Draft Environmental Impact Report

City of Glendale Biogas Renewable Generation Project

July 1, 2020

Lead Agency:
City of Glendale Community Development Department
Planning Division
633 E. Broadway, Room 103
Glendale, California 91206

Proponent:
City of Glendale
141 North Glendale Avenue
Glendale, California 91206

Consultant:
Stantec Consulting Services Inc.
290 Conejo Ridge Avenue
Thousand Oaks, California 91361

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Abbreviations

AAQS	Ambient Air Quality Standards
AB	Assembly Bill
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
AIP	Achieved in practice
ALOHA	Areal Locations of Hazardous Atmospheres
AMSL	Above mean sea level
A-P Zone	Alquist-Priolo Earthquake Special Studies Zone
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating and Air-Conditioning Engineers
ASSFC	Amalgamated System Sewage Facilities Charge
BACT	Best Available Control Technology
Basin Plan	Los Angeles Region Water Quality Control Plan
bgs	Below ground surface
bhp	Brake horsepower
BMP	Best Management Practice
BRTR	Biological Resources Technical Report
BSA	Biological Study Area
Btu/scf	British Thermal Unit per standard cubic foot
BUG	Backlight, uplight, and glare
C&D	Construction and demolition
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resource Board
CadnaA	Computer Aided Noise Abatement
CAFE	Corporate Average Fuel Economy
CalARP	California accidental release prevention
CalEEMod	California Emissions Estimator Model
CalFire	California Department of Forestry and Fire Protection
CALGreen Code	California Green Building Standards
Cal/OSHA	California Division of Occupational Safety and Health
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CAS	Chemical Abstracts Number



CATEF	California Air Toxics Emission Factors
CBC	California Building Code
CCH	Consortium of California Herbaria
CCR	California Code of Regulations
CD	Control delay
CDFW	California Department of Fish and Wildlife
CDWR	California Department of Water Resources
CEC	California Energy Commission
CEQA	California Environmental Quality Act
cf	Cubic feet
CFC	California Fire Code
CFCs	Chlorofluorocarbons
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	Methane
City	City of Glendale
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNG	Compressed Natural Gas
CNPS	California Native Plant Society
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Equivalent amount of carbon dioxide
CPT	Cone Penetration Test
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CUP	Conditional Use Permit
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted decibel
dbh	Diameter at breast height
DOT	Department of Transportation
DTSC	Department of Toxic Substances Control
EA	Enforcement agency
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
ERAs	Exceedance Response Actions

ERC	Emission Reduction Credits
ESA	Endangered Species Act
FE	Federally Endangered
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FRAP	Fire and Resource Assessment Program
GCP	General Construction Permit
GFD	Glendale Fire Department
GHG	Greenhouse gases
GMCGLA	City of Glendale Municipal CodeGeo-Logic Associates
gpd	Gallons per day
GPS	Global positioning system
GWh	Gigawatt-hour
GWP	Glendale Water and Power
GWP	Global Warming Potential
H_2S	Hydrogen sulfide
HAP	Hazardous Air Pollutant
HARP2	Hotspots Analysis Reporting Program Version 2
HCM	Highway Capacity Manual
HCS	Hazard Communication Standard
HFCs	Hydrofluorocarbons
HI	Hazard index
HIA	Hazard Index Acute
HIC	Hazard Index Chronic
HMBP	Hazardous Materials Business Plan
HNO_2	Nitrous acid
HNO_3	Nitric acid
hp	Horsepower
HSC	Health and Safety Code
Hz	Hertz
IBC	International Building Code
ICC	International Code Council
ICEs	Internal Combustion Engine
IESNA	Illuminating Engineering Society of North America
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
JPA	Joint Powers Agreement
kW	Kilowatts
kWh	Kilowatt-hour
L	Sound level

LACSD	Sanitation Districts of Los Angeles County
LADOT	Los Angeles Department of Transportation
LADPW	Los Angeles Department of Public Works
LdB	Sound level decibel
Ldn	Day/night average sound level
LEL	Lower explosive limit
Leq	Energy equivalent sound level
LFG	Landfill gas
Lmax	Maximum A-weighted noise level during the measurement period
Lmin	Minimum A-weighted noise level during the measurement period
LNG	Liquid Natural Gas
LOS	Level of Service
LRA	Local Responsibility Area
LST	Localized significance threshold
MBTA	Migratory Bird Treaty Act
MCE	Maximum credible earthquake
MCVII	A Manual of California Vegetation
MICR	Maximum individual cancer risk
mmBtu	One million British Thermal Units
mmscfd	Million standard cubic feet per day
MND	Mitigated Negative Declaration
MPE	Maximum possible earthquake
mph	Miles per hour
MPO	Metropolitan Planning Organization
MRP	Monitoring and reporting program
MSDS	Material Safety Data Sheets
MT	Metric tons
MW	Megawatt
MWe	Megawatts electric
MWh	Megawatt-hour
N_2O	Nitrous oxide
NAAQS	National ambient air quality standards
NAHC	California Native American Heritage Commission
NALs	Numeric action levels
NEC	National Electrical Code
NECs	No Exposure Certifications
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFPA	National Fire Protection Association
NG	Natural gas
NHTSA	National Highway Traffic Safety Administration



NMOC	Non-methane organic compounds
NO	Nitric oxide
NO_2	Nitrogen dioxide
NOA	Notice of Availability
NOI	Notices of Intent
NOP	Notices of Preparation
NOTs	Notices of Termination
NOx	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRHP	National Register of Historic Places
NSPS	New Source Performance Standards
NSR	New Source Review
NSWDs	Non-stormwater discharges
O&M	Operations and maintenance
O_3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
Pb	Lead
PCE	Passenger car equivalent
PFCs	Perfluorocarbons
PM	Particulate matter
ppm	Parts per million
ppmv	Parts per million volume
PPV	Peak particle velocity
PRC	Public Resources Code
PRDs	Permit Registration Documents
Project	Biogas Renewable Generation Project
PSD	Prevention of Significant Deterioration
PTC	Permit to Construct
PTO	Permit to Operate
R1R	Restricted Residential
R4SBA	Riverine, Intermittent, Streambed, Temporary Flooded
RCRA	Resource Conservation and Recovery Act of 1976
RECLAIM	Regional Clean Air Market
REL	Reference exposure levels
RICE	Reciprocating internal combustion engines
RNG	Renewable natural gas
ROW	Right-of-way



ROWD	Report of waste discharge
RPS	Renewable Portfolio Standards
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SAOs	Santa Ana Wind Occurrences
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
scfh	Standard cubic feet per hour
scfm	Standard cubic feet per minute
SCLF	Scholl Canyon Landfill
SCR	Selective catalytic reduction
SCS	Sustainable communities strategy
SE	State Endangered
SEA	Significant Ecological Area
SF_6	Sulfur hexafluoride
SFP	State Fully Protected
SGMA	Sustainable Groundwater Management Act
SIP	State implementation plan
SLF	Sacred Lands File
SMARTS	Stormwater Multiple Application and Report Tracking System
SO_2	Sulfur dioxide
SO_4^{2-}	Sulfates
SoCalGas	Southern California Gas Company
SO_X	Sulfur oxides
SPCC	Spill prevention, control, and countermeasure
SR	Special Recreation
SRA	Source receptor area
SRTS	Safe Routes to School
SSC	Species of Special Concern
ST	State Threatened
S-waves	Secondary or shear waves
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic air contaminants
T-BACT	Best Available Control Technology for Toxics
TSA	Temperature swing adsorption
USACE	United States Army Corps of Engineers

USAR	Urban Search and Rescue
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Survey
V/C	Volume to capacity ratio
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	Vehicle miles travelled
VOCs	Volatile organic compounds
vphpl	Vehicles per hour per lane
W	Watts
WDR	Waste Discharge Requirements
WDRs	Waste discharge requirements
WEAP	Worker Environmental Awareness Program
Wh	Watt-hours
WL	Watch List
WRPs	Water Reclamation Plants
WUI	Wildland-urban interface
WWTP	Wastewater Treatment Plant
ug/m^3	Micrograms per cubic meter

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1.0 INTRODUCTION

This document is a Draft Environmental Impact Report (Draft EIR) prepared for the Biogas Renewable Generation Project (Project). The City of Glendale (City) proposes to implement the proposed Project within the existing boundaries of the Scholl Canyon Landfill (SCLF), located at 3001 Scholl Canyon Road, Glendale, California, 91206. The Project is proposed on a non-fill portion of the site, situated on bedrock, which is located entirely within the jurisdictional boundaries of the City of Glendale, within Los Angeles County. Regional access to the landfill is from the Ventura Freeway (State Route 134) at the Figueroa Street exit. SCLF is an existing 535-acre Class III nonhazardous landfill facility that accepts municipal solid waste and is not a generator of, or repository for, hazardous wastes. The Project site is located on a 2.2-acre portion of the landfill and the Project objective is to beneficially use the methane-rich landfill gas (LFG) generated by SCLF as fuel to generate 100 percent renewable electrical energy on-site.

1.1 PURPOSE OF THE DRAFT ENVIRONMENTAL IMPACT REPORT

The purpose of this Draft EIR is to inform decision-makers and the general public of the environmental impacts resulting from the proposed Project. The City of Glendale is the Lead Agency under the California Environmental Quality Act (CEQA) responsible for preparing this Draft EIR. This Draft EIR has been prepared in conformance with CEQA (California Public Resources Code ("PRC" Section 21000 et seq.), the State CEQA Guidelines (California Code of Regulations ("CEQA Guidelines"), Title 14, Section 15000 et seq.) and the City of Glendale and Glendale Housing Authority Guidelines for Implementing the California Environmental Quality Act.

The City is responsible for processing and approving the proposed Project pursuant to PRC Section 20167. The City will consider the information in this Draft EIR, along with other information that may be presented during the CEQA process, including the Initial Study and a Final EIR. The EIR will be used in connection with all other permits and all other approvals necessary for the construction and operation of the proposed Project. The EIR will be used by the City's Departments, including Community Development, Water and Power, Public Works, and other responsible public agencies that must approve activities undertaken with respect to the proposed Project.

In accordance with CEQA Guidelines Section 15121, this Draft EIR provides specific information regarding the environmental effects associated with development of the proposed Project, ways to minimize any significant environmental effects through mitigation measures and describes reasonable range of alternatives to the proposed Project. For some effects, significant environmental impacts cannot be mitigated to a level considered less than significant; in such cases, impacts are considered significant and unavoidable. In accordance with CEQA Guidelines Section 15093(b), if a public agency approves a project that has significant impacts that are not substantially mitigated (i.e., significant unavoidable impacts where impacts cannot be mitigated to less than significant levels), the agency must state in writing the specific reasons for approving the project, based on the Final EIR and any other information in the public record for the project. This is known as a "statement of overriding considerations."



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This document analyzes the environmental effects of the proposed Project to the degree of specificity appropriate to the actions by the proposed Project, as required under Section 15146 of the State CEQA Guidelines. This analysis considers the actions associated with the proposed Project, to determine the short- and long-term effects associated with their implementation. This Draft EIR discusses both the direct and indirect impacts of this Project, as well as the cumulative impacts associated with other past, present, and reasonably foreseeable future projects. CEQA requires the preparation of an objective, full disclosure document to inform agency decision-makers and the general public of the direct and indirect environmental effects of the proposed action, including mitigation measures and reasonable alternatives that can reduce or eliminate any identified significant adverse impacts.

1.2 ENVIRONMENTAL IMPACT REPORT SCOPING PROCESS

In compliance with the CEQA Guidelines, the City has taken steps to provide the public and regulatory agencies opportunities to participate in the environmental process. As further described below, this included the distribution and electronic posting of an Initial Study and Notice of Preparation (NOP) as well as two public scoping meetings.

1.2.1 Notification

The City distributed 48 packets (31 one certified return receipt, and 17 through State Clearinghouse distribution) of the NOP and Scoping Meeting and Initial Study documents for review and comment to various agencies. In addition, the City provided email correspondence with the same documentation to other interested parties who requested notification and provided contact information.

1.2.2 Notice of Preparation

Pursuant to the provision of CEQA Guidelines Section 15082, the City circulated a NOP (Appendix A) to State, regional, and local agencies, and members of the public for a 32-day period commencing March 21, 2019 and ending April 22, 2019. The purpose of the NOP was to provide notice that the City was preparing a Draft EIR for the proposed Project, and to solicit input regarding the scope and content of the environmental information to be included in the Draft EIR.

1.2.3 Baseline Environmental Conditions

The City previously prepared an IS/MND for the proposed Project (City of Glendale and Stantec, 2018). The Final Initial Study/ Mitigated Negative Declaration (IS/MND) for the proposed Project concluded that the proposed Project would not result in potentially significant and unavoidable environmental impacts; however, City of Glendale Planning Commission elected not to adopt the Final IS/MND and requested preparation of this Environmental Impact Report (EIR) to evaluate a reasonable range of alternatives to the Project. While this EIR provides updates to the proposed Project's previous environmental analysis to address comments received during the public hearing considering adoption of the previous IS/MND and the public scoping meetings for preparation of this EIR. As a result, much of the environmental baseline established during preparation of the previous IS/MND has been utilized for purposes of this EIR to provide a comparative evaluation of the potential environmental impacts of alternatives to the proposed

Project (refer to Section 5.0 for a discussion of alternatives to the proposed Project). However, the environmental baseline was updated in this EIR for the following resource categories and reasons.

Air Quality and Greenhouse Gases: At the time the previous IS/MND was prepared, LFG was mixed with natural gas, conveyed through an existing unground pipe system to the Grayson Power Plant (Grayson) and burned in boilers at Grayson to make steam for electricity generation. Since that time, none of the existing operating engines at Grayson have the capacity to burn LFG. During the process of evaluating potential environmental impacts of modernizing (or "repowering") the Grayson, the City learned that emissions from combusting the LFG in the existing Grayson boilers exceeded potential health risk notification and action plan thresholds established by the South Coast Air Quality Management District. Accordingly, since April 1, 2018, the City ceased combusting LFG at Grayson and has been flaring all of the LFG at the SCLF in compliance with the existing SCAQMD permit. The baseline air quality and greenhouse gas settings have correspondingly been updated in this EIR to reflect this change.

The South Coast Air Quality Management District additionally passed new regulations in January 2019 that requires landfills that do not convert 80% percent or more of LFG to beneficial use to replace the existing LFG flares with new flares that comply with more stringent NOX and VOC emissions. The potential environmental impact analysis of the proposed Project and alternatives to the proposed Project consider this regulatory update.

Biological Resources: Public comments were received during the public hearing considering adoption of the previous IS/MND that the proposed Project could adversely impact the federally threatened and California Species of Special Concern coastal California gnatcatcher (*Polioptila californica californica*). While the previous environmental impact analysis determined a low likelihood of potential presence, Stantec conducted an additional biological survey of the proposed Project site on behalf of the City during preparation of this EIR to re-evaluate the biological setting of the site. The additional biological resources survey confirmed coastal California gnatcatcher (*Polioptila californica californica*) have low potential for occurrence at the proposed Project site due to limited and marginal habitat presence at the site as well as historic recorded occurrences within the proposed Project area. The nearest recorded occurrence is approximately 8.0 miles to the east; however, this observation is was over 20 years ago. The most recent record is from 2005, approximately 10.0 miles to the southeast. A description of the updated biological resources setting of the proposed Project is included in Section 4.3 and Appendix C of this EIR.

Hazards and Hazardous Materials: American Society for Testing and Materials indicates a 180-day validity for Phase I Environmental Site Assessment reports; although the original report was not completed for a property transfer, it was conducted under the ASTM guidance and therefore, an updated report was required for submittal with the EIR. The updated Phase I Environmental Site Assessment is in included with this EIR as Appendix G. The update did not result in a change in baseline environmental conditions since the previous IS/MND.

1.2.4 Scoping Meetings

The NOP included notification of two public scoping meetings to be held to further inform public agencies and other interested parties of the proposed Project and to solicit input regarding the Draft EIR. The two public scoping meetings were held at the Glendale Police Department Community Room located at 131

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N. Isabel Street in Glendale, CA on April 4, 2019 at 2:00 pm and again at 6:00 pm. These meetings afforded the public an opportunity to provide oral or written comments to the City regarding the scope and focus of the Draft EIR as described in the NOP and Initial Study. The meetings provided a brief presentation of the following information:

1. Purpose of the meetings;
2. Overview of the Project Description;
3. Summary of the Initial Study findings;
4. Review of alternatives being considered for further study within the EIR;
5. Opportunity for Public Comment; including speakers and comment cards; and
6. Closing Remarks discussing the CEQA review process, anticipated schedule, and where to find additional information and updates.

Oral and written comments received from the public were primarily related to the need for the proposed Project the proposed Project objectives as well as concerns for potential impacts to aesthetics, air quality, biological resources, noise, seismic hazards, traffic, and wildfire risk. Commenters also requested suggested the study of alternatives to the proposed Project, including a broad assessment of offsite alternatives, the conversion of LFG to LNG, no-project alternative, environmentally superior alternatives, and smaller-sized alternatives. Additionally, commenters requested evaluation of and evaluating potential cumulative impacts from other projects, including the Grayson Repowering Project, Scholl Canyon Landfill Expansion, Anaerobic Digester Project, and Devil's Gate Sediment Removal Project. All of which are considered in Section 3.2, Related Projects and Cumulative Impacts.

1.2.5 2019 California Environmental Quality Act Updates

On December 28, 2018, the Governor's Office of Planning and Research approved new CEQA Guidelines, including changes to Appendix G, which is the Environmental Checklist Form.[1] As the State formally adopted revisions to Appendix G on January 1, 2019, the revisions to Appendix G are commonly and collectively referred to as the "2019 CEQA Updates." The changes to Appendix G address statutory directives, streamline redundant threshold questions, modify thresholds based on court cases, and add new environmental impact topics for evaluation, including Energy and Wildfire. As such, the environmental impact topics analyzed, and the thresholds evaluated in this EIR are not identical to those presented in the 2017 Initial Study/Mitigated Negative Declaration previously prepared for the proposed Project. This EIR presents the most up-to-date evaluation of environmental impacts as required by State law, including two new impact areas (Energy and Wildfire); it analyzes cumulative impacts and includes a comparative analysis of Project Alternatives.

[1] Governor's Office of Planning and Research, Current CEQA Guidelines Update. Available at: http://opr.ca.gov/ceqa/updates/guidelines/. Accessed April 17, 2019.

1.2.6 Initial Study

In accordance with CEQA Guidelines Section 15063(a), the City prepared an Initial Study, which is provided in Appendix A of this Draft EIR. The Initial Study determined that the proposed Project has the potential to result in significant impacts associated with a number of environmental factors. As a result, the Initial Study determined that this Draft EIR should address those environmental factors where the proposed Project could result in potentially significant environmental impacts.

The Draft EIR focuses on changes in the environment that would result from the proposed Project, individually and cumulatively with other development projects. The Draft EIR identifies potentially significant direct and indirect impacts resulting from construction and operation of the proposed Project and provides Project design features and mitigation measures to reduce or avoid such effects. Based on public input and the results of the Initial Study, this Draft EIR addresses environmental effects in the following areas:

- Aesthetics
- Air Quality
- Biological Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Transportation and Traffic
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

1.2.7 Effects Found Not to be Significant

CEQA Guidelines Section 15128 states that an EIR shall contain a brief statement indicating reasons that various possible significant effects of a project were determined not to be significant and not discussed in detail in the Draft EIR. Pursuant to Section 15128, such a statement may be contained in an attached copy of an Initial Study. Based on the Initial Study, issues for which no significant impacts are anticipated to occur are addressed in Section 6.4, **Table 56**, Effects Found Not to be Significant, of this Draft EIR. Also refer to Appendix A, Initial Study, of this Draft EIR. The Initial Study provides a detailed discussion of

the potential environmental impact areas and the reasons that each topical area is or is not analyzed further in the Draft EIR.

1.3 FORMAT OF THE DRAFT ENVIRONMENTAL IMPACT REPORT

The Draft EIR includes an Executive Summary, eight chapters, and appendices, which are organized as follows:

1. **Introduction.** This section provides a summary of the proposed Project, describes the purpose of the EIR, including CEQA compliance requirements, steps undertaken to date regarding implementation of the CEQA process, and summarizes the Draft EIR's organization.
2. **Project Description.** This section describes the location, objectives, and physical and operational characteristics of the proposed Project.
3. **General Description of Environmental Setting.** This section presents an overview of the proposed Project's environmental setting, including on-site and surrounding land uses. This section also provides information on past, present, and probable future projects (referred to as "Related Projects") considered in the analysis of potential Project contributions to cumulative impacts.
4. **Environmental Impact Analysis.** This section contains the environmental setting, regulatory framework, methodology, thresholds of significance, Project characteristics and/or Project Design Features, Project-specific and cumulative impact analyses, mitigation measures, and conclusions regarding the level of significance after mitigation for each of the following environmental issues: (1) Aesthetics – Visual Character and Light and Glare; (2) Air Quality; (3) Biological Resources; (4) Energy; (5) Geology and Soils; (6) Greenhouse Gas Emissions; (7) Hazards and Hazardous Materials – Hazards to the Public and Wildland Fires; (8) Hydrology and Water Quality; (9) Land Use and Planning – Zoning Consistency; (10) Noise and Vibration; (11) Transportation and Traffic; (12) Tribal Cultural Resources; (13) Utilities and Service Systems – Relocation and Construction of New Storm Drains; and (14) Wildfire.
5. **Alternatives.** This section describes a reasonable range of alternatives to the proposed Project as means and methods to beneficially use the LFG, including:

   Alternative 1: No Project. LFG would continue to be captured and combusted by flare at SCLF. The South Coast Air Quality Management District (SCAQMD) passed new regulations in January 2019 that requires landfills that do not convert 80% percent or more of LFG to beneficial use to replace the existing LFG flares with new flares that comply with more stringent NOX and VOC emissions. Because the No Project Alternative would involve combusting 100% percent of the LFG in flares with no beneficial reuse, Alternative 1 assumes that the existing flares would be replaced with new flares required by SCAQMD regulation within the next three to four years. Alternative 1 is discussed further in Section 5.6.1.

   Alternative 2: Convert the LFG to Natural Gas. Alternative 2 includes converting the LFG to natural gas and delivering the natural gas to a connection with an existing SoCalGas natural gas transmission pipeline. Alternative 2 would include removing gas impurities through an LFG gas cleanup system at SCLF to meet stringent natural gas purity standards. After cleaning the LFG to meet SoCalGas standards, the natural gas would be compressed using new equipment at SCLF and delivered to SoCalGas through a new high-pressure pipeline. The existing flares would remain at SCLF and would be used as backup in the event natural gas was unable to be produced or

delivered to SoCalGas due to equipment and pipeline repair or maintenance activities. Alternative 2 is discussed further in Section 5.6.2.

Alternative 3: Convert LFG to Liquid Natural Gas (LNG). Alternative 3 includes converting the LFG to LNG at SCLF and utilizing the LNG as vehicle fuel at a new LNG storage and fueling facility at SCLF or transporting the LNG to a commercial user off-site via trucks. LNG is natural gas that is cooled to a temperature at which natural gas becomes a liquid. The conversion process includes a cleanup system to remove impurities from the LFG. The LFG is then cooled and liquefied via a cryogenic process to a temperature of approximately minus 260º F. The volume of the liquid is 600 times smaller than the gaseous form. The LNG would be stored at the landfill in an insulated LNG vessel. The LNG then can be used as vehicle fuel on-site or transported to a commercial user off-site via trucks. Alternative 3 would require a more extensive LFG cleanup system, additional process equipment, and LNG storage vessels at SCLF. The existing flares would remain at SCLF and would be used as backup in the event LNG was unable to be produced due to equipment repair or maintenance activities or LNG storage capacity is reached. Alternative 3 is discussed further in Section 5.6.3.

Alternative 4: Locate Engine Generators at an Another Location. Alternative 4 includes relocating the proposed internal combustion engine generators at Grayson Power Plant. The LFG compression and cleanup system would be located at SCLF. The cleaned LFG would be transported from SCLF to Grayson Power Plant through the existing LFG pipeline. The existing flares would remain at SCLF and would be used as backup in the event LFG was unable to be periodically combusted in the engine generators at Grayson Power Plant due to equipment repair or maintenance activities. Alternative 4 is discussed further in Section 5.6.4.

This section also evaluates the environmental effects of the alternatives for each issue area analyzed in the Draft EIR.

6. **Other CEQA Considerations.** This section includes a discussion of issues required by CEQA that are not covered in other sections. This includes a discussion of any significant unavoidable impacts, significant irreversible environmental changes, growth-inducing impacts, and effects found not to be significant.
7. **References.** This section lists the references and sources used in the preparation of this Draft EIR.
8. **EIR Preparers and Organizations and Persons Contacted.** This section lists the persons, public agencies, and organizations that were consulted or who contributed to the preparation of this Draft EIR.

The environmental impact analysis in this Draft EIR is supported by the following technical appendices:

APPENDIX A NOTICE OF PREPARATION AND INITIAL STUDY

APPENDIX B AIR QUALITY

- B.1 CALEEMOD Output Annual Report, Daily Report (summer) and Daily Report (winter)
- B.2 Criteria Pollutant Emission Inventory
- B.3 Ambient Air Quality Modeling Results
- B.4 Toxic Emission Inventory
- B.5 HARP2 Model Results

APPENDIX C BIOLOGICAL RESOURCES TECHNICAL REPORT

APPENDIX D GEOTECHNICAL INVESTIGATION REPORT

APPENDIX E GENERAL PLAN FAULT MAPS

APPENDIX F GREENHOUSE GAS (GHG) EMISSION INVENTORY

APPENDIX G PHASE I ENVIRONMENTAL SITE ASSESSMENT

APPENDIX H PRE-DEMOLITION ASBESTOS AND LEAD-BASED PAINT SURVEY

APPENDIX I OFF-SITE CONSEQUENCE ANALYSIS FOR AQUEOUS AMMONIA

APPENDIX J NOISE MODELING AND DATA COLLECTION SHEETS

APPENDIX K TRAFFIC ANALYSIS

- K.1 Traffic Analysis Exhibit 1
- K.2 Traffic Analysis Exhibit 2
- K.3 Traffic Analysis Exhibit 3

APPENDIX L TRIBAL CONSULT MEMORANDUM

APPENDIX M FIRE PROTECTION DESIGN BASIS PLAN

APPENDIX N OFF-SITE CONSEQUENCE ANALYSIS FOR LFG TO LNG (ALTERNATIVE 3)

APPENDIX O OFF-SITE CONSEQUENCE ANALYSIS FOR LFG TO CNG (CONSIDERED ALTERNATIVE)

1.4 AGENCIES INVOLVED AND PERMIT, CONSULTATION, AND ENVIRONMENTAL REVIEW REQUIREMENTS

The public agency that has the principal responsibility for carrying out or approving a project is designated as the “Lead Agency” under CEQA. The City of Glendale is the Lead Agency responsible for preparation of this EIR and therefore has the principal responsibility for approving and implementing the proposed Project. This EIR is intended to be used as the CEQA document for all local and state approvals required for the proposed Project; including approvals by responsible agencies, and any approvals required from trustee agencies. “Responsible Agency” means a public agency that proposes to carry out or approve a project for which the Lead Agency is preparing the CEQA document. For purposes of CEQA, the term “Responsible Agency” includes all public agencies other than the Lead Agency having discretionary approval authority over the proposed Project. “Trustee Agency” means a State agency having jurisdiction by law over project-affected natural resources that are held in trust for the people of the State of California.

The following is a list of agencies involved, and permit, consultation, and environmental review requirements anticipated for the proposed Project.

Agency	Permits and Other Approvals	Environmental Review/Consultation Requirements
FEDERAL		
United States Environmental Protection Agency (USEPA)	• Spill Prevention Control and Countermeasure Plan (40 Code of Federal Regulations [CFR] 112)	• None
U.S. Department of Transportation (USDOT)	• Compliance with USDOT regulations regarding transportation of hazardous substances on public highways (49 CFR)	• None
STATE		
California Air Resources Board (CARB)	• None	• Reviews Draft EIR
California Division of Occupational Safety and Health (Cal/OSHA)	• Injury and Illness Prevention Program (8 CCR 3203)	• None
California Natural Resource Agency	• Assembly Bill 52 (Chapter 532, Statutes 2014)	• None
LOCAL		
City of Glendale	• Notice of Completion • Design Review Board Approval • Conditional Use Permit • Grading Permit • Fire Department Permit • Industrial Waste Permit • Electrical Permit • Building Permit • Mechanical Permit • Plumbing Permit • Hazardous Materials Business Plan • Provide notification of project to County of Los Angeles and County Sanitation District pursuant to the Scholl Canyon Joint Powers Agreement (JPA)	• CEQA lead agency responsible for processing and adopting the EIR.
South Coast Air Quality Management District (SCAQMD)	• SCAQMD Regulation XXX: Title V Permits (Permit to Construct (PTC) and Permit to Operate (PTO)	• Responsible Agency
Los Angeles County Department of Public Health	• None	• Responsible Agency

Agency	Permits and Other Approvals	Environmental Review/Consultation Requirements
Los Angeles Regional Water Quality Control Board (RWQCB)	• California's General Permits for Stormwater Discharges Associated with Construction and Land Disturbance Activities and General Industrial Stormwater Discharges	• Stormwater Pollution Prevention Plan approval.
Los Angeles County Department of Public Works	• None	• Reviews Draft EIR

Responsible agencies that may have discretionary approval authority over the proposed Project, and trustee agencies having jurisdiction over natural resources affected by the proposed Project, would have the opportunity to review and provide comments during the review period. Other agencies and the public may also provide comments.

1.5 EIR REVIEW PROCESS

CEQA requires lead agencies to solicit and consider input from other interested agencies, citizen groups, and individual members of the public. The Initial Study was released by the City for a public review period in accordance with Section 15087 of the CEQA Guidelines. A Notice of Availability (NOA) of the Initial Study for review was provided with copies of the Initial Study to the State Clearinghouse and to regional and local public agencies. In addition, the NOA and Initial Study were made available on the proposed Project's website at www.glendalebiogasgeneration.com. The release of the Draft EIR will also follow this procedure.

This Draft EIR is being circulated for a 90-day public review and comment period. During this period, written comments concerning the adequacy of the Draft EIR may be submitted by any interested person and/or affected agency to the City of Glendale Community Development Department, Planning Division, at the address provided below.

Following the completion of this review period, the City of Glendale will examine all comments received on the Draft EIR and will prepare responses in accordance with Section 15088 of the State CEQA Guidelines. All oral and written comments with respect to environmental issues discussed in the EIR will be responded to in writing and will be incorporated into a Final EIR. At least ten days prior to a hearing to certify the Final EIR, proposed responses to comments on the Draft EIR by responsible agencies will be sent to those agencies. The Final EIR will be reviewed and considered by the City of Glendale Planning Commission and the City Council for certification in accordance with Section 15090 of the State CEQA Guidelines prior to considering the Project for approval. No aspect of the Project will be approved until after the Final EIR is certified.

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Any public agency or members of the public desiring to comment on the Draft EIR must submit their comments in writing or send them via email to the following address prior to the end of the public review period:

Mail: Erik Krause
Deputy Director of Community Development
Community Development Department
633 East Broadway, Room 103
Glendale, California 91206
Email: ekrause@glendaleca.gov

Upon the close of the public review period, the City will proceed to evaluate and prepare responses to all relevant written comments received from public agencies and other interested parties during the public review period. A Final EIR will then be prepared. The Final EIR will consist of the Draft EIR, any revisions, clarifications and corrections to the Draft EIR, comments submitted by responsible agencies or reviewing parties during the public circulation period for the Draft EIR, and City responses to those comments. After the Final EIR is completed and at least ten days prior to its certification, responses to comments made by public agencies on the Draft EIR will be provided to the commenting agencies.

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2.0 PROJECT DESCRIPTION

The Project is proposed to be located in the City of Glendale on a 2.2-acre site which is part of an approximately 95-acre area owned by Los Angeles County that is within the 535-acre SCLF. The SCLF is an operational Class III nonhazardous landfill that accepts municipal solid waste, but it is not a generator of, or repository for, hazardous wastes. Portions of SCLF are owned, respectively, by the City of Glendale, Los Angeles County, and by Southern California Edison Company (Sanitation Districts of Los Angeles County and AECOM, 2014). The Project is proposed to be located on a portion of the SCLF that is not used for disposal of waste. The SCLF's permitted capacity is based on disposal volume. At its current fill rate, the SCLF is estimated to reach its fill capacity by 2030.

The waste deposited into SCLF undergoes a natural waste decomposition process that generates LFG, including methane. Waste decomposition occurs at the closed and active portions of SCLF and will continue for many years. The SCAQMD requires the City to collect and control this LFG to eliminate direct release of methane from the landfill into the atmosphere. LFG is currently being captured through an existing LFG collection system and combusted in flares at the SCLF pursuant to a permit from the SCAQMD. Rather than continuing to flare the LFG, the proposed Project seeks to beneficially use the LFG for power generation utility at the SCLF to assist the City in meeting and exceeding State requirements for renewable energy generation. LFG will continue to be produced and must be collected and controlled regardless of whether SCLF remains in operation.

Additional facilities located near the proposed Project site include the Sanitation Districts of Los Angeles County portable and temporary offices, and landfill condensate and groundwater collection systems located adjacent to where the Project is proposed to be located. These existing facilities would not be modified or disturbed as part of the Project. Photographs of the existing facilities are provided on the following pages (see **Photos 1-4 Existing Facilities**).

At present, the existing LFG collection system at SCLF conveys the gas to a central location within the landfill property where it is compressed, liquids are removed, and the raw LFG is burned through flares at the landfill pursuant to an existing SCAQMD permit. In prior years, LFG was mixed with natural gas, conveyed through an existing unground pipe system to the Grayson Power Plant (Grayson) and burned in boilers at Grayson to make steam for electricity generation. At present, none of the existing operating engines at Grayson have the capacity to burn LFG. During the process of evaluating potential environmental impacts of modernizing (or "repowering") the Grayson, the City learned that emissions from combusting the LFG in the existing Grayson boilers exceeded potential health risk notification and action plan thresholds established by the SCAQMD. Accordingly, since April 1, 2018, the City ceased combusting LFG at Grayson and has been flaring all the LFG at the SCLF in compliance with the existing SCAQMD permit.



Photo 1: View west of existing facility from east of the proposed Project site within active landfill property.



Photo 2: View west of existing facility with landfill pipeline in foreground. Trailers in center are temporary and not part of Project.



Photo 3: Existing LFG processing facility to be demolished.



Photo 4: Existing flare system to remain.

2.1 PROJECT OBJECTIVES

CEQA Guidelines section 15124(b) specifies that a project description must state the objectives sought by the proposed project, and that the statement of objectives should include the underlying purpose of the project, and should be clearly written to guide the selection of mitigation measures and alternatives to be evaluated in the EIR.

The SCAQMD permit requires LFG from SCLF be captured and neutralized through flaring or burning, which process historically involved piping the LFG to the Grayson Power Plant for combustion. Following the SCAQMD 2018, directive, the City can no longer burn LFG at Grayson, and is currently flaring off the LFG at SCLF under SCAQMD Permit (Facility ID 045262 issued May 8, 2018).

The scope of proposed Project has been focused by the requirement that the City capture and burn off the LFG. The objectives for this Project are to:

1. Safely capture all the LFG generated by the SCLF as required by regulatory standards and use the captured LFG generated by the SCLF for beneficial purposes such as combusting the LFG to generate power.

2.2 PROJECT LOCATION AND SURROUNDING USES

The Project site is located completely within the boundaries of the existing SCLF, in Los Angeles County, at 3001 Scholl Canyon Road, Glendale, California, 91206. Regional access to the landfill is from the Ventura Freeway (State Route 134) at the Figueroa Street exit. **Figure 2.2-1** shows the location of the landfill and Project site.

2.3 DESCRIPTION OF THE PROPOSED PROJECT

The proposed Project would cause temporary disturbance to approximately 2.06 acres of land, and a permanent disturbance to approximately 8.00 acres of land within the SCLF site. The Project site would accommodate the installation the facility which would include engines that would burn the LFG in order to generate electrical power, and would include a natural gas pipeline, water pipeline, two water tanks, and associated vegetation clearance from within 100 feet of the proposed facility in accordance with applicable fire protection requirements. A summary of the activities that will cause disturbance to the existing environment can be found in **Table 1** below.

Table 1 Project Temporary and Permanent Site Modification

Project Components	Temporary Disturbance (acres)	Permanent Disturbance (acres)
Power Generation Facility & Water Tank Graded Area	0.00	2.07
Natural Gas Pipeline	0.71	0.02
Water Pipeline	1.35	0.10
Water Tank Pipelines (underground)	0.01	0.00
Power Generation Facility 100' Fire Buffer	0.00	5.81
Total Disturbance[2]:	**2.06**	**8.00**
Cleared/Developed Areas		
Previously Cleared/Developed	0.91	3.74
Not Previously Cleared/Developed	1.15	4.28

The Project includes the following components, which can be found in **Figure 2.3-1**.

2.3.1 Power Generation Facility

The Project includes construction and operation of an approximately 12-megawatt (MW) power generation facility that would utilize LFG as fuel to generate renewable energy (electricity).

The majority of the existing equipment owned and operated by Glendale Water and Power (GWP) required to treat the LFG would be demolished; only the existing blowers and LFG flaring station would remain. Existing equipment to be demolished or removed is shown on **Figure 2.3-2**. The proposed Project would be located adjacent to the existing LFG flare station and would include the following equipment and systems:

- LFG compressors: LFG compressors would be used to increase the LFG pressure so that the LFG can be treated and conveyed to the electrical generation equipment.
- LFG treatment system: The LFG treatment system would be used to prevent damage to the electrical generation equipment consisting of vessels, coolers, heat exchangers, and control systems designed to remove moisture and impurities from the LFG. The raw untreated LFG would initially go through a low temperature moisture removal system, consisting of a low temperature refrigeration system which removes the moisture from the LFG. The City proposes to use R134a refrigerant or equivalent in the cooling/chiller system. R134a refrigerant is not a hazardous material and is commonly used instead of anhydrous ammonia which is a hazardous material. The chiller will be filled via a truck at Project startup and no additional filling should be required. The dry LFG then goes through sulfur and siloxane removal systems. These removal systems consist of vessels containing media that capture the sulfur/siloxane and remove it from the LFG. When the sulfur removal media is saturated, that saturated media is then removed, and new media is installed into the vessels. When the siloxane media is saturated the media is

[2] Total Disturbance numbers have been rounded to the shown significant figure, accounting for the minimal difference in total for Cleared/Developed Areas.

regenerated by heating to drive off the captured siloxanes and the regeneration gas is conveyed to a ground flare for disposal. The above described process is undertaken and completed prior to combusting the LFG in the reciprocating engine generators[3].

- Condensate treatment system: The condensate treatment system would be used to collect condensate, which is the moisture removed from the LFG treatment system, and treat that condensate so that it complies with the City's Industrial Waste Discharge requirements before the condensate is disposed into the existing sewer system. The main components of the condensate treatment system are oil-water separator vessels that remove any entrained hydrocarbons[4], including any oils that might be entrapped in the condensate prior to disposal in the sewer.
- Electrical generating equipment: The electrical generating equipment consists of four reciprocating engine generators to produce electricity using the LFG as fuel. Electrical generating equipment would be self-contained and located in individual enclosures. To minimize noise and fire risk and to protect the engine generators from the weather they would be enclosed in containers similar in size and appearance to seagoing Conex boxes[5].
- Combustion exhaust gas cleanup system: The combustion exhaust gas cleanup is necessary so that exhaust gases from the combustion process will comply with SCAQMD regulations. This system consists of reactive catalyst[6] using 19 percent aqueous ammonia as the reactant to minimize the emissions of nitrogen oxides (NOx), and it also uses a carbon monoxide (CO) catalyst to minimize the emissions of CO. Before the exhaust gases are discharged into the air, the engine exhaust gas will go through an approximately six-foot cubic container that contains the catalyst, which is similar in function to a catalytic converter on an automobile. These six-foot cubic containers are located on top of each of the four Conex boxes described above. Ammonia is injected into the container to react with the engine exhaust gases which reaction converts both the nitrogen oxides and the carbon monoxide into harmless gases such as nitrogen. The 19 percent aqueous ammonia necessary for this clean up system would be stored in an above ground 12,000-gallon capacity storage tank. The tank would be surrounded by a secondary concrete containment structure that measures 38.5 feet long, 13.5 feet wide and 4.5 feet deep that has the capacity to hold the entire contents of the secondary containment tank, plus any rainwater accumulation.
- Continuous emission monitoring systems: Continuous emission monitoring systems would be installed on the engines to assure that the exhaust gas emissions comply with SCAQMD regulations at all times.
- Electric switchgear: Electric switchgear equipment, consisting of a circuit breaker and protection equipment, will be used to connect the electricity produced by the LFG powered engines to the existing GWP electrical system within the proposed Project site. No electric transmission system modification is anticipated.
- Office Space: A small office (containing office equipment and computers) and small storage building, consisting of shelving and storage space less than 1,000 square feet each, will be installed in order to operate and maintain the proposed Project.

[3] A reciprocating engine uses the expansion of gases to drive a piston within a cylinder and converts the piston's linear movement to a circular (or rotating) movement of a crankshaft to generate power.
[4] "Entrained hydrocarbons" - to draw in and transport (something, such as solid particles or gas) by the flow of a fluid.
[5] Conex boxes are the standard form Intermodal shipping containers that are used widely by container shipping companies.
[6] A "reactive catalyst" - A catalyst is a substance that speeds up the rate of a chemical reaction but is not consumed during the course of the reaction. A catalyst will appear in the steps of a reaction mechanism, but it will not appear in the overall chemical reaction (as it is not a reactant or product).

- Fire protection and safety system: A fire protection and safety system consisting of a new 60,000-gallon fire water tank, fire hydrants, fire extinguishers and fire alarm system will be installed in order to comply with National Fire Protection Association and Glendale Fire Department requirements. In addition, vegetation within 100 feet of the facility will be removed to provide a fire safety perimeter.
- Two water tanks: A new 60,000-gallon water tank would be constructed to provide water for fire protection. In addition, a new approximately 10,000-gallon water storage tank would be installed to provide potable water to the proposed Project site.
- Security Fencing and Lighting: The entire facility would be enclosed with chain-link fencing and area lighting would be provided to ensure safety and security for the Project site.

Figure 2.3-3 shows the location of the above-described equipment.

2.3.2 Natural Gas and Water Pipelines

Approximately two-thirds of a mile (3,500 linear feet) of natural gas pipeline would be constructed to connect the Power Generation Facility to the existing Southern California Gas Company (SoCalGas) pipeline system located at the eastern end of Scholl Canyon Drive. The SoCalGas pipeline is a three-inch, schedule 40 steel gas pipeline that would be located above ground, within the boundary of the SCLF, except at road and drainage culvert crossings (see **Figure 2.3-1**). Because the methane content in the SCLF LFG is only approximately 32 percent to 35percent, a small amount of natural gas is required to augment the LFG in order to assure continuous and complete combustion inside the engine cylinders. SCAQMD regulations allow the LFG to be augmented by up to a maximum of ten percent (10%) of the total fuel consumed by the engines to be natural gas.

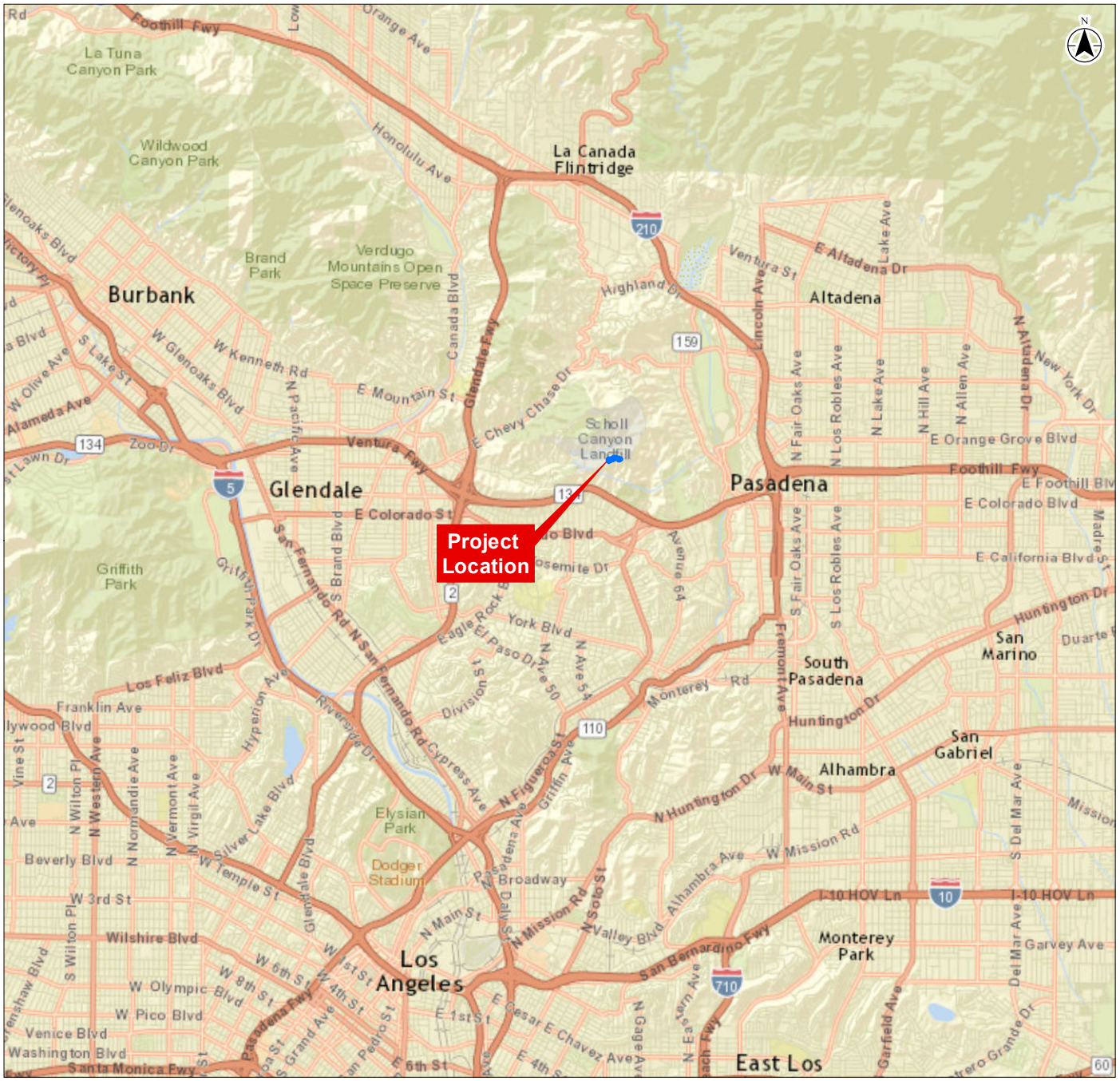
The new 60,000-gallon water storage tank for fire protection and a new approximately 10,000-gallon potable water storage tank would also be installed. In order to convey water to the proposed Project, an approximately one-mile-long, 12-inch steel or high-density polyethylene pipeline would be connected to the existing 16-inch pipeline located north of the SCLF on Glenoaks Blvd. This water line would be installed above-ground except for road and drainage culvert crossings, and at those locations the water line would be installed below-ground under the roads and either over or under the drainage culvert crossings. The water line would be connected to fire hydrants as required by the City of Glendale Fire Department. Additional water pipelines would be installed below-ground to connect the Project facility with the new fire protection and domestic water tanks, which would be located just east of the facility. A water fill-line would be installed below-ground extending across the proposed Project facility from a water tie-in at the southwest portion of the proposed Project site to facilitate the new water tanks. The water and natural gas pipelines are shown on **Figure 2.3-1**.

The unprocessed LFG from the landfill is saturated with liquids that need to be separated from the LFG, collected, and piped to a condensate treatment system where impurities such as any hydrocarbons and oils entrained within the liquid condensate would be removed, collected, and disposed of in accordance with required rules and regulations. After the impurities are removed, the remaining liquids would be piped to the existing sewer system located nearby. The condensate is periodically tested to assure compliance with the facility Industrial Waste Discharge permit.

During construction, water would be used for dust control, soil compaction, concrete curing, and similar construction activities. All cooling systems would be closed circulating glycol type with no open cooling towers required. The cooling system would use a glycol/water mixture. After initial filling, the system would operate in a closed loop and would not require additional makeup water to be added. Besides using water for domestic purposes, fire protection and construction, no other water consumption is contemplated. The cooling system is closed loop which does not require any water.

2.3.3 Existing Pipeline Decommissioning

The existing approximately five-mile-long underground pipeline that was previously used to carry LFG to the Grayson Power Plant would be abandoned in place. As part of the abandonment process, the line would be purged with an inert gas such as nitrogen and capped with cement plugs or similar items on each end. The existing line follows surface streets within an existing utility corridor.



Stantec

Legend

Proposed Power Plant Facility Boundary

0 1 2 Miles

1 in = 2 miles (At Original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 11N

2. Basemap: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



Project Location Glendale, CA	Project No.: 2057123300 Prepared by JT on 2017-06-27 Technical Review by CH on 2017-06-27

Client/Project
City of Glendale
Biogas Renewable Generation Project
Environmental Impact Report

Figure Number/Title:

Figure 2.2-1
Project Location

C:\Users\Vicki\Desktop\2057123300\mxd\2017627\Fig2.2-1_Site_Location_Rev1IP_20170627.mxd Revised: 2017-06-27 By: Vicki

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Stantec

Legend

- Proposed Gas Pipeline
- Proposed Water Pipeline
- Proposed Power Plant Facility Boundary
- New Water Tank

0 250 500 Feet

1 in = 500 feet (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet

2. Basemap: Image courtesy of USGS Image courtesy of LAR-IAC Earthstar Geographics SIO © 2017 Microsoft Corporation
Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand),



Project Location:
Glendale, CA

Project No.: 2057123300
Prepared by JT on 2017-07-24
Technical Review by CH on 2017-07-24

Client/Project:
City of Glendale Water and Power
Biogas Renewable Generation Project
Environmental Impact Report

Figure Number/Title:

Figure 2.3-1
Proposed Project Elements

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Legend

- Proposed Power Plant Facility Boundary
- Area to be Demolished

0 80 160 Feet

1:961 (At original document size of 11x17)

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Project Location
Glendale, CA

Project No.: 2057123300
Prepared by JT on 2017-07-21
Technical Review by CH on 2017-07-21

Client/Project
City of Glendale
Biogas Renewable Generation Project
Environmental Impact Report

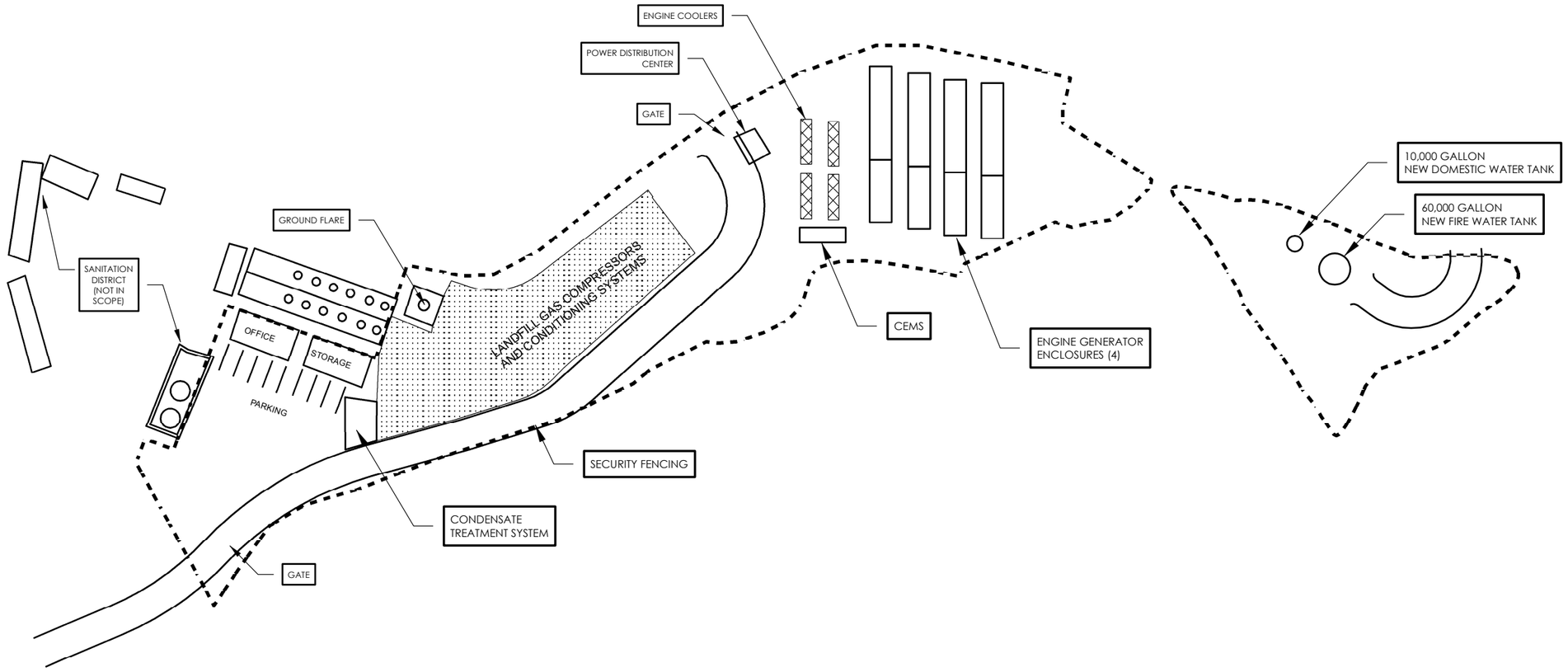
Figure No.
2.3-2

Title
Existing Facility Demolition Plan

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Legend

Proposed Power Plant Facility Boundary

0 80 160 Feet

1:961 (At original document size of 11x17)

Stantec

Project Location
Glendale, CA

Project No.: 2057123300
Prepared by JT on 2017-07-25
Technical Review by CH on 2017-07-25

Client/Project
City of Glendale Water and Power
Biogas Renewable Generation Project
Environmental Impact Report

Figure No.
2.3-3

Title
Major Equipment Location Plan

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2.4 PROJECT OPERATIONS

The Project would be constructed and operated adjacent to the existing LFG collection and LFG flaring systems. There are two operating and one backup LFG blower delivering LFG to the LFG flaring system which consists of 12 existing eight-foot diameter, 16-foot high ground flares (**Figure 2.3-2**). The blowers and the flares would remain, and pursuant to the existing SCAQMD permit, would be operating and disposing LFG during Project construction. After the proposed Project facility is in operation, the flares would only operate during facility maintenance or in the unlikely event that there is excess LFG being produced that cannot be used for generating electricity.

A total of four operators and two technicians would be responsible for on-site Project operations and routine facility maintenance. Personnel would be available and on call during non-business hours. Periodic maintenance would be performed by qualified personnel that would travel to the proposed Project site during business hours as needed to perform the required maintenance. Products such as lube oils, filters, cleaning media, 19 percent aqueous ammonia, and other similar materials would be stored on site and delivered as they become depleted. Restroom facilities also would be provided, and the existing sewer system would be utilized.

For security, the entire Project site would be enclosed within an eight-foot-high security fence with automatic gates. Security and safety lighting systems would be provided.

The life of the proposed Project is anticipated to be 20 years, or as long as the LFG can be used to generate electricity; after which time equipment and equipment foundations would be removed.

2.5 PROJECT CONSTRUCTION SCHEDULE

Project construction would occur in three phases over an approximately 15- to 18-month period. The Project schedule is depicted in **Figure 2.5-1**. Parking for construction workers would be provided on-site within the boundary of the landfill. The laydown and equipment storage area would also be within the boundary of the landfill. No off-site parking or material storage would be required. During the construction phase the proposed Project location would be accessed via Scholl Canyon Road from North Figueroa Street from the SR-State Route 134 Westbound Ramps/North Figueroa Street intersection. Scholl Canyon Road is a two-lane road that terminates at the Scholl Canyon Landfill.

2.5.1 Phase I – Demolition and Removal of Existing Equipment

Phase I would be implemented over four to five months and would entail demolition and removal of existing equipment from the site to make room for the Project facilities as depicted in **Figure 2.3-2** and summarized below. Tanks, piping, electrical systems, fencing, containers, office buildings, and other facilities would be dismantled and removed. The existing concrete foundations and existing asphalt roads would be demolished. The Sanitation District will use removed asphalt for landfill road base and concrete will be used on the proposed Project site for road base as needed**.** Any removed asphalt and/or concrete that is not used for landfill road base will be crushed onsite and transferred to the adjacent landfill by dump trucks. **Figure 2.3-2** shows the demolition plan. During this four to five-month period, approximately five trucks and ten worker vehicles would be driven each way to the proposed Project location each workday.

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	Month																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
PHASE I Demolition and Removal of Existing Equipment																		
Remove tanks, piping, electrical systems, office building & fencing	X	X	X															
Demolish existing foundations and asphalt				X	X													
PHASE II Site Grading & Construction																		
Cut slope, grade and compact soil, install asphalt for facility						X	X	X										
Build new foundations and access road								X	X									
Install new water tank and water line for fire protection									X	X	X	X						
Install new equipment, piping and electrical,												X	X	X	X			
Install new gas pipeline											X	X	X					
Install new office and storage buildings												X	X	X				
PHASE III Startup and Commissioning																		
Equipment commissioning																X	X	X

Stantec

Project Location
Glendale, CA

Project No.: 2057123300
Prepared by JT on 2017-07-21
Technical Review by CH on 2017-07-21

Client/Project
City of Glendale Water and Power
Biogas Renewable Generation Project
Environmental Impact Report

Figure No.
2.5-1

Title
Project Schedule

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2.5.2 Phase II – Site Grading and Construction

After Phase I is complete, Phase II would be implemented over the next nine to ten months. Earth moving equipment would be brought to the site for grading, excavation and site preparation and civil construction. It is anticipated that during the grading process approximately 20,000 cubic yards of soil would be excavated, of which 6,000 cubic yards of soil would be used on-site as fill and 14,000 cubic yards of clean soil would be used as cover at the landfill. **Figure 2.3-3** shows the extent of grading.

Phase II would also entail building concrete foundations, delivering, and installing electrical generating equipment located within individual enclosures, compressors, LFG and condensate conditioning and treatment systems, electrical switchgear and other equipment and construction materials required to build the Project facility. Existing landfill condensate and groundwater collection system, piping systems and power lines located within the facility would be relocated. A single, less than 1,000 square foot storage building, and a less than 1,000 square foot office building would be constructed; pipes, conduits, and wires would be delivered and installed; and the security and fire protection system would also be installed. LFG, natural gas, and water pipelines, and the new water tanks would be installed, and access roads would be constructed (**Figures 2.3-1** and **2.3-3**). During this nine- to ten-month period, approximately ten trucks and 12 vehicles would be driven each way to the proposed Project location each workday.

2.5.3 Phase III – System Startup

After Phase II is complete, Phase III would be implemented over the next two to three months. Phase III would entail sandblasting, priming and painting the facility, delivery of products/materials, and verifying the operational capabilities of all systems required to make the facility safe and operational. During this two to three-month period, approximately three trucks[7] and 20 worker vehicles would be driven each way to the proposed Project location each workday.

[7] a) The worker vehicles reflect a mix of light duty autos and light duty trucks. The vendor vehicles reflect a mix of medium and heavy-duty trucks. The hauling vehicles include heavy duty trucks. b) The quantity of 3 large truck and 20 cars during architectural coating phase include vehicle trips due to commissioning activity of the electrical generating equipment.

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3.0 GENERAL DESCRIPTION OF ENVIRONMENTAL SETTING

CEQA Guidelines Section 15125 requires that an EIR include a description of the existing environment. More specifically, Section 15125(a) states that an EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The City previously prepared an IS/MND for the proposed Project (City of Glendale and Stantec, 2018). The Final Initial Study/ Mitigated Negative Declaration (IS/MND) for the proposed Project concluded that the proposed Project would not result in potentially significant and unavoidable environmental impacts; however, City of Glendale Planning Commission elected not to adopt the Final IS/MND and requested preparation of this Environmental Impact Report (EIR) to evaluate a reasonable range of alternatives to the Project. While this EIR provides updates to the proposed Project's previous environmental analysis to address comments received during the public hearing considering adoption of the previous IS/MND and the public scoping meetings for preparation of this EIR, much of the environmental baseline established during preparation of the previous IS/MND has been utilized for purposes of this EIR to provide a comparative evaluation of the potential environmental impacts of alternatives to the proposed Project (refer to Section 5.0 for a discussion of alternatives to the proposed Project). However, the environmental baseline was updated in this EIR for air quality, biological resources, greenhouse gas emissions, and hazards and hazardous materials refer to Section 1.2.3).

Each environmental topic studied in Section 4.0 Environmental Impact Analysis (Sections 4.1 through 4.14), analyzes the proposed Project's consistency with applicable plans. This section provides a general overview of the environmental setting for the proposed Project. Detailed information on environmental conditions is provided for each environmental topic studied in Section 4.0. This section also provides a list of related projects that are considered in cumulative impact analysis.

3.1 OVERVIEW OF ENVIRONMENTAL SETTING

3.1.1 On-Site Conditions

The proposed Project site is located at 3001 Scholl Canyon Road (Assessor Parcel Number 566602901), in the City of Glendale, and is situated along the eastern-most border of the City (**Figure 2.2-1**). The approximately 2.2-acre Project site is currently occupied with the SCLF and would be located on the approximately 95-acre Los Angeles County portion of the SCLF, within the City of Glendale. SCLF is zoned SR (Special Recreation), with a corresponding General Plan Land Use designation of Recreation/Open Space.[8,9]

[8] City of Glendale Community Development Department, City of Glendale Zoning Map, September 11, 2014. https://www.glendaleca.gov/home/showdocument?id=654. Accessed April 30, 2019.
[9] City of Glendale Community Development Department, City of Glendale Comprehensive General Plan Land Use Element Map, September 4, 2018. https://www.glendaleca.gov/home/showdocument?id=47607. Accessed April 30, 2019.

GENERAL DESCRIPTION OF ENVIRONMENTAL SETTING

The proposed Project site is exclusively accessed by Scholl Canyon Road, which is a two-lane road that terminates at the SCLF. Figueroa Street turns into Scholl Canyon Road at State Route 134 (Ventura Freeway). Regional access to the proposed Project site is from the Ventura Freeway and Figueroa Street. State Route 210 (Foothill Freeway) is aligned farther north of the proposed Project site, and the State Route 2 (Glendale Freeway) is aligned farther west of the proposed Project site. The Project site is not served by public transportation; however, bus service in the vicinity is provided by the Los Angeles County Metropolitan Transportation Authority.

3.1.2 Surrounding Uses

The land uses surrounding the proposed Project site include low density residential and very low density/open space land uses. Immediately to the south of the proposed Project site is the City of Los Angeles community of Eagle Rock, and to the east of the proposed Project site is the City of Pasadena, including Arroyo Seco Park and Rose Bowl Stadium.

3.1.3 Existing Conditions

For more detailed descriptions of existing conditions specific to each of the environmental issues analyzed in this Draft EIR, see Sections 4.1 through 4.14.

3.2 RELATED PROJECTS AND CUMULATIVE IMPACTS

The State CEQA Guidelines require that an EIR discuss the cumulative impacts of a project when the project's incremental effect is cumulatively considerable. As set forth in CEQA Guidelines Section 15065(a)(3), "cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects.

In accordance with CEQA Guidelines Section 15130(a)(3), a project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. In addition, the Lead Agency is required to identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable.

State CEQA Guidelines Section 15130(b) further provides that the discussion of cumulative impacts reflects the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. Rather, the discussion is to be guided by the standards of practicality and reasonableness and should focus on the cumulative impact to which the identified other projects contribute.

State CEQA Guidelines Section 15130(b) states that complying with one of the following two protocols is necessary to provide an adequate discussion of significant cumulative impacts:

1. A list of past, present, and probable future projects producing related or cumulative impacts including, if necessary, those projects outside the control of the agency; or



2. A summary of projections contained in an adopted local, regional, or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the Lead Agency.

Cumulative study areas are defined based on an analysis of the geographical scope relevant to each particular environmental issue. Therefore, the cumulative study area for each individual environmental impact issue may vary. For example, a cumulative land use impact generally may only affect the compatibility of uses within the vicinity of a project site, while a cumulative air quality impact may affect the entire air basin.

In order to determine which projects would be considered as potential related projects, research was conducted during May and June 2019, including outreach to neighboring municipalities and agencies. Research was conducted online for each entity, (including the City of Glendale, Glendale Water and Power, City of Pasadena, Pasadena Water and Power, City of Burbank, Burbank Water and Power, City of La Canada-Flintridge, City of Los Angeles, Los Angeles Department of Water and Power, Los Angeles County Department of Public Works and Los Angeles County Department of Regional Planning). Additionally, telephone discussions with agency representatives were conducted to describe the proposed Project and to obtain information about the potential projects under their jurisdiction which could contribute to cumulative environmental impacts. The agencies and representatives consulted are included in Section 8.0 Projects identified through these correspondences and screened for potential evaluation in the proposed Project's cumulative impact analysis is summarized below. Based on distance and lack of comparable environmental impacts which could have a cumulative effect, only one project was considered relevant and carried forward into the cumulative impact analysis.

City of Glendale and Glendale Water & Power:

1. Grayson Repowering Project – Located approximately five-miles west of the proposed Project. Electrical repowering project, including replacement of generation units with new, cleaner, efficient, reliable power generation facilities. The City of Glendale is currently evaluating specific equipment and layouts and is evaluating the potential impacts of the Grayson Repowering project through preparation of an EIR. The Grayson Repowering Project **was** carried forward to the cumulative impact analyses included in Section 4.0 of this EIR.
2. Scholl Canyon Landfill Expansion – The City of Glendale previously proposed to expand the SCLF. The Landfill Expansion is no longer proposed, is no longer reasonably foreseeable and, as such, **was not** carried forward to the cumulative impacts analyses included in Section 4.0 of this EIR.
3. Anaerobic Digester Project – The City of Glendale previously considered constructing and operating an Anaerobic Digester Project at the SCLF. The Anaerobic Digester Project would anaerobically digest organic waste and would combust the produced gas in electrical generating equipment to produce renewable electricity. The Anaerobic Digester Project is no longer proposed, is no longer reasonably foreseeable and, as such, **was not** carried forward to the cumulative impacts analyses included in Section 4.0 of this EIR.

GENERAL DESCRIPTION OF ENVIRONMENTAL SETTING

City of Pasadena and Pasadena Water and Power:

4. Holly Street Bridge Seismic Retrofit Project – Located approximately two miles southeast of the proposed Project. This project would retrofit an existing bridge over the Arroyo Seco. The City of Pasadena indicated that required bridge and street closures could potentially cause emergency access issues and wildfire emergency egress issues for the Linda Vista community. The proposed Project does not spatially overlap with the bridge retrofit project, would not contribute to traffic congestion in the area of the Holly Street Bridge and would not have the potential to contribute to impacts to the Linda Vista community. Therefore, the Holly Street Bridge Seismic Retrofit Project **was not** carried forward to the cumulative impact analyses included in Section 4.0 of this EIR.
5. Annandale Canyon Open Space Trail Access Improvements and Park Expansion – Located approximately 2/3 of a mile west of the proposed Project. This project consists of trail construction, trailhead improvements, construction of a small parking lot, accessibility improvements, and acquisition of neighboring parcels to expand park footprint. The City of Pasadena reports that this project would be completed in 2019, which is before the timeline for implementation of the proposed Project. Due to the different timing, lack of spatial overlap, minor nature of recreation improvements, and distinctly different project types, the Annandale Canyon Open Space Trail Access Improvements and Park Expansion **was not** carried forward to the cumulative impact analyses included in Section 4.0 of this EIR.
6. ArtCenter College of Design Master Plan Project – Located one mile north of the proposed Project. This project consists of improvements within the ArtCenter Hillside Campus, including renovations, reconstruction, and additions to existing buildings, construction of additional parking, installation of a CNG fueling facility and photovoltaic (PV) solar cell canopies within the parking lots, and modifications to campus access. Due to the distance from proposed Project activities, distinctly different project types, and the use of a separate roadway system and transportation infrastructure, as compared to the proposed Project, the ArtCenter College of Design Master Plan Project **was not** carried forward to the cumulative impact analyses included in Section 4.0 of this EIR.
7. Berkshire Creek Area Improvements Project – Located approximately 3 miles north of the proposed Project. This project site consists of approximately 4.7 acres within the Oak Grove area of the City of Pasadena's approximate 1,300-acre Hahamongna Watershed Park. The Oak Grove area is situated in the southwestern portion of the Hahamongna Watershed Park Master Plan area. The primary goal of this project is to improve the ecological, hydrological, and recreational conditions throughout the lower third of the Oak Grove area. This is a small park improvement project with beneficial attributes that would not have overlapping impact types, when considered in combination with the proposed Project. Due to the distance, distinctly different project types, the lack of overlapping impact types, and use of a separate roadway system and different transportation infrastructure compared to the proposed Project, the Berkshire Creek Area Improvements Project **was not** carried forward to the cumulative impact analyses included in Section 4.0 of this EIR.
8. Glenarm II Rebuild/Retrofit/Refurbishment Project – Located approximately three and ¼ miles southeast of the proposed Project. This project would rebuild the portion of the Glenarm Power Plant that burned down in 2012. Due to the distance from the proposed Project and lack of additional information available, the Glenarm II Rebuild/Retrofit/Refurbishment Project **was not** carried forward to the cumulative impact analysis including in Section 4.0 of this EIR.
9. Sunset Reservoir Ion Exchange Project – Located approximately three and ¼ miles east of the proposed Project. This project involves a groundwater treatment system and includes an

aboveground aqueous ammonia tank and other large chemical tanks. Due to the distance to the proposed Project, the very small total size of the project site and water treatment tanks, and the fact there were no significant environmental impacts associated with this project, the Sunset Reservoir Ion Exchange Project **was not** carried forward to the cumulative impact analyses included in Section 4.0 of this EIR.

City of Burbank and Burbank Water and Power:

10. Burbank Landfill LFG Microturbine Replacement – Located seven and ¾ miles northwest of the proposed Project. This project would replace LFG burning microturbines which have reached the end of their life. Manufactured "skid units" would be placed on site as a new system to improve biogas reclamation. Burbank Water and Power indicated that this was a very small project and not comparable in scale to the proposed Project. There would be no potential for this project and the proposed Project to have any overlapping or cumulative impacts. As a result, and in in consideration of the distance from the proposed Project, the Burbank Landfill LFG Microturbine Replacement Project **was not** carried forward to the cumulative impact analyses included in Section 4.0 of this EIR.

City of La Canada-Flintridge:

11. There are **no applicable projects** to consider in La Canada-Flintridge, other that the Devil's Gate Sediment Removal Project (discussed below).

City of Los Angeles and Los Angeles Department of Water and Power:

12. There were **no applicable projects** to consider in the City of Los Angeles or proposed by the Los Angeles Department of Water and Power.

Los Angeles County:

13. Devil's Gate Sediment Removal Project – Located approximately three and ¼ miles north to the proposed Project. This project involves sediment removal from Devil's Gate Reservoir. Through 2022, 1.7 million cubic yards of sediment will be removed from Devil's Gate Reservoir, with habitat restoration taking place through 2023. There would be minimal, if any, potential for cumulative environmental impacts to occur, as limited number of construction trucks accessing the proposed Project site would not be in the vicinity of Devil's Gate Reservoir. Due to the distance, distinctly different project types, and use of a separate roadway system and different transportation infrastructure as compared to the proposed Project, the Devil's Gate Sediment Removal Project **was not** carried forward to the cumulative impact analyses included in Section 4.0 of this EIR.

The only related project is the GWP's Grayson Repowering Project, located approximately five miles west of the proposed Project site. The Grayson Repowering Project would be undertaken at GWP's existing Grayson Power Plant. A majority of the facilities located at the Grayson Power Plant, with the exception of Unit 9 (a simple cycle peaking plant built in 2003), were completed between 1941 and 1977, and are proposed to be replaced with more reliable, efficient, flexible, and cleaner units and related facilities and infrastructure. The City is currently evaluating repowering alternatives for the Grayson Power Plant.

GENERAL DESCRIPTION OF ENVIRONMENTAL SETTING

The cumulative analysis for each environmental issue, including a discussion regarding the identification of relevant related projects, is provided in Section 4.0, Environmental Impact Analysis, of this Draft EIR.

4.0 ENVIRONMENTAL IMPACT ANALYSIS

4.1 AESTHETICS

Acronyms

AMSL	Above mean sea level
BUG	Backlight, uplight, and glare
CALGreen Code	California Green Building Standards
CCR	California Code of Regulations
CEC	California Energy Code
CEQA	California Environmental Quality Act
FHWA	Federal Highway Administration
IESNA	Illuminating Engineering Society of North America
LFG	Landfill gas
SCAQMD	South Coast Air Quality Management District
SCLF	Scholl Canyon Landfill

4.1.1 Environmental Setting

This section evaluates Project-related impacts on visual quality, views, and light and glare. The visual characteristics of the proposed Project site and the surrounding area are described below.

4.1.1.1 Scenic Vistas and Ridgelines

The proposed Project is bordered on the north by the San Gabriel Mountains, on the northwest by the Verdugo Mountains, and on the east by the San Rafael Hills. The easternmost edge of the Santa Monica Mountains, in Los Angeles's Griffith Park, lies just beyond the City's boundary to the southwest.

According to the Open Space and Conservation Element of Glendale's General Plan, the Verdugo Mountains and the San Rafael Hills are the most significant physical landmarks in the community because these topographic features flank the central portion of the City. These landforms are important in that they create a dominant visual and physical resource that can be seen throughout the community. In the San Rafael Hills, the overall ridgeline form is less definitive as it is separated by numerous, well developed canyon areas such as Scholl Canyon. Within this area, however, the ridgelines can be readily identified (Glendale 1993).[10] According to Map 4-25 of the Open Space and Conservation Element,

[10] City of Glendale General Plan. Open Space and Conservation Element, 1993, pages 4-38 to 4-43. Available at: https://www.glendaleca.gov/home/showdocument?id=4565. Accessed May 14, 2019.

"Ridgelines and Streams of the San Rafael Hills", Scholl Canyon is not a primary or secondary ridgeline (Glendale 1993) However, the adjacent ridgeline south of the existing LFG collection facility and flares as well as proposed LFG power generation facility is a designated primary ridgeline. While the LFG power generation would be constructed on just north of this primary ridgeline, the proposed water tank would be located on the primary ridgeline.

The Open Space and Conservation Element further identifies visual and scenic resources as aesthetic functions that contain natural beauty, such as lush or colorful vegetation, prominent topographical stature, unique physical features, and an interesting visual effect.[11] Additionally, there are no scenic vistas, viewpoints that provide expansive views of a highly valued landscape for the benefit of the general public, that have been designated by the City as possessing visual and aesthetic qualities of high value to the community near the proposed Project or within other parts of the existing Scholl Canyon Landfill (SCLF), nor are there any designated scenic vistas from which the proposed Project would be visible.

Scenic Highways

There are no state-designated scenic highways in the City of Glendale.[12]

Light and Glare

Perceived glare is the unwanted and potentially objectionable sensation experienced from looking directly into a light source (e.g., the sun, its reflection, automobile headlights, or other light fixtures or sources). Reflective surfaces on existing buildings, car windshields, and so forth also expose people and property to varying levels of glare.

A significant light impact would typically occur if a project would cause: (1) a substantial increase in ambient illumination levels beyond the property line, and (2) visible glare from either fixtures or illuminated surfaces.

The Project vicinity is characterized by a mix of urban, suburban and open space areas, as well as the remainder of the SCLF itself. The areas surrounding the proposed Project site include developed urban areas, multi- and single-family residential areas, Eagle Rock Reservoir and Eagle Rock Hills Park, the Rose Bowl, Arroyo Seco, and four golf courses, including School Canyon Golf and Tennis Club, Annandale Golf Club, Brookside Golf Club and Chevy Chase Country Club golf courses. Major illuminated highways in the vicinity include State Route 134 (Ventura Freeway), State Route 2 (Glendale Freeway) and US Route 210 (Foothill Freeway). In addition, there are open space and undeveloped areas, including the San Rafael Mountains and surrounding hills and ridges. As such, there are varied degrees of illumination, ranging from well-lit urban areas and freeways to less illuminated areas, such as mountains, hillsides, and park areas. Scholl Canyon Golf Course includes a driving range which is

[11] City of Glendale General Plan. Open Space and Conservation Element, 1993, pages 4-36 to 4-37. Available at: https://www.glendaleca.gov/home/showdocument?id=4565. Accessed May 14, 2019.

[12] California Department of Transportation, California Scenic Highway Mapping System, Los Angeles County. Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed May 24, 2019.

illuminated until 10:00 pm, as well as illuminated tennis courts. The Rose Bowl routinely holds events which require significant illumination.

4.1.1.2 Project Site

Views and Scenic Vistas

The proposed Project is located at 3001 Scholl Canyon Road, within a non-filled portion of SCLF. The property is located approximately 0.5 mile north of the State Route 134, in the City of Glendale. Public access to SCLF is via Scholl Canyon Road, the northern extension of North Figueroa Street, and State Route 134. The SCLF and the proposed Project site are surrounded by multiple jurisdictions: Glendale to the north, south, east, and west; La Canada-Flintridge to the northeast; Pasadena to the east; South Pasadena to the southeast; Los Angeles to the south, southwest, and west. The Project site is also located south and west of US Route 210 and east of State Route 2.

The SCLF property consists of a total of 535 acres, 440 acres of which are designated for landfill operations and 95 acres of which are designated for related operations. The 440-acre operation area includes 314 acres of active landfill area (Scholl Canyon) and 126 acres of inactive landfill area (northern canyon). Most of the 314 acres have been graded and/or excavated for landfill purposes, filled with solid waste, and covered with soil. Some areas have been vegetated. The currently permitted height of the landfill is 1,525 feet above mean sea level (AMSL), with an average top deck elevation of approximately 1,500 feet AMSL (Sanitation District of Los Angeles County Planning Section and AECOM, 2014). The proposed Project will be located on an approximately 2.2-acre segment of land within the inactive portion of the landfill at an elevation of approximately 1,410 AMSL (**Figure 2.2-1**). It is located along the southern boundary of SCLF, bordering Scholl Canyon Road.

Land uses surrounding the proposed Project site are primarily residential, with some open space, special recreation (parks, golf course), and commercial development. The Rose Bowl and the Arroyo Seco are located approximately 1.4 miles to the east, separated by the ridge adjacent to the eastern boundary of SCLF. The Scholl Canyon Golf and Tennis Club is located on fill on the northwest closed portion of SCLF. Scholl Canyon Ballfields are located midway up Glenoaks Boulevard, below the Scholl Canyon Golf and Tennis Club. Scholl Canyon Park is located to the west at the base of SCLF along Glenoaks Boulevard.

Light and Glare

Since most of the site is undeveloped, the Project Site itself is characterized by low levels of ambient nighttime lighting relative to surrounding streets and neighborhoods. Existing sources of light and glare in the proposed Project vicinity include automatic night lighting in the equipment and scales facility and portable light towers at the adjacent SCLF. Existing sources of light at the proposed Project site consist of security lighting located at the Sanitation District office trailers and overlooking the chemical storage areas. These lights are hooded and pointed downward in order to minimize illumination and glare. Existing sources of glare include glare from the windshields or reflective metal on automobiles traveling to, from and within the proposed Project site. Landfill gas (LFG) flaring is contained within open cylinder flares with no visible flame, and as such, these do not constitute a source of light or glare.



4.1.2 Laws, Ordinances, Regulations and Standards

4.1.2.1 Federal

Rim of the Valley Corridor Preservation Act

The 2008 Rim of the Valley Corridor Preservation Act expands the Santa Monica Mountains National Recreation Area to include the mountains encircling the San Fernando, La Crescenta, Santa Clarita, Simi and Conejo Valleys, which are collectively described as the Rim of the Valley Unit. By including the Rim of the Valley Unit in the Santa Monica Mountains National Recreation Area, the National Park Service and the local communities are able to better protect natural resources and habitats, as well as increasing access to nature for recreational and educational purposes.[13] Although SCLF is located within the boundaries of the Rim of the Valley Unit, SCLF, portions of the Scholl Canyon Golf and Tennis Club and some surrounding roadways are excluded from the Rim of the Valley Unit.[14]

4.1.2.2 State

California Environmental Quality Act

California Environmental Quality Act (CEQA) (Pub. Resources Code, §§21000 et seq.; California Environmental Quality Act Guidelines, Title 14, Division 6, Chapter 3, §§15000 et seq., of the California Code of Regulations) and case law interpreting those laws and guidelines have established that only public views, not private views, need be analyzed under CEQA. For example, in *Association for Protection etc. Values v. City of Ukiah* (1991) 2 Cal. App. 4th 720 [3 Cal.Rptr.2d 488] the court determined that, "[w]e must differentiate between adverse impacts upon particular persons and adverse impacts upon the environment of persons in general." Therefore, for this analysis, only public views will be considered when analyzing the visual impacts of implementing the proposed Project.

California Code of Regulations, Title 24

Title 24 of the California Code of Regulations (CCR), also known as the California Building Standards Code, consists of regulations to control building standards throughout the State. The following components of Title 24 include standards related to lighting:

[13] Rim of the Valley Corridor Preservation Act, Fact Sheet. Available at: https://schiff.house.gov/imo/media/doc/Fact%20Sheet_ROTV.pdf. Accessed May 31, 2019.

[14] Rim of the Valley Corridor Preservation Act Map. Available at: https://www.google.com/maps/d/viewer?mid=1y3NG9aR_TgQt_VLRF_NivvnLDys&ll=34.15916395129059%2C-118.20181171725136&z=14. Accessed May 31, 2019.

California Building Code (Title 24, Part 1) and California Electrical Code (Title 24, Part 3)[15,16]

The California Building Code (Title 24, Part 1) and the California Electrical Code (Title 24, Part 3) stipulate minimum light intensities for safety and security at pedestrian pathways, circulation ways, and paths of egress.

California Energy Code (Title 24, Part 6)

The California Energy Code (CEC) defines allowances for lighting power and establishes control requirements for different lighting systems, with the goal of increasing efficiency and reducing energy consumption equipment.[17]

CEC Section 130.2 sets forth Outdoor Lighting Controls and Luminaire Cutoff requirements. All outdoor luminaires rated above 150 watts are required to comply with defined backlight, uplight, and glare (BUG) ratings in accordance with Illuminating Engineering Society of North America (IESNA) Technical Memorandum on Luminaire Classification Systems for Outdoor Luminaires Addendum A and must be fitted with a minimum 40 percent dimming capability activated by motion sensor or other automatic controls. (This requirement does not apply to streetlights for the public right-of-way, signs, or building façade lighting.)

CEC Section 140.7 sets forth outdoor lighting power density allowances in terms of watts per area for lighting sources other than signage. The lighting allowances are provided by Lighting Zone, as defined in Section 10-114 of the CEC. Under Section 10-114, all urban areas within California are designated as Lighting Zone 3. Sports athletic field lighting is exempt from this energy limit, and additional allowances are provided for Building Entrances or Exits, Outdoor Sales Frontage, Hardscape Ornamental Lighting, Building Façade Lighting, Canopies, Outdoor Dining, and Special Security Lighting for Retail Parking and Pedestrian Hardscape.

CEC Section 130.3 stipulates sign lighting controls with any outdoor sign that is on, both day and night, must include a minimum 65 percent dimming at night. Section 140.8 of the CEC sets forth the lighting power density restrictions for signs.

California Green Building Standards Code (Title 24, Part 11)

The California Green Building Standards (CALGreen Code) requires that non-residential outdoor lighting comply with the minimum light level requirements of the CEC's BUG ratings for outdoor lights defined by the; light ratings consistent with the CALGreen Code; or light and glare requirements set forth in a local ordinance, whichever is more stringent.[18]

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15 California Buildings Standards Commission, California Code of Regulations, Title 24, Part 1, 2016 California Administrative Code. Available at: https://codes.iccsafe.org/content/document/652?site_type=public. Accessed May 21, 2019.

16 California Building Standards Commission, California Code of Regulations, Title 24, Part 3. 2016 California Electrical Code. Available at: https://www.nfpa.org/codes-and-standards/all-codes-and-standards/codes-and-standards/free-access?mode=view. Accessed May 21, 2019.

17 California Buildings Standards Commission, California Code of Regulations, Title 24, Part 6, 2016 California Energy Code. Available at: https://codes.iccsafe.org/content/document/659?site_type=public. Accessed May 21, 2019.

18 California Buildings Standards Commission, California Code of Regulations, Title 24, Part 1q, 2016 California Green Building Standards Code. Available at: https://codes.iccsafe.org/content/document/658?site_type=public. Accessed May 21, 2019.

4.1.2.3 Local

City of Glendale General Plan Policies, Goals, and Objectives

The proposed Project is located within the City of Glendale, and therefore subject to the provisions of the City's General Plan. Policies pertaining to aesthetic resources that are applicable to the proposed Project are outlined within the Open Space and Conservation Element of the General Plan and are summarized below.

Goal 2: Protect vital or sensitive open space areas including ridgelines, canyons, streams, geologic formations, watersheds and historic, cultural aesthetic and ecologically significant areas from the negative impacts of development and urbanization.

- **Objective 2:** Provide buffer transition areas between sensitive open space and development.

Goal 5: Preserve prominent ridgelines and slopes in order to protect Glendale's visual resources.

- **Objective 1:** Identify visually prominent ridgelines and establish regulations to promote their preservation.

Goal 7: Continue programs which enhance community design and protect environmental resource quality.

- **Objective 1:** Extend landscape treatments along major arterials, into major activity centers, at major city/neighborhood access points, and along parkways and medians to provide aesthetic continuity and solidify open space linkages.
- **Objective 6:** Foster design objectives which ensure development that respects the character of existing neighborhoods and the natural setting.

City of Glendale Municipal Code

The GMC (16.08.010 (A) and 16.08.020 (A)) describes primary ridgelines as the highest undeveloped and visually dominant ridgelines in a viewshed, recognized by the continuous horizon line formed against the sky, and secondary ridgelines as providing a significant visual backdrop or landmark at the community or neighborhood level. Protections and prohibitions regarding construction and development on primary or secondary ridgelines are discussed in 16.08.010 (A) (D) and 16.08.020 (A) (D) and outlined below.

Purpose: The primary ridgelines are an exhaustible and precious scenic resource of the city and its citizens worthy of preservation for the welfare of all the citizens of Glendale. As the hillsides of Glendale continue to be developed, proper planning is necessary to protect primary ridgelines from grading activities. Secondary ridges are lower "branches" or "fingers" of the primary ridgelines which extend in different directions, or separate lower ridgelines that provide a visual foreground feature for primary ridgelines or form the boundary of a watershed. The character of the secondary ridgelines must be maintained through the course of development to protect their importance at a community or neighborhood level.

Prohibitions: No grading, engineered slopes, housing construction, streets, utilities or other manmade features shall be permitted within identified primary or secondary ridgeline areas.

The City of Glendale Municipal Code (GMC) (16.08.010 and 16.08.020) describes primary ridgelines as the highest undeveloped and visually dominant ridgelines in a viewshed, recognized by the continuous horizon line formed against the sky, and secondary ridgelines as providing a significant visual backdrop or landmark at the community or neighborhood level. Protections and prohibitions regarding construction and development on primary or secondary ridgelines are discussed in GMC 16.08.010 and 16.08.020. A primary ridgeline runs through the proposed Project area. However, GMC 16.08.010 (E) (G) states that nothing shall prohibit maintenance, upgrading or improvement of existing public or quasi-public utilities which traverse identified primary ridges. The Zoning Code (GMC 30.70.220 Definitions, "U") defines utilities and transmission facilities as, means facilities for the production, storage, transmission, distribution, and recovery of water, sewage, energy, and other similar utilities.

4.1.3 Methodology and Thresholds of Significance

4.1.3.1 Methodology

The assessment of the proposed Project's impacts to aesthetic resources was conducted through the review of applicable planning documents, site reconnaissance and photography, production of visual simulations, and application of the Visual Impact Assessment for Highway Projects methodology established by the Federal Highway Administration (FHWA). The assessment of aesthetic resources is based on the following FHWA steps:

- Establish the visual environment for the area that the proposed Project would be located in.
- Assess the visual resources of the proposed Project area by describing the visual character of the area and assessing the visual quality.
- Describe and assess the affected viewers in terms of viewer exposure to the components of the proposed Project and the levels of visual sensitivity.
- Assess Key Observation Points to determine the potential visual impact of the proposed Project. Visual impact is a function of the projected visual change of the proposed Project area and the anticipated viewer response.

In accordance with the FHWA methodology, this analysis organizes the baseline environmental setting and describes potential viewers of the proposed Project components. Representative viewpoints were selected to establish the existing conditions in views toward the proposed Project area, as well as estimate the level of contrast that would be introduced by components of the proposed Project. Visual simulations were developed to use as a basis for assessing visual impacts associated with the proposed Project. The Key Observation Points are presented on **Figures 4.1-1** through **4.1-4**.

Visual Quality

Visual quality is an expression of the visual impression or appeal of a given landscape and the associated public value attributed to the resource. Visual quality is an assessment of the features that define the

visual character of the proposed Project area. The visual quality of the proposed Project area is described using criteria established by the FHWA for visual landscape relationships. The criteria established to describe visual quality is based on the relative degree of vividness, intactness, and unity, as defined below:

- Vividness is described as the visual power or memorability of landscape components as they combine in distinctive visual patterns. Vividness is represented by an assessment of landforms, vegetation, water features, and human-made components present in views.
- Intactness is a measure of the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. This factor can be present in well-kept urban and rural landscapes, as well as natural settings. High intactness consists of a landscape that is free of unattractive features and is not broken up by features and elements that are out of place. Low intactness consists of visual elements that can be seen in a view that are unattractive and/or detract from the quality of the view.
- Unity is the visual coherence and compositional harmony of the landscape, considered as a whole. High unity frequently attests to the careful design of individual components in the landscape and their relationship in the landscape (FHWA, 2015).

Viewer Groups and Visual Sensitivity

Visual sensitivity is based on the number and type of viewers and the frequency and duration of views. Typically, visual sensitivity increases with an increase in total numbers of viewers, the frequency of viewing (e.g., daily or seasonally), and the duration of views (e.g., how long a scene is viewed). The criteria for identifying the importance of views are related in part to the viewer's position relative to the resource, and the placement of the viewer in the viewshed, defined as the area surrounding the proposed Project area from which the proposed Project is, or could be, visible to viewers.

In order to quantify viewers, a viewshed may be broken into distance zones of foreground, middleground, and background. Generally, the dominance and importance of an object increases with its proximity to the viewer. Although distance zones in viewsheds may vary between different geographic regions or types of terrain. The standard foreground distance zone is 0.25 to 0.5 mile from the viewer, the middleground distance zone extends from the foreground zone to three to five miles from the viewer, and the background zone extends from the middleground zone to infinity (FHWA, 2015). Generally, visual contrast within foreground distances would be more noticeable to viewers than increased visual contrast within background distance zones.

Viewer groups in the proposed Project area are based on primary viewing activities and are described in terms of their physical location in relation to components of the proposed Project, the number of viewers, the duration of views, and viewer sensitivity, which takes into account viewer activity and awareness. The following viewer groups and their sensitivity to visual change are as were identified for the proposed Project:

- **Residents:** Residential viewer groups typically have high sensitivity to visual changes, since residential viewer groups have stationary and long-term views of the landscape.
- **Commercial Viewers:** Commercial viewers have moderate sensitivity to visual changes. Commercial business viewer groups are generally less sensitive to visual changes, because they

are more focused on operational tasks and less focused on the greater surrounding visual environment.

- **Recreational Groups:** Recreational groups are likely to be highly sensitive to visual changes, as they typically regard the natural and built surroundings as a holistic visual experience.
- **Motorists:** Drivers on local roads and freeways include residents, workers, and commuters driving to businesses in the area. Motorists generally have low sensitivity to visual changes since their views are of short duration, and drivers are more concerned with surrounding traffic, road signs, and their immediate surroundings within their vehicle rather than visual features in the landscape.

Visual Character

Natural and artificial landscape features contribute to the visual character of an area or view. Visual character is influenced by geologic, hydrologic, botanical, wildlife, recreational, and urban features. Urban features include those associated with landscape settlements and development, including roads, utilities, structures, earthworks, and the results of other human activities. The perception of visual character can vary significantly seasonally, even hourly, as weather, light, shadow, and elements that compose the viewshed change. The FHWA describes visual character in terms of the four visual pattern elements: form, line, color, and texture. The appearance of the landscape is described in terms of the dominance of each of these components. Visual character in existing views and in views with the proposed Project is described below.

Viewpoint Evaluation

Four Key Observation Points (viewpoints) were identified as being representative of sensitive views toward the proposed Project site and serve as the basis for this analysis of potential impacts to aesthetic resources. Development and selection of the four viewpoints were based on discussions between Stantec Visual Resource Specialists and the City of Glendale Planning Department, and comments received during the public scoping period.

Based on fieldwork conducted on February 22, 2016, by Stantec staff, the existing visual conditions of the views from each of the four viewpoints were documented and evaluated. The assessment of existing conditions and visual impacts considered several factors including visual quality, viewer concern, visibility, number of viewers, and duration of view, as described above. These conditions were then factored into an evaluation of viewer exposure and viewer sensitivity. Existing viewing conditions from each of the four viewpoints are described below.

Figure 4.1-1: View 1

View 1 was taken from a turnout adjacent 1531 Glen Oaks Estate Drive, within the Glen Oaks Estates region in the City of Pasadena. The existing landfill boundaries are within 500 feet of this location, and the active operating area is clearly visible. However, the proposed Project site is approximately 0.6 mile to the southwest of this location. Perimeter landfill access roads and high-tension power lines and towers are visible, as is the Downtown Los Angeles skyline in the distance. However, the existing facilities at the proposed Project site are not visible from this location. As such, elements of the proposed Project will also not be visible from this viewpoint.



Figure 4.1-2: View 2

View 2 was taken from the intersection of Colorado Boulevard and Hartwick Street, approximately one mile directly south of the proposed Project site, in the Eagle Rock community of the City of Los Angeles. State Route 134 is located between this viewpoint and the proposed Project site; however, the view of the proposed Project site is obscured by existing mature trees. Trailers associated with the existing Project site are visible in the distance, at the center of the photo along the ridgeline. Project design calls for the access road to be located below the ridgeline on the south side of the proposed Project site, where the visible trailer is now located. As such, the proposed Project elements will not be visible from this location.

Figure 4.1-3: View 3

View 3 was taken from the parking lot of the Scholl Canyon Ballfields on Glenoaks Road. The view in this photo is directly west toward the active landfill. The existing Project site is not visible from this location due to the presence of the active landfill, which is an intervening feature from this viewpoint.

Figure 4.1-4: View 4

View 4 was taken looking east from the Scholl Canyon Golf and Tennis Club, adjacent to the parking lot and driving range. The active landfill is intermittently visible through the trees. The proposed Project site could be partially visible from some locations on Scholl Canyon golf course; however, the active landfill would likely obstruct most views from this viewpoint.

Views of the proposed Project site from most developed residential, recreational, and commercial land uses are primarily obscured by intervening topography, including natural ridgelines, the active landfill, and existing mature trees at Scholl Canyon Golf and Tennis Club.

None of these locations are defined by the state or the City as designated scenic vistas.



Notes

Photo 1: View southwest from adjacent 1531 Glen Oaks Estates drive within the City of Pasadena. Project site is blocked by topography in foreground.

Stantec

Project Location
Glendale, CA

Project No.: 205712 3300
Prepared by JT on 2016-02-22
Technical Review by DR on 2016-02-22

Client/Project
City of Glendale Water and Power
Biogas Renewable Generation Project
Environmental Impact Report

Figure No.
4.1-1

Title
View 1

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Notes

Photo 2: View north from intersection of Colorado Blvd and Hartwick Avenue in the City of Eagle Rock. Existing site trailers are visible along ridgeline in center of photo.

Stantec

Project Location
Glendale, CA

Project No.: 205712330
Prepared by JT on 2016-02-22
Technical Review by DR on 2016-02-22

Client/Project
City of Glendale Water and Power
Biogas Renewable Generation Project
Environmental Impact Report

Figure No.
4.1-2

Title
View 2

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Notes

Photo 3: View to the east from the Scholl Canyon Ballfields parking lot on Glen Canyon Drive. Project site is blocked by active landfill from this location.

Stantec

Project Location
Glendale, CA

Project No.: 205712330
Prepared by JT on 2016-02-22
Technical Review by DR on 2016-02-22

Client/Project
City of Glendale Water and Power
Biogas Renewable Generation Project
Environmental Impact Report

Figure No.
4.1-3

Title
View 3

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Notes

Photo 4: View east from the Scholl Canyon Golf and Tennis Club, adjacent the parking lot and driving range. The active landfill is intermittently visible through the trees.

Stantec

Project Location
Glendale, CA

Project No.: 205712 3300
Prepared by JT on 2016-02-22
Technical Review by DR on 2016-02-22

Client/Project
City of Glendale Water and Power
Biogas Renewable Generation Project
Environmental Impact Report

Figure No.
4.1-4

Title
View 4

C:\Users\jtrock\Desktop\205712300\mxd\20170718_Fig4_1_4_View_4_8x11_20170718.mxd Revised: 2017-07-18 By: jtrock

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Light and Glare

The analysis of light and glare describes the existing light and glare environments in the proposed Project area, identifies the light- and glare-sensitive land uses in the area, describes the light and glare sources resulting from the proposed Project, and qualitatively evaluates whether the Project would result in a substantial increase in nighttime lighting and daytime and nighttime glare as seen from the area's sensitive uses. Included in this analysis is consideration of the affected street frontages, the direction in which Project lighting would be directed, the potential for sunlight to reflect from the exterior surfaces of Project elements, and the extent to which glare would interfere with the operation of motor vehicles or other activities.

4.1.3.2 Thresholds of Significance

As determined in the Initial Study, the proposed Project would not have an adverse effect on a scenic vista or substantially damage scenic resources within a state scenic highway. There are no designated scenic vistas near the proposed Project site or within other parts of the existing SCLF, and there are no designated scenic vistas from which the proposed Project would be visible. Furthermore, there are no state-designated scenic highways in the City of Glendale. Therefore, the proposed Project would not damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. As such, only the following two checklist questions were determined to result in potentially significant impacts and are evaluated in this EIR.

Based on Appendix G of the CEQA Guidelines, implementation of the proposed Project would result in a significant impact related to aesthetics if it would:

1. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (public views are those that are experienced from publicly accessible vantage point). If the proposed Project is within an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?
2. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

4.1.4 Project Impacts

Threshold: In non-urbanized areas, would the Project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the Project is within an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The Project site can be considered to be in both a non-urbanized area, due to its location within the San Rafael Hills, and also in an urbanized area, since it is surrounded by heavily populated urban centers and major freeways. As such, this analysis considers the degradation of existing visual character and quality from publicly accessible vantage points, as well as the potential conflicts with applicable zoning and other regulations.



Visual Character during Demolition

During Phase I of Project implementation, demolition and removal of existing equipment from the proposed Project site would be required to make room for the new Project facility. As described in Section 2.0, Project Description, tanks, piping, electrical systems, fencing, containers, existing office buildings, and other facilities would be dismantled and removed. Demolition activities would require the temporary use of construction vehicles and various types of construction-related heavy equipment. Existing concrete foundations and asphalt roads would be removed; however, this concrete and asphalt would be reused for road base on existing landfill roads or the proposed improved access road at the LFG utility facility. The duration of Project demolition is anticipated to be four to five months, with approximately five to ten worker-vehicle round trips to the proposed Project site during each workday.

The existing visual character of the proposed Project site is industrial in in appearance, as existing industrial features and pieces of equipment and pipes are visible throughout the surrounding landscape. The majority of demolition activities and related equipment would not be visible to sensitive viewer[19] groups; however, some activities, such as construction vehicles traveling to and operating construction equipment on the proposed Project site, may be visible to viewers. As such, the presence of demolition equipment and demolition activities would contrast with the visual character and quality of public views of the site and its surroundings, and these activities would also add to the existing industrial character of the of the proposed Project vicinity.

Impacts to visual character and the quality of public views due to demolition would be temporary, as Phase I of the proposed Project is anticipated to occur for approximately four to five months. Furthermore, such impacts would be localized to the immediate Project site. Upon the completion of Phase I, demolition equipment would be removed from the proposed Project site and would no longer be visible to sensitive viewers. As such, demolition activities would not substantially degrade the existing visual character or quality of public views of the site and its surroundings, and impacts would be less than significant.

Policy Consistency

Phase I of the proposed Project would not conflict with applicable zoning and other regulations governing scenic quality. The Project is required to comply with applicable state and local regulations, including CCR Title 24 regarding outdoor lighting standards. With respect to City General Plan policies related to aesthetic resources, Phase I of the proposed Project would be consistent with the goals and objectives stated above, as demolition of the proposed Project would not conflict with the goal of protecting vital or sensitive open space areas (Goal 2), since the Project would not negatively impact such areas with new development and urbanization. The proposed Project would not conflict with programs implemented to enhance community design and protect environmental resource quality (Goal 7), as there would be no activities that would impact community design on the existing landfill, and impacts to environmental resources would be minimal during the course of demolition activities. Project-related demolition activities would not conflict with Goal 5 related to the preservation of prominent ridgelines and slopes, since

[19] Sensitive viewers or sensitive viewer groups could include residents, schools, recreation areas.

demolition activities would not occur on a primary ridgeline, (see below for a discussion related to potential impacts of constructing and operating the proposed water tank on a primary ridgeline). The Project site and SCLF is excluded from the Rim of the Valley Corridor Preservation Act, a bill introduced in the U.S. Congress to expand the reach of the existing Santa Monica Mountains National Recreation Area. Although the hills surrounding the SCLF have been included in the Rim of the Valley Preservation Act, based on review of the Rim of the Valley maps, SCLF is excluded from the proposed Rim of the Valley Unit and would not be included as part of the Santa Monica Mountains National Recreation Area.[20,21,22] As such, Project-related demolition activities would not conflict with application zoning or other regulations governing scenic quality, and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

As discussed above, Project-related demolition activities would not substantially degrade the existing visual character or quality of public views of the proposed Project site and its surroundings. Furthermore, the proposed Project would not conflict with applicable zoning or other regulations governing scenic quality. Therefore, Project-related demolition impacts would be less than significant, and no mitigation measures are warranted.

Visual Character during Construction

After completion of Phase I, Project construction would be implemented in Phase II, during which earth moving equipment would be brought in for grading, excavation, site preparation and construction on the approximately 2.2-acre site. The Project would be constructed and operated adjacent to the existing LFG collection and LFG flaring systems. There are two existing LFG blowers, and one backup blower, delivering LFG to the LFG flaring system, consisting of 12 existing eight-foot diameter, 16-foot high ground flares. The blowers and the flares would remain, and pursuant to the existing South Coast Air Quality Management District (SCAQMD) permit, would be operating and disposing LFG during Project construction.

During the grading of the proposed Project site, approximately 20,000 cubic yards of soil would be excavated, of which 6,000 cubic yards of soil would be used on-site as fill and 14,000 cubic yards of clean soil would be used as cover at SCLF. **Figure 2.3-3** shows the extent of grading. In addition, concrete foundations would be poured, proposed Project components, such as pipes, conduits and wires would be installed, and construction equipment and materials would be delivered, as described in Section 2.0. The existing landfill condensate and groundwater collection system, piping systems and power lines located

[20] Rim of the Valley Corridor Preservation Act, 116th Congress (2019-2020). Available at: https://www.congress.gov/116/bills/hr1708/BILLS-116hr1708ih.pdf. Accessed May 31, 2019.
[21] Rim of the Valley Corridor Preservation Act, Fact Sheet. Available at: https://schiff.house.gov/imo/media/doc/Fact%20Sheet_ROTV.pdf. Accessed May 31, 2019.
[22] Rim of the Valley Corridor Preservation Act Map. Available at: https://www.google.com/maps/d/viewer?mid=1y3NG9aR_TgQt_VLRF_NivvnLDys&ll=34.15916395129059%2C-118.20181171725136&z=14. Accessed May 31, 2019.

within the facility would be relocated. The storage and office buildings would be constructed. During Phase II, new pipelines and the new water tanks would be installed and the access roads would be constructed.

As described above, the existing visual character of the proposed Project site is industrial in appearance, and the majority of construction and installation activities would not be visible to sensitive viewer groups; however, some activities, such as construction vehicles traveling to and operating on the proposed Project site and construction of the water tank on a primary ridgeline may be visible to viewers, as approximately ten construction trucks and 12 construction worker vehicle round trips would occur each working day. As such, the presence of construction activities would contrast with the visual character and quality of public views of the site and its surroundings. These activities would also add to the existing industrial character of the of the proposed Project site.

After Phase II is complete, Phase III would be implemented over the next two to three months. Phase III would entail sandblasting, priming and painting the facility, delivery of products/materials, and verifying the operational capabilities of all systems required to make the facility safe and operational. During this period, approximately three trucks and 20 worker vehicles would be driven each way to the proposed Project location each workday.

Impacts to visual character and the quality of public views due to construction would be temporary, as Phase II of the proposed Project is anticipated to have a duration of approximately nine to ten months and Phase III of the proposed Project would last approximately two to three months. Furthermore, such impacts would be localized to the immediate Project site and the limited number of construction trucks and worker vehicles on Scholl Canyon Road. Decommissioning of the existing five-mile long underground pipeline would have no impact related to visual character. Upon the completion of Phases II, construction equipment would be removed from the proposed Project site and would no longer be visible to sensitive viewers. As such, construction activities would not substantially degrade the existing visual character or quality of public views of the site and its surroundings, and impacts would be less than significant.

Policy Consistency

Similar to the impacts related to Phase I, described above, Phase II and Phase III of the proposed Project would not conflict with applicable zoning and other regulations governing scenic quality. The Project is required to comply with applicable state and local regulations, including CCR Title 24 regarding outdoor lighting standards. With respect to City General Plan policies related to aesthetic resources, Phase II and Phase III of the proposed Project would be consistent with the goals and objectives as stated above. Therefore, Project-related construction and system start-up activities would not conflict with the goal of protecting vital or sensitive open space areas (Goal 2). While construction of the proposed water tank would occur on a primary ridgeline, the proposed Project is a utilities land use that is exempt from the requirements of GMC related to development on identified primary ridges (see Section 4.1.2.3). Therefore, the Project construction and system start-up activities would not conflict, with goals related to the preservation of ridgelines and slopes (Goal 5). Additionally, Project construction and system start-up activities would not affect programs implemented to enhance community design and protect environmental resource quality (Goal 7) , as there would be no Project-related activities which would affect community design on the existing landfill, and impacts to environmental resources would be minimal during the course of construction and system start-up activities. As such, Project-related

construction activities would not conflict with application zoning or other regulations governing scenic quality, and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

As discussed above, Project-related construction activities would not substantially degrade the existing visual character or quality of public views of the proposed Project site and its surroundings. Furthermore, the proposed Project would not conflict with applicable zoning or other regulations governing scenic quality. Therefore, Project-related construction impacts would be less than significant, and no mitigation measures are warranted.

Visual Character during Operation

There are two existing blowers delivering LFG to the flaring system. The flaring system consists of 12 existing eight-foot diameter, 16-foot high ground flares. During Project operation, the flares would only operate as required during Project facility maintenance or in the unlikely event that there is excess LFG produced that cannot be used for generating electricity.

The tallest features will be approximately 40 feet above the ground surface, consisting of four 18-inch diameter exhaust stacks and a flare. Equipment height will be approximately 25 feet above the ground surface. Office and warehouse space will be approximately 12 feet high. An eight-foot high security fence, with automatic gates, would surround the entire Project site. Security safety and lighting systems would be provided. During regular business hours, a total of four operators and two technicians would be on the site, carrying out regular operations and routine maintenance of the facility. As such, operation of the proposed Project would not create numerous trips or visual disturbance.

The Project's proposed power production equipment and related facilities are utility structures that are similar in size and design to the existing LFG collection system that the proposed Project will replace and also similar to other operational features within SCLF. The Project is designed to blend in with the surroundings, which will further minimize views of the proposed Project components. The Project would be consistent with the industrial character of the existing LFG collection facility and the SCLF, which has numerous temporary structures, trailers, and equipment interspersed throughout the facility. In addition, as discussed above, the Project site and SCLF is excluded from the Rim of the Valley Corridor Preservation Act and would not be included as part of the Santa Monica Mountains National Recreation Area. As such, Project-related operation activities would not conflict with application zoning or other regulations governing scenic quality. Portions of the proposed Project that may be visible from offsite viewing locations, within and outside of the City of Glendale, are similar to and would be consistent with the existing views of SCLF. Furthermore, due to natural features between the proposed Project site and public viewing areas, the proposed Project and its features would be minimally visible, if at all, as demonstrated by the following line of site analysis.



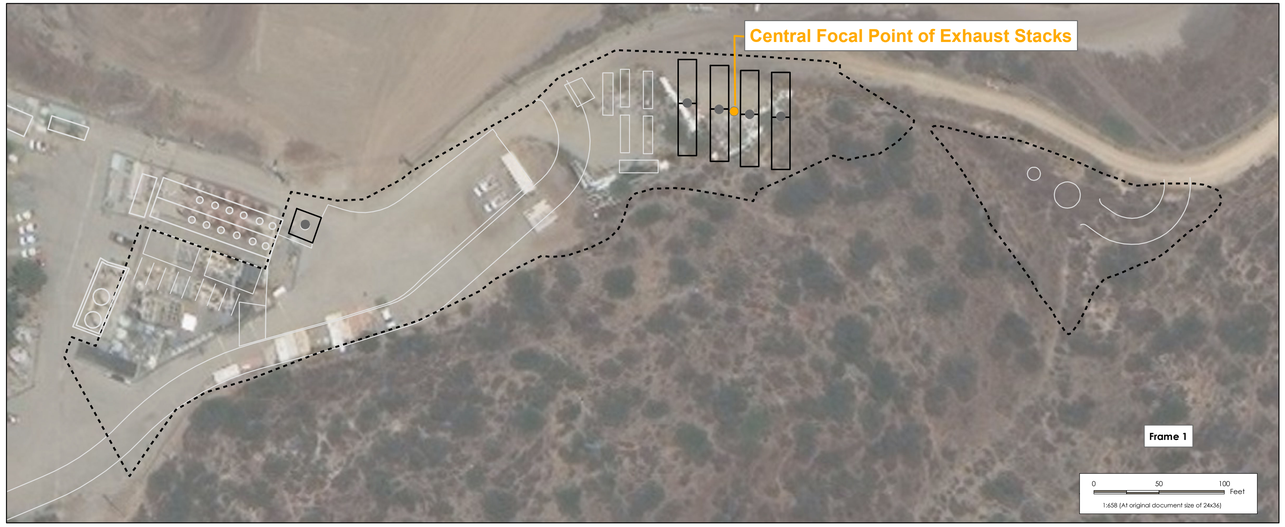
Line of Sight Analysis

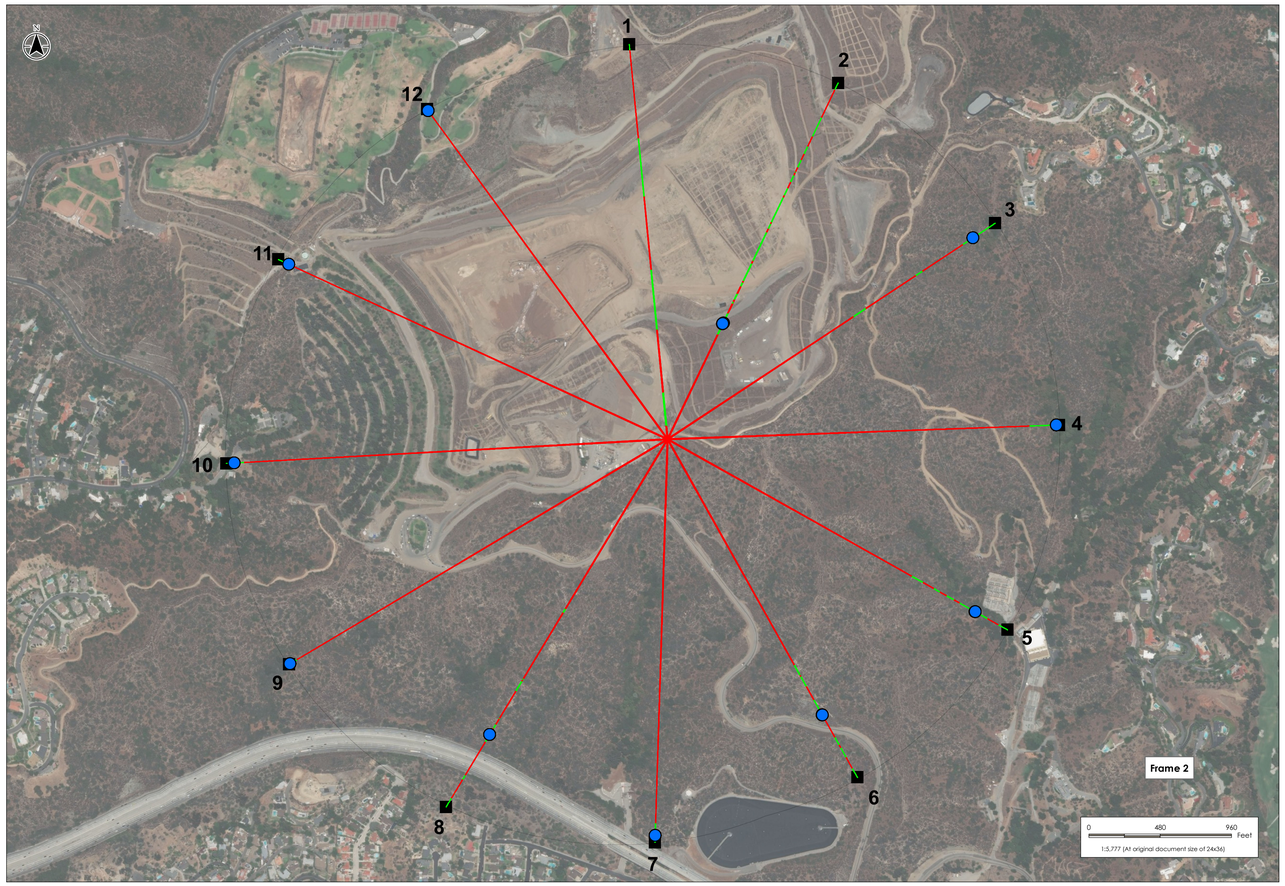
A line of sight analysis shows views of the proposed Project site from observation points located at a distance of 0.5-mile from the proposed Project site's exterior boundary. These analyses show the line of sight from 12 individual observation points and assumes an observer of six feet in height. The observation points are based on the most prominent proposed Project features, namely the engine exhaust stacks, the flare stack and the 60,000-gallon fire water tank. Within each exhibit, the line of sight is depicted as line segments of either red, which indicate points not visible to the observer, or green, which indicate points that would be visible to the observer. If the line of site to the targeted proposed Project feature is obstructed, due to an obstruction such as topography, the point at which it is obstructed is marked by a blue dot. It is important to note that any green line segments seen past an obstruction point do not mean that the target is visible from that observation point. Green line segments seen past an obstruction point indicate a high elevation that is visible to the observer.

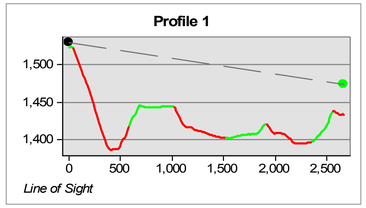
Changes in the elevation from the observation point are seen in the associated observer point profiles. Within the profile, the black square marks the location of the observer. The line of sight is shown by a dashed line from the observer to one of the three targets. The point of obstruction, if there is one, is marked by a blue dot. If one of the target Project features is visible to the observer, a symbol of a green dot marks it. If a target Project Feature is not visible to the observer, it is marked by a red dot.

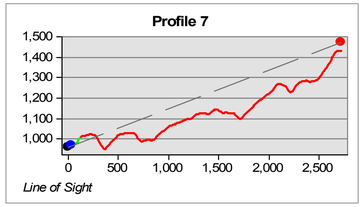
Figure 4.1-5 Engine Exhaust Stacks, demonstrates that the proposed Project's engine exhaust stacks are only visible from observation point 1; however, the engine exhaust stacks are not visible from observation points 2 through 12. **Figure 4.1-6** Flare Stack, demonstrates that that the proposed Project's flare stack is only visible from observation points 1 and 2; however, the flare stack is not visible from observation points 3 through 12. **Figure 4.1-7** Water Tank, demonstrates that the proposed Project's water tank is only visible from observation points 1 and 2; however, the water tank is not visible from observation points 3 through 12.

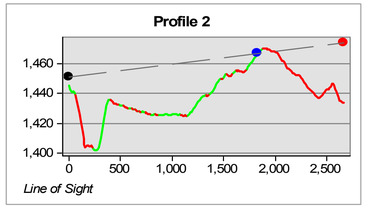
Based on the above analysis, operation of the proposed Project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings, and impacts would be less than significant.

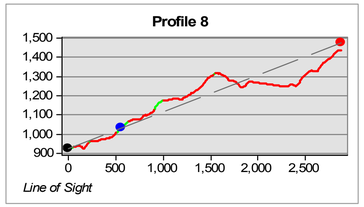


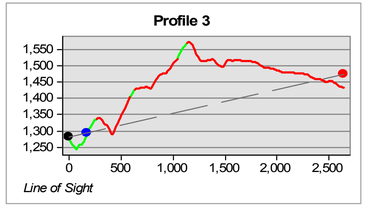


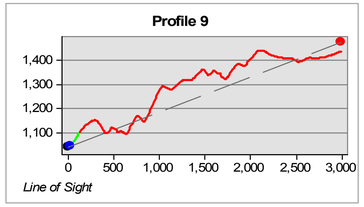


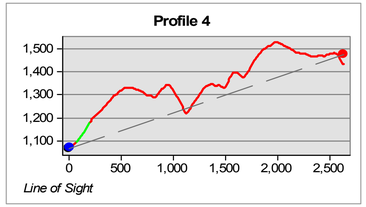


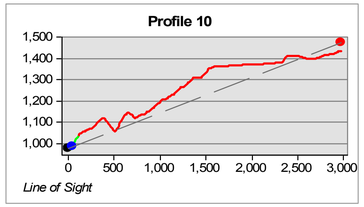


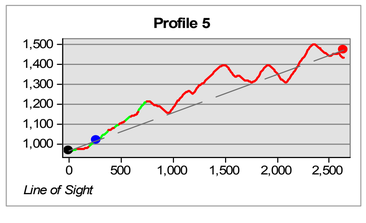


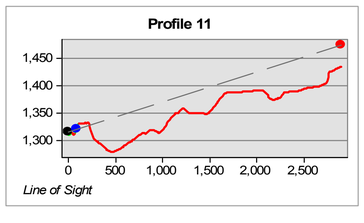


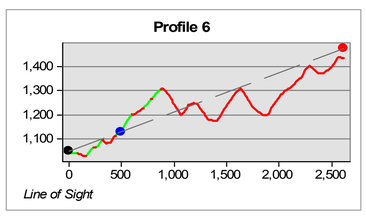


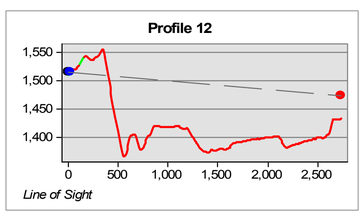












Legend - Frame 1

- Central Focal Point of Engine Exhaust Stacks for Line of Sight Analysis
- Proposed Stack Locations
- Engine Generators and Ground Flare Skid
- Project Area

Legend - Frame 2

- Distance Buffer (0.5 miles)
- Observation Points (ground surface +6 feet)
- Line of Sight Analysis - Results
- Visible to Observer
- Not Visible to Observer
- Obstruction of Line of Sight Between Observer and Engine Exhaust Stacks

Legend - Profiles

- Visible to Observer
- Not Visible to Observer
- Obstruction of Line of Sight Between Observer and Engine Exhaust Stacks
- Engine Exhaust Stacks Not Visible to Observer
- Engine Exhaust Stacks Visible to Observer
- Observer (ground surface +6 feet)

Notes
1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Stantec

Project Location: Glendale, CA
Project No.: 205712300
Prepared by MB on 2018-01-18
Technical Review by CH on 2018-01-18
Independent Review by SK on 2018-01-18

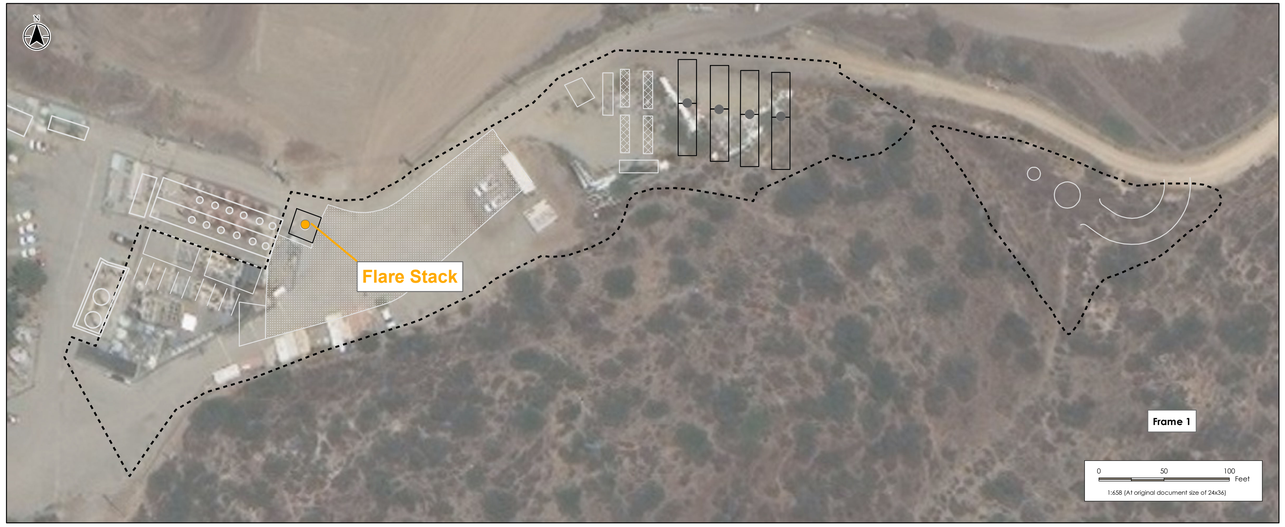
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Biogas Renewable Generation Project
Environmental Impact Report

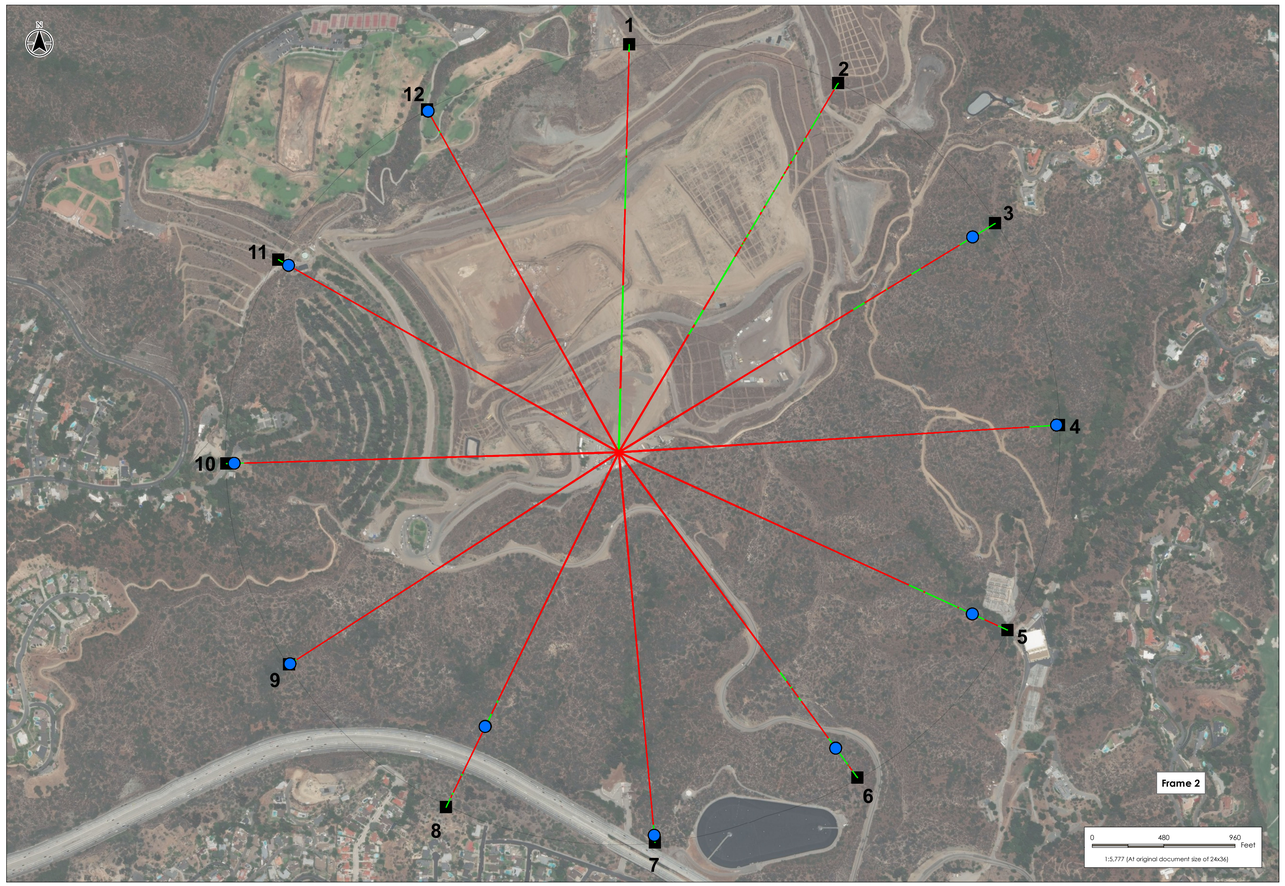
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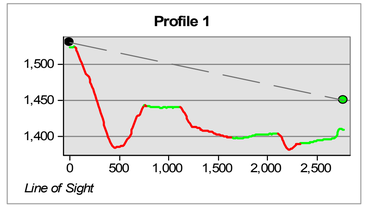
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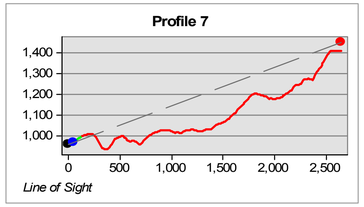
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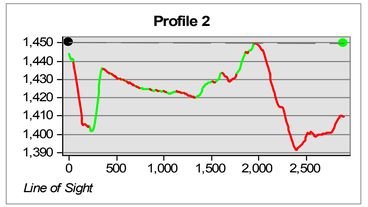
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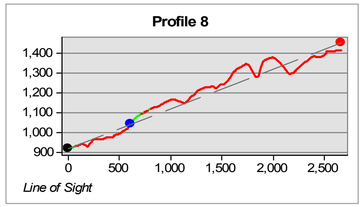


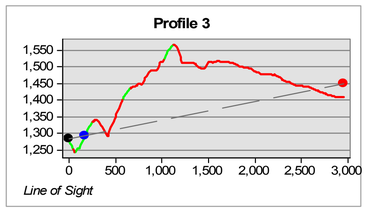


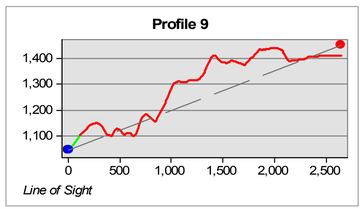


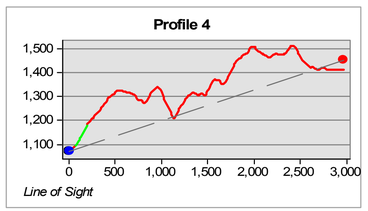


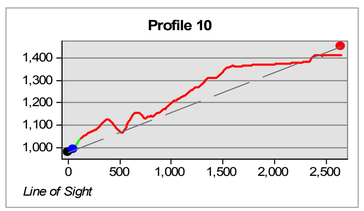


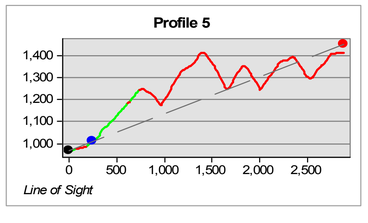


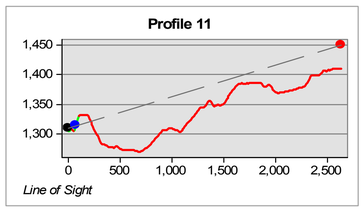


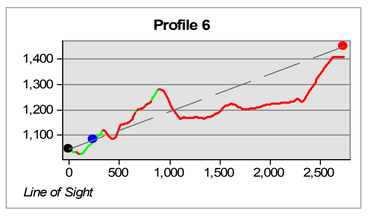


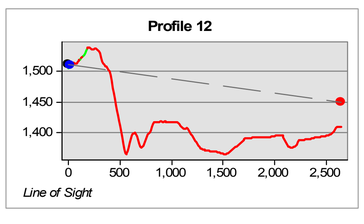












Legend - Frame 1

- Ground Flare Stack Location for Line of Sight Analysis
- Proposed Stack Locations
- Engine Generators and Ground Flare Skid
- Project Area

Legend - Frame 2

- Distance Buffer (0.5 miles)
- Observation Points (ground surface +6 feet)

Line of Sight Analysis - Results

- Visible to Observer
- Not Visible to Observer
- Obstruction of Line of Sight Between Observer and Ground Flare Stack

Legend - Profiles

- Visible to Observer
- Not Visible to Observer
- Obstruction of Line of Sight Between Observer and Ground Flare Stack
- Ground Flare Stack Not Visible to Observer
- Ground Flare Stack Visible to Observer
- Observer (ground surface +6 feet)

Notes
1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Stantec

Project Location: Glendale, CA
Project No.: 205712300
Prepared by MB on 2018-01-18
Technical Review by CH on 2018-01-18
Independent Review by SK on 2018-01-18

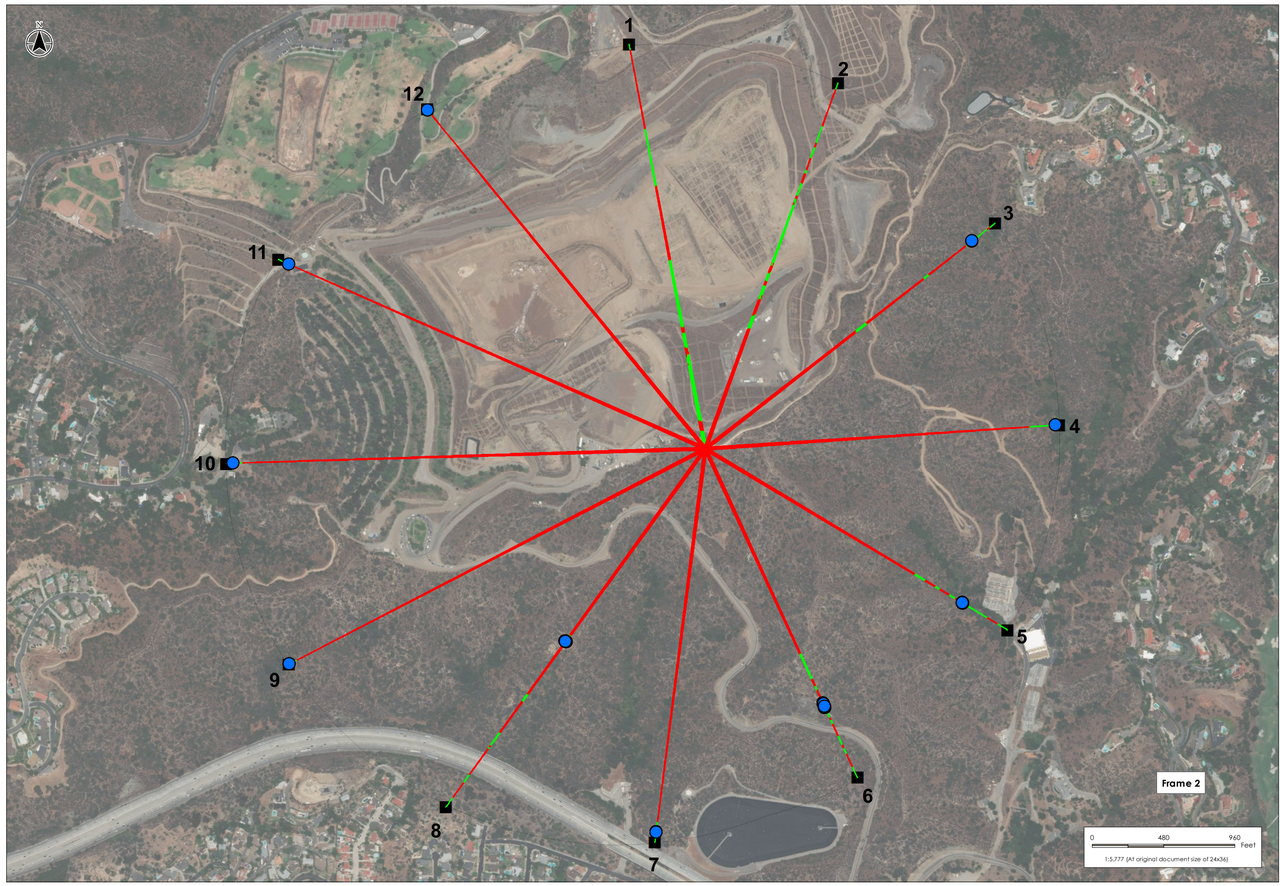
Client/Project:
City of Glendale Water and Power
Biogas Renewable Generation Project
Environmental Impact Report

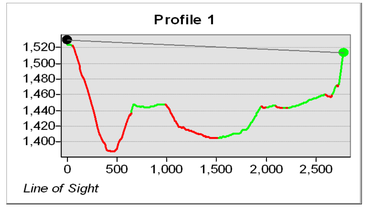
Figure No.
4.1-6

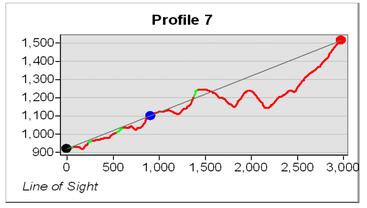
Title
Ground Flare Stack - Line of Sight Analysis

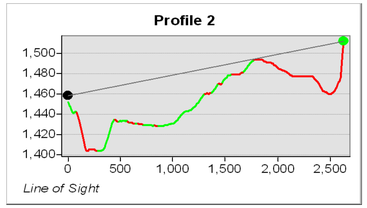
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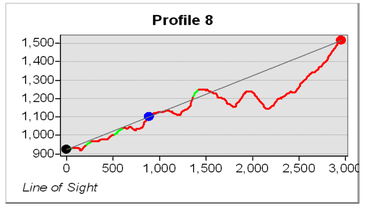


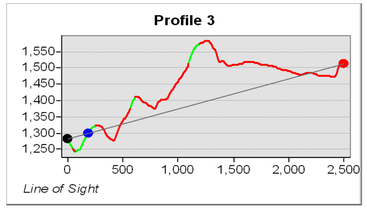


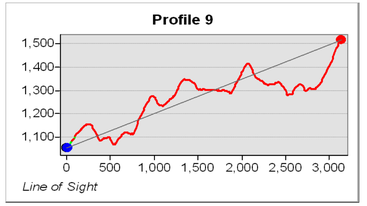


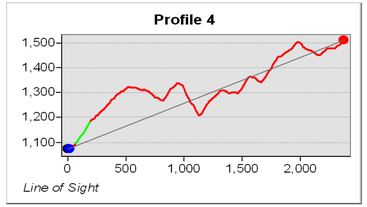


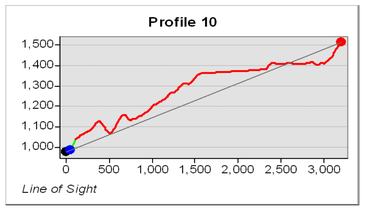


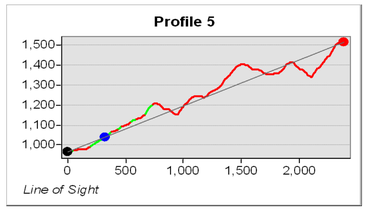


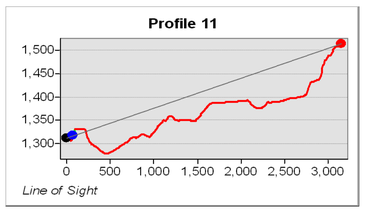


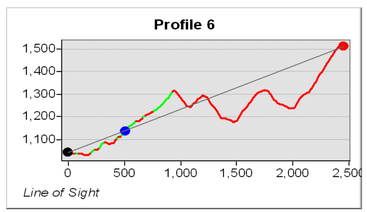


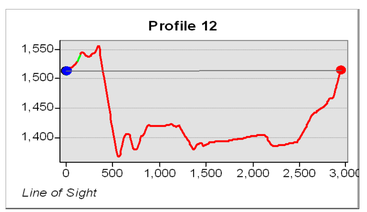












Legend - Frame 1

- Water Tank Location for Line of Sight Analysis
- Water Tank Locations
- Engine Generators and Flare Skid Proposed Scholl
- Power Plant Project Area

Legend - Frame 2

- Distance Buffer (0.5 miles)
- Observation Points (ground surface +6 feet)
- Line of Sight Analysis - Results
- Visible to Observer
- Not Visible to Observer
- Obstruction of Line of Sight Between Observer and Water Tank

Legend - Profiles

- Visible to Observer
- Not Visible to Observer
- Obstruction of Line of Sight Between Observer and Water Tank
- Water Tank Not Visible to Observer
- Water Tank Visible to Observer
- Observer (ground surface +6 feet)

Notes
1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Stantec

Project Location: Glendale, CA

Project No.: 205712300
Prepared by MB on 2018-01-18
Technical Review by CH on 2018-01-18
Independent Review by SR on 2018-01-18

Client/Project: City of Glendale Water and Power
Biogas Renewable Generation Project
Environmental Impact Report

Figure No.: **4.1-7**

Title: **Water Tank - Line of Sight Analysis**

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Policy Consistency

Similar to the impacts related to Phases I, II and III, as described above, operation of the proposed Project would not conflict with applicable zoning and other regulations governing scenic quality. The Project is a conditionally permitted use by the City of Glendale General Plan and Zoning Ordinance. While the proposed water tank would be situated on a primary ridgeline, the proposed Project is a utilities land use that is exempt from the requirements of GMC related to development on identified primary ridges (see Section 4.1.2.3).[23]

The proposed Project is required to comply with applicable state and local regulations, including CCR Title 24 regarding outdoor lighting standards. With respect to City General Plan policies related to aesthetic resources, Project operation would be consistent with the goals and objectives stated above. Operation of the proposed Project would not conflict with the goal of protecting vital or sensitive open space areas (Goal 2), as operation of the Project would not create new development within a community or contribute to urbanization. Furthermore, operation of the Project would not conflict with the programs implemented to enhance community design and protect environmental resource quality (Goal 7), as there would be no activities that would impact community design on the existing landfill, and impacts to environmental resources would be minimal during Project operation. As such, Project operation would not conflict with application zoning or other regulations governing scenic quality, and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

As discussed above, Project operation would not substantially degrade the existing visual character or quality of public views of the proposed Project site and its surroundings. Furthermore, the proposed Project would not conflict with applicable zoning or other regulations governing scenic quality or protection of ridgelines. Therefore, impacts related to operation of the proposed Project would be less than significant, and no mitigation measures are warranted.

Threshold: Would the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Construction

The Project site and the surrounding area current has security lighting. Construction of the proposed Project would involve minimal new sources of light, mainly from safety and security lighting and construction equipment and worker vehicles accessing the proposed Project site. All construction activities would be performed during daylight hours and would not result in an increase in offsite light or glare. All Project lighting is required to comply with applicable state and local regulations, including CCR

[23] City of Glendale Municipal Code, Section 16.08.010, Primary Ridgeline Areas – Preservation. Available at: http://qcode.us/codes/glendale/view.php?topic=16-16_08-16_08_010&frames=on. Accessed June 4, 2019.

Title 24 regarding outdoor lighting standards. As such, Project-related construction light and glare impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

As discussed above, Project-related construction activities would have a less than significant impact with respect to light and glare, and no mitigation measures are warranted.

Operation

The proposed Project would represent an expansion of an existing use which is presently a limited source of nighttime light and glare from the existing LFG collection facility. In compliance with CEC standards and the CALGreen code, shielded area lighting, with light switches and motion sensors, would be provided for safety at the proposed Project site. Lighting at the proposed Project site would incorporate features to minimize spillover and offsite impacts, including use of shields and directing light downward.

The incremental amount of light and glare generated by the operation of the proposed Project would be minimal due to the design measures incorporated into the proposed Project, and because the proposed Project site is located on a portion of the existing SCLF that is currently negligibly visible from public viewing locations. Furthermore, all Project lighting is required to comply with applicable state and local regulations, including CCR Title 24 regarding outdoor lighting standards. Therefore, light and glare impacts from operation of the proposed Project would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

As discussed above, operation of the proposed Project would have a less than significant impact with respect to light and glare, and no mitigation measures are warranted.

4.1.5 Cumulative Impacts

The proposed Project would not degrade the existing visual character or quality of the site and its surrounding area. The incremental amount of light and glare generated by the proposed Project would be minimal due to the design measures incorporated into the proposed Project, and the proposed Project site is located in a portion of the existing landfill that is negligibly visible from public viewing locations. The proposed Project and Grayson Power Plant Repowering Project are spatially separated by approximately five miles and do not have the potential to adversely impact the same viewsheds. Construction and operation of the proposed Project, when considered in combination with potential aesthetic impacts from other projects, would not degrade the existing visual character of the site and its surroundings as visible from public viewpoints. The proposed Project would not have cumulatively considerable aesthetics impacts.

4.2 AIR QUALITY

Acronyms

AAQS	Ambient air quality standards
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
AIP	Achieved in practice
AMSL	Above mean sea level
AQMP	Air Quality Management Plan
ARB	Air Resources Board
BACT	Best Available Control Technology
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CalEEMod	California Emissions Estimator Model
CAS	Chemical Abstracts Service
CATEF	California Air Toxics Emission Factors
CFR	Code of Federal Regulations
CO	Carbon monoxide
ERC	Emission Reduction Credits
EPA	Environmental Protection Agency
g/bhp-hr.	Grams per brake horsepower hour
GHG	Greenhouse gases
GWP	Glendale Water and Power
H_2S	Hydrogen sulfide
HAP	Hazardous Air Pollutant
HARP2	Hotspots Analysis Reporting Program Version 2
HI	Hazard index
HIA	Hazard Index Acute
HIC	Hazard Index Chronic
HNO_2	Nitrous acid
HNO_3	Nitric acid
ISO	International Organization for Standardization
KW	Kilowatts
LACSD	Sanitation Districts of Los Angeles County
LFG	Landfill gas
LST	Localized significance threshold
MICR	Maximum individual cancer risk
MND	Mitigated Negative Declaration
MW	megawatt
NAAQS	National ambient air quality standards

NG	Natural gas
NMOC	Non-methane organic compounds
NO	Nitric oxide
NO_2	Nitrogen dioxide
NO_x	Nitrogen oxides
NSPS	New Source Performance Standards
NSR	New Source Review
O_3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
PAH	Polycyclic aromatic hydrocarbons
Pb	Lead
PM	Particulate matter
ppm	Parts per million
ppmv	Parts per million volume
PSD	Prevention of Significant Deterioration
RECLAIM	Regional Clean Air Market
REL	Reference exposure levels
RICE	Reciprocating internal combustion engines
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
scfh	Standard cubic feet per hour
scfm	Standard cubic feet per minute
SCLF	Scholl Canyon Landfill
SCR	Selective catalytic reduction
SIP	State implementation plan
SO_2	Sulfur dioxide
SO_4^{2-}	Sulfates
SO_x	Sulfur oxides
SRA	Source receptor area
TACs	Toxic air contaminants
T-BACT	Best Available Control Technology for Toxics
USEPA	United States Environmental Protection Agency
VOCs	Volatile organic compounds

4.2.1 Environmental Setting

4.2.1.1 Existing Conditions

The proposed Project would be constructed entirely within the existing Scholl Canyon Landfill (SCLF) site located in the central San Rafael Hills. The landfill surrounding the proposed Project site is flanked to the west by two parks – Lower Scholl Canyon Park and Eagle Rock Hillside Park; to the north by Scholl Canyon Golf and Tennis Club; to the south by the Ventura Freeway (California State Route 134); and to the east by the Rose Bowl Stadium.

The Project will be located on the southern side of the landfill. The latitude and longitude coordinates of the Project are 34.153425°, -118.192518° with an elevation of 1,416 feet above mean sea level (AMSL). The SCLF site is located within the South Coast Air Basin (SCAB), which is regulated by the South Coast Air Quality Management District (SCAQMD).

4.2.1.2 Regional Climate

The SCLF is located on the western side of the San Gabriel Valley of the SCAB. The basin is a coastal plain with the Pacific Ocean to the southwest and enclosed by mountains to the north and east which trap air and pollutants in the valley. The regional climate is considered semi-arid and characterized by hot summers, mild winters, and infrequent seasonal rainfall. Glendale is located inland, where the temperatures are generally higher than along the coast due to the lack of sea breezes, with average monthly highs from 65°F to 91°F and lows from 44°F to 62°F. The relative humidity inland is also lower than along the coast (Western Regional Climate Center, 2015).

Due to the topography and weather conditions of the basin, temperature inversions that prevent the vertical mixing of warm and cooler layers of the air tend to form and allow pollutants to remain at ground level. The coastal location of the basin also creates a wind pattern that blows offshore at night and onshore during the day, so that air pollutants formed in the heat of the day tend to stay inland. Major cities like Los Angeles with high population density and heavy vehicular traffic, combined with the climate and geographical configuration, influence air quality in the basin.

4.2.1.3 Ambient Air Quality

Overview of Air Quality Standards

The United States Environmental Protection Agency (EPAUS) establishes national ambient air quality standards (NAAQS) to regulate the concentration of six criteria pollutants in the atmosphere: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur oxides (SO_X), particulate matter (PM10 and PM2.5), and lead (Pb). These pollutants are considered harmful to the public health and the environment.

The EPAUS designates the attainment status of areas in the nation for each criteria pollutant, based on whether NAAQS are met. A “non-attainment area” does not meet the standard and is subject to a State Implementation Plan to attain the standard. Similarly, the California Air Resources Board (ARB) has set its own stricter ambient air quality standards for California and designates regions in the state as

attainment or non-attainment based on those standards. The California ambient air quality standards (CAAQS) include sulfates as a criteria pollutant, which is not addressed in the federal standards.

Both state and federal ambient air quality standards are provided as the maximum allowable concentration over an averaging time of measurement. Maximum concentrations reflect levels of pollutants that can adversely affect human health. The averaging times reflect the potential for short-term or long-term effects. **Table 2** shows the NAAQS and CAAQS.

Table 2 Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	Federal Standards
Ozone	1-Hour (ppm)	0.09	--
	8-Hour (ppm)	0.070	0.070 [a]
Carbon Monoxide	1-Hour (ppm)	20	35
	8-Hour (ppm)	9	9
Nitrogen Dioxide	1-Hour (ppm)	0.18	0.100 [b]
	AAM (ppm)	0.03	0.053
Sulfur Dioxide [c]	1-Hour (ppm)	0.25	0.075
	3-Hour (ppm)	--	0.5
	24-Hour (ppm)	0.04	--
PM10	24-Hour (µg/m^3)	50	150
	AAM (µg/m^3)	20	--
PM2.5	24-Hour (µg/m^3)	--	35 [d]
	AAM (µg/m^3)	12	12 [e]
Lead	30-Day (µg/m^3)	1.5	--
	Rolling 3-Month (µg/m^3)	--	0.15
Sulfate	24-Hour (µg/m^3)	25	--
Hydrogen Sulfide	1-Hour (ppm)	0.03	--
Vinyl Chloride	24-Hour (ppm)	0.010	--

Notes:
AAM = Annual Arithmetic Mean
µg/m3 = microgram(s) per cubic meter
ppm = parts per million

a) On October 1, 2015, USEPA established a new 8-hour ozone standard of 0.070 ppm, effective December 28, 2015.
b) Based on the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area.
c) On June 2, 2010, USEPA established a new 1-hour SO2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The USEPA also revoked both the 24-hour SO2 standard of 0.14 ppm and the annual primary SO2 standard of 0.030 ppm, effective August 23, 2010.
d) Based on 98 percent of the daily concentrations averaged over 3 years.
e) Based on the 3-year average of the weighted annual mean concentrations.

Source: California Air Resource Board, 2016. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf (CARB 5/4/2016)

Table 3 provides the attainment status of the SCAB relative to federal and California ambient air quality standards. The SCAB is currently not in attainment with federal or California Ozone standards, California PM10 standards, and both federal and California PM2.5 standards.

Table 3 State and Federal Air Quality Designations for South Coast Air Basin

Pollutant	Averaging Time	State Designation	Federal Designation
Ozone	1-Hour	Non-attainment	N/A
	8-Hour	Non-attainment	Non-attainment (Extreme)
Carbon Monoxide	1-Hour	Attainment	Attainment
	8-Hour	Attainment	Attainment
Nitrogen Dioxide	1-Hour	Attainment	Attainment
	Annual	Attainment	Attainment
Sulfur Dioxide	1-Hour	Attainment	Attainment
	24-Hour	Attainment	N/A
PM10	24-Hour	Non-attainment	Attainment
	Annual	Non-attainment	N/A
PM2.5	24-Hour	N/A	Non-attainment (Serious)
	Annual	Non-attainment	Non-attainment (Serious)
Lead	30-Day	Attainment	N/A
	Quarter	N/A	Non-attainment (Partial)
Sulfate	24-Hour	Attainment	N/A

Notes:

N/A = not applicable

Lead is in partial non-attainment due to fence line readings at specific industrial lead facilities that are not located near the proposed Project. Regional monitoring stations show attainment with state and federal standards and SCAQMD expects USEPA to re-designate the entire Basin as an attainment area.

Sources: SCAQMD: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf?sfvrsn=14
ARB: https://ww3.arb.ca.gov/desig/changes.htm#summaries
USEPA: https://www.epa.gov/green-book

4.2.1.4 Criteria Pollutants

Ozone (O_3) is formed when volatile organic compounds (VOCs) and nitrogen oxides (NO_X) react with heat and sunlight. Exposure to ground-level ozone can trigger coughing and shortness of breath. It can also aggravate asthma and other lung diseases. Ground-level ozone can also damage sensitive vegetation and ecosystems.

The SCAB is currently designated as non-attainment for ozone by both USEPA and ARB. SCAQMD, as the local air district with jurisdiction over the SCAB, has developed a USEPA approved 8-hour ozone control plan (Air Quality Management Plan or AQMP) with new emission reduction commitments to meet the attainment of federal 8-hour standard by 2023. The AQMP is also intended to demonstrate attainment with the revoked 1-hour ozone attainment. Construction of new emission sources such as those proposed for the Project that are in compliance with New Source Review (NSR) and applicable local, state and federal air quality regulations would be in conformance with the AQMP.

Carbon monoxide (CO) is a colorless, odorless gas formed by incomplete combustion processes. Most CO emissions come from mobile sources. CO reduces oxygen delivery to organs and tissues, resulting in detrimental effects on body systems. With extremely high exposure, CO can cause death. The SCAB is designated as attainment with CO standards by both USEPA and ARB.

Nitrogen dioxide (NO_2) is used as the indicator for the larger group of nitrogen oxides (NO_X). Other nitrogen oxides include nitrous acid (HNO_2) and nitric acid (HNO_3). Nitric oxide (NO) produced from combustion reacts with oxygen in the atmosphere to form NO_2. Health effects from exposure to NO_2 include airway inflammation and aggravated respiratory ailments in sensitive groups. The SCAB is currently designated as attainment for NO_2 by USEPA and ARB.

Sulfur dioxide (SO_2) is part of a larger group of gases known as sulfur oxides (SO_X). SO_2 is formed from the combustion of sulfur-containing fossil fuels, mainly from power plants and other industrial facilities. Exposure to SO_2 can have an adverse effect on the respiratory system. SO_2 emissions in the basin are low due to the use of natural gas by stationary sources and low sulfur transportation fuels. The SCAB is designated as attainment for SO_2 by both USEPA and ARB.

Particulate matter (PM) is a mixture of extremely small solid and liquid particles, including soil, dust, metals, acids (such as nitrates and sulfates), and organic chemicals. The USEPA classifies PM into two categories: PM10 and PM2.5. PM10 consists of coarser particles smaller than ten micrometers in diameter, which is generally found in dusty areas like roadways and construction sites. PM2.5 is a subset of PM10 and consists of finer particles 2.5 micrometers and smaller in diameter, which are generally found in smoke and haze. Exposure to PM can lead to damaging health effects on the respiratory system.

The SCAB is designated as attainment by USEPA and non-attainment by ARB for PM10 standards. The SCAB is designated as non-attainment by USEPA and ARB for PM2.5 standards. SCAQMD adopted an AQMP to meet attainment status for the federal 24-hour PM2.5 standard by 2014; however, since the attainment has not yet been achieved due to the impacts of recent drought conditions, a new PM2.5 control strategy is developed to ensure attainment status of the federal 24-hour PM2.5 standard by 2019. The construction of new emission sources such as those proposed for the proposed Project that are in compliance with NSR and applicable local, state and federal air quality regulations would be in conformance with the AQMP.

Lead (Pb) is a metal that can be found naturally in the environment and in manufactured products. Historically, the major source of lead emissions was from the use of leaded-fuels. Motor vehicle gasoline fuels no longer contain lead, which significantly decreased lead levels in the atmosphere. Today, the



major sources of lead emissions are from lead smelters, battery manufacturing operations, and piston-engine aircraft using leaded gasoline. Lead exposure can result in adverse health impacts to the nervous, kidney, immune, reproductive, developmental, and cardiovascular systems.

The USEPA revised the federal lead standard from 1.5 ug/m^3, which was established in 1978, to 0.15 ug/m^3 on October 15, 2008. A portion of Los Angeles County was designated as non-attainment in the year 2010. In response to the non-attainment designation, the State submitted *the Final 2010 Lead State Implementation Plan – Los Angeles County to EPA*, which provides steps taken that brought the Los Angeles County into attainment by December 31, 2015. The outstanding partial non-attainment designation reflects ambient concentrations that have been detected at fence line locations surrounding select lead processing facilities. No exceedances of ambient lead standards are otherwise detected by the Basin's regional monitoring network. The lead processing facilities that have produced high fence line concentrations are not located near the project and SCAQMD has indicated that due to the implementation of Rules 1420 and 1420.1, the complete Basin will be re-designated as being in attainment with ambient standards for lead.

Sulfates (SO_4^{2-}) are an oxidized form of SO_2 in the atmosphere. This conversion takes place quickly especially in urban areas of California due to regional meteorological features. High exposure can increase respiratory stress and cardio-pulmonary disease. Sulfates can also lower visibility and damage the environment and property. The SCAB is designated as attainment for sulfates by ARB.

4.2.1.5 Existing Air Quality

The region surrounding the proposed Project site has experienced a general improvement in air quality with decreasing concentrations of most pollutants throughout the years. Existing air quality in the area complies with state ambient air quality standards for 8-hour CO, 1-hour NO_2, 1-hour SO_2, and 24-hour sulfate; and federal ambient air quality standards for 8-hour CO and 24-hour PM10. Existing air quality in the area is not in compliance with state standards for 1-hour and 8-hour ozone, 24-hour PM10, and annual PM2.5; and federal standards for 8-hour ozone and annual PM2.5.

The closest monitoring station to the proposed Project site is located in Pasadena, approximately four miles southeast in Los Angeles County. Data for pollutants that are not monitored at this station, such as SO_2, PM10, and lead, are taken from the Los Angeles-North Main Street monitoring station. The second site was chosen based on proximity and general wind direction in relation to the Scholl Canyon Landfill. The Los Angeles-North Main Street monitoring station is located approximately six miles south of the proposed Project site.

SCAQMD and ARB publish information for ambient air quality data on both sites. The SCAQMD data summary is used as the primary source, and the ARB database is used when information is not available on the SCAQMD data summary. **Table 4** presents a five-year background of the criteria pollutants monitored at both the Pasadena and Los Angeles-North Main Street monitoring stations through the year 2018.



Table 4 Background Pollutant Concentrations and Exceedances of State/Federal AAQS

Pollutant	Averaging Time	2014	2015	2016	2017	2018
Ozone	1-Hour (ppm)	0.124[b]	0.111[b]	0.126[b]	0.139	0.112
	Days Exceeding State Standard	(6)	(12)	(12)	(18)	(8)
	8-Hour (ppm)	0.096[b]	0.084[b]	0.090[b]	0.100	0.090
	Days Exceeding State Standard	(13)	(18)	(19)	(36)	(19)
	Days Exceeding Federal Standard	(7)	(18)	(18)	(36)	(19)
Carbon Monoxide	1-Hour (ppm)	3.0[b]	2.6	1.5	2.2	2.0
	8-Hour (ppm)	1.8[b]	1.6	1.0	1.7	1.4
	Days Exceeding State Standard	(0)	(0)	(0)	(0)	(0)
	Days Exceeding Federal Standard	(0)	(0)	(0)	(0)	(0)
Nitrogen Dioxide	1-Hour (ppm)	0.0752[b]	0.0749[b]	0.0719	0.0723[b]	0.0682[b]
	Days Exceeding State Standard	(0)	(0)	(0)	(0)	(0)
	AAM (ppm)	0.0166[b]	0.0153[b]	0.0154	0.0153[b]	0.0144[b]
	98th Percentile 1-Hour (ppm)	0.0601[b]	0.055[b]	0.0584	0.0593[b]	0.0544[b]
Sulfur Dioxide	1-Hour (ppm)[c]	0.0054[b]	0.0126[b]	0.0134	0.0057[b]	0.018[b]
	State Standard	(0)	(0)	(0)	(0)	(0)
	24-Hour (ppm)[a,c]	0.001	0.001	0.001	0.002	0.001
	99th Percentile 1-Hour (ppm)[c]	0.0044[b]	0.0063[b]	0.0025	0.0026[b]	0.0094[b]
PM10	24-Hour (µg/m^3)[b,c]	87	88	67	96	81
	% of Samples Exceeding State Standard[b,c]	(9%)	(8%)	(6%)	(12%)	(9%)
	Federal Standard[b,c]	(0%)	(0)	(0%)	(0%)	(0%)
	AAM (µg/m^3)[b,c]	35.4	33.0	32.4	34.4	34.1
PM2.5	24-Hour (µg/m^3)[b,c]	59.9	56.4	44.39	49.20	43.80
	% of Samples Exceeding Federal Standard[b,c]	(1.8%)	(2.0%)	(0.6%)	(1.4%)	(0.8%)
	AAM (µg/m^3)[b,c]	12.36	12.38	11.83	11.94	12.58
	98th Percentile 24-Hour (µg/m^3)[b,c]	34.5	38.0	27.3	27.8	30.5
Lead	30-Day (µg/m^3)[c]	0.013	0.013	0.016	0.017	0.011
	Quarter (µg/m^3)[c]	0.011	0.011	0.011	0.011	0.011
Sulfate	24-Hour (µg/m^3)[b,c]	11	6.1	5.8	5.1	4.5
	State Standard	(0%)	(0%)	(0%)	(0%)	(0%)

Pollutant	Averaging Time	2014	2015	2016	2017	2018
Notes: ppm = parts per million of air by volume µg/m3 = micrograms per cubic meter AAM = annual arithmetic mean (#) = Number of days exceeding the federal or state standard (%) = Percentage of samples exceeding the federal or state standard a) Data obtained from ARB, all unmarked data from SCAQMD b) Less than 12 full months of data, may not be representative c) PM10, SO_2, Pb and Sulfates from Los Angeles monitoring station (Station No. 087) when not available for Station 88 (Pasadena) Sources: South Coast Air Quality Management District - Historical Air Quality by Year, Data Tables 2014-2018 (www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year) California EPA (Air Resources Board) - Air Quality and Meteorological Information System (www.arb.ca.gov/aqmis2/aqdselect.php?tab=daily)						

4.2.2 Laws, Ordinances, Regulations, and Standards

USEPA implements the federal Clean Air Act (CAA), a law that regulates air emissions from stationary and mobile sources. NAAQS were established under the CAA to regulate pollutants considered harmful to public health and the environment. Areas that are in attainment of the NAAQS are regulated under the Prevention of Significant Deterioration (PSD) program, while areas that are not in attainment of the NAAQS are regulated under the nonattainment NSR program. The NSR and PSD requirements apply to new construction or modification of industrial sources that emit air pollutants.

ARB, SCAQMD and 34 other air districts implement the California CAA which precedes the federal CAA and establishes stricter ambient air quality standards (AAQS). Each of the 35 local Air Pollution Control Districts in California has its own NSR program and issues permits for the construction and operation of stationary emission sources. Depending on the amount of pollutants that will be emitted from a source and the area designation for that pollutant, the source may be required to install Best Available Control Technology (BACT). In addition, sources may also be required to mitigate or "offset" the increases in emissions.

This Project is subject to SCAQMD rules and regulations. SCAQMD has the principal responsibility for developing plans to meet the NAAQS and CAAQS; implementing permit programs for the construction, modification, and operation of air pollution sources; and enforcing air pollution regulations for non-mobile sources. The nonattainment NSR program has also been delegated by USEPA to SCAQMD and implemented through SCAQMD Regulation XIII.

4.2.2.1 Federal

Title 40 Code of Federal Regulations, Part 52, Subpart A, Section 52.21 – Prevention of Significant Deterioration of Air Quality

This subpart of the Code of Federal Regulations (CFR) sets forth requirements when a significant increase of attainment air contaminants occurs at an existing major stationary source of criteria pollutants, or when a new facility is considered a major source. PSD applies when the region is in attainment with federal ambient air quality standards for a pollutant. In the South Coast Basin, attainment with federal air quality standards has been reached for CO and NO_2 and PM10. The proposed Project is not expected to emit more than 250 tons per year for CO and NO_2 and 15 tons per year for PM10; therefore, it is not classified as a major source subject to federal PSD.

Title 40 Code of Federal Regulations, Part 60, Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines; Subpart WWW – Standards of Performance for Municipal Solid Waste Landfills; Proposed Subpart XXX – Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification on or After July 17, 2014.

These subparts are applicable to the proposed Project. SCAQMD has been delegated the authority to implement and enforce these federal regulations. Under SCAQMD Regulation IX, these subparts were adopted and made part of the Rules and Regulations of the SCAQMD. The proposed Project meets the standards set by SCAQMD Rules and Regulation and the implementation of BACT for new sources, SCAQMD Rule 431.1 - Sulfur content of gaseous fuels, Rule 1110.2 - Emissions from Gaseous and Liquid Fueled Engines, and Rule 1150.1 – Control of Gaseous Emissions from Municipal Solid Waste Landfills. **Table 5** shows the comparison the applicable federal and SCAQMD standards.

Table 5 Title 40 CFR Part 60 Applicable Emission Standards and Complementing SCAQMD Regulation

Federal Regulation	Type of Pollutant	Emission Standards	SCAQMD Regulation	Emission Standards
NSPS Subpart JJJJ (Landfill Gas Engines)	NO_X	150 ppmv @ 15% O_2	Rule 1110.2	11 ppmv @ 15% O_2
	CO	610 ppmv @ 15% O_2	Rule 1110.2	250 ppmv @ 15% O_2
	VOC	80 ppmv @ 15% O_2	Rule 1110.2	30 ppmv @ 15% O_2
NSPS Subpart WWW (Landfill)	$NMOC_a$	98% reduction efficiency or 20 ppmv as hexane @ 3% O_2	Rule 1150.1	98% reduction efficiency or 20 ppmv as hexane @ 3% O_2
NSPS Subpart XXX (Landfill)	$NMOC_a$	98% reduction efficiency or 20 ppmv as hexane @ 3% O_2	Rule 1150.1	98% reduction efficiency or 20 ppmv as hexane @ 3% O_2

Notes:

NMOC: Non-Methane Organic Compounds

NSPS: New Source Performance Standards

ppmv: Parts per million volume

SCAQMD Regulation IX currently does not include 40 CFR 60 Subpart XXX; however, the Regulation IX is currently being amended, which will this subpart.

Title 40 Code of Federal Regulations, Part 63, Subpart AAAA - National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills

This subpart establishes national emission standards for hazardous air pollutants for existing and new municipal solid waste landfills. To demonstrate compliance with this subpart, the facility must comply with the requirements of 40 CFR Part 60 Subpart WWW. As discussed previously, the proposed Project is expected to comply with the subpart WWW; therefore, compliance with subpart AAAA is expected.

Title 40 Code of Federal Regulations, Part 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

This regulation establishes national emission and operating limitations for Hazardous Air Pollutant (HAP) emissions from stationary internal combustion engines. Compliance with this subpart is achieved by meeting the emission standards of 40 CFR Subpart JJJJ. Subpart JJJJ specifies that new area sources of HAPs comply with the subpart by complying with the new source pollution standards of 40 CFR 60 Subpart JJJJ. As discussed in the above section, the proposed engines meet the emission standards of Subpart JJJJ; therefore, compliance with Subpart ZZZZ is also expected.

Title 40 Code of Federal Regulations, Part 70 – State Operating Permit Programs

The requirements of the operating permit program under this regulation apply to facilities that are classified as major sources or subject to certain NSPS requirements. The operating permit program implements Title V of the federal CAA and is carried out at the regional level under SCAQMD's Regulation XXX. All applicable federal performance standards, operating, monitoring, recordkeeping, and reporting requirements have to be issued for permits under this regulation.

A facility in SCAB is subject to Title V requirements if it has the potential to emit greater than 10 tons per year of NO_X or VOC, 100 tons per year of SO_X, 50 tons per year of CO, or 70 tons per year of PM10; 25 tons per year for combined HAPs or 10 tons per year for individual HAP.

Since the proposed Project will exceed the thresholds above for NO_X and VOCs, a Title V application for this proposed Project will be submitted to comply with this regulation.

4.2.2.2 State

California Code of Regulations, Section 41700

This regulation prohibits the discharge of air contaminants from a facility in quantities that will negatively affect the health and safety of the public, businesses, or properties. The Project will be subject to permit conditions that ensure no adverse public health effects or nuisance will result from the facility.

4.2.2.3 Local

South Coast Air Quality Management District Rule 403 – Fugitive Dust

The purpose of this rule is to reduce PM emissions from anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. During the construction phase



of the proposed Project, the following control measures as listed in Table 1 of Rule 403 will be taken to reduce the fugitive dust emissions:

a) Apply sufficient amount of water to prevent the generation of visible dust plumes during demolition and earth-moving activities.

b) Stabilize material while loading, transporting, and unloading to reduce fugitive emissions.

c) Establish traffic and parking areas for construction activities by using road barriers.

South Coast Air Quality Management District Rule 407 – Liquid and Gaseous Air Contaminants

This rule limits CO emissions to 2,000 ppm and SO_X emissions to 500 ppm, averaged over 15 consecutive minutes. The proposed equipment will meet the CO limit. The proposed equipment is exempt from the SO_X limit of this rule because it complies with the sulfur content requirements of Rule 431.1 for gaseous fuels.

South Coast Air Quality Management District Rule 409 – Combustion Contaminants

This rule prohibits contaminant emissions of more than 0.1 grain per cubic foot of gas at 12 percent CO_2 at standard conditions, averaged over 15 consecutive minutes. Emissions from internal combustion engines are exempt from this rule, and the proposed engines and existing flares are expected to comply with the emission limits of this rule.

Rule 431.1 – Sulfur Content of Gaseous Fuels

This rule limits the sulfur content of landfill gas to less than 150 ppmv averaged over 24 hours, calculated as hydrogen sulfide (H_2S). A sulfur removal system will be installed to reduce the sulfur content of landfill gas fuel used in this Project to the levels below this limit; thus, compliance with the rule is expected.

South Coast Air Quality Management District Regulation IX – Standards of Performance for New Stationary Sources

This regulation incorporates Title 40 CFR, Part 60 of the CFR, and is applicable to all new, modified, or reconstructed sources of air pollution. Subparts JJJJ of this regulation apply to the proposed stationary engines. These subparts establish emission limits, monitoring, and test method requirements. Compliance with Subpart JJJJ will be achieved through the application of BACT and compliance with SCAQMD Rule 1110.2.

This regulation currently does not include Subpart XXX; however, the proposed amended regulation will include Subpart XXX. SCAQMD envisions presenting the amended regulation to its Governing Board for adoption in July 2019. Compliance with Subpart XXX will be achieved through the application of BACT and compliance with SCAQMD Rule 1150.1.

South Coast Air Quality Management District Rule 1110.2 – Emissions from Gaseous and Liquid-Fueled Engines

Rule 1110.2 sets emission standards for engines that combust 90 percent or more landfill gas based on the higher heating value of the fuels. The applicable standards for biogas engines are 11 ppmv NO_X, 30

ppmv VOC, and 250 ppmv CO (all at 15 percent O_2). Emission control systems such as the proposed selective catalytic reduction (SCR) and CO oxidization systems are needed in order for the proposed landfill gas engines to meet these emission standards.

Rule 1150.1 – Control of Gaseous Emissions from Municipal Solid Waste Landfills

This rule requires landfill gas control devices to be operated continuously to reduce methane by at least 99 percent by weight and NMOC by at least 98 percent by weight or reduce the outlet NMOC concentration to less than 20 ppmv, dry basis as hexane at three percent oxygen. If lean burn engines are utilized as the gas control units, the engines shall reduce the outlet methane concentration to less 3000 ppmv, dry basis, corrected to 15 percent oxygen. An initial source test for the proposed equipment will be required to demonstrate compliance with this rule.

South Coast Air Quality Management District Regulation XIII – New Source Review (NSR)

The SCAQMD regulatory framework includes two options for implementing new source review. Certain facilities included in the Regional Clean Air Market (RECLAIM) cap and trade program for NO_X and SO_X are subject to the new source review requirements of Regulation XX. Facilities that are not part of RECLAIM are subject to the NO_X and SO_X new source review requirements of Regulation XIII. New source review for VOC, CO and PM is administered through Regulation XIII for all facilities. The proposed Project is to construct and operate a new landfill gas energy recover facility; therefore, the proposed Project is exempted from the RECLAIM program. The Project is instead subject to the new source requirements of Regulation XIII for all criteria pollutants.

South Coast Air Quality Management District Rule 1303 – New Source Review Requirements: Best Available Control Technology

Rule 1303(a) requires any new or modified source which results in an emission increase of any nonattainment air contaminant, any ozone depleting compound, or ammonia to meet the BACT requirement. BACT is the most stringent emission limitation or control technology which has been achieved in practice (AIP), is contained in any state implementation plan (SIP) approved by the USEPA, or is another technology that has been found to be technologically feasible and cost effective by the Air District. **Table 6** provides a summary of recent BACT determination for the proposed equipment. The BACT determinations for NO_X, VOC, and CO for reciprocating internal combustion engines reflect compliance with emission standards in Rule 1110.2.

Table 6 BACT Determinations for Landfill Gas Combustion Equipment

Equipment Type	Pollutant	BACT Emission Rate
Internal Combustion Engines	NO_X	11 ppmv at 15% O_2
	VOC	30 ppmv at 15% O_2
	CO	250 ppmv at 15% O_2
	PM10/2.5	0.066 g/bhp-hr.
	SO_X	60 ppmv of sulfur content in the landfill gas
	NH_3 (Slip)	5 ppmv at 15% O_2

South Coast Air Quality Management District Rule 1303 – New Source Review Requirements: Air Quality Modeling

Rule 1303(b)(1) requires an analysis to demonstrate compliance with ambient air quality standards. An air quality dispersion analysis must be conducted using a mass emissions-based analysis or an approved dispersion model to evaluate the impacts of the proposed Project. An air quality dispersion analysis was conducted to demonstrate that the proposed Project will not cause or significantly contribute to a violation of state and federal ambient air quality standards. The results of the analysis are discussed in Section 4.2.4 of this report.

South Coast Air Quality Management District Rule 1303 – New Source Review Requirements: Emissions Offsets

Rule 1303(b)(2) requires emission increases to be mitigated through one of several offset programs. For the proposed Project, emission mitigation can be accomplished by Emission Reduction Credits (ERC) approved pursuant to Rule 1309, allocations from the Priority Reserve pursuant to Rule 1309.1 for essential public services, or allocations from the Offset Budget pursuant to Rule 1309.2 for small sources. SCAQMD established the Priority Reserve to provide credits for innovative technology, research operations, and essential public service. Similar to ERCs, Priority Reserve credits are real, quantifiable, and permanent credits.

Since construction and operation of a landfill gas processing facility is considered to be an essential public service, Priority Reserve credits are expected to be granted for this Project pursuant to Rule 1309.1 for pollutants that exceed small source thresholds.

South Coast Air Quality Management District Rule 1401 – New Source Review of Toxic Air Contaminants

Rule 1401 establishes allowable risk thresholds for permit units that emit toxic air contaminants (TACs). Depending on the pollutant, the rule specifies limits for maximum individual cancer risk (MICR), cancer burden, and/or non-cancer acute and chronic Hazard Indices (HI and HC).



Emission controls, which are considered to be Best Available Control Technology for Toxics (T-BACT), will be implemented for the proposed engines to minimize TAC emissions. Sources that include the utilization of T-BACT may be subject to a MICR threshold that is equivalent to State standards for new sources and the CEQA significance threshold.

A health risk assessment was conducted to determine MICR, HI, and HC of this Project. The results of the assessment are discussed in Section 4.2.4 of this report.

South Coast Air Quality Management District Regulation XVII – Prevention of Significant Deterioration

Pursuant to Rule 1704(a)(1) and (4), the proposed Project is exempt from the requirement of PSD analysis per Rule 1703(a)(3) since construction and operation of a landfill gas processing facility is an essential public service facility and it is also categorized as a resource recovery project. Potential annual emissions of all criteria pollutants (NO_X, VOC, CO, SO_X, PM10 and PM2.5) are also below the PSD applicability thresholds of SCAQMD Regulation XVII and 40 CFR Part 52, Subpart A.

Regulation XXX – Title V

This regulation implements the operating permit requirements of Title V of the CAA as amended in 1990. USEPA has delegated to SCAQMD implementation authority over the federal program through local regulations that are as stringent, if not more stringent, than the federal regulations. Therefore, compliance with this regulation would result in compliance with the federal Title V program.

The Project would exceed the Title V applicability thresholds listed in this regulation for several pollutants and would require a Title V permit.

4.2.3 Methodology and Threshold of Significance

4.2.3.1 Methodology

The evaluation of potential impacts to regional and local air quality that could result from construction and long-term operation of the proposed Project is conducted as follows.

Construction Impacts

Construction of the proposed Project will include the removal and relocation of existing buildings, tanks, and related infrastructure. The onsite construction activities would consist of installation of the proposed power generation Project facility, natural gas pipeline, water pipeline, and two water tanks. Construction emissions including those due to earth moving activity were calculated using California Emissions Estimator Model (CalEEMod) version 2016.3.1. CalEEMod calculates both the daily maximum and annual emissions for criteria pollutants and annual greenhouse gases (GHG).

Operational Impacts

Operational emissions would come mainly from stationary equipment, but some indirect emissions such as those from the daily transportation of employees, visitors, contractors and goods will contribute as well.



Emissions due to facility occupancy, such as vehicle trips, energy and water usages, and waste disposed, were calculated using CalEEMod version 2016.3.1. Emissions from stationary equipment were calculated using SCAQMD BACT standards, manufacturer guaranteed emission factors, laboratory and source test data, and default emission factors provided by USEPA AP-42 or ARB. The maximum daily emissions were then compared to SCAQMD mass daily significance thresholds.

In addition to emission inventory, air dispersion modeling was conducted to analyze further impact of criteria pollutant emissions. The software for the modeling used was Providence BEEST AERMOD software (version 16216r). The results of the modeling were compared to the federal and state ambient air quality standards.

Carbon Monoxide Hotspots

The traffic emissions of this proposed Project were estimated using CalEEMod version 2016.3.1. Given the nature of the project, the impact to traffic surrounding the proposed Project site is minimal.

Toxic Air Contaminants Impacts

To analyze the public health impact of TAC emissions to the surrounding area of the proposed Project, health risk assessment modeling was conducted using the air dispersion modeling (BEEST AERMOD) and the ARB Hotspots Analysis Reporting Program Version 2 (HARP2). The results of the modeling were compared to cancer and non-cancer risk thresholds to determine the significance of the proposed Project's impacts.

4.2.3.2 Threshold of Significance

As determined in the Biogas Renewable Generation Project Initial Study, the proposed Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. The following three checklist questions were used to determine if the Project could result in potentially significant impacts and are therefore evaluated in this EIR.

Based on Appendix G of the CEQA Guidelines, implementation of the proposed Project would result in a significant impact related to air quality if it would:

a) Conflict with or obstruct implementation of the applicable air quality plan.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.

c) Expose sensitive receptors to substantial pollutant concentrations.

Pursuant to the State CEQA Guidelines (Section 15064.7), a lead agency may consider using, when available, significance thresholds established by the applicable air quality management district or air pollution control district when making determinations of significance. For purposes of this analysis, the City has determined to assess the potential air quality impacts of the proposed Project in accordance with the most recent thresholds adopted by the SCAQMD in connection with its CEQA Air Quality Handbook, Air Quality Analysis Guidance Handbook, and subsequent SCAQMD guidance, as summarized in **Table 7**. If the impacts equal or exceed any of the criteria, they may be considered significant.



Table 7 SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds		
Pollutant	**Construction**	**Operation**
NOx	100 lbs./day	55 lbs./day
VOC	75 lbs./day	55 lbs./day
PM10	150 lbs./day	150 lbs./day
PM2.5	55 lbs./day	55 lbs./day
SOx	150 lbs./day	150 lbs./day
CO	550 lbs./day	550 lbs./day
Lead	3 lbs./day	3 lbs./day
TACs and Odor Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
AAQS for Criteria Pollutants		
NO_2 1-hour average Annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
PM10 24-hour average annual average	 Increase of 10.4 µg/m^3 (construction) & 2.5 µg/m^3 (operation) 1.0 µg/m^3	
PM2.5 24-hour average	 Increase of 10.4 µg/m^3 (construction) & 2.5 µg/m^3 (operation)	
SO2 1-hour average 24-hour average	 0.25 ppm (state) & 0.075 ppm (federal – 99th percentile) 0.04 ppm (state)	
AAQS for Criteria Pollutants		
Sulfate 24-hour average	 25 µg/m^3 (state)	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
Lead 30-day Average Rolling 3-month average	 1.5 µg/m^3 (state) 0.15 µg/m^3 (federal)	

4.2.3.3 Localized Significance Thresholds

The SCAQMD has also developed localized significance thresholds (LSTs) to assess the localized air quality impacts from construction and operation based on the project location and distance to the nearest sensitive receptor. LSTs are only applicable for NO_X, CO, PM10, and PM2.5. SCAQMD has developed screening level emission rate thresholds for each source receptor area (SRA) in the region to aid in determining if a project may generate significant impacts to the localized air quality. These tables are intended to be used for a project with a size less than five acres. Projects with emissions that exceed the screening threshold may be subject to more complex analyses to determine the significance of their impact on air quality.

SCAQMD provides a lookup table by source receptor area for allowable emissions in pounds per day as a function of receptor distance from 25 to 500 meters and the size of the project. The nearest SRA is West San Gabriel Valley (SRA8) located at 752 S. Wilson Avenue in Pasadena. The size of the proposed Project is larger than two acres and the nearest receptor is more than 500 meters from the proposed Project; however, the LST threshold for two acres and a receptor distance of 500 meters was applied to provide a more conservative analysis. This is a conservative approach because it overestimates the concentration of pollutants across the 2.2-acre site and a receptor closer to the emissions sources than would actually occur during proposed Project implementation. **Table 8** shows the localized air quality significance threshold based on 500 meters receptor distance and a project size of two acres.

Table 8 SCAQMD Localized Air Quality Significance Thresholds at SRA8

Pollutant	Construction	Operation
NOx	175 lbs./day	175 lbs./day
CO	7,957 lbs./day	7,957 lbs./day
PM10	160 lbs./day	39 lbs./day
PM2.5	82 lbs./day	20 lbs./day

4.2.4 Project Impacts

Threshold: Would the Project conflict with or obstruct implementation of the applicable air quality plan?

The Project would not conflict with or obstruct the implementation of the applicable air quality plan because the significance levels of the proposed Project from construction and operation activities are determined to be below the significance thresholds.

4.2.4.1 Construction Impacts

Demolition and construction of the proposed Project will include the removal and relocation of the proposed power generation Project facility, natural gas pipeline, water pipeline, and two water tanks.

Emissions from construction activity were calculated using CalEEMod version 2016.3.1. CalEEMod estimates both the daily maximum and annual average emissions of criteria pollutants and annual GHG.



The model calculates emissions caused by demolition, site preparation, grading, building, coating and paving activities from the following sources:

- Off-road construction equipment
- Fugitive dust from material movement in site preparation and grading, demolition, and vehicle trips
- On-road mobile equipment associated with workers, vendors, and hauling
- VOC emissions associated with architectural coating

For the proposed Project, the model parameters provided in **Table 9** were used to estimate construction emissions. CalEEMod default factors were used for other input parameters such as trips, mileage, and VOC coatings content.

Table 9 CalEEMod Input Parameters

Input Parameters Type	Specification
Project Location:	Glendale
Land Use Type:	General Light Industry
Total Building Size (est.):	5,500 ft^2 [a]
Construction Schedule (5 days/week working schedule)[b]:	
Demolition:	23 days
Site Preparation:	20 days
Grading:	45 days
Building Construction:	195 days
Paving:	20 days
Architectural Coating:	12 days
Dust from Material Movement:	
Total Acres Graded (Site Preparation):	2 acres
Total Acres Graded (Grading):	3 acres
Material Exported during Grading:	14,000 cubic yard[s]
Distance of hauling trip (round trip):	1,400 feet (0.26 miles)[c]
Demolition:	
Amount of material demolished (est.):	24,664 ft^2
Construction Vehicles Trips[d]:	
Demolition:	10 worker trips/day, 5 vendor trips/day, and 112 hauling trips
Site Preparation:	10 worker trips/day and 10 vendor trips/day
Grading:	10 worker trips/day, 10 vendor trips/day, and 875 hauling trips
Building Construction:	10 worker trips/day and 10 vendor trips/day
Paving:	18 worker trips/day
Architectural Coating:	20 worker trips/day and 3 vendor trips/day[e]

Input Parameters Type	Specification
Architectural Coating:	
Coated Interior Area:	8,250 ft^2
Coated Exterior Area:	2,750 ft^2
Construction Mitigation:	
Utilize Tier 2 or newer for off-road construction equipment. Water disturbed area three times per day to minimize fugitive dust (PM10 and PM2.5) emissions.	
Note: a) The total building size of 18,000 ft^2 includes all structures will be constructed on the facility site. One office and one warehouse building are the only occupied buildings, which total size is less than 2,000 ft^2. b) The construction schedule in CalEEMod was based on construction starting date of August 1st, 2018. Start dates later than 2018 will be expected to have lower emissions that the levels included in the analysis, due to equipment fleet modernization. c) Although CalEEMod calculated fugitive emissions from the export of soil offsite to the neighboring landfill, the export of soil and resulting emissions displace what would otherwise result from the import of landfill cover from offsite sources. d) The worker vehicles reflect a mix of light duty autos and light duty trucks. The vendor vehicles reflect a mix of medium and heavy-duty trucks. The hauling vehicles include heavy duty trucks. e) The quantity of 3 large truck and 20 cars during architectural coating phase include vehicle trips due to commissioning activity of the electrical generating equipment.	

The proposed Project will also include construction of natural gas and water pipelines. The natural gas pipeline will connect the facility to the existing SoCalGas pipeline system located at the eastern end of Scholl Canyon Drive. The water line will be near the two fire hydrants located at the western end of Scholl Canyon Golf and Tennis Club. The air quality impacts of these pipelines are negligible because of the following reasons:

a) Pipelines will be located above ground except for at road crossings; therefore, minimal excavation activity will be expected.

b) Pipelines are short in distance (3,500 feet for natural gas pipeline and 5,280 feet for water pipeline).

c) No new access roads will be built for pipeline construction.

d) Disturbance due to moving vehicles will be minimal because of slow construction vehicle speeds and surrounding vegetation.

No transmission lines will be constructed for the proposed Project. Existing transmission lines will be utilized to connect the electric generating equipment to the local grid. CalEEMod model outputs are included in Appendix B.1.

When the Mitigated Negative Declaration (MND) report was being prepared in 2017, the majority of landfill gas produced by the SCLF was piped and combusted in existing boilers at GWP's) Grayson Power Plant. Therefore, the air quality impact during the construction phase prepared for the MND was analyzed based on the net emission increase from emissions due to earthmoving activity and new landfill gas combustion in the landfill flare system and baseline emissions from landfill gas combustion in Grayson Power Plant boilers.

However, in April 2018, GWP discontinued landfill gas combustion in the boilers at the Grayson Power Plant. All landfill gas produced by the landfill is now being combusted in the existing flare system at the SCLF, and that flaring system is part of the baseline for this Project. Since there would be no changes to how the landfill gas is being generated, the air quality impacts during the construction phase of the proposed Project are now limited to emissions due to earthmoving activity and supporting construction operations.

Table 10 compares the net emissions of the proposed Project during construction to the mass daily significance thresholds. The model output shown in Table 10 reflects a project that would have been initiated in 2018 and serves as a conservative assessment of construction impacts. A project that is initiated in 2020 or later would be expected to have lower emissions as existing truck and construction equipment engines are replaced with new technology.

Table 10 Overall Air Quality Impact Due to the Construction of the proposed Project

Pollutant	CalEEMod Output (Earthmoving Activity) (lbs./day)	SCAQMD Mass Daily Significance Thresholds for Construction Emissions (lbs./day)	Exceed the Threshold (yes/no)
NO_X	41	100	NO
CO	33	550	NO
VOC	4.5	75	NO
PM10	8.2	150	NO
PM2.5	4.9	55	NO
SO_X	0.05	150	NO

Data Source: The emissions estimator model output using CalEEMod version 2016.3.1.

As listed in Table 1 of Rule 403, the following control measures will be implemented to minimize fugitive dust emissions during construction for the proposed Project:

- Apply sufficient amount of water to prevent the generation of visible dust plumes during demolition and earth-moving activities.
- Stabilize material while loading, transporting, and unloading to reduce fugitive emissions.
- Establish traffic and parking areas for construction activities by using road barriers.

Based on the required Rule 403 actions taken to minimize fugitive emissions during construction activity and calculated emissions summarized in **Table 10**, the overall air quality impact of construction activity of the proposed Project would be below the applicable SCAQMD regional mass emissions thresholds of significance. The Project would also be in compliance with applicable SCAQMD rules and regulations. Construction of the proposed Project would not conflict with or obstruct implementation of the air quality plan and potential impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.2.4.2 Operational Impacts

Operational emissions will come primarily from stationary equipment, but some indirect emissions such as those from the transportation of employees, visitors, contractors and goods will result from the proposed Project. The Project is expected to result in a similar number of vehicle trips as those which already occur for existing facility operation and maintenance.

Emissions from stationary equipment were calculated based upon SCAQMD BACT standards, manufacturer guaranteed emission factors, laboratory and source test data, and default emission factors provided by USEPA or ARB. The maximum daily emissions were then compared to SCAQMD mass daily significance thresholds.

4.2.4.3 Operation Impacts due to Facility Occupancy

The emissions produced by the occupants of the facility were estimated using the CalEEMod version 2016.3.1. CalEEMod calculates indirect operational emissions caused by the occupancy of the facility, which include electricity and water consumption, as well as on-road mobile emissions. A total of six employees will be responsible for operations and routine maintenance of the facility and will generate on-road commute emissions in addition to the emissions from material deliveries to the site. **Table 11** summarizes the daily emissions caused by these six employees in operating the facility. CalEEMod model outputs are included in Appendix B.1.

Table 11 Criteria Pollutant Emission Summary – Facility Occupancy

Pollutant	Area Usage[a] (lbs./day)	Energy Usage (lbs./day)	Mobile Usage (lbs./day)	Total Emissions (lbs./day)
NO_X	0.00001	0.0268	0.0164	0.043
CO	0.00057	0.0225	0.0451	0.068
VOC	0.1229	0.0026	0.0031	0.128
PM10	0	0.0020	0.0126	0.015
PM2.5	0	0.0020	0.0035	0.005
SO_X	0	0.0002	0.0002	0.0003

Notes:
a) Area usages include architectural coating, consumer products, and landscaping.

Data Source: The emissions estimator model output using CalEEMod version 2016.3.1.

The daily indirect emissions resulting from employees operating the facility were added to plant operations emissions. However, as shown in **Table 11**, these daily emissions were estimated to be less than one pound and the contribution to the overall operational emissions are expected to be negligible.

4.2.4.4 Operation Impacts due to Stationary Equipment

The Project includes construction and operation of an approximately 12-megawatt (MW) power generation facility that would utilize LFG as fuel to generate renewable energy (electricity). The engines will create emissions due to the combustion of landfill gas.

Based on the fact that the flare will incinerate landfill gas and it will be utilized as needed, its emissions will be analyzed as part of the emissions from the existing flares. The existing flares will operate intermittently as backup devices to incinerate excess landfill gas being produced that is not utilized by the electrical generating units, should one or more generating units be temporarily inoperable.

Because SCLF LFG quality may fluctuate, NG may be utilized to ensure combustion and engine operating efficiency. The augmentation with natural gas is exclusively to maintain the heating value of fuel to ensure combustion and efficient engine operation. The proposed facility will not use natural gas to increase engine utilization. SCAQMD Rule 1110.2 restricts NG combustion to no more than 10% of the fuel stream, based on annual heat input, and the limit on natural gas augmentation will be specified in the SCAQMD operating permit for the Project. Since NG is a cleaner fuel than landfill gas, it is more conservative to analyze the air quality impacts of the proposed engines based on operating emissions using 100 percent landfill gas as the worst-case scenario. When the landfill gas production at the SCLF declines, engine utilization will also decline because SCAQMD regulations and permit conditions will not allow ongoing operation in the absence of landfill gas

Reciprocating Internal Combustion Engines

The City is proposing to use four reciprocating internal combustion engines (RICE) General Electric Jenbacher Model J 620 GS-16 engines for the Project. Each engine has the ability to produce 3,018 kilowatts (KW) of power at 39.5 percent efficiency under International Organization of Standardization (ISO) conditions. At 100 percent operating load, each engine is estimated to be able to combust 1,383 standard cubic feet per minute (scfm) of LFG. With the LFG production of 5,000 scfm, small amounts of natural gas will augment the landfill gas to increase intake fuel heating value which will allow all four engines be operated at 100 percent capacity during brief periods when peak utilization may be needed. Although it is expected that engine utilization will decline as LFG production declines, 100 percent annual utilization of LFG may occur in the first year of operation; therefore, it was used to determine the significance of air quality impacts.

The following emission factors were used to estimate the criteria pollutant emissions from the engines:

- 11 ppmv at 15 percent O_2 for NO_X and 30 ppmv at 15 percent O_2 emission factors were used based on the required emission limits pursuant to SCAQMD Rule 1110.2.
- The proposed engines will be equipped with oxidation catalysts to reduce the CO emissions. Based on the manufacturer data, uncontrolled CO emission of the engine is 250 ppmv at 15 percent O_2. While CO emission reductions of at least 90 percent can be expected due to the use of an oxidization catalyst, the emissions inventory and air quality analysis assumes a much lower control efficiency and a controlled CO concentration of 130 ppmv at 15 percent O_2.



- The engine manufacturer PM10/2.5 emission rate of 0.066 grams per brake horsepower hour (g/bhp-hr), based upon SCAQMD BACT guidance.
- The SO_X emission factor was estimated based on 60 ppmv of sulfur content of landfill gas measured in H_2S as determined by SCAQMD as BACT.

The proposed engines will be equipped with SCR combined with oxidation catalysts to meet SCAQMD emission standards. However, uncontrolled emissions can occur during startup, commission, and maintenance activities. To account for the uncontrolled emission rates and estimate maximum daily emissions, the following daily operating schedule is assumed:

1. Three engines run 22 hours in normal operation and 2 hours in startup/shutdown mode.
2. One engine runs 12 hours in normal operation, 10 hours in maintenance, and 2 hours for startup/shutdown.

It is unlikely to have more than one engine in maintenance in the 24-hour period. Additionally, this type of operation will likely be limited to commissioning of the proposed Project to ensure the engines are operating properly prior to the loading of emission control catalyst.

The emissions from the LFG combustion in the flare system were used for the baseline emissions during operational phase. The baseline emissions reflected the flare emissions reported in SCAQMD Annual Emission Reporting Program in 2018. This emission inventory is included in Appendix B.2.

Table 12 summarizes the net emissions of the proposed Project based on the daily maximum engine emissions, the daily average flare emissions as the baseline emissions, and the quantity of Priority Reserve credits to offset the emission increases. **Table 13** compares the net emissions of the proposed Project to the SCAQMD screening level mass-emissions significance thresholds. The emission Inventory for the proposed RICE is also included in Appendix B.2.

To comply with SCAQMD Regulation XIII, Priority Reserve credits will be allocated to offset the emission increases of the proposed Project. After consideration of reduced emissions due to the reduced operation of the existing flares and the application of Priority Reserve credits through SCAQMD Rule 1309.1, net emissions of NO_X, VOC, PM10, PM2.5 and SO_X will be below SCAQMD daily mass emission significance thresholds. SCAQMD does not provide Priority Reserve offsets for CO emissions. As such, daily emissions of CO are above the SCAQMD daily screening level mass emission significance thresholds. A more complex significance determination is made to demonstrate that emissions of CO are also below refined significance thresholds that are based upon ambient pollutant concentrations.



Table 12 Overall Air Quality Impact of the proposed Project in the Operational Phase

Pollutant	Total proposed Project (Engines Daily Max. Emissions (lbs./day)	Less: Existing Baseline Daily Landfill Gas Combustion Emissions (lbs./day)	Offset Allocations from the SCAQMD Priority Reserve (lbs./day)	Remaining Scholl Canyon Power Generating Facility Emissions (lbs./day)
NO_X	165	90	75	0
CO	919	42	0	877
VOC	114	7	107	0
PM10	58	62	0	[4]
PM2.5	58	62	0	[4]
SO_X	81	46	35	0

Table 13 Comparison of Overall Operation Emissions with Significance Thresholds

Pollutant	Net Operation Emissions (lbs./day)	SCAQMD Mass Daily Significance Thresholds for Operation Emissions (lbs./day)	Exceed the Threshold (yes/no)
NO_X	0	55	NO
CO	877	550	YES
VOC	0	55	NO
PM10	[4]	150	NO
PM2.5	[4]	55	NO
SO_X	0	150	NO

Without the Priority Reserve credits, NO_X, CO, and VOC emissions of the proposed Project would exceed the significance thresholds. Air dispersion modeling was conducted to analyze further impact of pollutants emissions. Air dispersion modeling was not conducted for VOC since there is no State or Federal ambient air quality standards. The data inputs for the emission modeling are provided in **Table 14**.

Table 14 American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) Input Parameters

Input Parameters Type	Specification
Engines Exhaust Information:	
Stack Height:	40 ft.
Stack Diameter:	2 ft.
Stack Temperature:	797 °F
Exhaust Flow (Wet):	481,020 scfh

Table 15 summarizes the ambient air quality impacts from operating the proposed engines. As discussed in Section 4.2.1.2, the background concentration is based upon the highest values recorded for the years 2014 through 2018. Model results demonstrate that the proposed Project will not cause an exceedance of NO_2, CO, or PM2.5 ambient air quality standards. PM10 and PM2.5 background ambient concentrations already exceed federal or state standards, but the increase in concentrations resulting from the proposed Project are below allowable thresholds established by SCAQMD. Detailed model input and output information is provided in Appendix B.3.

Table 15 AERMOD Model Output

Pollutant	Averaging Period	Project Impact	Background[a]	New Ambient	Limiting Standard	Type of Standard
NO_2[b]	1-HR	0.030 ppm	0.075 ppm	0.105 ppm	0.18 ppm	CAAQS
NO_2[b]	1-HR (98^{th} %)	0.014 ppm	0.060 ppm	0.074 ppm	0.10 ppm	NAAQS
NO2[c]	Annual	0.00015 ppm	0.017 ppm	0.017 ppm	0.03 ppm	CAAQS
CO	1-HR	0.0145 ppm	3.0 ppm	3.01 ppm	20 ppm	CAAQS
CO	8-HR	0.0344 ppm	1.8 ppm	1.83 ppm	9 ppm	CAAQS
PM10	24-HR	1.07 ug/m^3	96 ug/m^3	97.07 ug/m^3	Allowable increase of 2.5 ug/m^3	CAAQS/SCAQMD Allowable Increase
PM10[d]	24-HR (6^{th} highest over 5 years)	0.065 ug/m^3	96 ug/m^3	96.065 ug/m^3	150 ug/m^3	NAAQS
PM10	Annual	0.118 ug/m^3	35.4 ug/m^3	35.52 ug/m^3	Allowable increase of 1.0 ug/m^3	CAAQS/SCAQMD Allowable Increase
PM2.5	24-HR	1.07 ug/m^3	59.9 ug/m^3	60.97 ug/m^3	Allowable increase of 2.5 ug/m^3	CAAQS/SCAQMD Allowable Increase
PM2.5	24-HR (8^{th} highest)	0.35 ug/m^3	38.0 ug/m^3	38.35 ug/m^3	35 ug/m^3 Below SIL of 1.2 ug/m^3	NAAQS EPA Significant Impact Level (SIL)
PM2.5[e]	Annual	0.118 ug/m^3	12.38 ug/m^3	12.50 ug/m^3	Below SIL of 0.3 ug/m^3 Allowable increase of 1.0 ug/m^3	EPA Significant Impact Level (SIL) CAAQS/SCAQMD Allowable Increase
SO_2	1-HR	0.0026 ppm	0.018 ppm	0.021 ppm	0.25 ppm	CAAQS
SO_2[f]	1-HR (99^{th} %)	0.0014 ppm	0.0094 ppm	0.0108 ppm	0.075 ppm	NAAQS
SO_2	24-HR	0.0006 ppm	0.002 ppm	0.0026 ppm	0.04 ppm	CAAQS

Notes:
a) The background values are based on the highest concentrations monitored during 2014 through 2018.

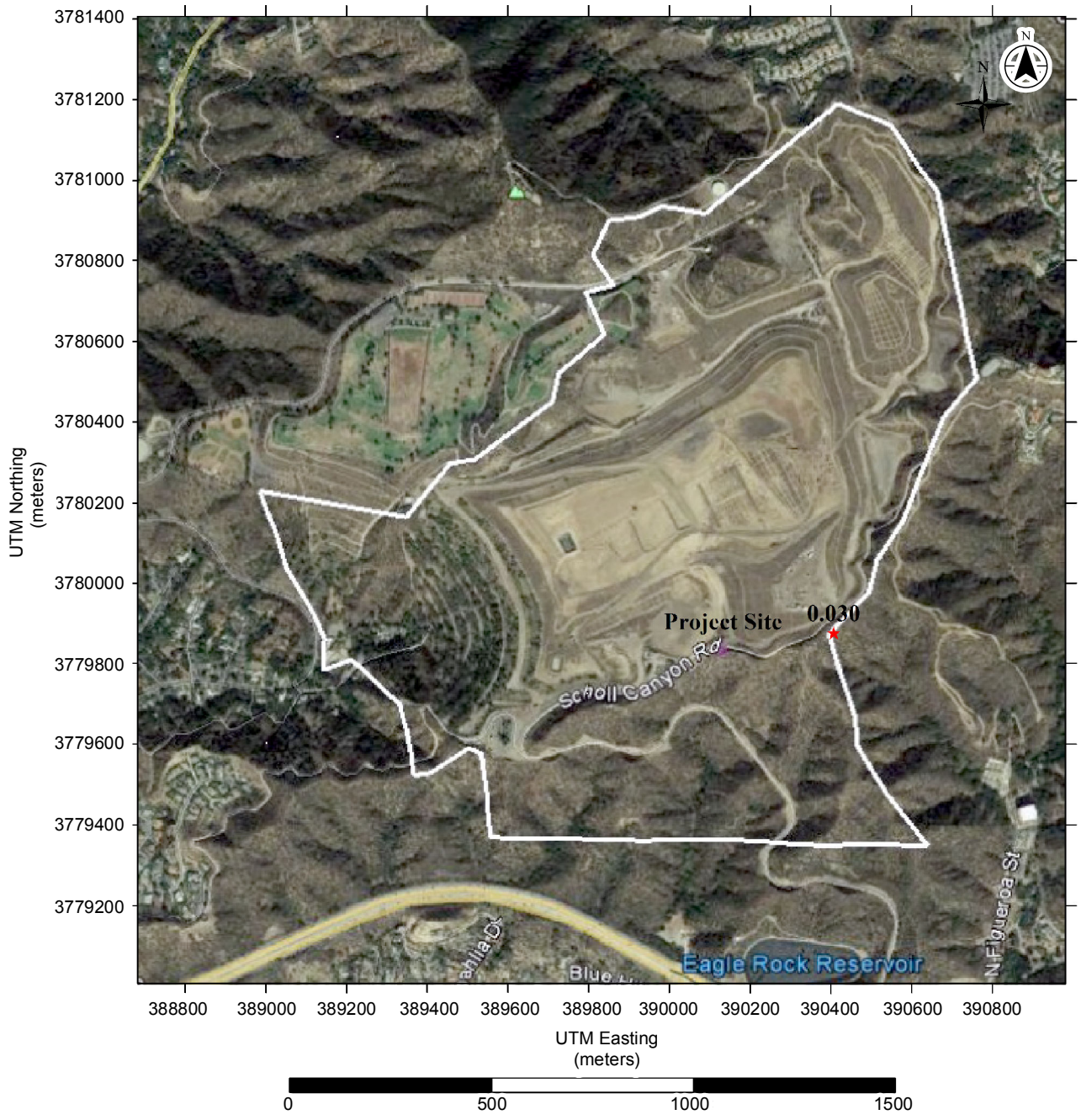
Pollutant	Averaging Period	Project Impact	Background[a]	New Ambient	Limiting Standard	Type of Standard
b) The NO_2 1-hour modeling was refined using the AERMOD Ambient Ratio Method Version 2 (ARM2) option.						
c) The NO_2 annual modeling was refined using the AERMOD ARM option, which assumed an 80% conversion factor of NO_X to NO_2.						
d) The PM10 24-hour modeled values were based on the maximum 6th highest concentration over 5 years period.						
e) The PM2.5 24-hour modeled values were based on the 8th highest concentration averaged over 5 years period with the background concentrations of 98th percentile of 24-hour data averaged over 5 years period.						
f) The SO_2 1-hour modeled values were based on the 4th highest concentration averaged over 5 years period with the background concentrations of 99th percentile of 1-hour data averaged over 5 years period.						
g) There are receptors surrounding the facility at lower and higher elevations than the emission sources. The model was run on non-default option (flat terrain) on all receptors at lower elevations; and a default option (complex terrain) was selected to on receptors above the emission sources base elevation. The project impact values shown are the highest values from both model runs.						

Data Source: The output of air dispersion model conducted using Providence BEEST AERMOD software (version 16216r).

Figures 4.2-1 A through **L** show the maximum concentration readings for criteria pollutants outside the landfill property boundary.

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Project No.: 205712300
Prepared by JT on 2017-07-21
Technical Review by CH on 2017-07-21

Client/Project
City of Glendale Water and Power
Biogas Renewable Generation Project
Environmental Impact Report

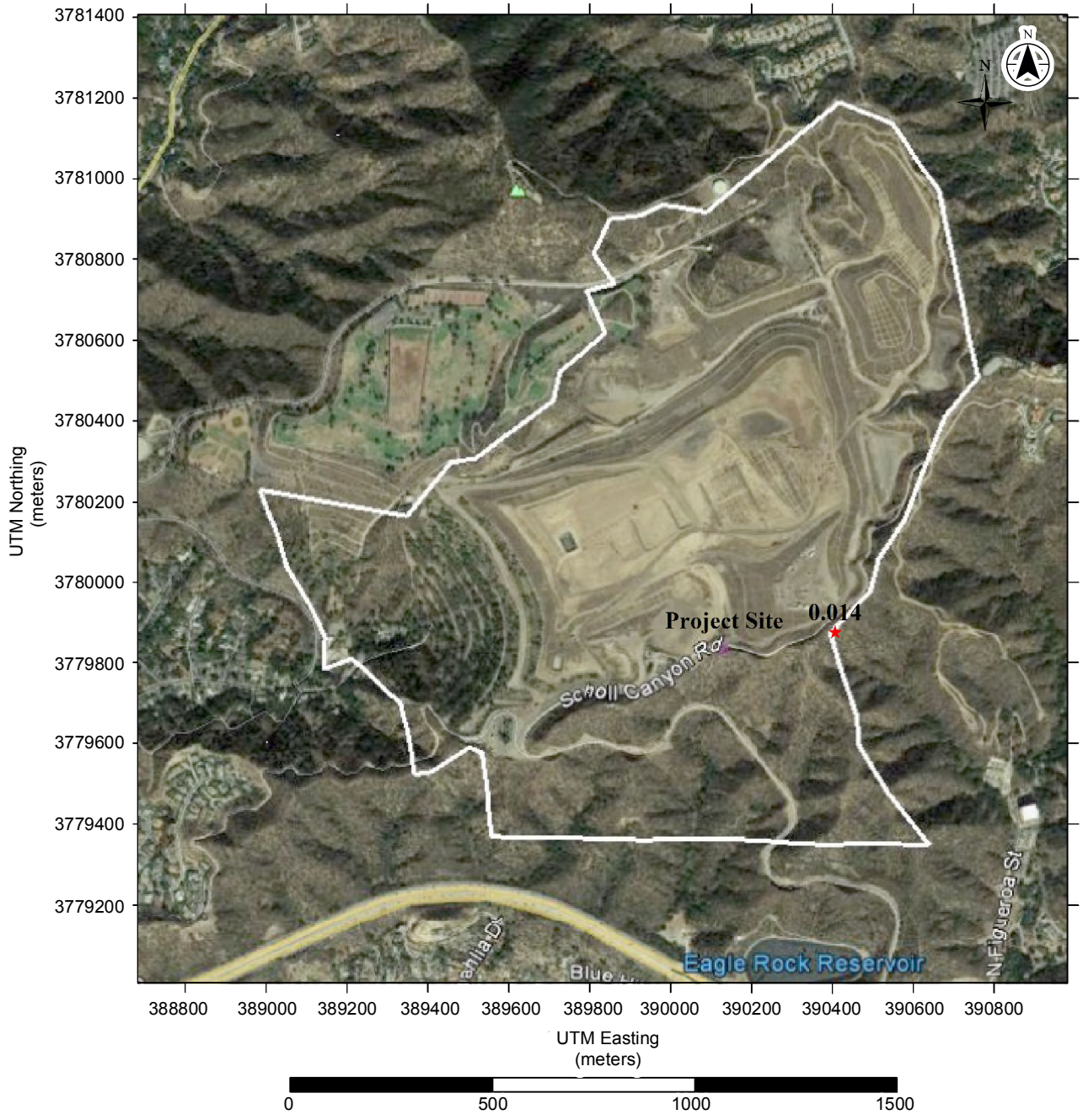
Figure No.
4.2-1A

Title
AERMOD Output for 1st highest 1-hourly NO_2 Concentrations (ppm)

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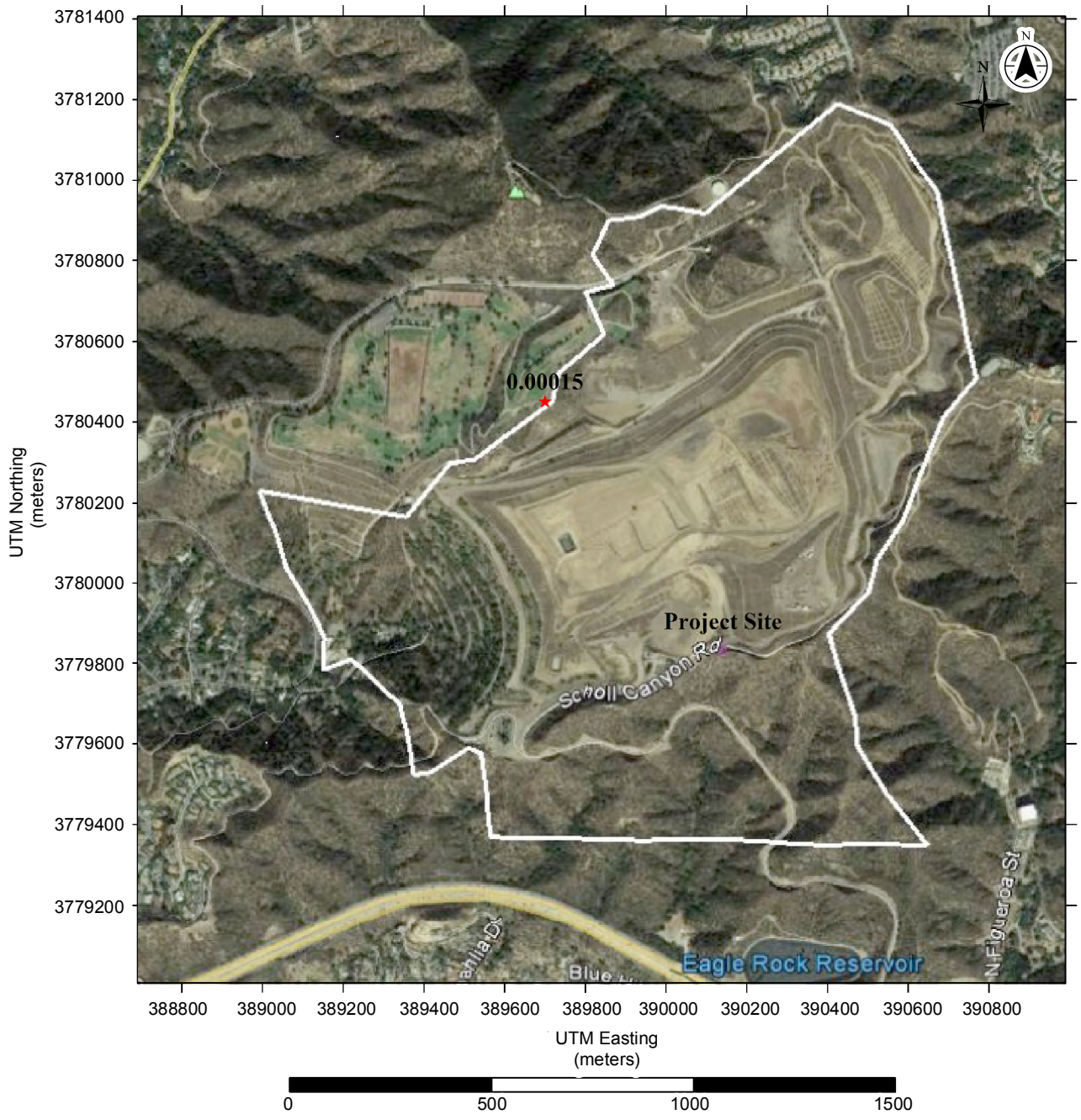
Figure No.
4.2-1B

Title
AERMOD Output for 8th highest 1-hourly NO_2 Concentrations (ppm)

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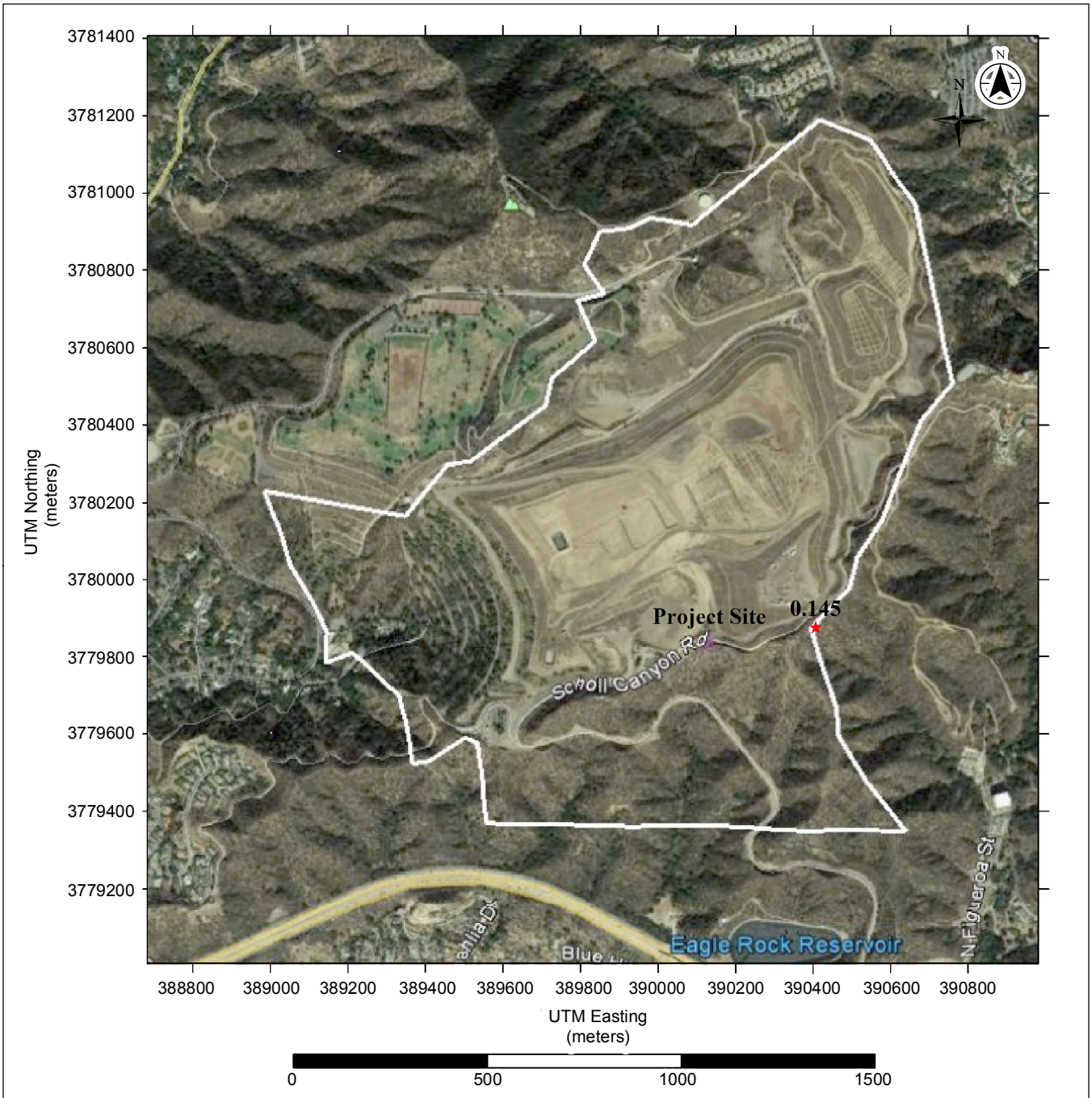
Figure No.
4.2-1C

Title
AERMOD Output for Annual NO_2 Concentrations (ppm)

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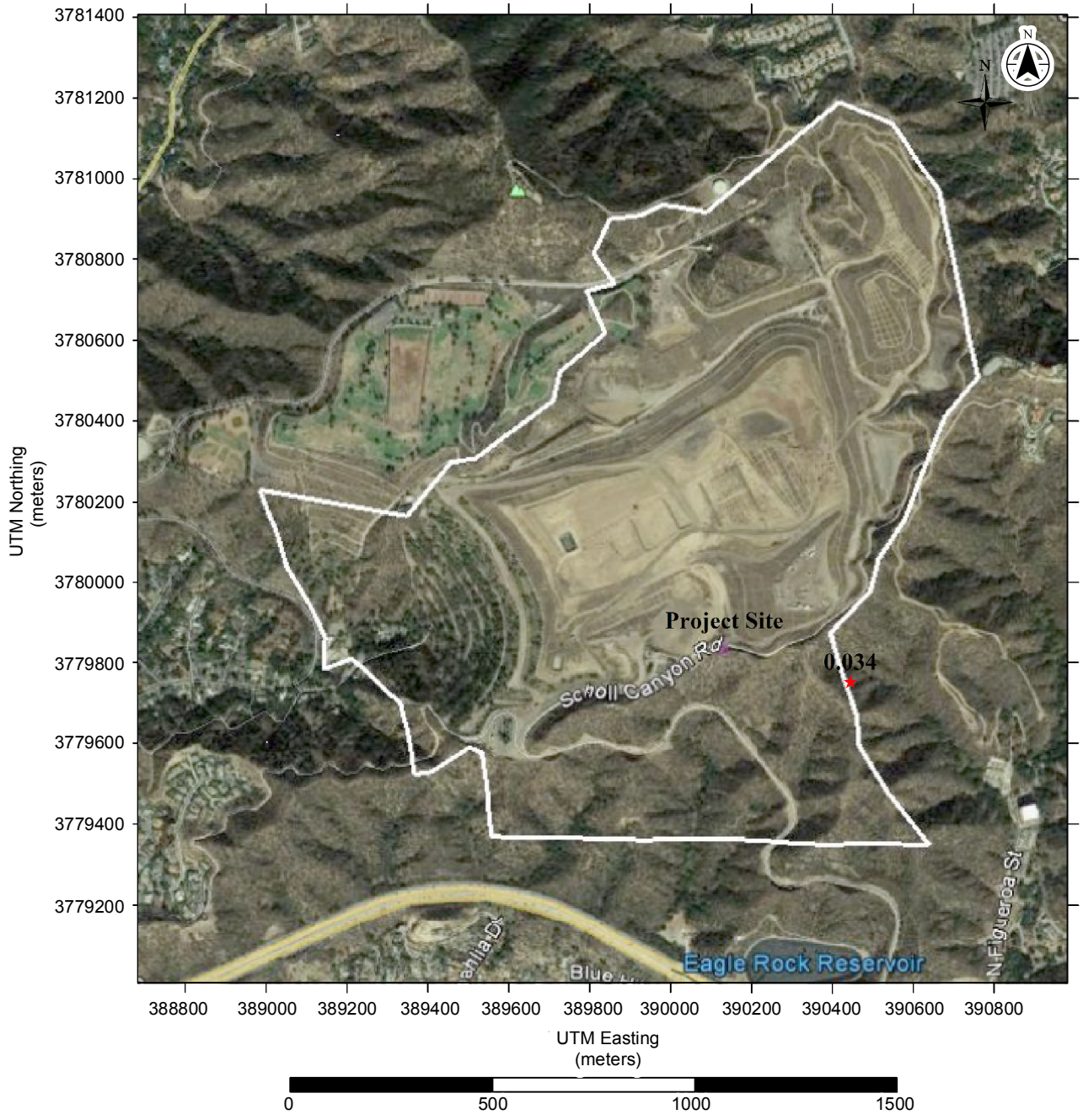
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4.2-1D

Title
AERMOD Output for 1st highest 1-hourly CO Concentrations (ppm)

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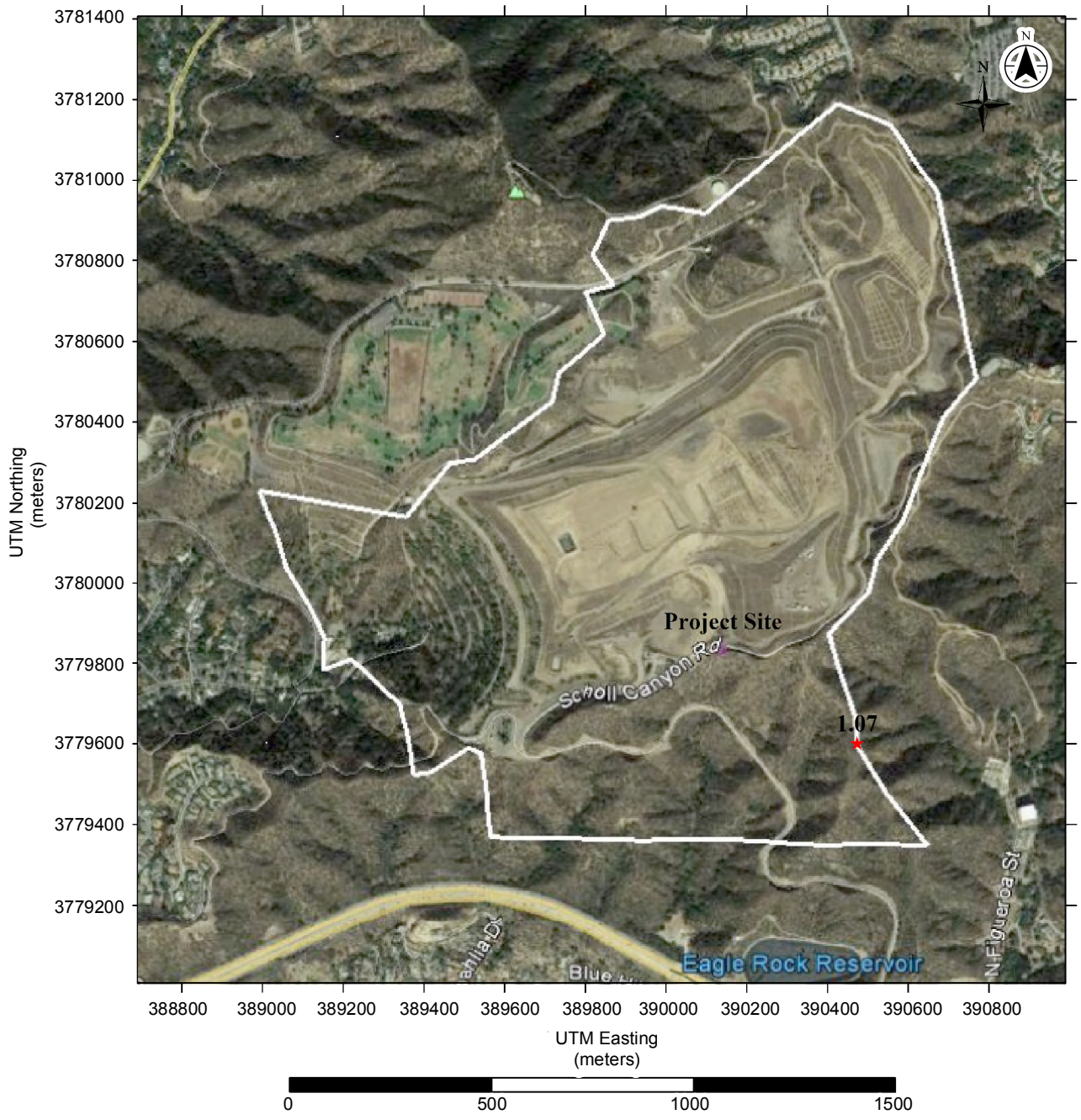
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Title
AERMOD Output for 1st highest 8-hourly CO Concentrations (ppm)

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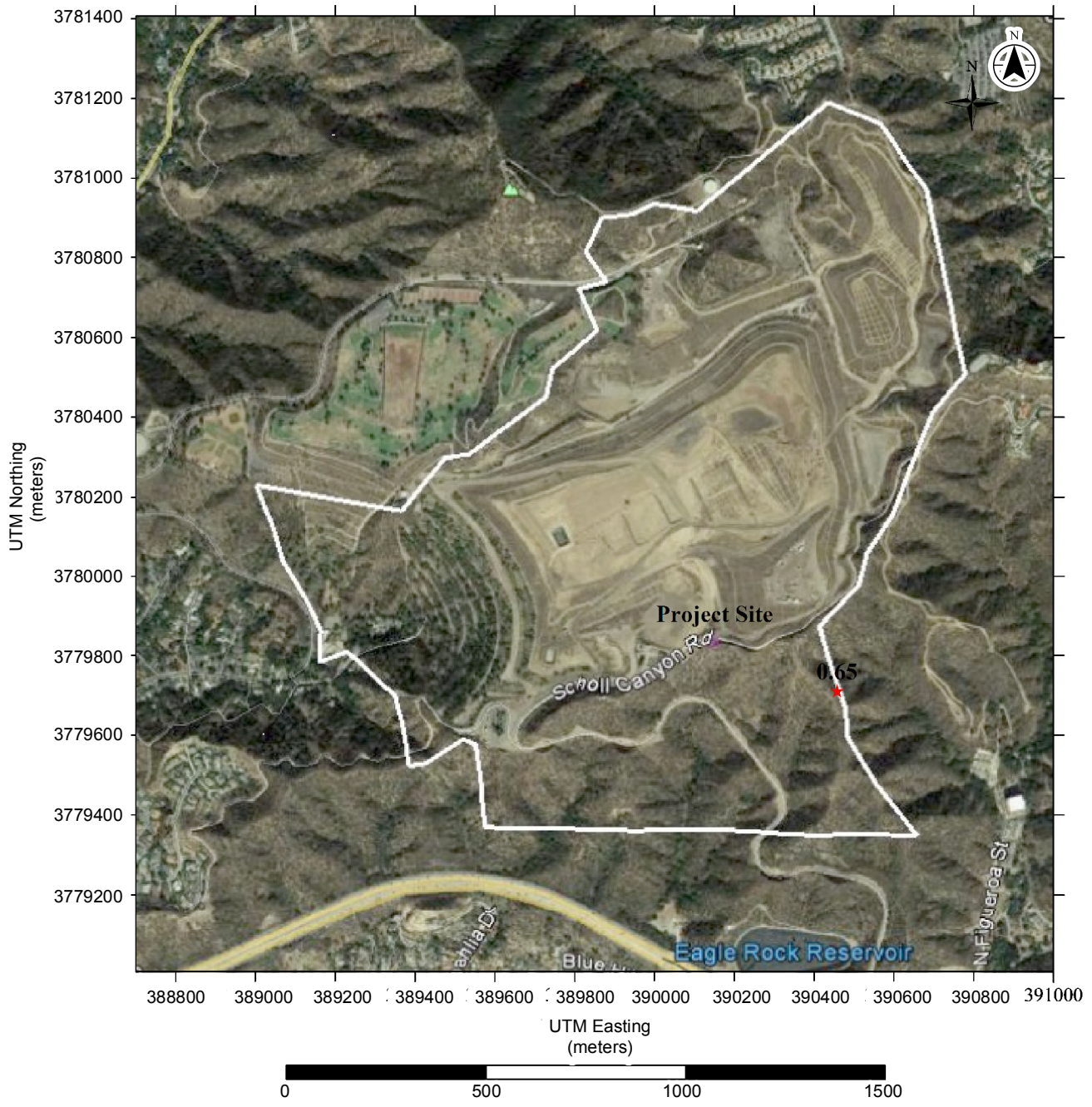
Figure No.
4.2-1F

Title
AERMOD Output for 1st highest 24-hour PM10/2.5 Concentrations (ug/m³)

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Prepared by JT on 2017-07-21
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Client/Project
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Biogas Renewable Generation Project
Environmental Impact Report

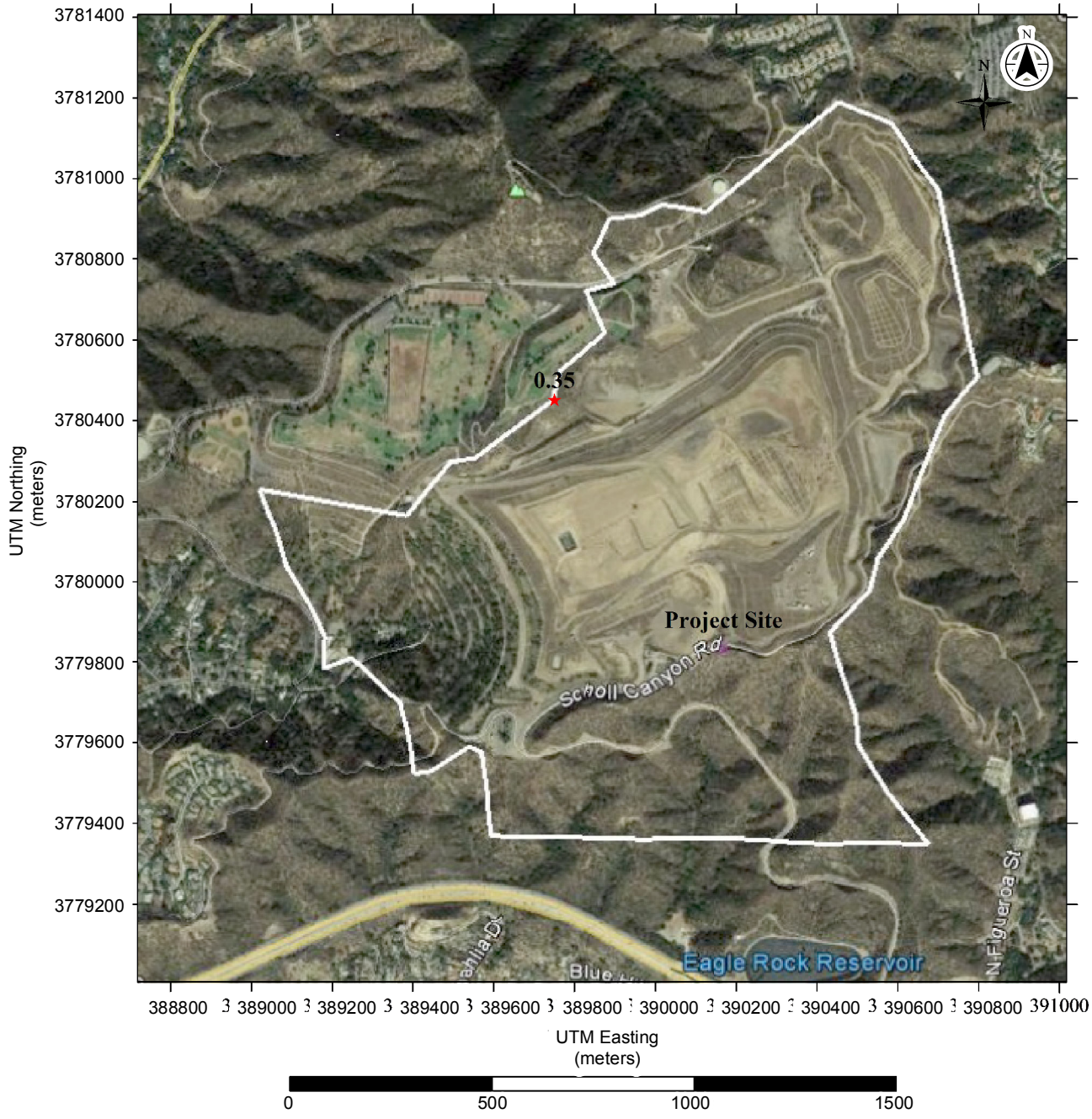
Figure No.
4.2-1G

Title
AERMOD Output for 6th highest 24-hour PM10 Concentrations (ug/m³)

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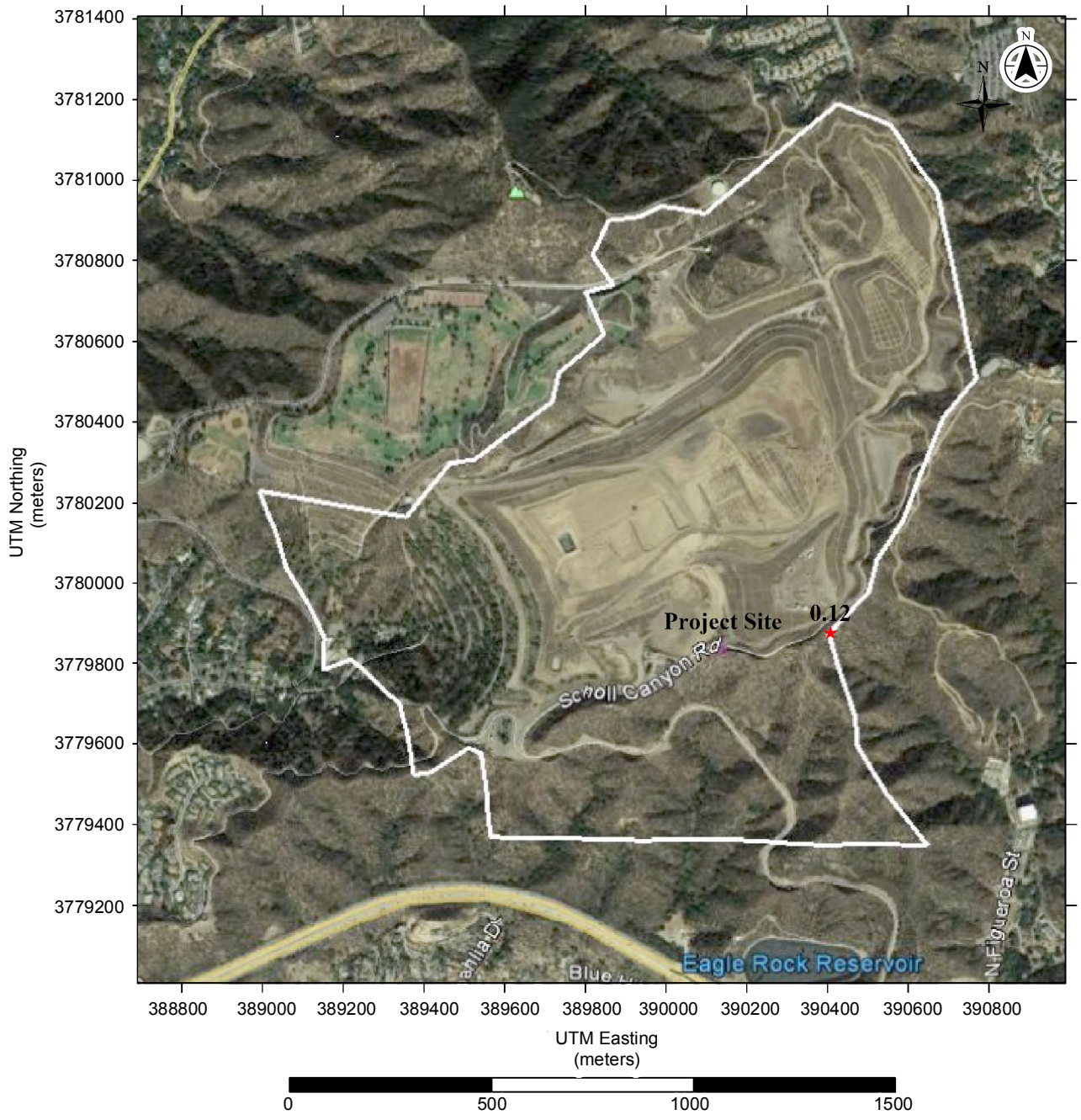
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4.2-1H

Title
AERMOD Output for 8th highest 24-hour PM2.5 Concentrations (ug/m³)

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Glendale, CA

Project No.: 2057123300
Prepared by JT on 2017-07-21
Technical Review by CH on 2017-07-21

Client/Project
City of Glendale Water and Power
Biogas Renewable Generation Project
Environmental Impact Report

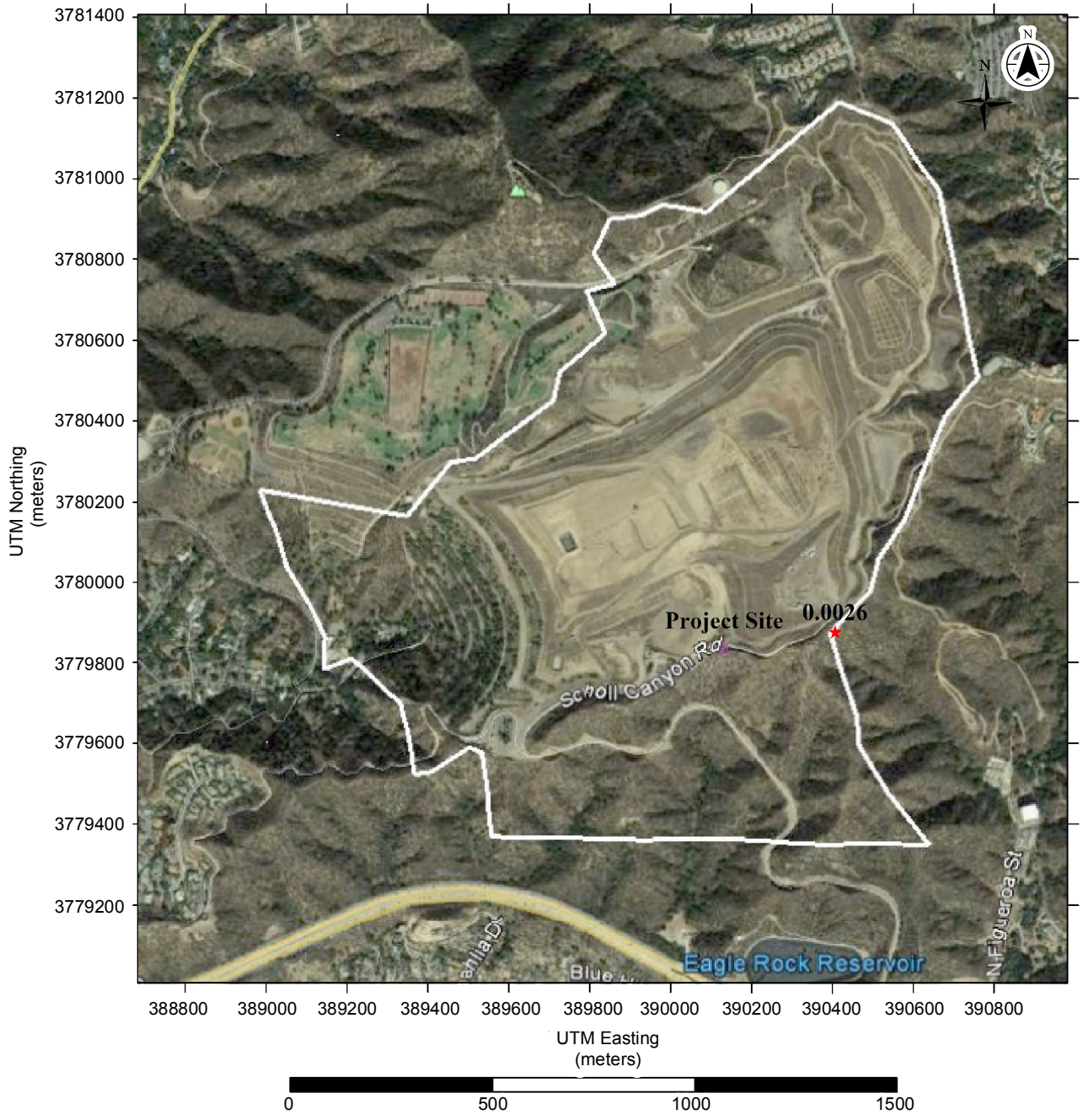
Figure No.
4.2-1l

Title
AERMOD Output for Annual Average PM10/2.5 Concentrations (ug/m³)

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Modeling performed by Montrose Air Quality Services

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Project Location
Glendale, CA

Project No.: 2057123300
Prepared by JT on 2017-07-21
Technical Review by CH on 2017-07-21

Client/Project
City of Glendale Water and Power
Biogas Renewable Generation Project
Environmental Impact Report

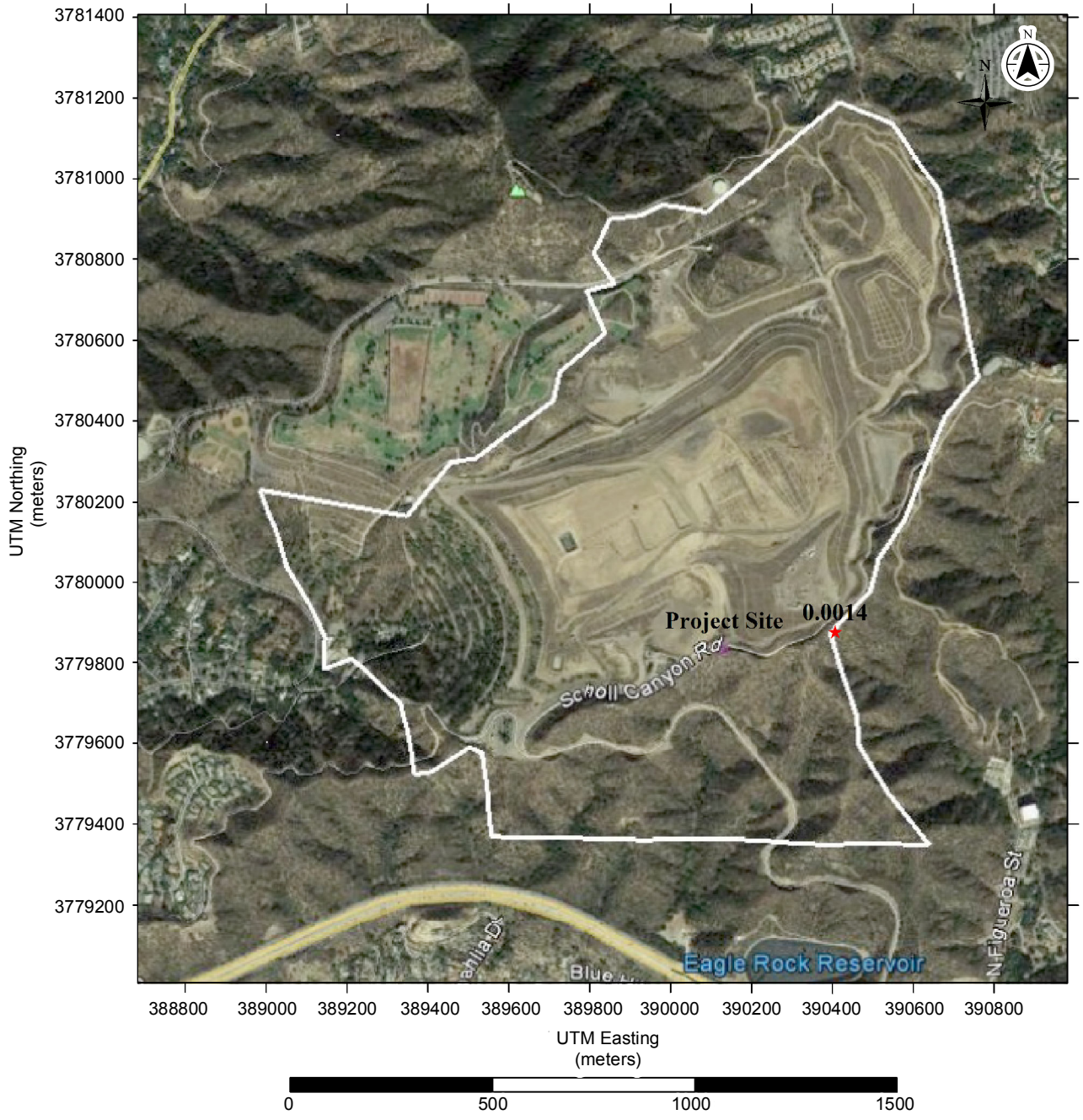
Figure No.
4.2-1J

Title
AERMOD Output for 1st highest 1-hourly SO_2 Concentrations (ppm)

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Modeling performed by Montrose Air Quality Services

Stantec

Project Location
Glendale, CA

Project No.: 205712300
Prepared by JT on 2017-07-21
Technical Review by CH on 2017-07-21

Client/Project
City of Glendale Water and Power
Biogas Renewable Generation Project
Environmental Impact Report

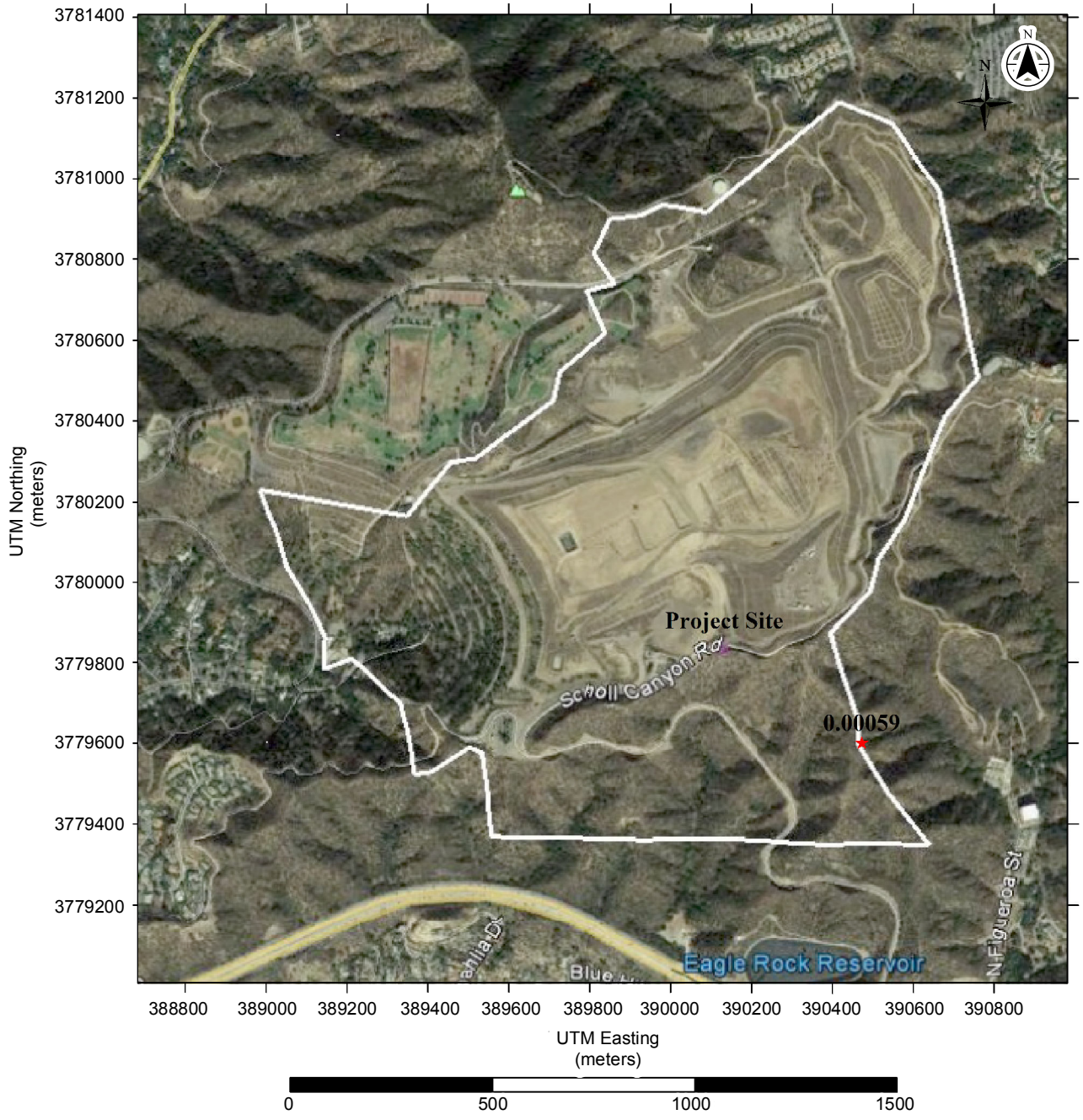
Figure No.
4.2-1K

Title
AERMOD Output for 4th highest 1-hourly SO_2 Concentrations (ppm)

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C:\Users\jtrook\Desktop\205712300\mxd\20170721\Fig3_3_2L_AERMOD_1st_highest_24hr_SO2_20170723.mxd Revised: 2017-07-23 By: jtrook



Modeling performed by Montrose Air Quality Services

Stantec

Project Location
Glendale, CA

Project No.: 205712300
Prepared by JT on 2017-07-21
Technical Review by CH on 2017-07-21

Client/Project
City of Glendale Water and Power
Biogas Renewable Generation Project
Environmental Impact Report

Figure No.
4.2-1L

Title
AERMOD Output for 1st highest 24-hour SO_2 Concentrations (ppm)

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Due to the application of SCAQMD BACT; the offsetting of emissions from SCAQMD priority reserve; and compliance with all applicable laws, ordinances and regulations; air quality impacts of the proposed Project are less than significant for all pollutants other than CO as shown in Tables 13 For all pollutants other than CO, daily mass emissions are below the thresholds of significance that are included in Table 13. Pursuant to SCAQMD policy, an ambient air quality impact analysis was then conducted to determine the significance of CO emissions. Table 15 and Figures 4.2-1A through 4.2.1L show ambient air quality impact analysis results for all criterial pollutants, including CO, demonstrate that project impacts are less than significant and would not conflict or obstruct implementation of the air quality plan.

4.2.4.5 Mitigation Measures

No mitigation measures are required.

Threshold: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?

See Section 4.2.5, Cumulative Impacts, below for a discussion of cumulative air quality impacts.

Threshold: Expose sensitive receptors to substantial pollutant concentrations?

In addition to the regional significance thresholds, SCAQMD has also developed LSTs to screen projects for potentially substantial localized impacts from daily emission levels from construction and operation based on the project location, size, and distance to the nearest sensitive receptor, which includes residential homes, schools, hospitals, and nursing homes. The nearest sensitive receptors are located more than 2,200 feet from the emission sources. **Figure 4.2-2** shows the location of the sensitive receptor relative to the proposed Project site.

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Project Location
Glendale, CA

Project No.: 205712330
Prepared by JT on 2017-07-21
Technical Review by CH on 2017-07-21

Client/Project
City of Glendale Water and Power
Biogas Renewable Generation Project
Environmental Impact Report

Figure No.
4.2-2

Title
Nearest Sensitive Receptor Location

Stantec

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Localized Construction Impacts

As discusses previously in this report, LSTs for the proposed project are based a project area of two acres because LSTs for a larger project are less stringent. SCAQMD requires the mass rate look-up table in the "Finalized Localized Significance Threshold Methodology" document to be used. **Table 16** shows that the impacts of Project construction emissions to the localized air quality are below the significance thresholds.

Table 16 Localized Significance Threshold Construction Analysis

Pollutant Type	Max. Daily Emissions (lbs./day)	SCAQMD Significance Threshold for Construction (lbs./day)	Exceed Threshold (yes/no)
NO_X	41	175	NO
CO	33	7,957	NO
PM10	8.2	160	NO
PM2.5	4.9	82	NO

Notes:
a) The maximum daily emissions for construction activity are the emissions from the earth-moving activity.

Based on **Table 16**, the air quality impact of construction activity to the nearest sensitive receptor will be less than significant.

Mitigation Measures

No mitigation measures are required.

Localized Operation Impacts

Table 17 compares the impacts of project operation emissions to the localized air quality threshold based on the SCAQMD look-up table.

Table 17 Localized Significance Threshold Operation Analysis

Pollutant Type	Net Operation Emissions (lbs./day)	SCAQMD Significance Threshold (lbs./day)	Exceed Threshold (yes/no)
NO_X	75	175	NO
CO	877	7,957	NO
PM10	[4]	39	NO
PM2.5	[4]	20	NO

Notes:
- The net operation emissions include the maximum daily emissions from engines less baseline emissions.

As shown in **Table 17**, the air quality impact of operation activity to the nearest sensitive receptor is expected to be less than significant.

In addition to mass emission analysis, air dispersion modeling was performed to estimate the concentrations of NO_2, CO, PM10 and PM2.5 from the operational emissions of the proposed Project to determine the localized air quality impacts on the state and federal ambient air quality standards.

Table 18 summarizes the results of the model and compares them with the ambient air quality standards. Detail model input and output information is provided in Appendix B.3.

Table 18 AERMOD Model Output

Pollutant	Averaging Period	Project Impact	Background[a]	New Ambient	Limiting Standard	Type of Standard
NO_2[b]	1-HR	0.030 ppm	0.075 ppm	0.105 ppm	0.18 ppm	CAAQS
NO_2[b]	1-HR (98^{th} %)	0.014 ppm	0.060 ppm	0.074 ppm	0.10 ppm	NAAQS
NO2[c]	Annual	0.00015 ppm	0.017 ppm	0.017 ppm	0.03 ppm	CAAQS
CO	1-HR	0.0145 ppm	3.0 ppm	3.01 ppm	20 ppm	CAAQS
CO	8-HR	0.0344 ppm	1.8 ppm	1.83 ppm	9 ppm	CAAQS
PM10	24-HR	1.07 ug/m^3	96 ug/m^3	97.07 ug/m^3	Allowable increase of 2.5 ug/m^3	CAAQS/SCAQMD Allowable Increase
PM10[d]	24-HR (6^{th} highest over 5 years)	0.065 ug/m^3	96 ug/m^3	96.065 ug/m^3	150 ug/m^3	NAAQS
PM10	Annual	0.118 ug/m^3	35.4 ug/m^3	35.52 ug/m^3	Allowable increase of 1.0 ug/m^3	CAAQS/SCAQMD Allowable Increase
PM2.5	24-HR	1.07 ug/m^3	59.9 ug/m^3	60.97 ug/m^3	Allowable increase of 2.5 ug/m^3	CAAQS/SCAQMD Allowable Increase
PM2.5	24-HR (8^{th} highest)	0.35 ug/m^3	38.0 ug/m^3	38.35 ug/m^3	Below SIL of 1.2 ug/m^3	EPA Significant Impact Level (SIL)
PM2.5[e]	Annual	0.118 ug/m^3	12.38 ug/m^3	12.50 ug/m^3	Below SIL of 0.3 ug/m^3 Allowable increase of 1.0 ug/m^3	EPA Significant Impact Level (SIL) CAAQS/SCAQMD Allowable Increase

Notes:

a. The background values are based on the highest concentrations monitored during 2014 through 2018.

b. The NO_2 1-hour modeling was refined using the AERMOD Ambient Ratio Method Version 2 (ARM2) option.

c. The NO_2 annual modeling was refined using the AERMOD ARM option, which assumed an 80% conversion factor of NO_X to NO_2.

d. The PM10 24-hour modeled values were based on the maximum 6^{th} highest concentration over 5 years period.

Pollutant	Averaging Period	Project Impact	Background[a]	New Ambient	Limiting Standard	Type of Standard
e. The PM2.5 24-hour modeled values were based on the 8th highest concentration averaged over 5 years period with the background concentrations of 98th percentile of 24-hour data averaged over 5 years period.						
f. There are receptors surrounding the facility at lower and higher elevations than the emission sources. The model was run on non-default option (flat terrain) on all receptors at lower elevations; and a default option (complex terrain) was selected to on receptors above the emission sources base elevation. The project impact values shown are the highest values from both model runs.						

Data Source: The output of air dispersion model conducted using Providence BEEST AERMOD software (version 16216r).

The values shown in **Table 18** are the highest pollutants concentration values from operating the proposed electrical generating units at any receptors outside the SCLF boundary. These values are below the significance thresholds; therefore, the localized air quality impacts during the operation activities of the proposed Project are expected to be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than Significant Impact

Toxic Air Contaminants Health Impacts

4.2.4.6 Toxic Air Contaminant Emissions Impact Due to Earth Moving Activity During Construction Phase

TAC emissions associated with earth moving activity will consist primarily of combustion byproducts from off-road equipment and vehicle trips. Project construction is proposed to take place over a period of 18 months. TAC emissions from construction activity will not have significant health impacts relative to cancer and non-cancer chronic risks because these risks typically occur over continuous exposure for eight to 30 years.

Additionally, the impacts of earth moving activity will typically occur within the Project fence line. The nearest residential and worker receptor is more than 2,200 feet to the east of the emission sources. Therefore, the TAC emission impacts from earth moving activity are expected to be less than significant.

Mitigation Measures

No mitigation measures are required.

4.2.4.7 Toxic Air Contaminant Emission Impacts During Operational Phase

The proposed Project site is located within the boundaries of SCLF in Los Angeles County northwest of the intersection between Ventura Freeway (State Route 134) and State Route 2. The nearest residence is located approximately one-half mile to the east of the proposed Project site. The nearest non-residential sensitive receptors are Dahlia Heights Elementary School, Eagle Rock Montessori School, and California Academy for Liberal Studies Charter Middle School. These schools are located within one mile

to the south of the proposed Project site. Toxic pollutant emission concentrations from the proposed Project will disperse substantially before reaching these sensitive receptors.

This section discusses whether the TAC emissions from the proposed Project will have the potential to cause significant public health impacts in the surrounding area. A detailed Tier IV Health Risk Assessment was performed to quantify and assess potential health risk impacts. The Health Risk Assessment modeling was conducted using the air dispersion model (BEEST AERMOD) and the ARB).HARP2

The Health Risk Assessment generally consists of the following steps to estimate health impacts:

- Identify the types and amount of toxic air contaminants generated from the project with consideration of operating profiles, fuel consumption and emission control systems;
- Estimate ground level TAC concentrations at each receptor location using air dispersion modeling;
- Estimate the amount of pollutants to which people could be exposed through inhalation, ingestion, and dermal contact; and
- Characterize the potential health risks by comparing worst-case exposure to safe standards based on known health effects.

4.2.4.8 Toxic Air Contaminant emissions inventory

TAC emissions associated with the proposed Project will consist primarily of combustion byproducts produced by the electrical generating units. TACs are compounds designated by the California Office of Environmental Health Hazard Assessment (OEHHA) as pollutants that may cause a significant health hazard.

TAC emissions were calculated based on the following parameters:

- Concentrations of TAC compounds are based on the average analysis results of LFG samples taken in the years 2013 to 2015. The Sanitation Districts of Los Angeles County (LACSD) has compiled subsequent emissions and fuel analyses during 2016 through 2018. The subsequent test results indicate a decrease in many toxic pollutants on a lb./MMBtu basis relative to the 2013-2015 analyses. Because the 2016-2018 emission rates and resulting health risks are lower than what was reflected in the initial MND assessment, the more conservative MND values from 2013-2015 were used for this EIR.
- Concentrations of additional TAC compounds are based on the USEPA AP-42, *Chapter 2.4: Municipal Solid Waste Landfills, Table 2.4-1, Default Concentrations of LFG Constituents*.
- Formaldehyde emission factors are obtained from ARB California Air Toxics Emission Factors (CATEF) database (http://www.arb.ca.gov/app/emsinv/catef_form.html) for engines. For flares, the emission factor is based on SCAQMD *Supplemental Instruction for AB2588 Facilities for Reporting Their Quadrennial Air Toxic Emissions Inventory*. The AB2588 emission factors have generally been shown to be more conservative than emission factors that have been measured by LACSD.
- The concentration of organic toxics in the landfill gas will be reduced by the combustion process of the engines. Residual post-combustion organic compounds will be further controlled through

the oxidation reaction due to the use of a catalytic converter. The control efficiency of RICE is calculated based on the NMOC destruction efficiency of 86.1 percent for non-halogenated species and 93.0 percent for halogenated species within the collected landfill gas per USEPA AP-42, Chapter 2.4, Table 2.4-3. The catalyst destruction efficiency for post-combustion organic TACs is 97.7 percent, which is the default control efficiency used in the SCAQMD Rule 1401 Calculator.

- An ammonia concentration of 5 ppmv at 15 percent oxygen is based on the SCAQMD BACT determination for a similar project (LFG-fired RICE at Frank R. Bowerman landfill).

Since Polycyclic aromatic hydrocarbons (PAH) concentrations are not detected in the SCLF gas analysis and the EPAUS AP-42 study on default chemical concentrations for LFG constituents shows no detection on PAH, they are not reflected in the toxic emission inventory. The absence of PAH from the inventory is also in accordance with SCAQMD engineering analyses for similar landfills and consultation with LACSD.

As discussed in the previous sections of this report, the MND previously prepared for this Project includes emissions from LFG combustion in the flare system during construction and emissions from LFG combustion in the RICE for the operational phase of the proposed Project. For the analysis considered in this EIR, flare operations are included in the construction phase of the proposed Project as well as pre-Project operations. **Table 19** summaries the TAC emissions from the RICE during Project operations. **Table 19** also compares Project TAC emissions with TAC emissions from the flare operations that occur as baseline conditions and will continue through the construction phase of the proposed Project. Detailed emission calculations for TACs are provided in Appendix B.4.

Table 19 TAC Emission Summary – Project

TAC	Chemical Abstracts Service # (CAS#)	Engines (lb./hr.)	Flares (pre-Project and Construction) (lb./hr.)
1,1,1 – Trichloroethane	71-55-6	3.87E-06	4.34E-05
1,1,2,2 – Tetrachloroethane	79-34-5	2.57E-04	2.89E-03
1,2 – Dibromoethane	106-93-4	1.06E-05	1.19E-04
1,1 – Dichloroethane	75-34-3	5.33E-06	5.98E-05
1,1 – Dichloroethene	75-35-4	2.54E-06	2.86E-05
1,2 – Dichloroethane	107-06-2	1.39E-05	1.56E-04
1,2 – Dichloropropane	78-87-5	2.81E-05	3.15E-04
2 – Propanol	67-63-0	8.26E-03	4.67E-02
Acetonitrile	75-05-8	1.06E-04	5.99E-04
Acrylonitrile	107-31-1	9.21E-04	5.21E-03
Ammonia	7664-41-7	2.70E-01	0.00E+00
Benzene	71-43-2	3.66E-04	2.07E-03
Benzyl chloride	100-44-7	2.27E-05	2.55E-04
Carbon disulfide	75-15-0	1.21E-04	6.85E-04
Carbon tetrachloride	56-23-5	4.46E-06	5.01E-05



TAC	Chemical Abstracts Service # (CAS#)	Engines (lb./hr.)	Flares (pre-Project and Construction) (lb./hr.)
Carbonyl sulfide	463-58-1	8.07E-05	4.56E-04
Chlorobenzene	108-90-7	2.47E-05	2.77E-04
Chlorodifluoromethane	75-45-6	1.55E-04	1.74E-03
Chloroethane	75-00-3	1.11E-04	1.25E-03
Chloroform	67-66-3	3.30E-06	3.70E-05
Chloromethane	74-87-3	8.44E-05	9.47E-04
Dichlorobenzene	106-46-7	1.66E-04	1.87E-03
Dichlorodifluoromethane	75-71-8	2.62E-03	2.94E-02
Dichlorofluoromethane	75-43-4	3.72E-04	4.18E-03
Dichloromethane (methylene chloride)	74-87-3	1.40E-05	1.57E-04
Ethylbenzene	100-41-4	8.00E-04	4.52E-03
Ethylene dibromide	106-93-4	2.59E-07	2.91E-06
Formaldehyde	50-00-0	9.85E-03	3.51E-01
Fluorotrichloromethane	75-69-4	1.44E-04	1.62E-03
Hexane, n-	110-54-3	1.55E-03	8.78E-03
Hydrogen chloride	7647-01-0	1.78E+00	1.61E+00
Hydrogen sulfide	7783-06-4	3.15E-03	1.78E-02
Mercury (total)	7439-97-6	5.03E-05	4.54E-05
Methyl ethyl ketone	78-93-3	1.40E-03	7.93E-03
Methyl isobutyl ketone	108-10-1	5.14E-04	2.90E-03
Tetrachloroethylene	127-18-4	3.53E-05	3.96E-04
Toluene	108-88-3	1.37E-03	7.77E-03
Trichloroethylene	79-01-6	1.62E-05	1.81E-04
Vinyl chloride	75-01-4	8.03E-06	9.01E-05
Xylenes	1330-20-7	1.41E-03	7.95E-03

Note: Some of the toxic emissions were calculated based on AP-42 and CATEF emission factors; and these default emission factors are typically higher than actual emission factors.

4.2.4.9 Air Dispersion Modeling of Toxic Air Contaminants Emissions

The AERMOD dispersion model was used to estimate the ground level TAC concentration resulting from the proposed Project. A normalized emission rate of one gram per second was used to model each source. Similar to the air quality impact analysis, a uniform Cartesian receptor grid covering an area of 36 square kilometers (8,900 acres) with 50 meters (164 feet) spacing was used in addition to the identification of discrete fence-line receptors.

4.2.4.10 Health Risk Characterization

The result of the dispersion modeling analysis was imported to HARP2 to determine MICR and non-cancer acute and chronic health risks. As defined in SCAQMD Rule 1401, MICR is the estimated probability of a potential maximally exposed individual contracting cancer as a result of exposure to TAC. Cancer risks were estimated based on 30-year continuous exposure duration for residential and sensitive receptors and a 25-year, five day per week, and eight hours per day exposure duration for worker receptors. Based upon SCAQMD Rule 1401 and the SCAQMD CEQA significance thresholds, a cumulative MICR increase less than ten in a million is considered to be less than significant when Best Available Control Technology for Toxics (T-BACT) is used. For this Project, the proposed RICE and the existing flares are expected to reduce a minimum of 98 percent of NMOC, which represents T-BACT. Additionally, a cancer burden greater than 0.5 excess cancer cases in areas with an incremental increase greater than one in one million individuals is considered to be significant.

To assess acute and chronic non-cancer exposures, annual and one-hour TAC ground-level concentrations are compared with the reference (safe) exposure levels (REL), which is developed by OEHHA. A hazard index (HI) is the ratio of TAC exposure of one hour for acute and long-term level for chronic from the facility to the REL. The total HI is calculated separately for acute and chronic effects. A total hazard index of less than one is considered to be below significance. Detail MICR and HI for acute and chronic results are provided in Appendix B.5.

4.2.4.11 Maximum Individual Cancer Risk

Table 20 summarizes the maximum MICR values of residential and worker receptors for each operating scenario.

Table 20 Maximum MICR Values

Equipment Scenario	Max. MICR for Residential Receptor	Max. MICR for Worker Receptor	CEQA Significance Threshold	Exceed Significance Threshold?
IC Engines[a]	4.74E-08	3.32E-09	10.00E-06	NO
Flares (during construction phase)[a,b]	1.24E-07	1.86E-09	10.00E-06	NO

Note:

a) The MICR values are the highest values of any receptors outside the landfill boundary. Since the values are already below the significance threshold of 10.00E-06, no further analysis was conducted to obtain readings at the nearest residential or worker receptors.

b) The cancer risk of the flares was based on 2 years exposure duration for both residential and worker receptors to reflect impact during construction activities.

Data source: the health risk assessment model output using HARP2

4.2.4.12 Chronic and Acute Hazard Index

Table 21 summarizes the overall chronic and acute HI values for each operations scenario. The acute HI values were calculated for each receptor for the combined impact of all chemicals on target organs.

Table 21 Overall HI Values

Equipment Scenario	Chronic Hazard Index		Acute Hazard Index		CEQA Significance Threshold	Exceed Significance Threshold?
	Residential (HIC)	Worker (HIC)	Residential (HIA)	Worker (HIA)		
IC Engines[a]	9.52E-03	9.52E-03	2.16E-03	2.16E-03	1.00	NO
Flares (Construction Phase)[a]	1.22E-03	1.22E-03	1.23E-02	1.23E-02	1.00	NO

Note:

a) The HIC and HIA values are the highest values of any receptors outside the landfill boundary. Since the values are already below the significance threshold of 1.00, no further analysis was conducted to obtain readings at the nearest residential or worker receptors.

Data source: Health risk assessment conducted in 2017,model output using HARP2

As shown in **Table 20** and **21**, MICR, HIC, and HIA values of the proposed Project are below the significance thresholds.

4.2.4.13 Cancer Burden

Pursuant to OEHHA Guideline and SCAQMD policy, if MICR at a representative receptor location is greater than 1.00E-06, an additional analysis must be conducted to determine Cancer Burden (the number of people exposed to a risk of 1.00E-6). As shown in the **Table 20**, the MICR for the proposed Project is less than 1.00E-06; therefore, a Cancer Burden analysis is not required.

Based on the results of health risk assessment shown in **Table 20** and **21**, the toxic emissions from the proposed Project will not expose the nearest sensitive receptors to significance cancer risks, non-cancer acute risks, and non-cancer chronic risks. Additional mitigation measures are not required.

Threshold: Expose sensitive receptors to substantial pollutant concentrations?

Mitigation Measures

No mitigation measures are required.

4.2.4.14 Carbon Monoxide Hotspots

The proposed Project would include a similar number of vehicle trips that already exists as part of operation and maintenance of the LFG collection, conditioning, and flaring operations. Because the proposed Project would not result in an increase in operation phase vehicle trips, there would be no increase in vehicle CO emissions that would have the potential to result in a carbon monoxide. CO emissions during construction activity will be below SCAQMD localized significant impact thresholds. As a result, the potential impact relative to CO hotspots of construction and operation of the Project would not be significant

Mitigation Measures

No mitigation measures are required.

4.2.5 Cumulative Impacts

One local project has been determined to be a related project as defined by CEQA Guidelines 15130(b). The Grayson Repowering Project, which is located approximately five miles west of the SCLF. Extensive analyses of each project were conducted to assess the significance of air quality, public health and greenhouse gas impacts. Each project was independently determined to present impacts that are below significance thresholds.

The Grayson Repower Project EIR is being amended to reflect an alternative project design, including a smaller fossil fuel -based generating platform that will be augmented with distributed renewable generation and a minimum of 50 MW of battery storage capacity. The environmental impacts of the alternative design of the Grayson Repower Project are also expected to be less than significant. Given the distance between the two projects and level of impact from each project, it is reasonable to conclude that the combined impact of the two projects would also be less than significant.

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4.3 BIOLOGICAL RESOURCES

Acronyms

AMSL	Above mean sea level
BMP	Best Management Practice
BRTR	Biological Resources Technical Report
BSA	Project Biological Study Area
CCH	Consortium of California Herbaria
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
dbh	Diameter at breast height
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FE	Federally Endangered
FT	Federally Threatened
GPS	Global positioning system
MBTA	Migratory Bird Treaty Act
MCVII	A Manual of California Vegetation
NPPA	Native Plant Protection Act
O&M	Operations and maintenance
R4SBA	Riverine, Intermittent, Streambed, Temporary Flooded
RWQCB	Regional Water Quality Control Board
SA	Special Animal
SCLF	Scholl Canyon Landfill
SE	State Endangered
SEA	Significant Ecological Area
SFP	State Fully Protected
SSC	Species of Special Concern
ST	State Threatened
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WDR	Waste Discharge Requirements
WEAP	Worker Environmental Awareness Program
WL	Watch List



4.3.1 Environmental Setting

This section describes the effects to biological resources that may result from the implementation of the proposed Project. An analysis was conducted within a 235-acre Project Biological Study Area (BSA), which includes the southern and western sections of the Scholl Canyon Landfill (SCLF) and adjacent lands proposed for the development of the proposed Project components and a surrounding 300-foot buffer area. The analysis included field evaluations, which involved reconnaissance-level surveys, habitat assessments, and focused rare plant surveys, as well as a literature review to determine special-status plants, wildlife, and vegetation communities that have been documented within the vicinity of the proposed Project. A complete Biological Resources Technical Report (BRTR) can be found in Appendix C.

In addition, this section includes vegetation communities and land cover types within the proposed Project area to characterize the botanical resources and potential for wildlife to occur on the proposed Project site. Biotic habitats suitable for the occurrence of plant and wildlife species of special-status (State and Federally listed threatened and endangered species, Federal candidate species, California Native Plant Society List species, California Fully Protected species, and California Species of Special Concern) are also described.

4.3.1.1 Baseline Data Collection Methodology

Stantec biologists conducted several surveys within the BSA to evaluate potential Project impacts on biological resources. Field evaluations were conducted on October 21, 2015, November 3, 2015, January 15, 2016, and July 11, 2017, with focused rare plant surveys occurring on January 15, April 15, and September 8, 2016. The results of these surveys were presented in a BRTR prepared by Stantec, dated July 20, 2017.

An additional reconnaissance-level survey was completed on April 29, 2019, which was proceeded by preliminary literature review of resources relevant to environmental conditions within the BSA, including the 2017 BRTR. The field assessment included a non-protocol[24] survey for plants, wildlife, and other biological resources intended to detect the presence of special-status plant and wildlife species, including nesting birds. The survey was conducted on foot within the BSA where accessible based on terrain, vegetative cover, and accessibility.

4.3.1.2 Literature Review

A literature search focused on the BSA was completed prior to the field survey. The BSA is located within the United States Geological Survey (USGS) Pasadena, California, 7.5-minute topographic quadrangle. A search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) was conducted for this quadrangle to determine whether special-status plants, wildlife, and

[24] Outside of the previous seasonally timed surveys and did not involve multiple visits to the project area throughout the season "in order to properly capture the floristic diversity at a level necessary to determine if special status plants are present (CDFW 2009).

vegetation communities have been documented within the vicinity of the BSA[25]. The following eight adjacent quadrangles were also included in the database search to encompass potential occurrences of special-status species in the region surrounding the BSA:

- Sunland
- Condor Peak
- Chilao Flat
- Burbank
- Mount Wilson
- Hollywood
- Los Angeles
- El Monte

Additional data regarding the potential occurrence of special-status species and policies relating to these special-status natural resources were gathered from the following sources:

- State and federally listed endangered and threatened animals of California[26];
- Special Animals List[27];
- List of California Sensitive Natural Terrestrial Communities[28];
- Inventory of Rare and Endangered Vascular Plants of California[29]; and
- Consortium of California Herbaria (CCH, 2018).

4.3.1.3 Habitat Assessment and Biological Surveys

Site Reconnaissance and Wildlife Surveys

In order to document the environmental conditions, present within the BSA, Stantec conducted a habitat assessment and reconnaissance-level survey on April 29, 2019; Stantec previously conducted reconnaissance-level surveys of the area in October/November 2015, January/April/September 2016, and July 2017. The primary goal of the surveys was to identify and assess habitat that may be capable of supporting special-status plant or wildlife species and to determine the potential need for additional focused surveys for special-status resources. Biologists also recorded all incidental plant and wildlife observations.

Experienced field biologists walked transects through accessible portions of the BSA at an average pace of approximately 1.5 kilometer/hour while visually scanning for signs and sounds of wildlife including songs and calls. Biologists halted approximately every 50 meters to listen for wildlife or as necessary to identify, record, or enumerate any detected species. Terrestrial insects and other invertebrates were searched for on flowers and leaves, under loose bark, and under stones and logs on the ground throughout the BSA. Randomly selected areas within appropriate micro habitats (e.g., leaf litter, woody

[25] CDFW (California Department of Fish and Wildlife). 2019. RAREFIND database ed.3.1.1. Electronic database managed by the California Natural Diversity Data Base, Wildlife Data and Habitat Analysis Branch, California Department of Fish and Wildlife. Sacramento, CA.
[26] CDFW. 2018. State and Federally Listed Endangered and Threatened Animals of California. August.
[27] CDFW. 2018b. Special Animals List. November.
[28] CDFW. 2018c. California Natural Diversity Data Base List of California Sensitive Natural Terrestrial Communities. https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities
[29] CNPS (California Native Plant Society). 2019. Inventory of rare and endangered plants. California Native Plant Society. Sacramento. (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org. Accessed May 2019.

debris piles, etc.) were hand raked or visually inspected to determine the presence/absence of gastropods, reptiles, small mammals, and amphibians. Species present were identified and recorded through direct visual observation, sound, or their sign (e.g., scat, tracks, etc.) and all potential refugia sites search were returned to their original state after inspection. Species identifications conform to the most up-to-date field guides and technical literature.

The surveys were conducted during the recognized bird breeding/nesting season[30] and time of day when resident and migratory birds would be expected to be present and potentially exhibiting nesting activity, where small mammals would be active and detectable visually or by sign, and above-ground amphibian and reptile movement would generally be detectable. However, it should be noted that some wildlife species and/or individuals may have been difficult to detect due to their elusive nature, cryptic morphology, or nocturnal behavior. Surveys were conducted during daylight hours when temperatures were such that reptiles and other wildlife would be active (i.e., between 65-95° Fahrenheit).

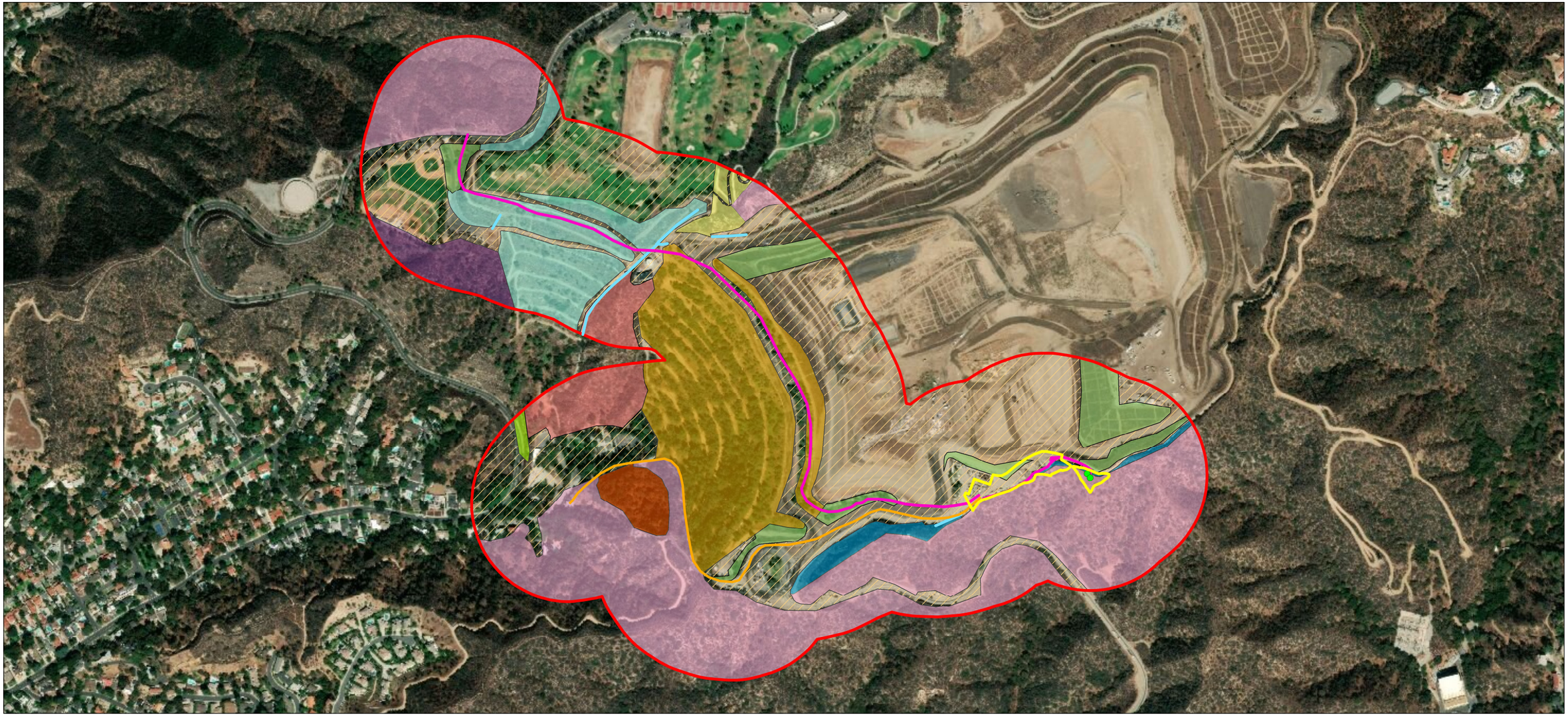
Vegetation Mapping

Vegetation mapping was conducted concurrently with the reconnaissance survey; please refer to **Figure 4.3-1** for Vegetation Communities and Land Coverage Types. Vegetation descriptions and nomenclature are based on Sawyer et al. (2009), where applicable, and have been defined at least to the alliance level. Vegetation maps were prepared by recording tentative vegetation type boundaries over recent aerial photograph base maps using the Esri® Collector for ArcGIS app on an Apple® iPad® coupled with a Bad Elf® GNSS Surveyor sub-meter external global positioning system (GPS) unit. Mapping was further refined in the office using ArcGIS (version 10.4) with aerial photograph base maps with an accuracy of one foot. Most boundaries shown on the maps are accurate within approximately three feet; however, boundaries between some vegetation types are less precise due to difficulties interpreting aerial imagery and accessing stands of vegetation.

Vegetation communities can overlap in many characteristics and over time may shift from one community type to another. Note also that all vegetation maps and descriptions are subject to variability for the following reasons:

* In some cases, vegetation boundaries result from distinct events, such as wildfire or flooding, but vegetation types usually tend to integrate on the landscape, without precise boundaries between them. Even distinct boundaries caused by fire or flood can be disguised after years of post-disturbance succession. Mapped boundaries represent best professional judgment, but usually should not be interpreted as literal delineations between sharply defined vegetation types.
* Natural vegetation tends to exist in generally recognizable types, but also may vary over time and geographic region. Written descriptions cannot reflect all local or regional variation. Many (perhaps most) stands of natural vegetation do not strictly fit into any named type. Therefore, a mapped unit is given the best name available in the classification system being used, but this name does not imply that the vegetation unambiguously matches written descriptions.
* Vegetation tends to be patchy. Small patches of one named type are often included within larger stands mapped as units of another type.

[30] February 1 – September 15



Biological Study Area

Potentially Jurisdictional Drainage Features

Vegetation Communities & Landcover Types

- Annual Brome Grassland
- Black Sage Scrub
- California Buckwheat Scrub
- California Sagebrush - California Buckwheat Scrub
- California Sagebrush Scrub
- Chamise Chaparral
- Coast Live Oak Woodland
- Fountain Grass Swards
- Laurel Sumac Scrub
- Ornamental Woodland
- Disturbed/ Developed

Project Components

- Proposed Power Plant Facility Boundary
- Proposed Water Pipeline
- Proposed Gas Pipeline
- New Water Tank

Notes

1. Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

2. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 170 340 metres

(At original document size of 11x17)
1:8,941

N

Stantec

Project Location
Glendale, Ca

Prepared by DL on 2019-05-2
TR by RB on 2019-05-17
IR Review by SR on 2019-05-22

Client/Project
185804356

City of Glendale Water and Power
Biogas Renewable Generation Project
Environmental Impact Report

Figure No.
4.3-1

Title
Vegetation Communities & Land Cover Types

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Regional Setting

The proposed Project is located within the City of Glendale in Los Angeles County, CA, just south of Flint Peak in the San Rafael Hills to the north of California State Route 134. The BSA ranges in elevation from approximately 940 feet (~286 meters) above mean sea level (AMSL) along Glenoaks Canyon Drive at the western boundary of the BSA to 1,530 feet (~466 meters) AMSL at its southeastern extent. The majority of the lands within the BSA are developed with active and reclaimed areas of the landfill occupying a significant portion of the BSA and other urban infrastructure including residential developments, roadways, and recreational open space. The slopes along the northern and southern edges of the BSA are undeveloped and support swathes of relatively undisturbed native habitat as described in further detail below.

The lands immediately surrounding the BSA primarily consist of open space within the San Rafael Hills, though residential developments about the SCLF to the west and northeast. Beyond the buffer of relatively undeveloped hillside encircling the SCLF, the region is significantly built out with urban infrastructure, thus creating a small "island" of the San Rafael Hills that includes areas of undisturbed native habitat.

Habitat in the BSA includes a variety of upland communities, native and ornamental woodlands, and developed/disturbed lands. Predominantly located within the western and southern portions of the BSA upland scrub plant communities are dominated by black sage (*Salvia mellifera*), laurel sumac (*Malosma laurina*), and chamise (*Adenostoma fasciculatum*). Along the west-facing slope of the landfill is a reclaimed area that has been planted with a variety of ornamental trees including Peruvian pepper (*Schinus molle*), southern silky oak (*Grevillea robusta*), fan palm (*Washingtonia robusta*), and eucalyptus (*Eucalyptus* spp.).

Existing Conditions

Vegetation

Generally, mapping and description of plant communities follows the classification system described in the second edition of A Manual of California Vegetation (MCVII) (Sawyer et al., 2009). As defined in MCVII, an alliance is defined as "a category of vegetation classification which describes repeating patterns of plants across a landscape. Each alliance is defined by plant species composition, and reflects the effects of local climate, soil, water, disturbance, and other environmental factors." Vegetation communities and land cover types mapped within the BSA are presented below in **Table 22**. It should be noted that due to changes in the nomenclature for some of the vegetation communities mapped within the BSA, as well as minor variations in site conditions, the names of mapped vegetation community and land cover types from the 2019 surveys do not always match those from the 2017 surveys. **Table 22** presents a cross-listing of vegetation communities and land cover types for ease of comparison (where applicable).

Species' scientific and common names correspond to those described in the second edition of the Jepson Manual (Baldwin et al., 2012). Within the BSA, nine plant communities defined by Sawyer et al. (2009) and two additional land cover types, classified as ornamental woodland and disturbed/developed land were mapped. Characteristics of these land cover types are summarized below, and their locations are depicted in Appendix C.



Table 22 Project Temporary and Permanent Site Modification

Vegetation Community / Land Cover Type		Total Acres in Survey Area	
2019 Survey	**2017 Survey**	**2019 Survey (Acres)**	**2017 Survey (Acres)**
Annual Brome Grassland	--	10.48	--
Black Sage Scrub	California Encelia-Black Sage Scrub	8.0	5.67
California Buckwheat Scrub	--	1.75	--
California Sagebrush Scrub	California Sagebrush Scrub	0.44	0.31
California Sagebrush-California Buckwheat Scrub	California Buckwheat Scrub	2.84	7.11
Chamise chaparral	Scrub Oak -Chamise Chaparral	4.82	2.40
Coast live oak woodland	Coast live oak woodland	2.95	1.3
Fountain Grass Swards	--	14.49	--
Laurel Sumac Scrub	Lauren Sumac Chamise Scrub	70.57	50
Developed / Disturbed	Cleared / Developed	87.18	86.75
Ornamental Woodland	Ornamental/ Non- Native	31.75	39.14
	Total:	**235.27**	**192.68**

Vegetation Community Descriptions

***BROMUS (DIANDRUS, HOREDEACEUS) – BRACHYPODIUM DISTACHYON* HERBACEOUS SEMI-NATURAL ALLIANCE**

Annual brome grasslands

Approximately 10.48 acres of this vegetation community occur within the BSA in several disturbed areas of the SCLF. It was dominated by early successional, non-native, grasses and forbs (90 percent to 100 percent absolute aerial coverage), including invasive species such as red brome ripgut brome (*Bromus diandrus*), (*Bromus madritensis* var. *rubens*), redstem filaree (*Erodium cicutarium*), California burclover (*Medicago polymorpha*), shortpod mustard (*Hirschfeldia incana*), cheeseweed (*Malva parviflora*), wild radish (*Raphanus sativus*), Russian thistle (*Salsola tragus*), and yellow sweetclover (*Melilotus indica*).

Due to changes in site conditions, expansion of the BSA, and differences in nomenclature, this community was not detailed during surveys prior to 2019. During the previous survey efforts, the areas comprising this vegetation community were mapped as a mixture of Cleared/Developed Land, Disturbed, Ornamenta/Non-Native, California Sagebrush Scrub, and California Buckwheat Scrub.

SALVIA MELLIFERA SHRUBLAND ALLIANCE

Black sage scrub

Approximately 8.0 acres of this vegetation community occur within the BSA on a south-facing slope to the west of the SCLF. Black sage (*Salvia mellifera*) is the dominant species with California bush sunflower (*Encelia californica*) being a near co-dominant. Other associated shrub species observed included laurel sumac (*Malosma laurina*), chamise (*Adenostoma fasciculatum*), and the understory in openings within the scrub consisted of native and non-native grasses and forbs common to the BSA.

ERIOGONUM FASCICULATUM SHRUBLAND ALLIANCE

California buckwheat scrub

Approximately 1.75 acres of this habitat type occur in a small area between the SCLF and the golf course to the north. This community appears to occupy a previously disturbed area and is likely the result of a revegetation effort. California buckwheat (*Eriogonum fasciculatum*) is the dominant species, but other species observed included bush monkeyflower (*Mimulus aurantiacus*), black sage, California fuchsia (*Epilobium canum*), sawtooth goldenbush (*Hazardia squarrosa*), and the invasive species fountain grass (*Pennisetum setaceum*) and shortpod mustard (*Hirschfeldia incana*).

ARTEMISIA CALIFORNICA SHRUBLAND ALLIANCE

California sagebrush scrub

Approximately 0.44 acre of this habitat type occurs within a small, sloped area near the western edge of the BSA, adjacent to E. Glenoaks Boulevard. This disturbed slope has been revegetated with a planting mixture including California sagebrush (*Artemisia californica*) and California buckwheat, though non-native species have since filled in the opening in the shrub layer, including Russian thistle and annual grasses.

ARTEMISIA CALIFORNICA – ERIOGONUM FASCICULATUM SHRUBLAND ALLIANCE

California sagebrush – California buckwheat scrub

Approximately 2.84 acres of this habitat type occur along thin strips of steep, north-facing slopes adjacent to Scholl Canyon Road along the southern border of the SCLF. Within the BSA, these areas are dominated by California sagebrush and California buckwheat though scrub oak (*Quercus berberidifolia*) is also present in the shrub layer along with non-native species including shortpod mustard and Russian thistle, and annual grasses and fobs in the understory.

ADENOSTOMA FASCICULATUM SHRUBLAND ALLIANCE

Chamise chaparral

Approximately 4.82 acres of this vegetation community occurs on a south facing slope immediately south of the baseball field in the northern portion of the BSA. It is dominated by chamise (*Adenostoma fasciculatum*) with other components of the shrub layer including toyon (*Heteromeles arbutifolia*), California buckwheat, bush monkeyflower, California sagebrush, and hollyleaf cherry (*Prunus ilicifolia*). Understory occupying openings within the shrub layer is comprised primarily of sparse non-native grasses and forbs.

QUERCUS AGRIFOLIA WOODLAND ALLIANCE

Coast live oak woodland

A small area (approximately 2.95 acres) occupied by this plant community occurs on the north-facing slope between the SCLF and residential area to the west, in the western portion of the BSA. Cover in this area is dominated by coast live oak trees (*Quercus agrifolia*), though toyon and laurel sumac shrubs were also observed interspersed throughout this area.

PENNISETUM SETACEUM HERBACEOUS SEMI-NATURAL ALLIANCE

Fountain grass swards

Within the BSA, approximately 14.49 acres of this community occurs on the slopes of a reclaimed area of the SCLF in the northern portion of the BSA, to the south of the golf course. The reclamation process appears to have included revegetation of the slopes with a planting mixture consisting of non-native fountain grass. This perennial species is known to become invasive in southern California and it has come to dominate this area. Native species are also present at lower cover, including California buckwheat, sawtooth goldenbush, and California fuchsia.

Due to changes in site conditions, expansion of the BSA, and differences in nomenclature, this community was not detailed during surveys prior to 2019. During the previous survey efforts, the areas comprising this vegetation community were mapped as a mixture of Cleared/Developed Land, Ornamenta/Non-Native, and California Buckwheat Scrub.

MALOSMA LAURINA SHRUBLAND ALLIANCE

Laurel sumac scrub

This is the most prominent native plant community within the BSA, approximately 70.57 acres of which occur along the hillsides bordering the southern and northern boundaries of the BSA. Laurel sumac is nearly co-dominant with chamise throughout these areas. Other associated species observed included lemonade berry (*Rhus integrifolia*), toyon, purple sage (*Salvia leucophylla*), black sage, deerweed

(*Acmispon glaber*), bush monkeyflower, bigpod ceanothus (*Ceanothus megacarpus*), California brickellbush (*Brickellia californica*), and non-native Russian thistle.

Land Cover Type Descriptions

DEVELOPED/DISTURBED LAND

This classification, which is not described in the MCVII, was used to map the portions of the BSA (approximately 87.18 acres) that are heavily disturbed and/or developed. Developed/disturbed lands include portions of the SCLF and areas occupied by urban infrastructure such as residential developments, recreational areas (baseball diamond and golf course), paved areas such as roads and parking lots, and landscaped areas associated with those developments. In general, these areas are populated with ornamental species or are unvegetated. Where vegetation does occur, it is comprised of ornamental species or ruderal pioneer plant species that readily colonize open disturbed soil and thrive as a result of anthropogenic impacts. Some of the plants present within this cover type included red-stem filaree, tocalote (*Centaurea melitensis*), wild oats (*Avena fatua*), and other non-native grasses and forbs.

ORNAMENTAL WOODLAND

This classification, which is not described in the MCVII, was used to map approximately 31.75 acres within the central portion of the BSA. This west-facing slope is a reclaimed area of the landfill that has been planted with a variety of ornamental trees including Peruvian pepper (*Schinus molle*), southern silky oak (*Grevillea robusta*), fan palm (*Washingtonia robusta*), and eucalyptus (*Eucalyptus* spp.). Other non-native species observed consisted of castor bean (*Ricinis communis*), pampas grass (*Cortaderia selloana*), fountain grass, English plantain (*Plantago lanceolata*), red-stem filaree, lamb's quarters (*Chenopodium album*), Russian thistle, and annual grasses.

Jurisdictional Wetlands/Waters

The National Wetlands Inventory (USFWS, 2018a) has mapped R4SBA (Riverine, Intermittent, Streambed, Temporary Flooded) habitat within the BSA that consist of the headwaters in the hills along its southern boundary (data is dated March 2006). While a formal delineation of jurisdictional waters has not been conducted, the south-facing canyons in this area of the BSA did support conditions indicative of this type of feature, with flows originating from within the BSA entering into the storm drain system adjacent to the Eagle Rock Reservoir and likely ending up in the Arroyo Seco. Additionally, concrete-lined drainage channels were observed throughout the landfill and reclaimed areas that contribute flows to the stormwater conveyance system through Scholl Canyon, downslope of the SCLF, and ultimately into the Verdugo Wash. Based on field observations, the concrete-lined channels and headwaters described above may qualify as United States Army Corps of Engineers (USACE)/ Regional Water Quality Control Board (RWQCB) non-wetland waters of the U.S. and/or California Department of Fish and Wildlife (CDFW) jurisdictional waters.

Common Wildlife

This section describes the common wildlife observed during the reconnaissance survey and species that are expected to occur within the BSA based on habitat characteristics/suitability and species known to occur in the region. A complete list of wildlife observed during the surveys are located in Appendix C.

Invertebrates and Gastropods

A focused insect survey was not performed within the BSA; however, a variety of common insects are known to occur in the area. Habitat conditions in the BSA provide a suite of microhabitat conditions for a wide variety of terrestrial insects and other invertebrates. As in all ecological systems, invertebrates in the BSA play a crucial role in a number of biological processes. They serve as the primary or secondary food source for a variety of bird, reptile, and mammal predators; they provide important pollination vectors for numerous plant species; they act as efficient components in controlling pest populations; and they support the naturally occurring maintenance of an area by consuming detritus and contributing to necessary soil nutrients. The reconnaissance survey of the BSA detected a wide variety of common and non-native invertebrates. Some of the orders identified in the BSAs included *Hemiptera* (true bugs), *Coleoptera* (beetles), *Diptera* (flies), *Lepidoptera* (moths and butterflies), *Hymenoptera* (wasps, bees and ants), and *Orthoptera* (grasshoppers).

Fish

Based on the historic land uses, topography within the BSA, and a lack of suitable aquatic habitat fish are not expected to occur nor were any observed during the 2019 surveys.

Amphibians

Amphibians often require a source of standing or flowing water to complete their life cycle; however, some terrestrial species can survive in drier areas by remaining in moist environments found beneath leaf litter and fallen logs, or by burrowing into the soil. Amphibian species were not observed during the reconnaissance surveys within the BSA. Their potential to occur within much of the BSA is greatly reduced because of the continual disturbance associated with the land use. However, they may inhabit other less disturbed areas within the BSA, such as the slopes surrounding SCLF. Species not observed in the BSA but known to occur in the region include the Baja California treefrog (*Pseudacris hypochondriaca*), western toad (*Anaxyrus boreas*), and the non-native bullfrog (*Lithobates catesbeiana*). These species all require aquatic habitat for all or part of their life cycle, which is only present during and immediately after substantial rain events, and therefore are not likely to occur within the BSA outside of the rainy season, generally from November through March. These species are highly cryptic and often difficult to detect. Downed logs, bark, and other woody material in various stages of decay (often referred to as coarse woody debris), present in a limited section of the BSA, could provide shelter and feeding sites for a variety of wildlife, including amphibians and reptiles.[31] [32]

[31] Maser, C. and J.M. Trappe, tech eds. 1984. The seen and unseen world of the fallen tree. Gen. Tech. Rep. PNW-164. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 56 pp.
[32] Aubry, K. B., L. L. C. Jones, and P. A. Hall. 1988. Use of woody debris by plethodontid salamanders in Douglas-fir in Washington. Pages 32-37 in R. C. Szabo, K. E. Severson, and D. R. Patton, technical coordinators. Management of amphibians, reptiles and

Reptiles

The number and type of reptile species that may occur at a given site is related to a number of biotic and abiotic features. These include the diversity of plant communities, substrate, soil type, and presence of refugia such as rock piles, boulders, and native debris. Weather conditions were favorable during the survey for reptile activity.

The only reptiles observed during the site reconnaissance were a single western fence lizard (*Sceloporus occidentalis*) and western rattlesnake (*Crotalus viridis*). Although not observed, several other common reptiles likely occur in the BSA. Many reptile species, even if present, are difficult to detect because they are cryptic and their life history characteristics (e.g., foraging, thermoregulatory behavior, fossorial nature, camouflage etc.) limit their ability to be observed during most surveys. Further, many species are only active within relatively narrow thermal limits, avoiding both cold and hot conditions, and most take refuge in microhabitats that are not directly visible to the casual observer, such as rodent burrows, in crevices, under rocks and boards, and in dense vegetation where they are protected from unsuitable environmental conditions and predators.[33]. In some cases, they are only observed when flushed from their refugia. Although other reptiles were not detected, suitable habitat conditions for a number of common reptiles were observed within the BSA at the time of the survey. Other species that may occur in limited areas within the BSA based on the presence of suitable habitat include western skink (*Plestiodon skiltonianus*), southern alligator lizard (*Elgaria multicarinata*), and San Diego gopher snake (*Pituophis catenifer annectens*).

Birds

Birds were identified by sight and sound and were observed throughout the BSA. Some of these included mourning dove (*Zenaida macroura*), California towhee (*Melozone crissalis*), house finch (*Haemorhous mexicanus*), Allen's hummingbird (*Selasphoris sasin*), western kingbird (*Tyrannus verticalis*), northern mockingbird (*Mimus polyglottos*), western scrub jay (*Aphelocoma californica*), and common raven (*Corvus corax*). All avian species identified in the BSA during the biological survey are listed in the BRTR (Appendix C) It is possible that many other birds use the BSA either as wintering habitat, seasonal breeding, or as occasional migrants. Species known to occur commonly in the vicinity of the BSA but not observed during the April 2019 survey include California quail (*Callipepla californica*), Anna's hummingbird (*Calypte anna*), American crow (*Corvus branchyrhynchos*), cedar waxwing (*Bombycilla cedrorum*), bushtit (*Psaltriparus minimus*), lesser goldfinch (*Spinus psaltria*), and white-throated swift (*Aeronautes saxitalis*).

Mammals

Generally, the distribution of mammals on a given site is associated with the presence of factors such as access to perennial water, topographical and structural components (e.g., rock piles, vegetation) that provide cover and support prey base, and the presence of suitable soils for fossorial mammals (e.g.,

small mammals in North America. General technical report RM-166. U.S. Forest Service, Rocky Mountain Research Station, Fort Collins, Colorado.

[33] USACE and CDFW. 2010. Newhall Ranch Resource Management and Development Plan and Spineflower Conservation Plan Joint Environmental Impact Statement and Environmental Impact Report. SCH No. 2000011025.

sandy areas). No mammal species were observed during the biological survey within the BSA. Though not observed, a number of common mammals habituated to urban environments may occur within the BSA, including California ground squirrel (*Otospermophilus beecheyi*), Audubon's cottontail (*Sylvilagus audubonii*), Virginia opossum (*Didelphis virginiana*), and raccoon (*Procyon lotor*).

Although bats were not detected in the BSA, they likely forage and roost in the riparian corridors in the region where insect abundance is high.[34] Because this type of foraging habitat does not occur in the BSA, it is unlikely that bats permanently inhabit or forage in significant numbers within the BSA.

4.3.1.4 Special Status Biological Resources

The information gathered from the literature review and field surveys was used to generate a list of special-status natural communities and special-status plant and animal taxa that either occur or may have the potential to occur within the proposed Project area and/or adjacent habitats. For the purposes of this report, special-status taxa are defined as plants or animals that:

- Have been designated as either rare, threatened, or endangered by CDFW or the United States Fish and Wildlife Service (USFWS), and are protected under either the California or Federal Endangered Species Acts (ESA);
- Are candidate species being considered or proposed for listing under these same acts;
- Are recognized as Species of Special Concern by the CDFW;
- Are ranked as CRPR 1, 2, 3 or 4 plant species;
- Are fully protected by the CDFW Code, Sections 3511, 4700, 5050, or 5515; or
- Are of expressed concern to resource/regulatory agencies, or local jurisdictions.

Special Status Natural Communities

Special-status natural communities are defined by CDFW (2009) as, "...communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects." All vegetation within the state is ranked with an "S" rank; however, only those that are of special concern (S1-S3 rank) are generally evaluated under CEQA. No such communities occur within the BSA. The BSA does not occur within an area covered by any Natural Community Conservation Plan and/or Habitat Conservation Plan.

While coast live oak woodland occurs within the BSA, it has a S4 rank which is not generally evaluated under CEQA. The City of Glendale however has an "Indigenous Tree Ordinance" which provides protection for native California tree species, such as coast live oak and scrub oak, that are 6 or more inches in diameter at breast height (dbh) for single trunk trees and eight inches dbh for multitrunked trees. Both of these species occur within the BSA.

[34] CDFW. 2000. "Spotted Bat." California Wildlife Habitat Relationships System California Department of Fish and Game California Interagency Wildlife Task Group.

Designated Critical Habitat

Critical habitat is defined by the USFWS (2018b) as "…a term defined and used in the Endangered Species Act. It is specific geographic areas that contain features essential to the conservation of an endangered or threatened species and that may require special management and protection. Critical habitat may also include areas that are not currently occupied by the species but will be needed for its recovery."

Critical habitat within ten miles of the BSA is present for Santa Ana sucker (*Catostomus santaanae*), which occurs approximately eight miles to the north and Braunton's milk vetch, which occurs approximately ten miles to the east. Santa Ana sucker (*Catostomus santaanae*) are not expected to occur within the BSA due to lack of suitable habitat and Braunton's milk vetch has a moderate potential to occur within the BSA due to marginal habitat present but the nearest recorded occurrence 10 miles from the BSA.

Special Status Plants

Record searches of the CNDDB, the California Native Plant Society (CNPS) Online Inventory, and the Consortium of California Herbaria (CCH) were performed for special-status plant taxa. Each of the taxa identified in the record searches was assessed for their potential to occur within the BSA based on the following criteria:

- **Present**: Taxa were observed within the BSA during recent botanical surveys or population has been acknowledged by CDFW, USFWS, or local experts.
- **High**: Both a documented recent record (within ten years) exists of the taxa within the BSA or immediate vicinity (approximately five miles) and the environmental conditions (including soil type) associated with taxa presence occur within the BSA.
- **Moderate**: Both a documented recent record (within ten years) exists of the taxa within the BSA or the immediate vicinity (approximately five miles) and the environmental conditions associated with taxa presence are marginal and/or limited within the BSA or the BSA is located within the known current distribution of the taxa and the environmental conditions (including soil type) associated with taxa presence occur within the BSA.
- **Low**: A historical record (over ten years) exists of the taxa within the BSA or general vicinity (approximately ten miles) and the environmental conditions (including soil type) associated with taxa presence are marginal and/or limited within the BSA.
- **Not Likely to Occur**: The environmental conditions associated with taxa presence do not occur within the BSA.

Table 23 presents a list of special-status plants, including federally- and state listed species and CRPR 1-4 species that are known to occur in the vicinity of the BSA. No special-status plant species were observed during any of the reconnaissance-level or focused surveys.

Table 23 Known and Potential Occurrences of Special-Status Plant Taxa within the BSA

Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Acanthoscyphus parishii var. *parishii* Parish's oxytheca	4.2	Sandy or gravelly. Chaparral, lower montane coniferous forest. 1,220-2,600m.	Jun-Sep	**Low** Marginal habitat occurs within the BSA; however, the BSA is well below the species' known elevation range.
Arctostaphylos glandulosa ssp. *gabrielensis* San Gabriel manzanita	1B.2	Chaparral (rocky). 595-1,500 m.	Mar	**Low** Marginal habitat occurs within the BSA; however, the BSA is below the species' known elevation range.
Arctostaphylos parryana ssp. *tumescens* interior manzanita	4.3	Chaparral (montane), cismontane woodland. 2,100-2,310 m.	Feb-Apr	**Low** Marginal habitat occurs within the BSA; however, the BSA is well below the species' known elevation range.
Arenaria paludicola marsh sandwort	1B.1, FE, SE	Sandy, openings. Marshes and swamps (freshwater or brackish). 3-170m.	May-Aug	**Not Likely to Occur** Suitable habitat is not present within the BSA.
Asplenium vespertinum western spleenwort	4.2	Rocky. Chaparral, cismontane woodland, coastal scrub 180-1,000 m.	Feb-Jun	**Moderate** Suitable habitat occurs within the BSA.
Astragalus brauntonii Braunton's milk-vetch	1B.1, FE	Recent burns or disturbed areas, usually sandstone with carbonate layers. Chaparral, coastal scrub, valley and foothill grassland. 4-640 m.	Jan-Aug	**Moderate** Marginal habitat and disturbed areas occur within the BSA. The nearest recorded occurrence is further than 10 miles from the BSA.
Astragalus pycnostachyus var. *lanosissimus* Ventura marsh milk-vetch	1B.1, FE, SE	Coastal dunes, coastal scrub, marshes and swamps (edges, coastal salt or brackish). 1-35 m.	(Jun) Aug-Oct	**Not Likely to Occur** Suitable habitat is not present within the BSA and the BSA is well below the species' known elevation range.
Atriplex parishii Parish's brittlescale	1B.1	Alkaline. Chenopod scrub, playas, vernal pools. 25-1,900 meters	Jun-Oct	**Not Likely to Occur** Suitable habitat is not present within the BSA. The nearest recorded occurrence is approximately 6.6 miles to the west.
Atriplex serenana var. *davidsonii* Davidson's saltscale	1B.2	Alkaline. Coastal bluff scrub, coastal scrub. 10-200 meters	Apr-Oct	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest recorded occurrence is approximately 6.9 miles to the southwest of the BSA; however, this observation is from well over 20 years ago.

Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Berberis nevinii Nevin's barberry	1B.1, FE, SE	Sandy or gravelly. Chaparral, cismontane woodland, coastal scrub, riparian scrub. 70-825 meters	(Feb) Mar-Jun	**High** Suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.8 miles to the northeast of the BSA; however, this observation is from well over 20 years ago. The most recent observation is from 2010, approximately 6.0 miles to the southwest of the BSA.
Calochortus catalinae Catalina mariposa lily	4.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. 15-700 meters	(Feb) Mar-Jun	**Moderate** Suitable habitat occurs within the BSA.
Calochortus clavatus var. *gracilis* slender mariposa-lily	1B.1	Chaparral, coastal scrub, valley and foothill grassland. 320-1,000 m.	Mar-Jun (Nov)	**Moderate** Suitable habitat occurs within the BSA. The nearest recorded occurrence is from 2010, approximately 6.7 miles to the west of the BSA.
Calochortus palmeri var. *palmeri* Palmer's mariposa lily	1B.2	Mesic. Chaparral, lower montane coniferous forest, meadows and seeps. 710-2,390 m.	Apr-Jul	**Low** Suitable mesic conditions do not occur within the BSA.
Calochortus plummerae Plummer's mariposa-lily	4.2	Granitic, rocky. Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland. 100-1,700 m.	May-Jul	**High** Suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.6 miles to the south of the BSA; however, this observation is from well over 20 years ago. The most recent observation is from 2011, approximately 8.6 miles to the northwest of the BSA.
Calochortus weedii var. *intermedius* intermediate mariposa lily	1B.2	Rocky, calcareous. Chaparral, coastal scrub, valley and foothill grassland. 105-855 m.	May-Jul	**Moderate** Marginal habitat occurs within the BSA.
Calystegia felix lucky morning-glory	1B.1	Historically associated with wetland and marshy places, but possibly in drier situations as well. Possibly silty loam and alkaline. Meadows and seeps (sometimes alkaline), riparian scrub (alluvial). 30-215 m.	Mar-Sep	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is slightly higher than this species' known elevation range. The nearest and most recent recorded occurrence is approximately 5.9 miles southwest to the southwest of the BSA; however, this observation is from well over 20 years ago.

Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Camissoniopsis lewisii Lewis' evening-primrose	3	Sandy or clay. Coastal bluff scrub, cismontane woodland, coastal dune, coastal scrub, valley and foothill grassland. 0-300 m.	Mar-May (Jun)	**Moderate** Marginal habitat occurs within the BSA.
Castilleja gleasoni Mt. Gleason paintbrush	1B.2, SR	Granitic. Chaparral, lower montane coniferous forest, pinyon and juniper woodland. 665-2,170 m.	May-Jun (Sep)	**Low** Marginal habitat occurs within the BSA and the BSA is below this species' known elevation range. The nearest and most recent recorded occurrence is approximately 7.4 miles to the northeast of the BSA; however, this observation is from well over 20 years ago.
Castilleja plagiotoma Mojave paintbrush	4.3	Great Basin scrub (alluvial), Joshua tree woodland, lower montane coniferous forest, pinyon and juniper woodland. 300-2,500 m.	Apr-Jun	**Not Likely to Occur** No suitable habitat occurs within the BSA.
Centromadia parryi ssp. australis southern tarplant	1B.1	Marshes and swamps (margins), valley and foothill grassland (vernally mesic), vernal pools. 0-480 m.	May-Nov	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 0.8 miles to the southwest of the BSA; however, this observation is from well over 20 years ago. The most recent record in the region is from 1997.
Centromadia pungens ssp. *laevis* smooth tarplant	1B.1	Alkaline. Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland. 0-640 m.	Apr-Sep	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 1.7 miles to the east of the BSA; however, this observation is from well over 20 years ago.
Chorizanthe parryi var. fernandina San Fernando Valley spineflower	1B.1, FPT, SE	Coastal scrub (sandy), valley and foothill grassland. 150-1,220 m.	Apr-Jul	**Low** Marginal habitat occurs within the BSA. The nearest and most recent occurrence is approximately 6.1 miles to the northwest of the BSA; however, this observation is from well over 20 years ago.

Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Chorizanthe parryi var. *parryi* Parry's spineflower	2B.2	Sandy or rocky, openings. Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. 275-1,220 m.	Apr-Jun	**Moderate** Marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.7 miles to the north of the BSA; however, the date of this observation cannot be confirmed. The most recent occurrence for which the date is known is from 1919, approximately 3.8 miles to the northeast of the BSA.
Cladium californicum California saw-grass	2B.2	Meadows and seeps, marshes and swamps (alkaline or freshwater). 60-1,600 m.	Jun-Sep	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 9.9 miles to the east of the BSA; however, this record is from well over 20 years ago.
Clinopodium mimuloides monkey-flower savory	4.2	Streambanks, mesic. Chaparral, north coast coniferous forest. 305-1,800 m.	Jun-Oct	**Not Likely to Occur** No suitable habitat occurs within the BSA.
Convolvulus simulans small-flowered morning-glory	4.2	Clay, serpentinite seeps. Chaparral (openings), coastal scrub, valley and foothill grassland. 30-740 m.	Mar-Jul	**Not Likely to Occur** No suitable habitat occurs within the BSA.
Cuscuta obtusiflora var. *glandulosa* Peruvian dodder	1B.1	Marshes and swamps (freshwater). 15-280 m.	Jul-Oct	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 9.3 miles to the southeast of the BSA; however, the date of this observation cannot be confirmed.
Diplacus johnstonii Johnston's monkeyflower	4.3	Lower montane coniferous forest (scree, disturbed areas, rocky or gravelly, roadside). 975-2,920 m.	(Apr) May-Aug	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below the species' known elevation range.
Dodecahema leptoceras slender-horned spineflower	1B.2, FE, SE	Sandy. Chaparral, cismontane woodland, coastal scrub (alluvial fan). 200-760 m.	Apr-Jun	**Moderate** Marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.8 miles to the north of the BSA; however, this record is from well over 20 years ago. The most recent observation is from 2003, approximately 4.5 miles to the northwest of the BSA.

Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Dudleya multicaulis many-stemmed dudleya	1B.2	Often clay. Chaparral, coastal scrub, valley and foothill grassland. 15-790 m.	Apr-Jul	**Low** Marginal habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 6.3 miles to the southwest of the BSA; however, this record is from well over 20 years ago.
Frasera neglecta pine green-gentian	4.3	Lower montane coniferous forest, pinyon and juniper woodland, upper montane coniferous forest. 1,400-2,500 m.	May-Jul	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below the species' known elevation range.
Galium angustifolium ssp. *gabrielense* San Antonio Canyon bedstraw	4.3	Granitic, sandy or rocky. Chaparral, lower montane coniferous forest. 1,200-2,650 m.	Apr-Aug	**Low** Marginal habitat occurs within the BSA; however, the BSA is well below the species' known elevation range.
Galium grande San Gabriel bedstraw	1B.2	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest. 425-1,500 m.	Jan-Jul	**Moderate** Marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 7.8 miles to the northeast of the BSA; however, this record is from well over 20 years ago. The most recent record is from 2003, approximately 9.8 miles to the northeast of the BSA.
Galium jepsonii Jepson's bedstraw	4.3	Granitic, rocky or gravelly. Lower montane coniferous forest, upper montane coniferous forest. 1,540-2,500 m.	Jul-Aug	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below the species' known elevation range.
Galium johnstonii Johnston's bedstraw	4.3	Chaparral, lower montane coniferous forest, pinyon and juniper woodland, riparian woodland. 1,220-2,300 m.	Jun-Jul	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below the species' known elevation range.
Helianthus nuttallii ssp. *parishii* Los Angeles sunflower	1A	Marshes and swamps (coastal salt and freshwater). 10-1,525 m.	Aug-Oct	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 3.6 miles to the southeast; however, this observation is from well over 20 years ago.

Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Heuchera caespitosa urn-flowered alumroot	4.3	Rocky. Cismontane woodland, lower montane coniferous forest, riparian forest (montane), upper montane coniferous forest. 1,155-2,650 m.	May-Aug	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below the species' known elevation range.
Hordeum intercedens vernal barley	3.2	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), vernal pools. 5-1,000 m.	Mar-Jun	**Not Likely to Occur** No suitable habitat occurs within the BSA.
Horkelia cuneata var. *puberula* mesa horkelia	1B.1	Sandy or gravelly. Chaparral (maritime), cismontane woodland, coastal scrub. 70-810 m.	Feb-Jul (Sep)	**Low** Marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.5 miles to the west; however, this record is well over 20 years old. The most recent record is from 1967, approximately 4.7 miles to the northeast of the BSA.
Hulsea vestita ssp. *gabrielensis* San Gabriel Mountains sunflower	4.3	Rocky. Lower montane coniferous forest, upper montane coniferous forest. 1,500-2,500 m.	May-Jul	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below the species' known elevation range.
Imperata brevifolia California satintail	2B.1	Mesic. Chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps (often alkali), riparian scrub. 0-1,215 m.	Sep-May	**Not Likely to Occur** No suitable habitat occurs within the BSA.
Juglans californica Southern California black walnut	4.2	Alluvial. Chaparral, cismontane woodland, coastal scrub, riparian woodland. 50-900 m.	Mar-Aug	**Low** Marginal habitat occurs within the BSA; however, this tree was not observed during multiple surveys conducted over several years throughout the BSA.
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	1B.1	Marshes and swamps (coastal salt), playas, vernal pools.1-1,220 m.	Feb-Jun	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 1.7 miles to the east; however, this observation is from well over 20 years ago.
Lepechinia fragrans fragrant pitcher sage	4.2	Chaparral. 20-1,310 m.	Mar-Oct	**Moderate** Marginal habitat occurs within the BSA.

Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	4.3	Chaparral, coastal scrub. 1-885 m.	Jan-Jul	**Moderate** Marginal habitat occurs within the BSA. The nearest and most recent occurrence is approximately 4.8 miles to the northeast of the BSA; however, this record is from over 20 years ago.
Lilium humboldtii ssp. *ocellatum* ocellated Humboldt lily	4.2	Openings. Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland. 30-1,800 m.	Mar-Jul (Aug)	**Moderate** Marginal habitat occurs within the BSA.
Linanthus concinnus San Gabriel linanthus	1B.2	Rocky, openings. Chaparral, lower montane coniferous forest, upper montane coniferous forest. 1,520-2,800 m.	Apr-Jul	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below the species' known elevation range. The nearest and most recent recorded occurrence is approximately 7.4 miles to the northeast of the BSA from 2003.
Linanthus orcuttii Orcutt's linanthus	1B.3	Openings. Chaparral, lower montane coniferous forest, pinyon and juniper woodland. 915-2,145 m.	May-Jun	**Low** Marginal habitat occurs within the BSA; however, the BSA is well below the species' known elevation range.
Lupinus peirsonii Peirson's lupine	1B.3	Gravelly or rocky. Joshua tree woodland, lower montane coniferous forest, pinyon and juniper woodland, upper montane coniferous forest. 1,000-2,500 m.	Apr-Jun	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below the species' known elevation range.
Malacothamnus davidsonii Davidson's bush-mallow	1B.2	Chaparral. Cismontane woodland, coastal scrub, riparian woodland. 185-1,140 m.	Jun-Jan	**Moderate** Marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 6.9 miles to the northwest of the BSA; however, this record is from well over 20 years ago. The most recent record is from 2018, approximately 8.4 miles to the northeast of the BSA.
Monardella australis ssp. *cinereal* gray monardella	4.3	Lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest. 1,800-3,050 m.	Jul-Aug	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below the species' known elevation range.

Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Muhlenbergia californica California muhly	4.3	Mesic, seeps and streambanks. Chaparral, coastal scrub, lower montane coniferous forest, meadows and seeps. 100-2,000 m.	Jun-Sep	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 6.3 miles to the northeast; however, this record is from well over 20 years ago.
Nasturtium gambelii Gambel's water cress	1B.1, FE, ST	Marshes and swamps (freshwater or brackish). 5-330 m.	Apr-Oct	**Not Likely to Occur** No suitable habitat occurs within the BSA.
Navarretia prostrata prostrate vernal pool navarretia	1B.1	Mesic. Coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), vernal pools. 3-1,210 m.	Apr-Jul	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 6.6 miles to the southwest; however, this record is from well over 20 years ago.
Opuntia basilaris var. *brachyclada* short-joint beavertail	1B.2	Chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland. 425-1,800 m.	Apr-Jun (Aug)	**Moderate** Marginal habitat occurs within the BSA.
Orobanche valida ssp. *valida* Rock Creek broomrape	1B.2	Granitic. Chaparral, pinyon and juniper woodland. 1,250-2,000 m.	May-Sep	**Low** Marginal habitat occurs within the BSA; however, the BSA is well below the species' known elevation range.
Phacelia hubbyi Hubby's phacelia	4.2	Gravelly, rocky, talus. Chaparral, coastal scrub, valley and foothill grassland. 0-1,000 m.	Apr-Jul	**Moderate** Marginal habitat occurs within the BSA.
Phacelia mohavensis Mojave phacelia	4.3	Sandy or gravelly. Cismontane woodland, lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland. 1,400-2,500 m.	Apr-Aug	**Low** Marginal habitat occurs within the BSA; however, the BSA is well below the species' known elevation range.
Phacelia stellaris Brand's star phacelia	1B.1	Coastal dunes. Coastal scrub. 1-400 m.	Mar-Jun	**Not Likely to Occur** No suitable habitat occurs within the BSA.
Pickeringia montana var. *tomentosa* woolly chaparral-pea	4.3	Gabbroic, granitic, clay. Chaparral. 0-1,700 m.	May-Aug	**Low** Marginal habitat occurs within the BSA, though suitable substrates are not present.

Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Pseudognaphalium leucocephalum white rabbit-tobacco	2B.2	Sandy, gravelly. Chaparral, cismontane woodland, coastal scrub, riparian woodland. 0-2,100 m.	(Jul) Aug-Nov (Dec)	**Low** Marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.7 miles to the east of the BSA; however, this record is well over 20 years old. The most recent record is from 1932, approximately 6.9 miles to the northeast of the BSA.
Quercus dumosa Nuttall's scrub oak	1B.1	Sandy, clay loam, closed-cone coniferous forest, chaparral, coastal scrub. 15-400 m.	Feb-Apr (May-Aug)	**Moderate** Marginal habitat occurs within the BSA. The nearest and most recent occurrence is approximately 6.0 miles to the southwest of the BSA; however, this record is well over 20 years old.
Quercus durata var. *gabrielensis* San Gabriel oak	4.2	Chaparral, cismontane woodland. 450-1,000 m.	Apr-May	**Low** Marginal habitat occurs within the BSA; however, this tree was not observed during multiple surveys conducted over several years throughout the BSA.
Quercus engelmannii Engelmann oak	4.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. 50-1,300 m.	Mar-Jun	**Low** Marginal habitat occurs within the BSA; however, this tree was not observed during multiple surveys conducted over several years throughout the BSA.
Ribes divaricatum var. *parishii* Parish's gooseberry	1A	Riparian woodland. 65-300 m.	Feb-Apr	**Low** Limited marginal habitat occurs within the BSA. The nearest recorded occurrence is from within the BSA; however, this observation is from well over 20 years ago. The most recent record is from 1951, approximately 9.9 miles to the southeast of the BSA.
Romneya coulteri Coulter's matilija poppy	4.2	Often in burns. Chaparral, coastal scrub. 20-1,200 m.	Mar-Jul (Aug)	**Moderate** Marginal habitat occurs within the BSA.
Rupertia rigida Parish's rupertia	4.3	Chaparral, cismontane woodland, lower montane coniferous forest, meadows and seeps, pebble (pavement) plain, valley and foothill grassland. 700-2,500 m.	Jun-Aug	**Moderate** Marginal habitat occurs within the BSA.

Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Scutellaria bolanderi ssp. *austromontana* southern mountains skullcap	1B.2	Mesic. Chaparral, cismontane woodland, lower montane coniferous forest. 425-2,000 m.	Jun-Aug	**Moderate** Marginal habitat occurs within the BSA. The nearest and most recent occurrence is approximately 9.3 miles to the southeast of the BSA, though the date of this record cannot be confirmed.
Senecio astephanus San Gabriel ragwort	4.3	Rocky slopes. Coastal bluff scrub, chaparral. 400-1,500 m.	May-Jul	**Moderate** Marginal habitat occurs within the BSA.
Sidalcea neomexicana salt spring checkerbloom	2B.2	Alkaline, mesic. Chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, playas. 15-1,530 m.	Mar-Jun	**Not Likely to Occur** No suitable mesic habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.7 miles to the north of the BSA; however, this record is from well over 20 years ago. The most recent record is from1920, approximately 6.6 miles to the southwest of the BSA.
Sidotheca caryophylloides chickweed oxytheca	4.3	Lower montane coniferous forest (sandy). 1,114-2,600 m.	Jul-Sep (Oct)	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below this species' known elevation range.
Spermolepis lateriflora western bristly scaleseed	2A	Rocky or sandy. Sonoran Desert scrub. 365-670 m.	Mar-Apr	**Not Likely to Occur** No suitable habitat occurs within the BSA.
Symphyotrichum defoliatum San Bernardino aster	1B.2	Near ditches, streams, springs. Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic). 2-2,040 m.	Jul-Nov (Dec)	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 7.6 miles to the southwest of the BSA; however, this record is from well over 20 years ago.
Symphyotrichum greatae Greata's aster	1B.3	Mesic. Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, riparian woodland. 300-2,010 m.	Jun-Oct	**Not Likely to Occur** No suitable mesic habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.6 miles to the south of the BSA; however, this record is from well over 20 years ago. The most recent record is from2014, approximately 7.7 miles to the northeast of the BSA.

Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Thelypteris puberula var. *sonorensis* Sonoran maiden fern	2B.2	Meadows and seeps (seeps and streams). 50-610 m.	Jan-Sep	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 4.3 miles to the northeast of the BSA; however, this record is from well over 20 years ago.

Source: Baldwin et al. 2012; CDFW, 2019a; CNPS, 2019.

* Species listings for which nearest/most recent data are not provided originated from the CNPS database. Metadata is not available for these records.

Status Codes

US Fish and Wildlife Service (Fed.) Designations:

FE: Federally listed, endangered
FT: Federally listed, threatened
FPT: Federally proposed, threatened

California Department of Fish and Wildlife (State) Designations:

SE: State listed, endangered.
ST: State listed, threatened.
SR: State listed, rare

California Rare Plant Rank (CRPR) designation

1A Plants presumed extinct in California.
1B Plants rare, threatened, or endangered in California and elsewhere.
2B Plants presumed extinct in California but more common elsewhere.
3 Plants about which we need more information – a review list.
4 Plants of limited distribution – a watch list.
.1 Seriously threatened in California (high degree/immediacy of threat).
.2 Fairly threatened in California (moderate degree/immediacy of threat).
.3 Not very threatened in California (low degree/immediacy of threats or no current threats known).

Special Status Wildlife

Special-status taxa include those listed as threatened or endangered under the federal or California ESAs, taxa proposed for such listing, Species of Special Concern, and other taxa that have been identified by the USFWS, CDFW, or local jurisdictions as unique or rare and which have the potential to occur within the BSA.

The CNDDB was queried for occurrences of special-status wildlife taxa within the USGS topographical quadrangles in which the BSA occurs and the eight surrounding quadrangles. No special-status taxa were observed or assumed to be present within, or immediately adjacent to the BSA, based on the results of the CNDDB query and 2019 field surveys. A total of 31 taxa known to occur in the general region were reviewed and 22 taxa were determined to have a low, moderate or high potential to occur in the BSA based on existing recorded occurrences, known geographic range, and/or the presence of suitable habitat. **Table 24** summarizes the special-status wildlife taxa known to regionally occur and their potential for occurrence in the BSA. A detailed list of all taxa present in the BSA is included in Appendix C of this

document. Each of the taxa identified in the database reviews/searches were assessed for its potential to occur within the BSA based on the following criteria:

- **Present:** Taxa (or sign thereof) were observed in the BSA or in the same watershed (aquatic taxa only) during the most recent surveys, or a population has been acknowledged by CDFW, USFWS, or local experts.
- **High:** Habitat (including soils) for the taxa occurs onsite and a known occurrence occurs within the BSA or adjacent areas (within five miles of the BSA) within the past 20 years; however, these taxa were not detected during the most recent surveys.
- **Moderate:** Habitat (including soils) for the taxa occurs onsite and a known regional record occurs within the database search, but not within five miles of the BSA or within the past 20 years; or a known occurrence occurs within five miles of the BSA and within the past 20 years and marginal or limited amounts of habitat occurs onsite; or the taxa's range includes the geographic area and suitable habitat exists.
- **Low:** Limited habitat for the taxa occurs within the BSA and no known occurrences were found within the database search and the taxa's range includes the geographic area.
- **Not Likely to Occur:** The environmental conditions associated with taxa presence do not occur within the BSA.

Threatened, Endangered, or Special-Status Invertebrates

No threatened, endangered, or special-status invertebrates were detected in the BSA. While suitable food plants for one CDFW Special Animal, Crotch bumble bee (*Bombus crotchii*), occur within the BSA the most recent recorded occurrence is approximately 4.2 miles to the northeast and is more than 20 years old; this species has a low potential of occurrence within the BSA.

Threatened, Endangered, or Special-Status Fish

No threatened, endangered, or special-status fish species were detected in the BSA. Santa Ana sucker (federally threatened), arroyo chub (*Gila orcuttii* [California Species of Special Concern]), and Santa Ana speckled dace (*Rhinichtys osculus* ssp. 3 [federally threatened and a California Species of Special Concern]), while known from the region, are not expected to occur within the BSA due to the lack of suitable aquatic habitat.

Threatened, Endangered, or Special-Status Reptiles

No threatened, endangered, or special-status reptile species were detected in the BSA. Four California Species of Special Concern, while not observed, have some potential of occurrence within the BSA; southern California legless lizard (*Anniella stebbinsi*), California glossy snake (*Arizona elegans occidentalis*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), coast horned lizard (*Phrynosoma blainvillii*).

Threatened, Endangered, or Special-Status Amphibians

Surveys conducted in the BSA did not detect any threatened, endangered, or special-status amphibians. Southern mountain yellow-legged frog (*Rana mucosa*), federally and state listed as endangered and a federal watchlist species, and coast range newt (*Taricha torosa*), a California Species of Special Concern

are both known from the general region of the BSA; suitable aquatic habitat for these species is not present within the BSA.

Threatened, Endangered, or Special-Status Birds

No threatened, endangered, or special-status bird species were detected in the BSA. The majority of threatened, endangered, or special-status bird species known to occur in the general region of the BSA were determined to have a low or no potential to occur. The federally and state threatened least Bell's vireo (*Vireo bellii pusillus*), state threatened Swainson's hawk (*Buteo swainsoni*) were both determined to have a low potential of occurrence but as a transient only. While limited suitable habitat (coastal sage scrub) is present in the BSA the federally threatened and California Species of Special Concern coastal California gnatcatcher (*Polioptila californica californica*) is not expected to occur on the site; the nearest recorded occurrence is approximately eight miles to the east from over 20 years ago.

Threatened, Endangered, or Special-Status Mammals

Surveys conducted in the BSA did not detect any threatened, endangered, or special-status mammals. A suite of special-status mammals, all California Species of Special Concern or CDFW Special Animals, having the potential to occur in the BSA include (but are not limited to) pallid bat (*Antrozous pallidus*), western mastiff bat (*Eumopos perotis californicus*), San Diego desert woodrat (*Neotoma lepida intermedia*), and American badger (*Taxidea taxus*).

Table 24 Known and Potential Occurrence of Special-Status Wildlife within the BSA

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Invertebrates					
Bombus crotchii	Crotch bumble bee	**SA**	Coastal California east to the Sierra-Cascade Crest and south into Mexico. Food plant genera include *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*.	Suitable food plants occur in the BSA. The nearest and most recent recorded occurrence is approximately 4.2 miles to the northeast of the BSA; however, this observation is from well over 20 years ago.	**Low**
Amphibians					
Rana muscosa	southern mountain yellow-legged frog	**WL, FE, SE**	Federal listing refers to populations in the San Gabriel, San Jacinto and San Bernardino Mountains (Southern DPS). The Northern DPS was determined to warrant listing as endangered in 2014. Always encountered within a few feet of water. Tadpoles may require 2-4 yrs. to complete their aquatic development.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 2009, approximately 3. 9 miles to the northeast of the BSA.	**Not Likely to Occur**

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Taricha torosa	Coast Range newt	**SSC**	Coastal drainages from Mendocino County to San Diego County. Lives in terrestrial habitats and will migrate over 1 km to breed in ponds, reservoirs & slow-moving streams.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 2003, approximately 3.9 miles to the northeast of the BSA.	**Not Likely to Occur**
Fish					
Catostomus santaanae	Santa Ana sucker	**FT**	Endemic to Los Angeles Basin south coastal streams. Habitat generalists, but prefer sand-rubble-boulder bottoms, cool, clear water, and algae.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 2002, approximately 8.4 miles to the north of the BSA.	**Not Likely to Occur**
Gila orcuttii	arroyo chub	**SSC**	Native to streams from Malibu Creek to San Luis Rey River basin. Introduced into streams in Santa Clara, Ventura, Santa Ynez, Mojave, and San Diego River basins. Slow water stream sections with mud or sand bottoms. Feeds heavily on aquatic vegetation and associated invertebrates.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 2015, approximately 8.4 miles to the north of the BSA.	**Not Likely to Occur**
Rhinichthys osculus ssp. 3	Santa Ana speckled dace	**SSC, FT**	Headwaters of the Santa Ana and San Gabriel Rivers. May be extirpated from the Los Angeles River system. Requires permanent flowing streams with summer water temps of 17-20° C. Usually inhabits shallow cobble and gravel riffles.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 2015, approximately 8.4 miles to the north of the BSA.	**Not Likely to Occur**
Reptiles					
Anniella stebbinsi	southern California legless lizard	**SSC**	Generally south of the transverse range, extending to northwestern Baja California. Occurs in sandy or loose loamy soils under sparse vegetation. Disjunct populations in the Tehachapi and Piute Mountains in Kern County. Variety of habitats; generally, in moist, loose soil. They prefer soils with a high moisture content.	Suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 0.4 mile to the north of the BSA; however, this observation is over 20 years ago. The most recent record is from 2018, approximately 6.0 miles to the northwest.	**High**

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Arizona elegans occidentalis	California glossy snake	**SSC**	Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular Ranges, south to Baja California. Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils.	Suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 4.5 miles to the northwest of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**
Aspidoscelis tigris stejnegeri	coastal whiptail	**SSC**	Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland & riparian areas. Ground may be firm soil, sandy, or rocky.	Marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 8.7 miles to the northeast of the BSA; however, this observation is was over 20 years ago. The most recent record is from 2015, approximately 9.9 miles to the northwest of the BSA.	**Moderate**
Emys marmorata	western pond turtle	**SSC**	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 1987, approximately 5.0 miles to the northeast of the BSA.	**Not Likely to Occur**
Phrynosoma blainvillii	coast horned lizard	**SSC**	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.4 miles to the northwest of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Moderate**
Birds					
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	**WL**	Resident in southern California coastal sage scrub and sparse mixed chaparral. Frequents relatively steep, often rocky hillsides with grass and forb patches.	Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 2014, approximately 8.5 miles to the southwest of the BSA.	**Moderate**

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Athene cunicularia	burrowing owl	**SSC**	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.7 miles to the east of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**
Buteo swainsoni	Swainson's hawk	**ST**	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, & agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 1880, approximately 5.5 miles to the southeast of the BSA.	**Low (as a transient)**
Coturnicops noveboracensis	yellow rail	**SSC**	Summer resident in eastern Sierra Nevada in Mono County. Freshwater marshlands.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 1952, approximately 7.0 miles to the southwest of the BSA.	**Not Likely to Occur**
Empidonax traillii extimus	southwestern willow flycatcher	**FE, SE**	Riparian woodlands in southern California.	A small area of marginal habitat occurs within the BSA. The nearest and most recent recorded occurrence is from within the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**
Falco peregrinus anatum	American peregrine falcon	**SFP**	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	Marginal habitat occurs within the BSA. The nearest and most recent recorded occurrence is from within the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Polioptila californica californica	coastal California gnatcatcher	**SSC, FT**	Obligate, permanent resident of coastal sage scrub below 2,500 ft in southern California. Low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.	Limited marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 8.0 miles to the east of the BSA; however, this observation is was over 20 years ago. The most recent record is from 2005, approximately 10.0 miles to the southeast.	**Low**
Riparia riparia	bank swallow	**ST**	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 1894, approximately 0.8 mile to the south of the BSA.	**Not Likely to Occur**
Vireo bellii pusillus	least Bell's vireo	**FE, SE**	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2,000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, *Baccharis*, mesquite.	No suitable habitat occurs within the BSA. The nearest recorded occurrence is from within the BSA; however, this observation was over 20 years ago. The most recent record is from 2015, approximately 5.7 miles to the northeast of the BSA.	**Low (as a transient)**
Mammals					
Antrozous pallidus	pallid bat	**SSC**	Desert, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats form high temperatures. Very sensitive to disturbance of roosting sits.	Marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.7 miles to the east of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**
Corynorhinus townsendii	Townsend's big-eared bat	**SSC**	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Marginal habitat occurs within the BSA, though ongoing human activities in the area reduce the potential for this species to use the site. The nearest and most recent recorded occurrence is approximately 10.0 miles to the east of the BSA.	**Low**

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Eumops perotis californicus	western mastiff bat	**SSC**	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	Suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 0.70 mile to the southeast of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Moderate**
Lasionycteris noctivagans	silver-haired bat	**SA**	Primarily a coastal and montane forest dweller, feeding over streams, ponds & open brushy areas. Roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes, and rarely under rocks. Needs drinking water.	Marginal habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 3.2 miles to the northwest of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**
Lasiurus blossevillii	western red bat	**SSC**	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 10 miles to the east of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**
Lasiurus cinereus	hoary bat	**SA**	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	Suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.7 miles to the east of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**
Lasiurus xanthinus	western yellow bat	**SSC**	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, particularly palms. Forages over water and among trees.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 2.6 miles to the west of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Not Likely to Occur**

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Neotoma lepida intermedia	San Diego desert woodrat	**SSC**	Coastal scrub of southern California from San Diego County to San Luis Obispo County. Moderate to dense canopies preferred. They are particularly abundant in rock outcrops, rocky cliffs, and slopes.	Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 2006, approximately 7.3miles to the west of the BSA.	**Moderate**
Nyctinomops macrotis	big free-tailed bat	**SSC**	Low-lying arid areas in southern California. Need high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	No suitable roosting habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 6.1 miles to the northwest of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**
Onychomys torridus ramona	southern grasshopper mouse	**SSC**	Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover. Feeds almost exclusively on arthropods, especially scorpions and orthopteran insects.	Marginal habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 1.8 miles to the east of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**
Taxidea taxus	American badger	**SSC**	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Suitable habitat occurs within the BSA. The nearest and most recent occurrence is approximately 2.6 miles to the southwest of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Moderate**
Federal Rankings: FE = Federally Endangered FT = Federally Threatened			**State Rankings:** SE= State Endangered ST = State Threatened SFP = State Fully Protected SA = CDFW Special Animal WL = CDFW Watch List SSC = Species of Special Concern		

Wildlife Corridors and Special Linkages

Linkages and corridors facilitate regional animal movement and are generally centered in or around waterways, riparian corridors, flood control channels, contiguous habitat, and upland habitat. Drainages generally serve as movement corridors because wildlife can move easily through these areas, and fresh water is available. Corridors also offer wildlife unobstructed terrain for foraging and for dispersal of young individuals.

As the movements of wildlife species are more intensively studied using radio-tracking devices, there is mounting evidence that some wildlife species do not necessarily restrict their movements to some obvious landscape element, such as a riparian corridor. For example, recent radio-tracking and tagging studies of Coast Range newts, California red-legged frogs, southwestern pond turtles, and two-striped garter snakes found that long-distance dispersal involved radial or perpendicular movements away from a water source with little regard to the orientation of the assumed riparian "movement corridor" (Hunt, 1993; Rathbun et al., 1992; Bulger et al., 2002; Trenham, 2002; Ramirez, 2002, 2003a, 2003b). Likewise, carnivores do not necessarily use riparian corridors as movement corridors, frequently moving overland in a straight line between two points when traversing large distances (Newmark, 1995; Beier, 1993, 1995; Noss, et al., 1996; Noss et al., no date). In general, the following corridor functions can be utilized when evaluating impacts to wildlife movement corridors:

- Movement corridors are physical connections that allow wildlife to move between patches of suitable habitat. Simberloff et al. (1992) and Beier and Loe (1992) correctly state that, for most species, we do not know what corridor traits (length, width, adjacent land use, etc.) are required for a corridor to be useful. But, as Beier and Loe (1992) also note, the critical features of a movement corridor may not be its physical traits but rather how well a particular piece of land fulfills several functions, including allowing dispersal, plant propagation, genetic interchange, and recolonization following local extirpation.
- Dispersal corridors are relatively narrow, linear landscape features embedded in a dissimilar matrix that links two or more areas of suitable habitat that would otherwise be fragmented and isolated from one another by rugged terrain, changes in vegetation, or human-altered environments. Corridors of habitat are essential to the local and regional population dynamics of a species because they provide physical links for genetic exchange and allow animals to access alternative territories as dictated by fluctuating population densities.
- Habitat linkages are broader connections between two or more habitat areas. This term is commonly used as a synonym for a wildlife corridor (Meffe and Carroll, 1997). Habitat linkages may themselves serve as source areas for food, water, and cover, particularly for small- and medium-size animals.
- Travel routes are usually landscape features, such as ridgelines, drainages, canyons, or riparian corridors within larger natural habitat areas that are used frequently by animals to facilitate movement and provide access to water, food, cover, den sites, or other necessary resources. A travel route is generally preferred by a species because it provides the least amount of topographic resistance in moving from one area to another yet still provides adequate food, water, or cover (Meffe and Carroll, 1997).

- Wildlife crossings are small, narrow areas of limited extent that allow wildlife to bypass an obstacle or barrier. Crossings typically are manmade and include culverts, underpasses, drainage pipes, bridges, and tunnels to provide access past roads, highways, pipelines, or other physical obstacles. Wildlife crossings often represent "choke points" along a movement corridor because useable habitat is physically constricted at the crossing by human-induced changes to the surrounding areas (Meffe and Carroll, 1997).

Wildlife Movement within the BSA

The BSA is situated in the San Rafael Hills, which functions as an "island" in which patches of native habitat occur surrounded by the heavily developed City of Glendale and the greater Los Angeles area. This relatively small expanse of native habitat and isolation from wider areas of open space would significantly constrain the movement of certain types of wildlife, particularly megafauna, within the San Rafael Hills and by extension, within the BSA. The BSA is characterized primarily by open space; however much of that land is occupied by the SCLF and recreational facilities (baseball field and golf course) that generally lack the cover, presence of refugia, or other characteristics conducive the permanent use of and/or movement through a habitat by many native wildlife species.

Other barriers to terrestrial wildlife movement within the BSA include residential development, fencing, and roadways. There are localized portions of open space occupied by native habitat within the BSA such as the slopes to the north and south of the SCLF. These more open areas likely provide "live-in habitat" for a variety of common species habituated to life in urban environments such as Virginia opossum, raccoon, Audubon's cottontail, California ground squirrel, and other small rodents. Mammalian carnivores are not typically deterred by the open conditions within the landfill areas because they are less dependent on cover. Although some species may use the SCLF for movement, the majority of species have been known to avoid the area and use the more natural adjacent canyons and watersheds. It is likely that the ridgelines on and off the SCLF property would serve as the principal wildlife movement and dispersal corridors for most species found on or in the immediate vicinity of the proposed Project, and species will not need to cross through open, disturbed areas of the SCLF (Sanitation Districts of Los Angeles County and AECOM, 2014).

The Pacific Flyway, a major bird migration route, passes through California from Oregon to the north and Mexico to the south. The proposed Project does not fall within the Pacific Flyway's major or principal bird migration routes.

4.3.2 Laws, Ordinances, Regulations, and Standards

4.3.2.1 Federal

Federal Endangered Species Act

Federal ESA provisions protect federally listed threatened and endangered species and their habitats from unlawful take and ensure that federal actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Under the ESA, "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct." The USFWS regulations define harm to



mean “an act which actually kills or injures wild-life.” Such an act “may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering” (50 CFR § 17.3). Critical habitat is defined in Section 3(5)(A) of the ESA as “(i) the specific areas within the geographical area occupied by the species on which are found those physical or biological features (I) essential to the conservation of the species, and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species upon a determination by the Secretary of Commerce or the Secretary of the Interior (Secretary) that such areas are essential for the conservation of the species.” The effects analyses for designated critical habitat must consider the role of the critical habitat in both the continued survival and the eventual recovery (i.e., the conservation) of the species in question, consistent with the Ninth Circuit judicial opinion, *Gifford Pinchot Task Force v. USFWS*. Activities that may result in “take” of individuals are regulated by the USFWS. The USFWS produced an updated list of candidate species December 6, 2007 (72 FR 69034). Candidate species are not afforded any legal protection under ESA; however, candidate species typically receive special attention from Federal and State agencies during the environmental review process.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711) makes it unlawful to possess, buy, sell, purchase, barter or “take” any migratory bird listed in Title 50 of the Code of Federal Regulations (CFR) Part 10. “Take” is defined as possession or destruction of migratory birds, their nests or eggs. Disturbances that cause nest abandonment and/or loss of reproductive effort or the loss of habitats upon which these birds depend may be a violation of the MBTA. The MBTA prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary. This act encompasses whole birds, parts of birds, and bird nests and eggs.

Bald and Golden Eagle Protection Act of 1940 (16 USC 668)

The Bald Eagle Protection Act of 1940 (16 USC 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: “disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior’’ (72 FR 31132; 50 CFR 22.3).

The USFWS is the primary federal authority charged with the management of golden eagles in the United States. A permit for take of golden eagles, including take from disturbance such as loss of foraging habitat, may be required if this Project affects such resources. USFWS guidance on the applicability of current Eagle Act statutes and mitigation is currently under review. On November 10, 2009, the USFWS implemented new rules (74 FR 46835) governing the “take” of golden and bald eagles. The new rules were released under the existing Bald and Golden Eagle Act which has been the primary regulation protection unlisted eagle populations since 1940. All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by the USFWS under this act. The definition of disturb (72 FR 31132) includes interfering with normal breeding, feeding, or sheltering



behavior to the degree that it causes or is likely to cause decreased productivity or nest abandonment. If a permit is required, due to the current uncertainty on the status of golden eagle populations in western United States, it is expected permits would only be issued for safety emergencies or if conservation measures implemented in accordance with a permit would result in a reduction of ongoing take or a net take of zero.

Federally Regulated Habitats

Areas meeting the regulatory definition of "Waters of the U.S." (Jurisdictional Waters) are subject to the jurisdiction of the USACE under provisions of Section 404 of the Clean Water Act (CWA) (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as "Waters of the U.S.," tributaries of waters otherwise defined as "Waters of the U.S.," the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to "Waters of the U.S." (33 CFR, Part 328, Section 328.3). Wetlands on non-agricultural lands are identified using the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987). The BSA falls within the South Pacific Division of the USACE and is under the jurisdiction of the Los Angeles District.

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit would be effective in the absence of State water quality certification pursuant to Section 401 of the CWA. As a part of the permit process the USACE works directly with the USFWS to assess potential project impacts on biological resources.

4.3.2.2 State

California Environmental Quality Act

The California Environmental Quality Act (CEQA) establishes State policy to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures. CEQA applies to actions directly undertaken, financed, or permitted by State lead agencies. Regulations for implementation are found in the State CEQA Guidelines published by the Resources Agency. These guidelines establish an overall process for the environmental evaluation of projects.

California Endangered Species Act

Provisions of the California ESA protect State-listed Threatened and Endangered species. The CDFW regulates activities that may result in "take" of individuals ("take" means "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of "take" under the California Fish and Game Code. Additionally, the California Fish and Game Code contains lists of vertebrate species designated as "fully protected" (California Fish & Game Code §§ 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], 5515 [fish]). Such species may not be taken or possessed.



In addition to Federal and State-listed species, the CDFW also has produced a list of Species of Special Concern to serve as a "watch list." Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Species of Special Concern may receive special attention during environmental review, but they do not have statutory protection.

Birds of prey are protected in California under the State Fish and Game Code. Section 3503.5 states it is "unlawful to take, possess, or destroy any birds of prey (in the order Falconiformes or Strigiformes) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFW. Under Sections 3503 and 3503.5 of the State Fish and Game Code, activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory nongame bird as designated in the MBTA, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to Fish and Game Code Section 3800 are prohibited.

Native Plant Protection Act (Fish & Game Code 1900-1913)

California's Native Plant Protection Act (NPPA) requires all State agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that would otherwise be destroyed. The Applicant is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

Sections 3503 & 3503.5 of the Fish and Game Code

Under these sections of the Fish and Game Code, the Applicant is not allowed to conduct activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory non-game bird as designated in the MBTA, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to Fish and Game Code Section 3800.

Porter-Cologne Water Quality Control Act

RWQCBs regulate the "discharge of waste" to "waters of the State." All projects proposing to discharge waste that could affect waters of the State must file a waste discharge report with the appropriate regional board. The board responds to the report by issuing waste discharge requirements (WDR) or by waiving WDRs for that project discharge. Both terms "discharge of waste" and "waters of the State" are broadly defined such that discharges of waste include fill, any material resulting from human activity, or any other "discharge." Isolated wetlands within California, which are no longer considered "waters of the United States" as defined by Section 404 of the CWA, are addressed under the Porter-Cologne Act.

State-Regulated Habitats

The State Water Resources Control Board is the State agency (together with the RWQCBs) charged with implementing water quality certification in California. The BSA falls under the jurisdiction of the Los Angeles RWQCB.

The CDFW extends the definition of stream to include “intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS-defined), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife” (CDFW, 1994).

Activities that result in the diversion or obstruction of the natural flow of a stream; or which substantially change its bed, channel, or bank; or which utilize any materials (including vegetation) from the streambed, may require that the project applicant enter into a Streambed Alteration Agreement with the CDFW.

4.3.2.3 Local

City of Glendale General Plan – Open Space and Conservation Element

The Open Space and Conservation Element of the City of Glendale General Plan (Glendale 1993) contains policies and programs which are designed to identify and manage natural resources within the City. It provides a broad overview of existing conditions, issues, and opportunities and a comprehensive approach to the management of natural resources.

The Policies relative to natural resources that apply to the BSA are as follows:

Policy 1: Natural resources, including open spaces, biological habitats, and native plant communities should be maintained and, where necessary, restored.

Policy 4: Natural and man-made aesthetic features should be recognized and identified as important natural resources to the community that require proper management.

Policy 5: Proper management of environmental resources, especially natural resources, can assist in reducing hazards to the life and property of the City's residents and should be considered in project planning.

Policy 7: Projects proposed by public agencies, special districts and private developers should demonstrate compliance with the policies, goals and objectives of this element prior to proceeding.

The Goals and Objectives relative to natural resources that apply to the BSA are as follows:

Goal 1: Continue identification, acquisition, and protection of open space land vital to ensure enhancement of the quality of life within the City.

- **Objective 3:** Develop a fee structure for open space acquisition and management in connection with the development review process.

- **Objective 5:** During the environmental and development review processes, on- and off-site impacts of development on open space and related biological and geological systems should be evaluated. Mitigation measures should be applied to alleviate specific impacts through site planning and design modifications that will protect the integrity of valuable open spaces.

Goal 2: Protect vital or sensitive open space areas including ridgelines, canyons, streams, geologic formations, watersheds and historic, cultural, aesthetic and ecologically significant areas from the negative impacts of development and urbanization.

- **Objective 3:** Continue to apply and monitor open space protection measures as part of the environmental and development review processes.

- **Objective 5:** During the environmental and development review processes, on- and off-site impacts of development on open space and related biological and geological systems should be evaluated. Mitigation measures should be applied to alleviate specific impacts through site planning and design modifications that will protect the integrity of valuable open spaces.

Goal 4: Develop a program that sustains the quality of Glendale's natural communities.

- **Objective 2:** Prevent development that jeopardizes or diminishes the integrity and value of native plant and animal communities.

- **Objective 4:** Naturalize, through native revegetation programs, disturbed areas, and prevent the invasion of exotic plant materials.

- **Objective 5:** Encourage the development of landscape plans that incorporate native species in those areas adjoining open space land.

Goal 12: Continue to conserve water resources and provide for the protection and improvement of water quality.

- **Objective 6:** Continue to monitor, inventory land uses and coordinate with the Environmental Protection Agency (EPA) to avoid ground water pollution and improve groundwater quality with particular emphasis on industrial areas and landfills.

City of Glendale Indigenous (Protected) Tree Program

The indigenous oak, bay, and sycamore trees within the city are natural aesthetic resources which help define the character of the city. These trees are worthy of protection in order to preserve the natural environment and to protect the city's native plant life heritage for the benefit of all residents. Oak, bay, and sycamore trees are unique because of their size and beauty and their relative abundance adds distinction and character to certain neighborhoods within the community. It is pertinent to the public interest, health and welfare that these trees be protected from mutilation, indiscriminate cutting, damage, destruction or removal in order to provide for conservation purposes, for counteracting air and noise



pollution and minimizing soil erosion and related environmental damage, as well as for the preservation of the natural beauty which the oak, bay, and sycamore trees lend to the city. It is the intent of this ordinance to create favorable conditions for the preservation of indigenous trees in the community while respecting individual rights to develop, maintain and enjoy private property to the fullest possible extent consistent with the public interest, health and welfare. (Ord. 5719, § 1, 12-7-2010)

Except as provided in sections 12.44.030 and 12.44.060 of the Glendale Municipal Code, a permit shall be required of any person who proposes to cut, remove, encroach upon, or relocate a protected indigenous tree. (Ord. 5719, § 1, 12-7-2010).

4.3.2.4 Other Applicable Plans, Regulations, and Standards

California Native Plant Society Rare Plant Program

The mission of the CNPS Rare Plant Program is to develop current, accurate information on the distribution, ecology, and conservation status of California's rare and endangered plants, and to use this information to promote science-based plant conservation in California. Once a species has been identified as being of potential conservation concern, it is put through an extensive review process. Once a species has gone through the review process, information on all aspects of the species (e.g., listing status, habitat, distribution, threats, etc.) are entered into the online CNPS Inventory and given a California Rare Plant Rank (CRPR). In 2011, the CNPS officially changed the name "CNPS List" to "CRPR." The Program currently recognizes more than 1,600 plant taxa (species, subspecies and varieties) as rare or endangered in California.

Vascular plants listed as rare or endangered by the CNPS, but which might not have a designated status under State endangered species legislation, are defined by the following CRPR:

- CRPR 1A - Plants considered by the CNPS to be extinct in California
- CRPR 1B - Plants rare, threatened, or endangered in California and elsewhere
- CRPR 2 - Plants rare, threatened, or endangered in California, but more numerous elsewhere
- CRPR 3 - Plants about which we need more information – a review list
- CRPR 4 - Plants of limited distribution – a watch list

In addition to the CRPR designations above, the CNPS adds a Threat Rank as an extension added onto the CRPR and designates the level of endangerment by a 1 to 3 ranking, with 1 being the most endangered and 3 being the least endangered. These are described as follows:

- 0.1 – Seriously threatened in California (high degree/immediacy of threat)
- 0.2 – Fairly threatened in California (moderate degree/immediacy of threat)
- 0.3 – Not very threatened in California (low degree/immediacy of threats or no current threats known)

4.3.3 Methodology and Thresholds of Significance

4.3.3.1 Methodology

The analysis below examines the potential impacts to plant and wildlife resources that may occur as a result of implementation of the proposed Project. For the purpose of this assessment, project-related impacts take two forms, direct and indirect. Direct impacts are those that involve the loss, modification or disturbance of natural habitats (i.e., vegetation or plant communities), which in turn, directly affect plant and wildlife species dependent on that habitat. Direct impacts also include the destruction of individual plants or wildlife, which is typically the case in species of low mobility (i.e., plants, amphibians, reptiles, and small mammals). The collective loss of individuals in these manners may also directly affect regional population numbers of a species or result in the physical isolation of populations thereby reducing genetic diversity and, hence, population stability.

Indirect impacts are those that involve the effects of increases in ambient levels of sensory stimuli (e.g., noise, light), unnatural predators (e.g., domestic cats and other non-native animals), and competitors (e.g., exotic plants, non-native animals). Indirect impacts may be associated with the construction and/or eventual habitation/operation of a project; therefore, these impacts may be both short-term and long-term in their duration. These impacts are commonly referred to as “edge effects” and may result in changes in the behavioral patterns of wildlife and reduced wildlife diversity and abundance in habitats adjacent to project sites.

Operational impacts include both direct and potential indirect impacts to biological resources. Ongoing Operations and Maintenance (O&M) impacts would occur during routine inspection and maintenance of proposed Project components and would include such activities as routine inspection of proposed Project-related facilities and emergency repairs. Operational impacts would also include weed abatement and vegetation management activities including but not limited to mechanical removal or mowing, hand removal, or herbicide treatment. These impacts would remain an ongoing source of disturbance for many plants and wildlife species that occur.

The determination of impacts in this analysis is based on both the proposed Project development and the biological values of the habitat and/or sensitivity of plant and wildlife species to be affected.

The biological values of resources within, adjacent to, and outside the area to be affected by the proposed Project were determined by consideration of several factors, as applicable. These included the overall size of habitats to be affected, the previous land uses and disturbance history, the surrounding environment and regional context, the on-site biological diversity and abundance, the presence of special-status plant and wildlife species, the importance to regional populations of these species, and the degree to which on-site habitats are limited or restricted in distribution on a regional basis and, therefore, are considered sensitive in themselves. Therefore, the focus of this impact analysis is on sensitive plant communities/habitats, resources that play an important role in regional biological systems, and special-status species.



4.3.3.2 Thresholds of Significance

As determined in the Initial Study, the proposed Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. According to the Glendale General Plan, there is no habitat conservation plan or natural habitat community conservation plan in the City. There is, however, a Significant Ecological Area (SEA) program in the City, intended to preserve these designated sensitive areas. The Project site is not located within a SEA. As such, implementation of the proposed Project would not conflict with the SEA program or other Habitat conservation plans. There would be no impact in this regard.

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would have a significant impact related to biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or USFWS.
- Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.
- Conflict with any local polices or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

4.3.4 Project Impacts

Threshold: Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Candidate, Sensitive, or Special-Status Plants

State or federally listed and special-status plant species were not detected within proposed Project impact areas. General botanical surveys of the proposed Project site were conducted in 2015, 2016, 2017, and 2019; focused rare plant surveys were conducted in the spring and summer of 2016. Seasonal rainfall across Southern California in from 2015 – 2017 was extremely limited, which may have reduced the potential to detect sensitive plants within the proposed Project areas. Southern California experienced average to above average rainfall in 2018/2019, which provided ideal conditions for species to occur.



Although the recent droughts may have limited the detectability of some annual plants, plant expression was considered good to excellent in the majority of the proposed Project area that was surveyed.

Direct impacts to listed or special-status plants would include for example, trampling or crushing from heavy equipment, vehicles, or foot traffic, alterations to the native seed bank due to soil compaction, and modifications to existing hydrological conditions. Potential indirect impacts could include the disruption of native seed banks through soil alterations, the accumulation of fugitive dust, increased erosion and sediment transport, and the colonization of non-native, invasive plant species. Excessive dust can decrease or limit plant survivorship by decreasing photosynthetic output, reducing transpiration, and adversely affecting reproductive success. Ground-disturbing activities that would occur during the proposed Project can result in the proliferation and spread of non-native invasive plants to new areas. Because noxious weeds can permanently degrade rare plant and animal habitats, their proliferation could adversely affect listed plant species if they are present.

Operational impacts from routine maintenance and inspection would include trampling or crushing, increased erosion, exposure to fugitive dust, and the spread and colonization of noxious weeds. Listed or special-status plant species were not identified during focused surveys of the proposed Project area.

If present during construction, impacts to listed plant species would be considered significant and require mitigation.

Mitigation Measures

BIO-1: Implement a Worker Environmental Awareness Program.

Prior to any Project activities on the site (i.e., surveying, mobilization, fencing, grading, or construction), a Worker Environmental Awareness Program (WEAP) shall be prepared and implemented by a qualified biologist(s). The WEAP shall be finalized and administered prior to construction mobilization, and implemented throughout the duration of the construction activities, such as when new contractor employees or subcontractors begin working on-site.

- The WEAP shall include, at a minimum, the following items:
    - Training materials and briefings shall include but not be limited to: a discussion of the Federal and State Endangered Species Acts, Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act; the consequences of non-compliance with these acts; identification and values of plant and wildlife species and significant natural plant community habitats; hazardous substance spill prevention and containment measures; a contact person and phone number in the event wildlife needs to be relocated or dead or injured wildlife is discovered; and a review of mitigation requirements.
        - A discussion of measures to be implemented for avoidance of the sensitive resources discussed above and the identification of an onsite contact in the event of the discovery of sensitive species on the site; this shall include a discussion on microtrash.
        - Protocols to be followed when roadkill is encountered in the work area or along access roads and the identification of an onsite representative to whom the roadkill will be reported. Roadkill shall be reported to the appropriate local animal control agency within 24 hours.

  - Maps showing the known locations of special-status wildlife, populations of rare plants and sensitive vegetation communities, seasonal depressions and known waterbodies, wetland habitat, exclusion areas, and other construction limitations (e.g. limited operating periods, etc.). These features shall be included on the proposed Project plans and specifications drawings.
  - Literature and photographs or illustrations of potentially occurring special-status plant and/or wildlife species shall be provided to all Project contractors and heavy equipment operators.

- Evidence that all onsite construction and security personnel have completed the WEAP prior to the start of site mobilization. A special hardhat sticker or wallet size card shall be issued to all personnel completing the training, which shall be carried with the trained personnel at all times while on the proposed Project site. All new personnel shall receive this training and may work in the field for no more than five days without participating in the WEAP, accompanied by staff that has undergone the training. A log of all personnel who have completed the WEAP training shall be kept on-site.
- The contract specification books shall include all project conditions as they relate to biological resources and shall be kept on-site at all times (e.g., in the break room, construction foreman's vehicle, construction trailer, etc.) for the duration of the construction. This information shall be easily accessible for personnel in all active work areas.
- Develop a standalone version of the WEAP, that covers all previously discussed items above, and that can be used as a reference for maintenance personnel during Project operations.
- An environmental monitor shall be retained during construction of the proposed project and shall be directly involved with the implementation and enforcement of the WEAP. A log of all personnel who have completed the WEAP training shall be kept on-site.

BIO-2 Implement Best Management Practices

Best Management Practice (BMP) shall be implemented as standard operating procedures during all ground disturbance and construction-related activities to avoid or minimize Project impacts on biological resources. These BMPs shall include, but are not limited to, the following:

- Compliance with BMPs shall be documented and provided in a written report upon conclusion of construction activities. The report shall include a summary of the construction activities completed, a review of the sensitive plants and wildlife encountered, a list of compliance actions and any remedial actions taken to correct the actions, and the status of ongoing mitigation efforts.
- Prior to ground disturbance of any kind, the project work areas shall be clearly delineated by stakes, flags, or other clearly identifiable system.
- Vehicles and equipment shall be parked on pavement, existing roads, and previously disturbed areas to the extent practicable.
- No vehicles or equipment shall be refueled within 100 feet of an ephemeral drainage or wetland unless a bermed and lined refueling area is constructed. Spill kits shall be maintained on-site.
- All general trash, food-related trash items (e.g., wrappers, cans, bottles, food scraps, cigarettes, etc.) and other human-generated debris shall be stored in animal proof containers and/or removed from the site each day. No deliberate feeding of wildlife shall be allowed.

- All pipes and culverts removed from (that remain on-site after removal) or brought on-site as part of new construction, with a diameter of greater than 4 inches, shall be capped or taped closed. Prior to capping or taping the pipe/culvert shall be inspected for the presence of wildlife by a qualified biologist. If encountered, wildlife shall be allowed to escape unimpeded.
- No firearms shall be allowed on the project site, unless otherwise approved for security personnel.
- To prevent harassment or mortality of listed, special-status species and common wildlife, or destruction of their habitats, no domesticated animals of any kind shall be permitted in any project area.
- Use of chemicals, fuels, lubricants, or biocides shall be in compliance with all local, state and federal regulations, and shall include secondary containment. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other state and federal legislation, as well as additional project-related restrictions deemed necessary by the USFWS and CDFW.
- Any contractor or employee that inadvertently kills or injures a special-status animal, or finds one either dead, injured, or entrapped, shall immediately report the incident to the onsite representative identified in the WEAP. The representative shall contact the USFWS, CDFW, and the City of Glendale by telephone by the end of the day, or at the beginning of the next working day if the agency office is closed. In addition, formal notification shall be provided in writing within three working days of the incident or finding. Notification shall include the date, time, location and circumstances of the incident. Any threatened or endangered species found dead or injured shall be turned over immediately to CDFW or USFWS for care, analysis, or disposition.
    - Avoidance of vegetation removal or any other construction activities outside of the proposed Project boundaries. All Project impact areas must be clearly flagged prior to initiating work. In areas of temporary impacts, native vegetation shall be cut to ground level and the root system left intact to permit resprouting following work (unless within required fire clearance areas). All non-native vegetation within the temporary impact area shall be removed initially, and any regrowth eliminated throughout construction, the habitat restoration period and during the O&M phase.
    - Avoidance and minimization of construction activities resulting in impacts to streambeds and banks of any ephemeral drainage.
    - All excavation, steep-walled holes or trenches in excess of 6 inches in depth shall be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earth dirt fill or wooden planks. Trenches shall also be inspected for entrapped wildlife each morning prior to onset of construction activities and immediately prior to covering with plywood at the end of each working day. Before such holes or trenches are filled, they shall be thoroughly inspected for entrapped wildlife. Any wildlife discovered shall be allowed to escape before construction activities are allowed to resume or removed from the trench or hole by a qualified biologist holding the appropriate permits (if required).

BIO-3 Implement Biological Construction Monitoring

Prior to the commencement of ground disturbance or site mobilization activities, the City of Glendale shall retain a qualified biologist(s) to monitor Project construction. The biologist will have demonstrated expertise with special- status plants, terrestrial mammals, reptiles, and birds.



Monitoring will occur continuously during initial ground disturbance for the duration of construction. Once initial ground disturbance is complete, monitoring will occur periodically during all construction activities. The qualified biologist(s) shall be present at all times during ground-disturbing activities immediately adjacent to, or within, habitat that supports populations of listed or special- status species. Any special-status plants shall be flagged for avoidance. Any special-status terrestrial species found within a Project impact area shall be relocated by the authorized biologist to suitable habitat outside the impact area. Surveys for special-status species shall be conducted by the authorized biologist prior to the initiation of construction each day during initial ground disturbance, and weekly thereafter. If nesting birds are found during the pre-construction surveys, buffers shall be installed (as prescribed in Mitigation Measure BIO-5 Conduct Pre-construction Surveys for Nesting and Breeding Birds and Implement Avoidance Measures discussed below.

If, during construction, the biological monitor observes a dead or injured special-status wildlife species on the construction-site, a written report shall be sent to the City of Glendale, CDFW, and USFWS (as appropriate) within five calendar days. The report will include the date, time of the finding or incident (if known), and location of the carcass or injured animal and circumstances of its death or injury (if known). Injured animals will be taken immediately to the nearest appropriate veterinary or wildlife rehabilitation facility. The biological monitor shall, immediately upon finding the remains or injured animal, coordinate with the onsite construction foreman to discuss the events that caused the mortality or injury, if known, and implement measures to prevent future incidents. Details of these measures shall be included with the report. Species remains shall be collected and frozen as soon as possible, and CDFW and USFWS, as appropriate, shall be contacted regarding ultimate disposal of the remains.

BIO-4 Conduct Pre-construction Surveys

Conduct pre-construction surveys for State and federally Threatened, Endangered, Proposed, Petitioned, Candidate, and Special-status Plants and Avoid Any Located Occurrences of Listed Plants or Perform other Conservation Strategy. The City of Glendale shall conduct focused surveys for federal- and state-listed and other special-status plants. All special-status plant species (including listed threatened or endangered species, and all CRPR 1A, 1B, 2, 3, and 4 species) subject to disturbance shall be documented in a pre-construction survey report. Surveys shall be conducted during the appropriate season in all suitable habitat located within the proposed Project disturbance areas and within 100 feet of disturbance areas and access roads and be conducted by a qualified botanist. The field surveys and reporting must conform to current CDFW botanical field survey protocols (CDFW, 2009) or more recent updates, if available. The report will describe any conditions that may have prevented target species from being located or identified, even if they are present as dormant seed or below-ground rootstock (e.g., poor rainfall, recent grazing, or wildfire).

If federally or State-listed plants are detected in disturbance areas or within 100-feet of the disturbance areas, the City of Glendale would avoid these populations and notify the USFWS and CDFW as appropriate.

The City of Glendale shall avoid impacts to any State or federally listed plants to the extent feasible. If Project activities result in the loss of more than ten percent of the known individuals within a



special-status plant species (List 1.B and List 2 only) occurrence/population to be impacted, the City of Glendale shall consult with USFWS and CDFW regarding the most appropriate conservation strategy for the particular species being impacted.

Level of Significance After Mitigation

Implementation of Mitigation Measures BIO-1 (*Implement a Worker Environmental Education Program*), BIO-2 *(Implement Best Management Practices*), BIO-3 (*Implement Biological Construction Monitoring*) would minimize impacts to special-status plant species. These measures include worker education describing the sensitive biological resources that occur on the proposed Project site, implementation of BMPs to minimize and avoid impacts, and conducting biological monitoring during ground- disturbing and other construction-related activities. In addition, implementation of Mitigation Measure BIO-4 (*Conduct Pre-construction Surveys*) would protect occurrences of listed plant species and require compensation for impacts to special-status plant species. Implementation of these mitigation measures would reduce impacts to listed or special-status plants to a less than significant level.

Candidate, Sensitive, or Special-Status Wildlife

Surveys conducted within the proposed Project impact areas in 2015, 2016, 2017, and 2019, did not result in the observation of state or federally listed and special-status wildlife species. Project related impacts to state or federally listed and special-status wildlife species would be as follows:

Special-Status Invertebrates and Reptiles

Construction activities associated with the proposed Project could result in the direct loss of sensitive invertebrates and reptiles. Given the ecology of these species and cryptic nature, it is likely that some or all of the species may occur in or near the proposed Project site. Direct impacts could result from potential mechanical crushing during construction, fugitive dust, and general disturbance due to increased human activity. proposed Project implementation may also result in permanent loss of habitat from the removal of debris piles or trampling of soft friable soils required for burrowing. Indirect impacts could include compaction of soils and the introduction of exotic plant species.

Operational impacts include increased human presence, the spread of noxious weeds due to the use of new or improved access roads, and increased perch sites for avian predators. Inspection and maintenance of the underground gen-tie lines could result in trampling or crushing of small invertebrates and reptiles by vehicular or foot traffic, alterations in topography and hydrology, increased erosion and sedimentation, and the introduction of non-native, invasive plants due to increased human presence.

Special-Status Birds

Construction activities associated with the proposed Project could result in direct and indirect impacts to a variety of sensitive resident and migratory birds. Direct impacts to most listed species are not anticipated because nesting habitat for most listed birds is not present on-site.

Project activities have the potential to impact nesting birds through direct impacts such as ground-disturbing activities associated with excavation of the existing levee, construction of new heightened

levee, and increased human presence. During the breeding season, construction activities could result in the displacement of breeding birds and the abandonment of active nests. Potential indirect impacts could include the deterioration of habitat as a result of the spread of noxious weeds, increased noise levels from heavy equipment and sheet pile installation, exposure to fugitive dust, and human presence during repairs to the levees and floodwalls or routine inspection of the facilities. Weed management could also affect nesting.

During O&M of the proposed Project, impacts to nesting birds would include increased human disturbance, exposure to fugitive dust, the spread of noxious weeds, and disruption of breeding or foraging activity due to routine inspection and maintenance activities. Weed abatement through herbicide application or mechanized tools could also affect nesting.

If project construction were to occur during the avian nesting season (generally considered to be between February 15th through September 15th; although some raptors species may nest as early as January) indirect impacts to nesting birds could occur; the MBTA of 1918 (16 USC 703-711) does not allow for take of migratory birds.

The MBTA makes it unlawful to possess, buy, sell, purchase, barter or “take” any migratory bird listed in Title 50 of the CFR Part 10. “Take” is defined as possession or destruction of migratory birds, their nests or eggs. Disturbances that cause nest abandonment and/or loss of reproductive effort or the loss of habitats upon which these birds depend may be a violation of the MBTA. The MBTA prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary. This act encompasses whole birds, parts of birds, and bird nests and eggs.

Project activities that result in the degradation to habitat for or the loss of endangered, threatened, or other special-status species would be considered a significant adverse impact requiring mitigation.

Special Status Mammals

No special-status mammal species were detected within proposed Project impact areas. The proposed Project area and adjacent habitats have the potential to support a variety of special-status mammals including the American badger and the San Diego desert woodrat, both CDFW Species of Special Concern. Direct impacts to these species would include mechanical crushing by vehicles and construction equipment, trampling, and loss of habitat. Construction disturbance can also result in the flushing of small animals from refugia which increases the predation risk for small rodents. Potential indirect impacts include exposure to fugitive dust, alteration of soils, such as compaction, that could preclude burrowing, the spread of exotic weeds, and increased noise levels.

During O&M of the proposed Project, impacts to sensitive mammals would include increased human disturbance, exposure to fugitive dust, the spread of noxious weeds, and disruption of breeding or foraging activity due to routine inspection and maintenance activities. Weed abatement through herbicide application or mechanized tools could also affect mammal species.

Because the proposed Project would remove or disturb vegetation and these animals would be subject to mortality from the construction of the proposed Project, impacts to these species would be considered significant adverse effects requiring mitigation.



Mitigation Measures

BIO-1 Implement a Worker Environmental Education Program

BIO-2 Implement Best Management Practices (BMPs)

BIO-3 Implement Biological Construction Monitoring

BIO-5 Conduct Pre-construction Surveys for Nesting and Breeding Birds and Implement Avoidance Measures

Prior to construction activities (i.e., mobilization, staging, grading, or construction) the City of Glendale shall retain a qualified avian biologist to conduct pre-construction surveys for nesting birds within the recognized breeding season in all areas within 500 feet of all proposed Project components (i.e., pipelines, staging areas, and access road locations). Surveys for raptors shall be conducted for all areas from January 1 to August 15. The required survey dates may be modified based on local conditions, as determined by the qualified avian biologist, in coordination with CDFW and USFWS. Measures intended to exclude nesting birds shall not be implemented without prior approval by CDFW and USFWS.

If breeding birds with active nests are found prior to or during construction, the qualified avian biologist shall establish a 300 foot buffer (500 foot for raptors) around the nest and no activities will be allowed within the buffer(s) until the young have fledged from the nest or the nest fails.

The prescribed buffers may be adjusted by the qualified avian biologist in coordination with the USFWS and/or CDFW based on existing conditions around the nest, planned construction activities, tolerance of the species, and other pertinent factors. The qualified avian biologist shall conduct regular monitoring of the nest to determine success/failure and to ensure that Project activities are not conducted within the buffer(s) until the nesting cycle is complete or the nest fails. The avian biologist shall be responsible for documenting the results of the surveys, nest buffers implemented, and the results of ongoing monitoring and will provide a copy of the monitoring reports for impact areas to the City of Glendale.

Surveys shall be conducted to include all impact areas on the proposed Project site as well as all construction equipment. If birds are found to be nesting in facility structures or construction equipment and the nests contain eggs or young, buffers as described above shall be implemented.

If trees with nests are to be removed as part of Project construction activities, this will be done outside of the nesting season to avoid additional impacts to nesting raptors. If removal during the nesting season cannot be avoided, all trees will be inspected for active nests by the avian biologist. If nests are found within these trees and contain eggs or young, no activities within a 300-foot buffer for nesting birds and/or a 500-foot buffer for nesting raptors shall occur until the young have fledged the nest.



BIO-6 Conduct Surveys for Terrestrial Herpetofauna and Implement Monitoring, Avoidance, and Minimization Measures

Prior to ground disturbance or vegetation clearing at all Project locations, the City of Glendale shall retain a qualified biologist to conduct surveys for terrestrial herpetofauna where suitable habitat is present and directly impacted by construction vehicle access. Focused surveys shall consist of a minimum of three daytime surveys and one nighttime survey within one week of vegetation clearing. The qualified biologist will be present full time during all vegetation removal activities immediately adjacent to or within habitat that supports terrestrial herpetofauna, and part time for all remaining activities. Surveys for terrestrial herpetofauna shall be conducted by the qualified biologist prior to the initiation of each day of vegetation removal activities in suitable habitat. Terrestrial herpetofauna found within the area of disturbance or potentially affected by the proposed Project will be relocated to the nearest suitable habitat that will not be affected by the proposed Project.

Level of Significance After Mitigation

To reduce impacts to special-status wildlife, the City of Glendale would implement Mitigation Measures BIO-1 (Implement a Worker Environmental Education Program), BIO-2 (Implement Best Management Practices), BIO-3 (Implement Biological Construction Monitoring), BIO-5 (Conduct Pre-construction Surveys for Nesting and Breeding Birds and Implement Avoidance Measures), and BIO-6 (Conduct Surveys for Terrestrial Herpetofauna and Implement Monitoring, Avoidance, and Minimization Measures). These measures include worker education describing the sensitive biological resources that occur on the proposed Project site, implementation of BMPs to minimize and avoid impacts, conducting pre-construction nesting bird and herpetofauna surveys, and conducting biological monitoring during ground-disturbing and other construction-related activities. Implementation of these mitigation measures would reduce impacts to special-status wildlife to a less-than-significant level.

Threshold: Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Wildlife Service?

Riparian Habitats and Sensitive Natural Communities

Construction of the proposed Project would result in 8.01 acres of permanent and 2.06 acres of temporary disturbance to vegetation communities and land cover types including annual brome grassland, black sage scrub, California buckwheat scrub, California sagebrush scrub, California sagebrush-California buckwheat scrub, chamise chaparral, coast live oak woodland, fountain grass swards, laurel sumac scrub, developed/disturbed, and ornamental woodland. Proposed Project impacts to vegetation communities and land cover types are shown in Table 25. Just over 96%Just over 96 percent of these impacts would be to non-native communities or developed/disturbed lands. The vast majority of these impacts are directly related to fire department vegetation clearance requirements within the vicinity of the proposed Project. Permanent impacts to native vegetation would be limited to 0.22 acres of California sagebrush-California buckwheat scrub and 3.21 acres of Laurel Sumac Scrub.



Table 25 Proposed Project Impacts to Vegetation Communities and Land Cover Types

Vegetation Community / Land Cover Type		Total Acres in Survey Area		Project Impacts			
2019 Survey	2017 Survey	2019 Survey (Acres)	2017 Survey (Acres)	2019 Survey (Acres)*		2017 Survey (Acres)	
				Temp	Perm	Temp	Perm
Annual Brome Grassland	--	10.48	--	0.22	0.80	--	--
Black Sage Scrub	California Encelia-Black Sage Scrub	8.0	5.67	--	--	--	--
California Buckwheat Scrub	--	1.75	--	--	--	--	--
California Sagebrush Scrub	California Sagebrush Scrub	0.44	0.31	--	--	--	--
California Sagebrush-California Buckwheat Scrub	California Buckwheat Scrub	2.84	7.11	--	0.22	0.02	0.29
Chamise chaparral	Scrub Oak - Chamise Chaparral	4.82	2.40	--	--	--	--
Coast live oak woodland	Coast live oak woodland	2.95	1.3	0.00	--	--	--
Fountain Grass Swards	--	14.49	--	0.34	0.03	--	--
Laurel Sumac Scrub	Lauren Sumac Chamise Scrub	70.57	50	0.16	3.21	0.09	0.39
Developed / Disturbed	Cleared / Developed	87.18	86.75	0.91	3.73	1.13	1.45
Ornamental Woodland	Ornamental/ Non-Native	31.75	39.14	0.42	0.03	0.92	0.06
	Total	**235.27**	**192.68**	**2.06**	**8.01**	**2.16**	**2.19**

*These acreages include impacts related to updated Fire Department brush clearance requirements not required as part of the 2017 impact acreage calculations.

Construction of the proposed Project would remove vegetation, alter soil conditions, and potentially result in the loss of native seed banks. Construction activities could also result in the spread of noxious weeds within the proposed Project site and adjacent habitats. Vehicle travel on access roads and paved streets could result in increased fugitive dust to native vegetation in adjacent areas. Wind-blown dust can degrade soils and vegetation over a wide area (Okin et al., 2001). Dust can have deleterious physiological effects on plants and may affect their productivity and nutritional qualities (Sharifi et al., 1997). Fugitive dust can kill plants by burial and abrasion, interrupt natural processes of nutrient accumulation, and allow the loss of soil resources. The destruction of plants and soil crusts by windblown dust exacerbates the erodibility of soil and accelerates the loss of nutrients (Okin et al., 2001).

Operational impacts would occur during routine inspection and maintenance of the proposed Project components. These impacts could include trampling or crushing of native vegetation by foot traffic, alterations in topography and hydrology, increased erosion and sedimentation, and the introduction of non-native, invasive plants due to increased human presence on foot or equipment.

While not considered a sensitive community for the purposes of CEQA, coast live oak and scrub oak are protected under the City of Glendale's "Indigenous Tree Ordinance." Depending on the dbh of the impacted trees a permit and replacement trees may be required. The City of Glendale would be required to seek a permit for impacts to protected trees to comply with the "Indigenous Tree Ordinance."

Because of their suitability to support several special-status species, the loss of and impacts to native habitat associated with the proposed Project would be considered a significant adverse impact for which mitigation would be required (Class II).

Mitigation Measures

BIO-1 Implement a Worker Environmental Education Program

BIO-2 Implement Best Management Practices (BMPs)

BIO-3 Implement Biological Construction Monitoring

BIO-7 Vegetation Removal and Replacement

Construction activities shall be done in such a manner as to minimize the removal of native vegetation. If impacts to native vegetation removal cannot be avoided, all temporarily impacted plant communities shall be restored at a mitigation ratio of 1:1; permanent impacts to native communities shall be restored/mitigated at a 2:1 ratio. Sensitive communities, including jurisdictional wetlands, shall be restored/replaced at a mitigation ration of 2:1 for all temporary and 3:1 for all permanent impacts. The compensation for the loss of habitats may be achieved either by a) on-site habitat creation or enhancement of impacted communities with similar species compositions to those present prior to construction, b) off-site creation or enhancement of California sycamore woodlands and southern riparian scrub communities, or c) participation in an established mitigation bank program.

Prior to the removal of native vegetation, if on or off-site mitigation is required, a Habitat Mitigation and Monitoring Plan shall be prepared that will guide all restoration and monitoring activities. This plan shall include, at a minimum, the following:

- Proposed species list for creation/enhancement;
- Planting/seeding methodology;
- Irrigation plan;
- Weeding schedule;
- Success criteria;
- Monitoring methodology and schedule; and
- Reporting requirements.



Level of Significance After Mitigation

Implementation of Mitigation Measures BIO-1 (*Implement a Worker Environmental Education Program*), BIO-2 (*Implement Best Management Practices*), BIO-3 (*Implement Biological Construction Monitoring*), and BIO-7 (*Vegetation Removal and Replacement*) would minimize impacts to sensitive or protected communities. These measures include worker education describing the sensitive biological resources that occur on the proposed Project site, implementation of BMPs to minimize and avoid impacts, and conducting biological monitoring during ground- disturbing and other construction-related activities. Implementation of these mitigation measures would reduce impacts to listed or special-status plants to a less than significant level.

Threshold: Would the Project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

A formal delineation of jurisdictional wetlands, other "waters of the U.S.," waters of the State, and CDFW jurisdictional waters was not conducted; however, during reconnaissance level surveys potentially jurisdictional features were mapped and are presented on Figure 3 in Appendix C of this document. The project has been designed such that all gas and water pipelines would be installed overhead or below all potentially jurisdictional features.

Should they occur, direct impacts to federal non-wetland Waters of the U.S. and CDFW jurisdictional waters could include the removal of native vegetation, the discharge of fill, degradation of water quality, and increased erosion and sediment transport. Potential indirect impacts could include alterations to the existing topographical and hydrological conditions and the introduction of non-native, invasive plant species. Operational impacts to wetland habitats would be similar to direct and potential indirect impacts.

As required by law, the City would comply with the regulations regarding conducting Project activities in water courses and habitats under the jurisdiction of the State and federal government. Therefore, the City would obtain required permits pursuant to Section 401 and 404 of the CWA, the State Porter- Cologne Act, and Fish and Game Code Section 1605. Due to the importance of jurisdictional habitats and ephemeral/perennial drainages and their suitability to support special-status species, the loss of these habitats associated with the proposed Project would be considered a significant adverse impact requiring mitigation.

Mitigation Measures

BIO-1 Implement a Worker Environmental Education Program

BIO-2 Implement Best Management Practices (BMPs)

BIO-3 Implement Biological Construction Monitoring

Level of Significance After Mitigation

Implementation of Mitigation Measures BIO-1 (*Implement a Worker Environmental Education Program*), BIO-2 (*Implement Best Management Practices*), and BIO-3 (*Implement Biological Construction Monitoring*) would minimize impacts to potentially jurisdictional features. These measures include worker education describing the sensitive biological resources that occur on the proposed Project site, implementation of BMPs to minimize and avoid impacts, and conducting biological monitoring during ground- disturbing and other construction-related activities. Implementation of these mitigation measures would reduce impacts to potentially jurisdictional features to a less than significant level.

Threshold: Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Wildlife Movement and Migratory Corridors

Studies suggest that habitat fragmentation and isolation of natural areas ultimately results in the loss of native species within those communities (Soulé et al., 1988). The ability for wildlife to move freely among populations is important to long-term genetic variation and demography. Fragmentation and isolation of natural habitat may cause loss of native species diversity in fragmented habitats. In the short term, wildlife movement may also be important to an animal's ability to occupy home ranges, if a species range extends across a potential movement barrier. These considerations are especially important for rare, threatened, or endangered species, and wide-ranging species such as large mammals, which exist in low population densities.

Direct impacts resulting from the construction of the proposed Project include the placement of physical structures such as pipelines. Ground- disturbing activities would be expected to interfere with terrestrial wildlife movement during construction of the proposed Project. The Project could also affect wildlife in adjacent habitats by interfering with movement patterns or causing animals to temporarily avoid areas adjacent to the construction zone. More mobile species such as birds and larger mammals would likely disperse into adjacent habitat areas during ground disturbing activities.

Potential indirect impacts include human disturbance, colonization or expansion of invasive weeds, and vehicle traffic. Operational impacts would be the same as described for direct and potential indirect impacts.

Construction activities may temporarily limit terrestrial wildlife movement within the proposed Project area; however, the broad geographic range and habitat that occurs in the region would remain available to wildlife. The Project would not substantially interfere with the movement of any native resident or migratory fish, reptile, or amphibian species. Existing barriers to movement (i.e., landfill and associated structures) and surrounding land uses (i.e., residential and recreational) currently constrain or limit movement in the proposed Project area.

There are no known bird or bat migratory corridors that would be directly impeded by the proposed Project. Large concentrations of migrants are not known to utilize any specific portion of the proposed Project site and Project activities are not expected to preclude use of the area. Migrating birds would have access to native habitat communities within adjacent areas. Although species would be disrupted during



certain activities, impacts to wildlife movement and migratory corridors from the proposed Project would not be significant.

Threshold: Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation ordinance?

Local Policies and Ordinances

The City has an "Indigenous Tree Ordinance" which provides protection for native California tree species, such as coast live oak and scrub oak, that are six or more inches in dbh for single trunk trees and eight inches dbh for multitrunked trees. While both of these species occur within the BSA, neither of the protected species are within the impact areas of the proposed Project, therefore, there would be no impact.

4.3.5 Cumulative Impacts

The majority of construction related impacts to sensitive wildlife, sensitive plants, and jurisdictional waters would be temporary and indirect. Operational impacts would not result in additional impacts. There are no known bird or bat migratory corridors that would be directly impeded by the proposed Project. Large concentrations of migrants are not known to utilize any specific portion of the proposed Project site and construction and O&M activities are not expected to preclude use of the area. Migrating birds would have access to suitable habitat within the adjacent areas. Although species would be disrupted during certain activities, impacts to migratory corridors from the proposed Project would not be significant. Impacts to sensitive wildlife, sensitive plants, jurisdictional waters and wildlife corridors, when combined with past, present, and probable future projects, would not be cumulatively considerable.

However, the proposed Project would result in minimal direct impacts to native vegetation known to support-special status plants and wildlife including San Diego desert woodrat, southern California legless lizard, and coast horned lizard. The majority of potential impacts would be temporary and indirect in nature. Although impacts to native habitat (coast live oak woodland and California sagebrush – California buckwheat scrub) as part of the proposed Project would be minimal, because of the overall loss of these communities within California, and their suitability to support several special- status species, the loss of this habitat when combined with past, present, and probable future projects would be a cumulatively significant impact.

Implementation of Mitigation Measures BIO-1 through BIO-6 would reduce the proposed Project's contribution of cumulative impacts. These measures include worker education describing the sensitive biological resources that occur on the proposed Project site, implementation of BMPs to minimize and avoid impacts, pre-construction surveys, nesting bird buffer protocols, and conducting biological monitoring during ground-disturbing and other construction-related activities. Implementation of these mitigation measures would reduce the proposed Project's contribution to cumulative impacts such that they would not be cumulatively considerable.



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4.4 ENERGY

Acronyms

AB	Assembly Bill
ASHRAE	American Society of Heating and Air-Conditioning Engineers
CAFE	Corporate Average Fuel Economy
CALGreen Code	California Green Building Standards
CARB	California Air Resources Board
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
cf	Cubic feet
CPUC	California Public Utilities Commission
EIR	Environmental Impact Report
GHG	Greenhouse gas
GWh	Gigawatt-hour
GWP	Glendale Power and Water
hp	Horsepower
HSC	Health and Safety Code
kWh	Kilowatt-hour
LFG	Landfill gas
MPO	Metropolitan Planning Organization
MW	Megawatts
MWh	Megawatt-hour
NG	Natural gas
NHTSA	National Highway Traffic Safety Administration
PRC	Public Resources Code
RPS	Renewable Portfolio Standards
RTP	Regional Transportation Plan
SB	Senate Bill
SCAG	Southern California Association of Governments
SCLF	Scholl Canyon Landfill
SCS	Sustainable communities strategy
USEPA	U.S. Environmental Protection Agency
VMT	Vehicle miles travelled
W	Watts
Wh	Watt-hours

Section 21100(b)(3) and described in Appendix F to the Guidelines for the Implementation of the California Environmental Quality Act (CEQA) 14 California Code of Regulations [CCR]§§ 15000 et seq.). Section 21100(b) of the State *CEQA Guidelines* (CEQA Guidelines) requires that an Environmental Impact Report (EIR) include a detailed statement setting forth mitigation measures proposed to minimize a project's significant effects on the environment, including, but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy. Appendix F of the CEQA Guidelines states that, in order to ensure that energy implications are considered in project decisions, the potential energy implications of a project shall be considered in an EIR, to the extent relevant and applicable to a project.

In accordance with the intent of Appendix F of the CEQA Guidelines, this Draft EIR analyzes the energy implications of the proposed Project, focusing on the following three energy resources: electricity, natural gas, and transportation-related energy (petroleum-based fuels). This section includes a summary of the proposed Project's anticipated energy needs (which can be found in Appendix B), impacts, and conservation measures. Information found herein, as well as other aspects of the proposed Project's energy implications, are discussed in greater detail elsewhere in this Draft EIR, including in Sections 2.0, Project Description, 4.6, Greenhouse Gas Emissions, and 4.11, Transportation.

4.4.1 Environmental Setting

4.4.1.1 Existing Conditions

Electricity

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands.

Energy capacity, or electrical power, is generally measured in watts (W) while energy use is measured in watt-hours (Wh). For example, if a light bulb has a capacity rating of 100 W, the energy required to keep the bulb on for one hour would be 100 Wh. If ten 100 W bulbs were on for one hour, the energy required would be 1,000 Wh or one kilowatt-hour (kWh). On a utility scale, a generator's capacity is typically rated in megawatts (MW), which is one million watts, while energy usage is measured in megawatt-hours (MWh) or gigawatt-hours (GWh), which is one billion watt-hours.

Glendale Water and Power (GWP) provides electrical service throughout the City of Glendale, including the proposed Project site, serving approximately 205,536 residents across an approximately 31-square mile area. GWP serves nearly 89,000 electrical customers and provides service to the homes, businesses and institutions within its service area. GWP's annual retail electrical load obligation is approximately 1.4 MWh. As provided in GWP's 2019 Integrated Resources Plan, the City currently relies on the Grayson Power Plant to provide electricity; however, GWP is retiring 173 MW of natural gas steam, combined



cycle, and combustion turbine capacity in 2021. GWP has developed a power plan[35] to meet power reliability requirements, which includes a mix of clean energy and load reduction, imported renewable resources (solar and wind), a battery energy storage system, and conventional internal combustion generation.

kilowatts per hour Natural Gas

Natural gas (NG)is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. NG consumed in California is obtained from naturally occurring reservoirs, mainly located outside the State, and delivered through high-pressure transmission pipelines. The NG transportation system is a nationwide network, and, therefore, resource availability is typically not an issue. NG provides almost one-third of the state's total energy requirements and is used in electricity generation, space heating, cooking, water heating, industrial processes, and as a transportation fuel. NG is measured in terms of cubic feet (cf).

SoCalGas is the principal distributor of NG in Southern California, serving residential, commercial, and industrial markets. SoCalGas serves approximately 21.8 million customers in more than 500 communities encompassing approximately 24,000 square miles throughout Central and Southern California, from the City of Visalia to the Mexican border.[36]

SoCalGas receives gas supplies from several sedimentary basins in the western United States and Canada, including supply basins located in New Mexico (San Juan Basin), West Texas (Permian Basin), the Rocky Mountains, and Western Canada as well as local California supplies. The traditional, southwestern United States sources of natural gas will continue to supply most of SoCalGas' natural gas demand. The Rocky Mountain supply is available but is used as an alternative supplementary supply source, and the use of Canadian sources provide only a small share of SoCalGas supplies due to the high cost of transport. Gas supply available to SoCalGas from California sources averaged 323 million cf per day in 2017 (the most recent year for which data are available).[37]

Transportation Energy

According to the California Energy Commission (CEC), transportation accounts for nearly 37 percent of California's total energy consumption in 2014.[38] In 2016, California consumed 15.6 billion gallons of gasoline and 3.1 billion gallons of diesel fuel.[39] Petroleum-based fuels currently account for more than 90 percent of California's transportation fuel use.[40] However, the state is now working on developing flexible

[35] City of Glendale Water and Power 2019 Integrated Resources Plan, Adopted July 23, 2019. Available at: https://www.glendaleca.gov/home/showdocument?id=51814. Accessed August 2019.
[36] SoCalGas, Company Profile. Available at: http://www.socalgas.com/about-us/company-info.shtml. Accessed August 2019.
[37] California Gas and Electric Utilities, 2018 California Gas Report. Available at: https://www.socalgas.com/regulatory/documents/cgr/2018_California_Gas_Report.pdf. Accessed August 2019.
[38] California Energy Commission 2016 Integrated Energy Policy Report, Docketed February 28, 2017. Available at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=16-IEPR-01. Accessed August 2019. Based on the transportation sector accounting for 37 percent of the state's GHG emissions in 2014. .
[39] California Department of Fee and Tax Administration, Fuel Taxes Statistics and Reports. Available at: https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm. Accessed August 2019.
[40] California Energy Commission, 2016-207 Investment Plan Updated for the Alternative and Renewable Fuel and Vehicle Technology Program, May 2016. Available at: http://www.energy.ca.gov/2015publications/CEC-600-2015-014/CEC-600-2015-014-CMF.pdf. Accessed August 2019.

strategies to reduce petroleum use. Over the last decade, California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and greenhouse gas (GHG) from the transportation sector, and reduce vehicle miles travelled (VMT). Accordingly, gasoline consumption in California has declined. The CEC predicts that the demand for gasoline will continue to decline over the next ten years, and there will be an increase in the use of alternative fuels, such as NG, biofuels and electricity.[41]

The Project site is currently developed with the landfill gas (LFG) collection system and associated facilities. Therefore, existing daily trips are associated with current site maintenance activities and are considered part of the baseline conditions in this analysis.

4.4.2 Laws, Ordinances, Regulations and Standards

4.4.2.1 Federal

Federal Corporate Average Fuel Economy Standards

First established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA) jointly administer the CAFE standards. The U.S. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.[42]

Fuel efficiency standards for medium- and heavy-duty trucks have been jointly developed by USEPA and NHTSA. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018 and result in a reduction in fuel consumption from six to 23 percent over the 2010 baseline, depending on the vehicle type.[43] The USEPA and NHTSA also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a five to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type.[44]

[41] California Energy Commission 2015 Integrated Energy Policy Report, Docketed June 29, 2016. Available at: https://ww2.energy.ca.gov/2015_energypolicy/. Accessed August 2019.
[42] National Highway Transportation Safety Administration, Laws and Regulations, Corporate Average Fuel Economy. Available at: https://ww2.energy.ca.gov/2015_energypolicy/. Accessed August 2019.
[43] United States Environmental Protection Agency, Fact Sheet: EPA and NHTSA Adopt First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles, August 2011. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100BOT1.PDF?Dockey=P100BOT1.PDF. Accessed August 2019.
[44] United States Environmental Protection Agency, Federal Register/Vol. 81, No. 206/Tuesday, Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2, October 25, 2016. Available at: https://www.gpo.gov/fdsys/pkg/FR-2016-10-25/pdf/2016-21203.pdf. Accessed August 2019.

4.4.2.2 State

California Building Standards Code (Title 24)
California Building Energy Efficiency Standards (Title 24, Part 6)

The California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) were adopted to ensure that building construction and system design and installation achieve energy efficiency and preserve outdoor and indoor environmental quality. The current California Building Energy Efficiency Standards (Title 24 standards) are the 2016 Title 24 standards, which became effective on January 1, 2017.[45] The 2016 Title 24 standards include efficiency improvements to the residential standards for attics, walls, water heating, and lighting, and efficiency improvements to the non-residential standards include alignment with the American Society of Heating and Air-Conditioning Engineers (ASHRAE) 90.1-2013 national standards.[46]

California Green Building Standards (Title 24, Part 11)

The California Green Building Standards Code (CCR, Title 24, Part 11), commonly referred to as the CALGreen Code, most recently went into effect on January 1, 2017. The 2016 CALGreen Code includes mandatory measures for non-residential development related to site development; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality.[47] Most mandatory measure changes, when compared to the previously applicable 2013 CALGreen Code, were related to the definitions and to the clarification or addition of referenced manuals, handbooks, and standards. Refer to Section 4.6, Greenhouse Gas Emissions, of this Draft EIR for additional details regarding these standards.

California's Renewable Portfolio Standard

First established in 2002 under Senate Bill 1078, California Renewable Portfolio Standards (RPS) require retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent by 2020 and 50 percent by 2030.[48] The California Public Utilities Commission (CPUC) and the CEC jointly implement the RPS program. The CPUC's responsibilities include: (1) determining annual procurement targets and enforcing compliance; (2) reviewing and approving each investor-owned utility's renewable energy procurement plan; (3) reviewing contracts for RPS-eligible energy; and (4) establishing the standard terms and conditions used in contracts for eligible renewable energy.[49]

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[45] California Energy Commission, 2016 Building Energy Efficiency Standards. Available at: http://www.energy.ca.gov/title24/2016standards/. Accessed August 2019.
[46] California Energy Commission, 2016 Building Energy Efficiency Standards for Residential and Nonresidential Buildings, June 2015. Available at: http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf. Accessed August 2019.
[47] California Building Standards Commission, Guide to the 2016 California Green Building Standards Code Nonresidential, January 2017. Available at: https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen. Accessed August 2019.
[48] California Public Utilities Commission, California Renewables Portfolio Standard (RPS), 2018. Available at: http://www.cpuc.ca.gov/RPS_Homepage/. Accessed August 2019.
[49] California Public Utilities Commission, RPS Program Overview, 2018. Available at: http://www.cpuc.ca.gov/RPS_Overview/. Accessed August 2019.

Assembly Bill 32 /California Global Warming Solutions Act

In 2006, the California State Legislature adopted Assembly Bill (AB) 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. Under HSC Division 25.5, the California Air Resources Board (CARB) has the primary responsibility for reducing the State's GHG emissions, however, it also tasked CEC and the CPUC with providing information, analysis, and recommendations to CARB regarding strategies to reduce GHG emissions in the energy sector.

In 2016, the California State Legislature adopted Senate Bill (SB) 32 and its companion bill AB 197; both were signed by Governor Brown. SB 32 and AB 197 amend HSC Division 25.5 and establishes a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and includes provisions to ensure that the benefits of state climate policies reach into disadvantaged communities.

Senate Bill 350 /Clean Energy and Pollution Reduction Act of 2015

SB 350, signed October 7, 2015, is the Clean Energy and Pollution Reduction Act of 2015. SB 350 is the implementation of some of the goals of Executive Order B-30-15, issued in April 2015, which established a new statewide policy goal to reduce GHG emissions 40 percent below their 1990 levels by 2030. The objectives of SB 350 are 1) to increase the procurement of our electricity from renewable sources from 33 percent to 50 percent; and 2) to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation by 2030.[50]

Senate Bill 100 /100 Percent Clean Energy Act of 2018

SB 100, signed September 10, 2018, is the 100 Percent Clean Energy Act of 2018. SB 100 updates the goals of California's RPS and SB 350, discussed above, in the following ways: 1) achieve the 50 percent renewable resources target by December 31, 2026, and 2) achieve a 60 percent target by December 31, 2030. SB 100 also requires that eligible renewable energy resources and zero-carbon resources supply 100 percent of electricity procured to serve all state agencies by December 31, 2045.[51]

Assembly Bill 1493 (/Pavley Regulations

AB 1493 (commonly referred to as CARB's Pavley Regulations) was the first legislation to regulate GHG emissions from new passenger vehicles. Under this legislation, CARB adopted regulations to reduce GHG emissions from non-commercial passenger vehicles (cars and light-duty trucks) for model years 2009–2016 and model years 2017-2025.[52,53]

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[50] California Legislative Information, SB 350 (2015-2016 Regular Session) Stats 2015, Chapter 547. Available at: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350. Accessed August 2019.
[51] California Legislative Information, SB 100 (2017-2018 Regular Session) Stats 2018, Chapter 312. Available at: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100. Accessed August 2019.
[52] California Air Resources Board, Clean Car Standards – Pavley, Assembly Bill 1493. Available at: http://www.arb.ca.gov/cc/ccms/ccms.htm, last reviewed January 11, 2017. Accessed August 2019.
[53] United States Environmental Protection Agency, EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks, 2012. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100EZ7C.PDF?Dockey=P100EZ7C.PDF. Accessed August 2019.



California Air Resources Board

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

In 2004, the CARB adopted an Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling in order to reduce public exposure to diesel particulate matter emissions (CCR, Title 13, Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than five minutes at any given location. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation also results in energy savings in the form of reduced fuel consumption from unnecessary idling.

Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles

In addition to limiting exhaust from idling trucks, CARB also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower (hp) such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The In-Use Off-Road Diesel-Fueled Fleets regulation adopted by CARB on July 26, 2007 aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models (13 CCR Section 2449). The compliance schedule requires full implementation by 2023 in all equipment for large and medium fleets and by 2028 for small fleets. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation has shown an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines.

Senate Bill 375 /Sustainable Communities Strategy

SB 375, the Sustainable Communities and Climate Protection Act of 2008, coordinates land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction mandates of AB 32. SB 375 specifically requires the Metropolitan Planning Organization (MPO) to prepare a "sustainable communities strategy" (SCS) as a part of its Regional Transportation Plan (RTP) that will achieve GHG emission reduction targets set by CARB for the years 2020 and 2035 by reducing VMT from light-duty vehicles through the development of more compact, complete and efficient communities. The Project Site is located within the planning jurisdiction of the Southern California Association of Governments (SCAG), which is the MPO responsible for the preparation of the SCS. SCAG's has most recently adopted the 2016-2040 RTP/SCS, with a number of goals focusing on transportation and land use planning.[54]

[54] Southern California Association of Governments, 2016 – 2040 Regional Transportation Plan/ Sustainable Communities Strategy. Available at: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx. Accessed August 2019.

Senate Bill 1389 /Integrated Energy Policy Reporting

SB 1389 (Public Resources Code [PRC] Sections 25300–25323; SB 1389) requires CEC to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety (PRC Section 25301[a]). The 2015 Integrated Energy Policy Report provides the results of the CEC's assessments of a variety of energy issues facing California including energy efficiency, strategies related to data for improved decisions in the Existing Buildings Energy Efficiency Action Plan, building energy efficiency standards, the impact of drought on California's energy system, achieving 50 percent renewables by 2030, the California Energy Demand Forecast, the Natural Gas Outlook, the Transportation Energy Demand Forecast, Alternative and Renewable Fuel and Vehicle Technology Program benefits updates, update on electricity infrastructure in Southern California, an update on trends in California's sources of crude oil, an update on California's nuclear plants, and other energy issues.[55]

California Environmental Quality Act

In accordance with the CEQA Guidelines, including Appendix F, *Energy Conservation*, in order to assure that energy implications are considered in project decisions, EIRs are required to include a discussion of the potential significant energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. Appendix F of the CEQA Guidelines provides a list of energy-related topics that should be analyzed in the EIR. In addition, while not described or required as significance thresholds for determining the significance of impacts related to energy, Appendix F provides the following topics that the lead agency may consider in the discussion of energy use in an EIR, where topics are applicable or relevant to the project:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed;
- The effects of the project on local and regional energy supplies and on requirements for additional capacity;
- The effects of the project on peak and base period demands for electricity and other forms of energy;
- The degree to which the project complies with existing energy standards;
- The effects of the project on energy resources;
- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives;
- The degree to which the project design and/or operations incorporate energy-conservation measures, particularly those that go beyond City requirements; and
- Whether the project conflicts with adopted energy conservation plans.

[55] California Legislative Information, SB 1389 (Public Resources Code Section 25300 – 25323). Available at: http://www.leginfo.ca.gov/pub/0102//bill/sen/sb_13511400/sb_1389_bill_20020915_chaptered.html. Accessed August 2019.

4.4.2.3 Regional

Southern California Gas

SoCalGas, along with five other utility providers released the 2018 California Gas Report, presenting a comprehensive outlook for natural gas supplies and requirements for California through the year 2035. The report predicts gas demand for all sectors and presents best estimates, as well as hot and cold year scenarios. Overall, SoCalGas predicts a decrease in natural gas demand in future years, due to a decrease in per capita usage, energy efficiency policies, and California's transition to renewable energy displacing fossil fuel use, including natural gas.[56]

4.4.2.4 Local

Greener Glendale Plan for Community Activities

The Greener Glendale Plan for Community Activities, adopted by the City Council on March 27, 2012, is the City's plan for helping its residents achieve better sustainability. The Greener Glendale Plan for Community Activities provides objectives and strategies for increased sustainability within the City, assesses what actions the City and community have already taken to be more sustainable, and recommends how to build on these efforts, such as using biogas to create clean, renewable energy. The Greener Glendale Plan for Community Activities includes focus areas addressing environmental issues including, but not limited to, energy use, water supplies, solid waste and recycling, transportation, urban design, urban nature, environmental health and economic development. Based on the City's forecasts and reduction targets, the City is on track to meet SCAG's regional GHG reduction targets of eight percent by 2020 and 13 percent by 2023. The City's goal is to achieve a 25 percent reduction in transportation related GHGs by 2020, and an additional 10 percent by 2035, in order to meet RPS goals and AB 1493 standards.[57]

Greener Glendale Plan for Municipal Operations

The Greener Glendale Plan for Municipal Operations, adopted by the City Council on November 1, 2011, is the City's plan for achieving better sustainability in municipal operations. The Greener Glendale Plan for Municipal Operations indicated that the City of Glendale has already completed or initiated many sustainability programs, achieving overall energy and water consumption reductions in its buildings, even though there was an increase in public services, including a 30 percent growth in the municipal vehicle fleet and the opening of a new Glendale Police Department building. The Greener Glendale Plan for Municipal Operations includes the same focus areas as the Greener Glendale Plan for Community

[56] California Gas and Electric Utilities, 2018 California Gas Report. Available at: https://www.socalgas.com/regulatory/documents/cgr/2018_California_Gas_Report.pdf. Accessed August 2019.
[57] City of Glendale Community Development Department, Greener Glendale Plan, The City of Glendale's Sustainability Plan for Community Activities, Adopted by the Glendale City Council on March 27, 2012. Available at: https://www.glendaleca.gov/home/showdocument?id=6934. Accessed August 2019.

Activities, with an additional focus on climate change adaptation and adherence to climate change policies.[58]

Glendale Green Building Standards

The City adopted 12 measures, in addition to the mandatory CALGreen Code, for new projects, which went into effect on July 7, 2011. These measures include requirements to reduce consumption of electricity and NG by 15 percent more than the California Energy Code standards, among others.[59]

Glendale Solid Waste and Construction Waste Diversion Programs

The recycling of solid waste materials also contributes to reduced energy consumption. Specifically, when products are manufactured using recycled materials, the amount of energy that would have otherwise been consumed to extract and process virgin source materials is reduced. For example, in 2015, 3.61 million tons of aluminum were produced by recycling in the United States, saving enough energy to provide electricity to 7.5 million homes.[60] In 1989, California enacted AB 939, the California Integrated Waste Management Act which establishes a hierarchy for waste management practices such as source reduction, recycling, and environmentally safe land disposal.[61] Importantly the City requires the diversion of at least 65 percent of construction and demolition debris from a landfill, through recycling, salvage or deconstruction. Compliance with this requirement must be documented.[62]

4.4.3 Methodology and Thresholds of Significance

4.4.3.1 Methodology

This analysis addresses the proposed Project's potential energy usage, including electricity, natural gas, and transportation fuel. Energy consumption during both construction and operation is assessed.

Construction

Energy consumed during Project construction would primarily include petroleum fuels used in off-road construction equipment and on-road motor vehicles. Limited amounts of indirect electricity associated with water use and wastewater treatment would also be consumed during the approximate 15- to 18-month construction duration.

[58] City of Glendale Community Development Department, Greener Glendale Plan, The City of Glendale's Sustainability Plan for Municipal Operations. Adopted by the Glendale City Council on November 1, 2011. Available at: https://www.glendaleca.gov/home/showdocument?id=6928. Accessed August 2019.
[59] City of Glendale Green Building Standards, July 27, 2011. Available at: https://www.glendaleca.gov/home/showdocument?id=6930.Accessed August 2019.
[60] American Geosciences Institute, How Does Recycling Save Energy? Available at: https://www.americangeosciences.org/critical-issues/faq/how-does-recycling-save-energy. Accessed August 2019.
[61] CalRecycle, History of California Solid Waste Law, 1985–1989. Available at: http://www.calrecycle.ca.gov/laws/legislation/calhist/1985to1989.htm. Accessed August 2019.
[62] City of Glendale Construction and Demolition Debris Diversion Program, City of Glendale Ordinance 5895, Chapter 8.58. Available at: http://qcode.us/codes/glendale/view.php?topic=8-8_58-8_58_050&frames=on.Accessed August 2019.

Operation

Energy consumed during Project operation would include electricity usage associated with the LFG collection and processing equipment as well as some ancillary equipment used to support the power generation process. Electricity would also be used for security lighting, the storage room and office space for site operation and maintenance personnel, and indirect sources such as water use and wastewater treatment. Additionally, the LFG fuel stream to the generators may include up to ten percent (10%) natural gas as fuel augmentation. Transportation energy consumed during Project operation would be similar to the current baseline conditions, as there would be the same small number of site operators and workers required at the facility.

4.4.3.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would have a significant impact related to energy if it would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operations.
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

4.4.4 Project Impacts

Threshold: Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operations?

4.4.4.1 Construction

Construction of the proposed Project would require little use of electricity to power construction and support equipment, which would be provided by portable generators that produce electricity from the combustion of petroleum fuel such as diesel. NG is not expected to be consumed in support of construction of the proposed Project. Construction would include the use of petroleum fuels such as diesel and gasoline in on-road vehicles and off-road conventional construction equipment such as graders, generators, pumps, air compressors, and similar equipment. The City proposes to utilize internal combustion engines in off-road construction equipment that meets USEPA Tier II emissions standards that are more fuel efficient than Tier I or non-tiered engines. Additionally, the CARB adopted Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling discussed above in the setting would require that diesel-fueled commercial vehicles used in support of construction idle for no longer than five minutes at any given location. Compliance with this regulation results in energy savings in the form of reduced fuel consumption from unnecessary idling. Considering the lack of electricity and NG needed to support construction as well as the short-term construction duration, use of Tier II engines, and compliance with diesel vehicle idling limits, construction of the proposed Project would have a less than significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

As discussed above, proposed Project construction would have a less than significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources and no mitigation measures are warranted.

4.4.4.2 Operation

Operation of the proposed Project would require direct electricity to continue to operate the LFG collection system as well as the LFG treatment system and ancillary power generation equipment. Electricity would also be used to operate security lighting and electrical control equipment. There would also be some indirect energy consumption related to water use, wastewater treatment, and solid waste disposal; however, operation of the proposed Project would generate 12 MW of RPS eligible electricity from the combustion of the LFG rather that continuing to combust the LFG in flares with no energy generation benefit. Project operation would also utilize up ten percent (10%) NG makeup to assist the internal combustion engine generators combust the LFG to generate electricity. Use of petroleum-based fuel such as diesel and gasoline in personnel vehicles and maintenance equipment would be similar to which occurs under existing LFG treatment activities. Therefore, operation of the proposed Project would have a less than significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. As discussed, proposed Project operation would have a less than significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources and no mitigation measures are warranted.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than Significant Impact.

Threshold: Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

4.4.4.3 Construction

As discussed above, the City proposes to utilize internal combustion engines in off-road construction equipment that meets USEPA Tier II emissions standards and that more fuel efficient than Tier I or non-tiered engines. Additionally, adherence to the CARB adopted Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling discussed above in the setting would require that diesel-fueled commercial vehicles used in support of construction idle for no longer than five minutes at any given location. Compliance with this regulation results in energy savings in the form of reduced fuel consumption from unnecessary vehicle idling. Considering these efficiencies and short-term duration of



construction activities, construction of the proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency and would have a less than significant impact. As discussed, Project construction would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency and would have a less than significant impact. No mitigation measures are warranted.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than Significant Impact.

4.4.4.4 Operation

Under existing conditions, the LFG is combusted in flares at the Scholl Canyon Landfill (SCLF). The flaring of LFG does not provide any renewable energy or energy efficiency benefits. The Project includes combusting the LFG in internal combustion engine generators to produce 12 MW of RPS eligible electricity. The generation of 12 MW of electricity from the proposed Project would assist the City in meeting and exceeding the RPS requirements mandated by the State of California. As such, proposed Project operation would be consistent with state and local plans for renewable energy or energy efficiency and would have a less than significant impact. As discussed, proposed Project operation would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency and would have a less than significant impact. No mitigation measures are warranted.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than Significant Impact.

4.4.5 Cumulative Impacts

This cumulative impact analysis evaluates the proposed Project's incremental contribution to a potentially significant energy-related cumulative impact when considered in combination with potential impacts of the proposed Grayson Repowering Project.

The Grayson Repowering Project would consume energy resources primarily including petroleum hydrocarbons during demolition and construction to fuel construction equipment and NG during operation to generate electricity. The Grayson Repowering Project involves replacing less energy efficient electrical generation equipment with more energy efficient electrical generation equipment. As a result, the Grayson Repowering Project would result in an improvement in long-term energy efficiency compared to existing power generation occurring at Grayson Power Plant.



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The proposed Project would utilize renewable LFG to generate electricity to assist the City in RPS requirements compared to receiving no beneficial use from flaring the LFG under existing conditions. As a result, the proposed Project would result in an improvement in energy efficiency compared to baseline conditions. Considering this improvement as well as the energy benefits of the Grayson Repowering Project, the proposed Project would not result in a substantial contribution to a significant energy-related cumulative environmental impact and potential impacts would therefore be less than significant.



4.5 GEOLOGY AND SOILS

Acronyms

AMSL	Above mean sea level
A-P Zone	Alquist-Priolo Earthquake Special Studies Zone
ASCE	American Society of Civil Engineers
BMPs	Best management practices
Cal/OSHA	California Division of Occupational Safety and Health
CBC	California Building Code
CCR	California Code of Regulations
CDWR	California Department of Water Resources
CGS	California Geological Survey
CPT	Cone Penetration Test
CWA	Clean Water Act
EIR	Environmental Impact Report
FEMA	Federal Emergency Management Agency
GLA	Geo-Logic Associates
IBC	International Building Code
ICC	International Code Council
MCE	Maximum credible earthquake
MPE	Maximum possible earthquake
NPDES	National Pollutant Discharge Elimination System
PRC	Public Resources Code
SCLF	Scholl Canyon Landfill
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
USGS	United States Geological Survey

This section describes existing geologic and soil conditions in the proposed Project area, addresses the potential for geologic hazards to impact the proposed Project area, identifies associated potential geotechnical impacts related to development and construction of the proposed Project, and evaluates the significance of the potential hazards on or resulting from the proposed Project.

4.5.1 Environmental Setting

4.5.1.1 Regional Hydrogeology

According to the California Department of Water Resources (CDWR) Bulletin 118 Report, the proposed Project site is not located within a mapped groundwater basin. The closest groundwater basin is the San Fernando Valley Groundwater Basin of the South Coast Hydrologic Region (4-12), located to the west of the proposed Project site. The basin is approximately 226 square miles and is bounded on the north and northwest by the Santa Susana Mountains, on the north and northeast by the San Gabriel Mountains, on the east by the San Rafael Hills, on the south by the Santa Monica Mountains and Chalk Hills, and on the west by the Simi Hills (CDWR, 2004).

4.5.1.2 Regional Geology

The Project site is located in the northwestern portion of the Transverse Range Geomorphic Province in the southwestern part of California. The region is separated by an east-west trending series of steep mountain ranges and valleys, sub-parallel to faults branching from the San Andreas Fault. The proposed Project site resides in the portion of the Province drained by the Los Angeles River.

California Highway 134 is located approximately 0.25 miles southwest of the site, California Highway 210 is located approximately two miles east of the site, and the Los Angeles River is located approximately 4.9 miles west of the proposed Project site. Based on interpretation of the ground surface elevation contour lines drawn on the topographic map, the proposed Project site is located at an elevation of approximately 1,410 to 1,485 feet (North American Vertical Datum of 1988) above mean sea level (AMSL). The topography in the vicinity of the proposed Project site is hilly, with a slope to the south then southwest toward the Los Angeles River (USGS, 1995).

4.5.1.3 Local Geology

Based on information depicted on the 2005 Geologic Map of Los Angeles, the proposed Project site is underlain by Mesozoic age quartz diorite deposits composed of plagioclase feldspar (oligoclase-andesine, hornblende, biotite, and minor quartz). Sometimes referred to as the Wilson Diorite, this unit is the most widespread bedrock type in the Glendale area. The bulk of the Verdugo Mountains and the San Rafael Hills are comprised of quartz diorite. The color of the rock is typically a light gray to light brown. The texture is generally medium grained, and the structure is massive. In the central part of the San Rafael Hills, just north of Highway 134, at the southeastern margin of Glendale, the mineral grains are aligned, giving the rock a distinct banding or “foliation” resulting in a somewhat layered structure. In this area, the structure dips 60 to 70 degrees to the east and northeast (Earth Consultants International, 2003).

4.5.1.4 Site Surface Conditions

The proposed Project site is bordered by natural slopes on the south and southeast. The northern, western, and northeastern sides border the existing landfill.



Most of the area to be developed is relatively flat, at an elevation of approximately 1,410 feet AMSL. The surface begins to steepen in the northeastern portion of the site, rising to almost 1,500 feet east of the northeast corner of the site, where a cut slope is proposed. The ground surface has been cleared and is devoid of vegetation, except in limited areas in the northeastern part of the proposed Project site, where portions of the landfill are exposed at the surface. Existing structures and equipment associated with operation of the landfill are located throughout the area.

4.5.1.5 Seismicity

The proposed Project site, as is most of California, is located in a seismically active area. The estimated distances from the proposed Project site to the nearest expected surface expression of nearby faults is presented in **Table 26** below. The maximum moment magnitude is the measurement of maximum motion recorded by a seismograph; whereby "moment" is equal to the rigidity of the earth times the average amount of slip on the fault times the area of ground surface that slipped.

Table 26 Distance of Faults to Project Site and Maximum Magnitudes

Fault	Distance* (miles)	Maximum Moment Magnitude*
Verdugo	0.3	6.9
Raymond	2.3	6.8
Hollywood	3.3	6.7
Sierra Madre (connected)	3.9	7.2
Elysian Park Thrust	6.1	6.7
Santa Monica	6.2	7.4
Sierra Madre (San Fernando)	10.5	6.7
Clamshell-Sawpit	11.1	6.7
Puente Hills (LA Basin)	11.5	7.0
San Gabriel	12.4	7.3
Elsinore	13.7	7.8
Newport-Inglewood (LA Basin)	13.7	7.5
Santa Monica	13.9	7.3
Northridge	15.2	6.9
Puente Hills (Santa Fe Springs)	17.3	6.7
San Jose	19.6	6.7
Puente Hills (Coyote Hills)	19.9	6.9
Malibu Coast	21.0	6.7
Anacapa-Dume	22.7	7.2
Palos Verdes	24.4	7.7

* Measured from 2008 National Seismic Hazard Maps (USGS, 2008).

The proposed Project site is not located within a currently mapped California Earthquake Fault Zone, as presented in the table above; the nearest fault is the Verdugo Fault, located approximately 0.3 miles to the southwest of the proposed Project site. Based on available geologic data, there is low potential for surface fault rupture from the Verdugo Fault and other nearby active faults propagating to the surface of the proposed Project site during design life of the proposed development.

The Scholl Canyon faults were mapped by Byer (1968), and Envicom (1975) suggested that this fault zone connects the Verdugo Fault in the west to the Eagle Rock Fault in the east. However, more recent mapping by Dibblee (1989) does not even show these faults, and there is no data available to indicate that these fault traces, if even present, are active. The Hazards Map in the Glendale General Plan shows the Scholl Canyon Fault, as mapped by Byer, on Plate P-1 of the Safety Element of the Glendale General Plan (Glendale 2003).

4.5.1.6 Site Soils

Based on soil assessment work conducted by Stantec in December 2015, soils within the footprint of the proposed power generation facility consist of those presented in **Table 27** below.

Table 27 Site Soils

Soil Symbol	Soil Type	Description
SM	Silty Sand with Gravel	Silty sand with gravel; 7.5 YR 3/3 dark brown; 15 percent fine gravel; 65 percent fine to coarse grained sand; 20 percent fines; moist; medium dense; no staining; no odor (FILL).
Wqd	Wilson Quartz Diorite	Weathered dioritic-granitic bedrock; dark yellowish brown; dry; very dense; moderately fractured.
Qns	Natural Soil	Silty sand with gravel; brown; dry; loose; sand is very fine to coarse grained; rootlets (NATIVE)
Source: Stantec, 2016		

4.5.2 Laws, Ordinances, Regulations and Standards

4.5.2.1 Federal

Clean Water Act (Erosion Control)

The Federal Clean Water Act (CWA) (33 USC 1251 et seq.), formally known as the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The Federal CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point-source and certain nonpoint-source discharges to surface water. Such discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (Federal CWA Section 402). Projects that disturb one-acre or more are required to obtain NPDES coverage under the NPDES General Permit for Stormwater Discharges Associated with Construction Activity (Construction General Permit)



administered by the State Water Resources Control Board (SWRCB), Order No. 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ (SWRCB, 2013). The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which includes best management practices (BMPs) to regulate stormwater runoff, including measures to prevent soil erosion. Requirements of the CWA and associated SWPPP are described in further detail in Section 4.8, Hydrology and Water Quality of this Environmental Impact Report (EIR).

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act was enacted in 1977 to "reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program." To accomplish this, the Act established the National Earthquake Hazards Reduction Program. This program was significantly amended in November 1990, which refined the description of agency responsibilities, program goals, and objectives.

National Earthquake Hazards Reduction Program's mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results. The National Earthquake Hazards Reduction Program designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Programs under National Earthquake Hazards Reduction Program help inform and guide planning and building code requirements such as emergency evacuation responsibilities and seismic code standards such as those to which the proposed Project would be required to adhere.

International Building Code

The International Building Code (IBC) is the national model building code developed by the International Code Council (ICC) providing standardized requirements for construction. The IBC replaced earlier regional building codes (including the Uniform Building Code) in 2000 and established consistent, minimum requirements to safeguard public health, safety and general welfare of the occupants of new and existing buildings and structures (ICC, 2018). In 2006, the IBC was incorporated into the 2007 California Building Code, and currently applies to all structures being constructed in California. The current version of the IBC is the 2018 edition, also known as ICC IBC-2018. A new edition of the IBC is promulgated every three years.

4.5.2.2 State

Alquist-Priolo Earthquake Fault Zoning Act – Affected Local Agencies

The state legislation protecting the population of California from the effects of fault-line ground-surface rupture is the Alquist-Priolo Earthquake Fault Zoning Act (California Public Resources Code [PRC] 1972, 1997), passed in the wake of the 1971 Sylmar (or San Fernando) Earthquake, which resulted in extensive surface fault ruptures that damaged numerous structures. The Act is intended to a) prevent the

construction of buildings intended for human occupancy on the surface traces of active faults, and b) to increase safety and minimize the loss of life resulting from earthquakes by facilitating seismic retrofitting to strengthen buildings against ground shaking. At the direction of the Act, in 1972 the State Geologist became responsible for delineating Earthquake Fault Zones (called Special Studies Zones prior to 1994) around active and potentially active fault traces to reduce fault-rupture risks to structures for human occupancy. The zones are revised periodically and extend 200 to 500 feet on either side of identified active fault traces. The California Geological Survey (CGS) has prepared nearly 600 maps delineating Earthquake Fault Zones, which are provided to cities and counties in planning, zoning, and building regulation functions.

Local agencies must enforce the Act in the development permit process, where applicable, and may be more restrictive than State law requires. According to the Act, before a project can be permitted, cities and counties must require a geologic investigation, prepared by a licensed geologist, to demonstrate that buildings will not be constructed across active faults. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault and must be set back. Although setback distances may vary, a minimum 50-foot setback is required.

Seismic Hazards Mapping Act – Affected Local Agencies

The Seismic Hazards Mapping Act protects the public from geo-seismic hazards other than surface faulting, such as strong ground shaking, liquefaction, landslides, and other ground failures. The Act's regulations apply to public buildings intended for human occupancy and a large percentage of private buildings intended for human occupancy. The Act became effective in 1991 with the purpose of identifying and mapping seismically hazardous areas to assist cities and counties in preparing the safety elements of their general plans and to encourage land use management policies and regulations that reduce seismic hazards. Under the terms of the Act, cities and counties must require a geotechnical report defining and delineating any seismic hazard prior to the approval of a project in a state-identified seismic hazard zone. The local jurisdiction is required to submit one copy of the approved geotechnical report to the State Geologist within 30 days of approval of the report.

The Act requires the State Geologist to prepare maps that delineate Liquefaction Zones of Required Investigation and Earthquake-Induced Landslide Zones of Required Investigation in the Los Angeles Basin and San Francisco Bay areas. Mapping has been completed for the project area and hazards have been identified (e.g., earthquake shaking, liquefaction, earthquake-induced landslides) and evaluated (CGS, 1999).

California Building Code

California Code of Regulations (CCR) Title 24, Part 2, the California Building Code (CBC), provides minimum standards for building design in the state. The current CBC, published July 1, 2016 with an effective date of January 1, 2017, is based on the 2015 IBC but includes numerous State of California amendments. Given the State's susceptibility to seismic events, the seismic standards within the CBC are strict and include requirements to reduce the risks associated with buildings in designated seismic hazard zones to the maximum extent practical. In turn, each jurisdiction in California may adopt its own building



code based on the CBC, which is permitted to be more stringent than the CBC, but, at a minimum, is required to meet all state standards and enforce the regulations of the CBC.

Chapter 16 of the CBC deals with structural design requirements governing seismically resistant construction (Section 1604), including factors and coefficients used to establish seismic site class and seismic occupancy category for the soil/rock at the building location and the proposed building design (Sections 1613.5 through 1613.7). Chapter 18 includes the requirements for foundation and soil investigations (Section 1803); excavation, grading, and fill (Section 1804); allowable load-bearing values of soils (Section 1806); and the design of footings, foundations, and slope clearances (Sections 1808 and 1809), retaining walls (Section 1807), and pier, pile, driven, and cast-in-place foundation support systems (Section 1810). Chapter 33 includes requirements for safeguards at work sites to ensure stable excavations and cut or fill slopes (Section 3304). CBC includes (but is not limited to) grading requirements for the design of excavations and fills and for erosion control. Construction activities are subject to occupational safety standards for excavation, shoring, and trenching as specified in the California Division of Occupational Safety and Health (Cal/OSHA) regulations (CCR Title 8). The CBC is revised every three years.

4.5.2.3 Local

City of Glendale Building and Safety Code

The Grading Section of the CBC 2016, was adopted into the Glendale Building and Safety Code, 2017. The City's Code was amended to read as follows: "The provisions of this chapter apply to grading, excavation, and earthwork construction, including fills and embankments and the control of grading site runoff, including erosion sediments and construction-related pollutants. Where conflicts occur between the technical requirements of this chapter and the geotechnical report, the more restrictive requirement shall govern."

Grading permit application submittal and approval is required for projects in the City. All projects requiring a grading permit must prepare a Soil Engineering Report and Engineering Geology Report that includes recommendations to be incorporated in the grading plans or specifications as a condition of project approval. Additionally, an electric service plan must be obtained from Glendale Water & Power and included in the grading permit application package.

City of Glendale General Plan, Safety Element

The Glendale General Plan, Safety Element includes the following policies applicable to seismic hazards:

Goal 1: Reduce the loss of life, injury, private property damage, infrastructure damage, economic losses and social dislocation and other impacts resulting from seismic hazards.

- **Policy 1-1:** The City shall ensure that new buildings are designed to address earthquake hazards and shall promote the improvement of existing structures to enhance their safety in the event of an earthquake.

- **Policy 1-2:** The City shall enforce the provisions of the Alquist-Priolo Earthquake Fault Zoning Act and the Seismic Hazards Mapping Act, with additional local provisions.
- **Policy 1-3:** The City shall ensure to the fullest extent possible that, in the event of a major earthquake, essential structures and facilities will remain safe and operational. Essential facilities include hospitals, police stations, fire stations, emergency operation centers, communication centers, generators and substations, reservoirs and "lifeline" infrastructure.
- **Policy 1-4:** The City shall ensure that current seismic and geologic knowledge and State-certified professional review are incorporated into the design, planning and construction stages of a project, and that site-specific data are applied to each project.
- **Policy 1-5:** The City shall ensure that all residents and business owners in the City have access to information regarding seismic and geologic hazards.

Goal 2: Reduce the loss of life, injury, private property damage, infrastructure damage, economic losses and social dislocation and other impacts resulting from geologic hazards.

- **Policy 2-1:** The City shall avoid development in areas of known slope instability or high landslide risk when possible and will encourage that developments on sloping ground use design and construction techniques appropriate for those areas.

4.5.3 Methodology and Thresholds of Significance

4.5.3.1 Methodology

Information from the Geo-Logic Associates Geotechnical Report (GLA; 2012), Sanitation Districts of Los Angeles County – Planning Section and AECOM (2014) Draft Environmental Impact Report, Geotechnical Investigation Report (Stantec, 2016, Appendix D), and the City of Glendale General Plan was included for the analysis supporting impact conclusions in the following section. Data and conclusions from the analyses were used to determine potential impacts from the proposed Project to and from Project site geology and soils parameters. These impacts were compared against the Thresholds of Significance set forth below in Section 4.5.3.2 to determine their significance.

4.5.3.2 Thresholds of Significance

As determined in the Initial Study, the proposed Project does not have soils that are incapable of supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater. The Project does not include the construction of new septic tanks or alternative wastewater disposal systems, and there would be no impact in this regard. In addition, the proposed Project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. The potential to encounter unique paleontological resources is low because the majority of the proposed Project area has been previously disturbed by landfill and other urban activities. The proposed Project will not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. As there would be no impact for these two topics, only the following four checklist questions were determined to result in potentially significant impacts and are evaluated in this EIR.



In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would have a significant impact related to geology and soils if it would:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault, as delineated on the most-recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area of based on other substantial evidence of a known fault;
  - Strong seismic ground shaking;
  - Seismic-related ground failure, including liquefaction; or
  - Landslides.
- Result in substantial soil erosion or the loss of topsoil.
- Be located on a strata or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial direct or indirect risks to life or property.

4.5.4 Project Impacts

Threshold: Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

Fault Rupture Hazard

The Alquist-Priolo Earthquake Fault Zoning Act mitigates fault rupture hazards by prohibiting the location of structures for human occupancy across the trace of an active fault. The Act requires the State Geologist to delineate "Earthquake Fault Zones" along faults that are "sufficiently active" and "well defined." The boundary of an "Earthquake Fault Zone" is generally 500 feet from major active faults and from 200 to 300 feet from well-defined minor faults. The Scholl Canyon Landfill (SCLF) and the approximately 2.2-acre site lying within the inactive portion of the landfill proposed for the proposed Project, is located in a seismically active area and would experience strong ground motions during a large earthquake event. However, no evidence of surface traces of active faults (having experienced displacement within the Holocene period (i.e. in the last 10,000 years) at the SCLF were identified as part of the geotechnical investigation for the landfill expansion project or in other previous geologic and faulting studies. Furthermore, the proposed Project site does not lie within or near a State of California Alquist-Priolo Earthquake Special Studies Zone (A-P Zone) (CGS, 1999). A-P Zones are established by the State Geologist to regulate construction of buildings for human occupancy within narrow zones adjacent to active faults (Sanitation District of Los Angeles County Planning Section and AECOM, 2014).

Although the City's Safety Element provides other faults like the Scholl Canyon Fault (Plate 1-1 of the Safety Element), the closest active or potentially active earthquake fault is the Verdugo Fault located 0.3 miles to the southwest of the proposed Project site (Appendix E). The deterministic seismic hazard



assessment performed for the proposed Project includes ground motion estimates from a postulated M_w 6.9 earthquake on the Verdugo fault per the United States Geological Survey (USGS)/CGS 2008 Fault Model. The Verdugo Fault trace in this model actually comprises the Verdugo-Eagle Rock-San Rafael fault system, a northeast-dipping fault system that runs along the southwest base of the Verdugo Mountains and the San Rafael Hills. While the Verdugo Fault proper is considered by the State of California to be Holocene-active (i.e., active within the last 10,000 years), the Eagle Rock and San Rafael Faults are considered as having last experienced fault displacement in the Late Quaternary period (i.e. within the past 700,000 years). So, while the entire Verdugo-Eagle Rock-San Rafael fault system per the USGS/CGS 2008 Fault Model is considered in the ground motion estimates the proposed Project's geotechnical investigation, the southern portion of this fault system (i.e. the Eagle Rock and San Rafael faults) is not considered active. Furthermore, no evidence for surface rupture has been observed along Eagle Rock and San Rafael Faults (Weber et al., 1980). As such, the probability of earthquake surface rupture affecting the proposed Project site is considered very low (Sanitation District of Los Angeles County Planning Section and AECOM, 2014).

Additionally, the proposed Project is being constructed to comply with California Building Code, American Society of Civil Engineers (ASCE) minimum design load and associated criteria for buildings and structures (ASCE 7), and Glendale Building and Safety Code 2016 which considers the risk of seismic events impacting facilities and structures. Construction of the proposed Project will also include automatic seismically triggered shutoff valves on both the new natural gas line at the meter box and on the connection to the existing landfill gas pipeline that will shut off the flow of gas in the event of a seismic event.

Therefore, potential impacts related to rupture of a known earthquake fault or strong seismic ground-shaking are considered less than significant.

Mitigation Measures

No mitigation measures are required.

Ground Shaking

Please refer to Section 4.5.4.1.

Mitigation Measures

No mitigation measures are required. The Project impact on ground shaking is less than significant.

Liquefaction

Liquefaction is a phenomenon whereby loose, sandy soils below the water table lose strength in response to the cyclic build-up of earthquake-induced groundwater pore pressures. In severe cases, liquefied soils can lose nearly all strength, causing slope failures, ground distortion and settlement, and damage to overlying structures (GLA, 2012). According to the Glendale General Plan Hazards Map (Plate P-1) and the Earthquake Zones of Required Investigation Map for the Pasadena Quadrangle (CGS, 1999), the proposed Project site is outside of identified Liquefaction Hazard Zones.



Within the vicinity of the proposed Project site, the aerial extent of potentially liquefiable alluvium is confined to the relatively narrow channel of the pre-development creek. Subsurface conditions near the toe of the landfill, in Scholl Canyon Park, generally consist of varying depths of alluvial materials overlying bedrock. Alluvial depths are highly variable, ranging from less than five feet along the flanks of the canyon to about 40 feet along the canyon axis. Alluvium generally consists of loose to very dense sand, silty sand, silty sand with gravel, gravelly sand, cobbles, and minor amounts of clayey sand.

GLA evaluated the stability of the proposed landfill slopes and proposed cut slopes in bedrock of the adjacent property (SCLF) for their geotechnical report (2012). During this investigation it was established that, although the proposed Project site would experience strong ground motions during the maximum considered earthquake design event, the calculated displacement of waste mass and potential liquefaction of alluvium at the toe of the waste fill, are considered to be tolerable (less than six inches) and in compliance with Title 27, Division 2, CCR.

Ongoing groundwater pumping within Scholl Canyon Park, to the west of the SCLF, the proposed water line, and where the western portion of the proposed gas line would terminate, is expected to prevent or minimize potential liquefaction at the toe of the SCLF by depriving sediments of the groundwater necessary for liquefaction (Sanitation District of Los Angeles County Planning Section and AECOM, 2014). In the very unlikely event of high groundwater, such as due to a cessation of pumping, in combination with the maximum credible earthquake (MCE) (MCE = M_w[63] 6.9, PHGA[64] = 0.67 g[65]), surface manifestations of liquefaction at the SCLF, such as differential settlement and sand boils, would generally be confined to Scholl Canyon Park. This extreme worst-case liquefaction scenario is not expected to cause significant stability failures of the waste mass, and in no case, would any potential liquefaction-related failure extend very far up the landfill slope.

Additionally, the potential for seismically-induced dynamic settlements within the sandy alluvial soils at Scholl Canyon Park were calculated based on Cone Penetration Test (CPT) soundings advanced on the SCLF property. Similarly, it was determined that estimated dynamic settlements during the MCE would not be expected to significantly impact the waste fill. In addition, according to the geotechnical report for the landfill expansion (GLA, 2012), no significant impacts related to expansive soils would occur.

Subsurface conditions underlying the proposed Project site consist mainly of dense to very dense silty sands over slightly weathered, hard bedrock. Groundwater was not encountered during soil assessment (maximum depth explored 36.5 feet below ground surface) and it is anticipated that the groundwater level is below a depth that would affect planned construction. The Project site is located in an area where water bearing soils are not present. Consequently, the potential for liquefaction beneath the proposed Project site is negligible (Stantec, 2016).

[63] Magnitude weighted
[64] Peak horizontal ground acceleration
[65] Peak ground acceleration can be expressed in ***g*** (the acceleration due to Earth's gravity, equivalent to g-force) as either a decimal or percentage

Power Generation Equipment

Due to the subsurface conditions underlying the proposed Project site consisting mainly of dense to very dense silty sands over slightly weathered, hard bedrock, combined with very deep groundwater levels in an area where water bearing soils are not present, the potential for liquefaction beneath the proposed Project site is negligible. Therefore, potential impacts related to liquefaction and expansive and unstable soils (i.e., settlement, subsidence, and collapse) are less than significant.

Gas and Water Lines

As described above, the extreme-worst-case liquefaction scenario is not expected to cause significant stability failures of the waste mass of the SCLF. Furthermore, the potential for seismically induced dynamic settlements within the sandy alluvial soils at Scholl Canyon Park during the MCE would not be expected to significantly impact the waste fill (Sanitation District of Los Angeles County Planning Section and AECOM, 2014). Therefore, impacts related to liquefaction and expansive and unstable soils (i.e., settlement, subsidence, and collapse) along the proposed water and gas lines are less than significant.

Mitigation Measures

No mitigation measures are required.

Landslides

Landslides are not listed in the Safety Element of the Glendale General Plan as an overlay constraint within Scholl Canyon (identified as “Low landslide incidence”). The SCLF is shown in the General Plan Slope Instability Map (Plate 2-4) as outside any areas identified as having slope instability (Low-Very High). Displacements of six to 12 inches are considered the maximum tolerable deformation for landfills with synthetic liner components. Because the MCE is more conservative than the Maximum Possible Earthquake (MPE) required by Title 27 (combined SWRCB/California Integrated Waste Management Board regulations for Solid Waste), the dynamic stability of the proposed landfill slopes exceeds Title 27 requirements.

The proposed Project site is also outside of Liquefaction Hazard Zones identified on the Glendale General Plan Hazards Map Plate P-1. Landslide Hazard Zones appear on Plate P-1 to be located directly to the south of the proposed Project site, most likely on the steep slopes where Scholl Canyon Road is located.

Power Generation Plant and Water Tanks

A cut native slope currently is proposed at the northeast end of the proposed Project site. At present, the slope is configured at 1.5:1 (horizontal:vertical). Erosion protection measures such as a drainage swale or bench (one at the top and one approximately mid-way down on the face of the slope) incorporated into the proposed Project design will reduce the potential for sloughing and raveling from the face of the slope. Project compliance with design requirements set forth by Uniform Building Code and the City’s Building and Safety Code will ensure maximum slope steepness is not exceeded. Therefore, impacts would be less than significant.

Natural Gas and Water Pipelines

The proposed water line traverses the perimeter active landfill road and the southern boundary of the Scholl Canyon Golf Course to the northwest. The proposed gas line traverses and descends a terraced hillside into Scholl Canyon Park.

The gas line would be routed above-ground except for road crossings, along existing landfill roadways and down a terraced, engineered slope on an existing pipe rack to an existing SoCalGas meter. The terraced hillside down into Scholl Canyon Park is heavily landscaped and contains numerous water conveyance structures which serve to dissipate water flow and stabilize the slope. Therefore, impacts related to slope stability (i.e., landslides and lateral spreading) are considered less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold: Result in substantial soil erosion or the loss of topsoil?

4.5.4.2 Erosion

Construction of the proposed Project will involve soil disturbing activities that may have the potential to result in soil erosion and loss of topsoil due to wind and/or water erosion. The Project would be designed, constructed, and operated with adequate stormwater run-off control measures to minimize erosion. In addition to diversion of surface water into conveyance features such as channels and culverts, other surface features would reduce flow velocities, as well as bind the soil to prevent erosion.

A cut slope is proposed at the northeast end of the proposed Project site. Shallower parts of the cut area could expose weathered rock susceptible to erosion. Erosion protection such as erosion-resistant vegetation, commercial erosion control mats or other means should be provided to minimize sloughing and raveling. An erosion control plan, which is subject to review and approval by the City Engineer, would be required prior to any demolition- and construction-related activities. Such plans must include procedures and equipment necessary to contain onsite soils and minimize potential for contaminated runoff from the proposed Project site. In addition to the erosion control plan, preparation and implementation of a SWPPP, Dust Control Plan and BMPs would also minimize construction-related impacts on soil erosion and post-Project operation would not generate surface flows that result in loss of topsoil or induce erosion.

As recommended in the geotechnical report dated January 4, 2016 (Appendix D), drainage on the cut slope at the northeast end of the proposed Project should be designed to prevent surface water from flowing over the face of the slope. At least one drainage swale or bench should be provided at the top of the slope and another one approximately mid-way down on the face of the slope. Incorporation of these Project design features, plans, and engineering methods would ensure soil erosion and/or loss of topsoil would be a less than significant level.

Mitigation Measures

No mitigation measures are required, the impact on erosion is less than significant

Threshold: Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

4.5.4.3 Landslide

Power Generation Plant and Water Tanks

Due to the subsurface conditions underlying the proposed Project site consisting mainly of dense to very dense silty sands over slightly weathered, hard bedrock, combined with very deep groundwater levels in an area where water bearing soils are not present, the potential for landslides, lateral spreading, subsidence, liquefaction or collapse beneath the proposed Project site is negligible. Therefore, potential impacts related to liquefaction and expansive and unstable soils (i.e., settlement, subsidence, and collapse) are less than significant.

Natural Gas and Water Pipelines

As described above, the extreme worst-case liquefaction scenario is not expected to cause significant stability failures of the waste mass of the SCLF. Furthermore, the potential for seismically induced dynamic settlements within the sandy alluvial soils at Scholl Canyon Park during the MCE would not be expected to significantly impact the waste fill (Sanitation District of Los Angeles County Planning Section and AECOM, 2014). Therefore, potential impacts related to liquefaction and expansive and unstable soils (i.e., settlement, subsidence, and collapse) along the proposed water and gas lines are less than significant. Please also refer to Section 4.5.4.4.

Mitigation Measures

No mitigation measures are required.

4.5.4.4 Lateral Spreading

Lateral spreading typically occurs as a form of horizontal displacement of relatively flat-lying alluvial material toward an open or “free” face such as an open body of water, channel, or excavation. This movement is generally due to failure along a weak plane and may often be associated with liquefaction. As cracks develop within the weakened material, blocks of soil displace laterally toward the open face. Subsurface conditions underlying the proposed Project site mainly consist of dense to very dense silty sands over slightly weathered, hard bedrock, combined with very deep groundwater levels in an area where water bearing soils are not present. It is anticipated that the groundwater level is below a depth that would affect planned construction. Due to the depth of groundwater, the potential for lateral spreading is considered minimal. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.5.4.5 Subsidence

Please refer to section 4.5.4.6.

Mitigation Measures

No mitigation measures are required, the Project's impact from subsidence is less than significant.

4.5.4.6 Liquefaction

Please refer to Section 4.5.4.3 and 4.5.4.6.

Mitigation Measures

No mitigation measures are required, the Project's impact from liquefaction is less than significant.

4.5.4.7 Collapse

Please refer to Section 4.5.4.6.

Mitigation Measures

No mitigation measures are required, the Project impact from collapse is less than significant.

Level of Significance After Mitigation

Less than Significant Impact

Threshold: Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial direct or indirect risks to life or property?

4.5.4.8 Power Generation Plant and Water Tanks

Based on the subsurface investigation conducted as part of the subject site geotechnical evaluation (Stantec, 2016), The near-surface materials (upper eight feet) consist of silty sand and quartz diorite bedrock. The predominantly granular soils and rock are not considered expansive, as identified in Table 18-1-B of the Uniform Building Code (1994), and do not create substantial risks to life or property. Design for expansive soils is not required. If imported soils are used for earthwork, the proposed materials will be evaluated for expansion potential prior to import, per Uniform Building Code and the Glendale Building and Safety Code 2016 and approved by the proposed Project Geotechnical Engineer prior to utilization. Imported soil will consist of predominately granular non-detrimentally expansive (Expansion Index less than 20) material free of organics, debris and rocks greater than four inches in any dimension. Due to the absence of expansive soils within the subject site footprint, and regulations prohibiting the use of

expansive soils, potential impacts associated with presence of expansive soils would be less than significant.

4.5.4.9 Natural Gas and Water Pipelines

Any native or imported soils used onsite during installation of the below-grade portion of the pipelines would be placed and compacted in accordance with Uniform Building Code and Glendale Building and Safety Code 2016. Potential impacts from expansive or collapsible soils would therefore be less than significant.

Mitigation Measures

No mitigation measures are required, the Project impact from expansive soils is less than significant.

4.5.5 Cumulative Impacts

The proposed Project and other projects considered in this cumulative impact analysis would be subject to conformance with applicable building codes and standards as well as erosion control requirements intended to reduce the potential for geology and soils impacts to occur. The nature and type of these projects does not have the potential to magnify the potential for geology and soils impacts by increasing the potential for fault rupture, strong seismic ground shaking, seismic-related ground failure, liquefaction, landslides, expansive soils, unstable soils or erosion. The proposed Project would not have cumulatively considerable geology and soils impacts.

4.6 GREENHOUSE GAS EMISSIONS

Acronyms

AB	Assembly Bill
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CFCs	Chlorofluorocarbons
CFR	Code of Federal Regulations
CH_4	Methane
CO_2	Carbon dioxide
CO_2e	Equivalent amount of carbon dioxide
EIR	Environmental Impact Report
GHG	Greenhouse gas
GWP	Global Warming Potential
GWP	Glendale Water and Power
HFCs	Hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
LFG	Landfill gas
MND	Mitigated Negative Declaration
MT	Metric tons
N_2O	Nitrous oxide
NG	Natural gas
NSR	New Source Review
PFCs	Perfluorocarbons
PSD	Prevention of Significant Deterioration
RPS	Renewable Portfolio Standard
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
scfm	Standard cubic feet per minute
SCLF	Scholl Canyon Landfill
SF_6	Sulfur hexafluoride
USEPA	United Stated Environmental Protection Agency

This section addresses greenhouse gas (GHG) emissions that would be associated with construction and operation of the proposed Project. The analysis also addresses consistency of the proposed Project with adopted applicable regulations, plans, and policies set forth by the State of California, South Coast Air Quality Management District (SCAQMD), Southern California Association of Governments (SCAG), and the City for the reduction or mitigation of GHG emissions. The proposed Project's potential contributions



to global climate change are identified. Details regarding the GHG emission inventory are provided in Appendix F of this Draft Environmental Impact Report (EIR.)

4.6.1 Environmental Setting

Global warming is the observed increase in the average temperature of the Earth's surface. The effects of increased greenhouse gas concentrations in the atmosphere may contribute to global warming. The major sGHG are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

GHGs in the atmosphere absorb solar radiation reflected by the earth, which leads to warming of the atmosphere. GHGs also radiate energy both upwards toward space and downward to the surface of the earth. The downward direction of GHGs radiation is commonly called the "greenhouse effect."

Most GHGs can be produced through biogenic (natural) and anthropogenic (human-caused) processes. Biogenic sources include the combustion of biological material in forest fires, fermentation, decomposition or processing of biologically based materials. Some of the main sources of GHG due to human activity are the burning of fossil fuels, agricultural activities, and the use of chlorofluorocarbons (CFCs) in refrigeration and fire suppression systems.

Global Warming Potential (GWP) is a measure of how much a GHG contributes to global warming relative to the heat contributed by a similar mass of CO_2. CH_4 and N_2O have GWP of 21 and 310 times that of CO_2, respectively. For this analysis, GHGs other than CO_2 will be scaled to a single factor to determine the equivalent amount of CO_2 (CO_2e) for each gas. For CO_2, the scaling factor is 1.0. The scaling factors for CH_4 and N_2O are 21 and 310, respectively. United States Environmental Protection Agency (USEPA) develops emission factor tables to estimate the GHG emissions from various equipment and activity. This project involves the continued destruction of 2.67 tons of CH_4 (43,621 tons CO_2e) annually from landfill gas (LFG)while incorporating beneficial power production. The amount of CO_2e was calculated based on the potential LFG production of 5,000 scfm.

4.6.1.1 Existing Conditions

When the previous Mitigated Negative Declaration (MND) for the proposed Project was being prepared in 2017, the majority of LFG produced by the Scholl Canyon Landfill (SCLF) was piped and combusted in existing boilers at Glendale Water and Power's (GWP) Grayson Power Plant. In April 2018, GWP discontinued LFG combustion in the boilers at the Grayson Power Plant. Any LFG produced by the landfill is currently being combusted in the existing flare system at the SCLF.

In the operation phase of the proposed Project, the LFG will be combusted in the proposed engines instead of the flare system. Therefore, the GHG emissions from the existing flare system were estimated as the baseline emission of this Project. The GHG emissions were calculated based on the estimated landfill gas production of 5,000 scfm. **Table 28** summarizes greenhouse gas emissions from the existing flare system.



Table 28 Baseline GHG Emission Rates

Devices	CO_2 (MT/year)	CH_4 (MT/year)	N_2O (MT/year)	Total CO_2e (MT/year)
Flares	43,397	2.67	0.53	43,621

Effects of Global Climate Change

The scientific community's understanding of the fundamental processes responsible for global climate change has improved over the past decade, and its predictive capabilities are advancing. However, there remain significant scientific uncertainties in, for example, predictions of local effects of climate change, occurrence, frequency, and magnitude of extreme weather events, effects of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, and changes in oceanic circulation. Due to the complexity of the Earth's climate system and inability to accurately model it, the uncertainty surrounding climate change may never be completely eliminated. Nonetheless, the Intergovernmental Panel on Climate Change's (IPCC) *Fifth Assessment Report, Summary for Policy Makers* states that, "it is *extremely likely* that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic forces [*sic*] together."[66] A report from the National Academy of Sciences concluded that 97 to 98 percent of the climate researchers most actively publishing in the field support the tenets of the IPCC in that climate change is very likely caused by human (i.e., anthropogenic) activity.[67]

According to California Air Resources Board (CARB), the potential impacts in California due to global climate change may include: loss in snow pack; sea level rise; more extreme heat days per year; more high ozone days; more large forest fires; more drought years; increased erosion of California's coastlines and sea water intrusion into the Sacramento and San Joaquin Deltas and associated levee systems; and increased pest infestation.[68]

4.6.2 Laws, Ordinances, Regulations and Standards

4.6.2.1 Federal

Title 40 Code of Federal Regulations, Part 52, Subpart A, Section 52.21 – Prevention of Significant Deterioration of Air Quality

Beginning January 2, 2011, GHG has been subject to Prevention of Significant Deterioration (PSD) regulation with an emissions increase threshold of 75,000 tons CO_2e per year. PSD review is not triggered solely based on GHG emissions. A facility will be subject to PSD review if its annual CO_2e is

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66 Intergovernmental Panel on Climate Change, Fifth Assessment Report, Summary for Policy Makers, (2013) 15. Available: http://ipcc.ch/report/ar5/syr/. Accessed April 2019.

67 Anderegg, William R. L., J.W. Prall, J. Harold, S.H., Schneider, Expert Credibility in Climate Change, Proceedings of the National Academy of Sciences of the United States of America. 2010;107:12107-12109.

68 California Environmental Protection Agency, Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature, (2006). Available at: https://www.climatechange.ca.gov/climate_action_team/reports/2006report/2006-04-03_FINAL_CAT_REPORT.PDF. Accessed April 2019.

equal or more than 75,000 tons only if any of the regulated New Source Review (NSR) (non-GHG) pollutants emissions exceed the applicable PSD threshold of 100 or 250 tons per year.

The proposed Project is not expected to emit more than 75,000 tons per year of CO_2e; therefore, PSD permitting for GHG emissions for the proposed Project is not required.

4.6.2.2 State

California Assembly Bill 32 – Global Warming Solutions Act

Assembly Bill (AB) 32, which was signed by Governor Schwarzenegger on September 27, 2006, is the first enforceable state-wide program in U.S. to limit all GHG emissions from major industries. AB 32 requires the state of California to reduce its GHG emissions to 1990 levels by 2020. CARB had developed emissions reduction plan to achieve this goal. The reduction plan includes adopting laws and regulations, developing cap and trade program, and expansion of energy efficiency and renewable programs.

Assembly Bill 197 and Senate Bill 32 of 2017

Senate Bill (SB) 32 was signed into law on September 8, 2016 by Governor Edmond G. Brown. This bill requires a GHG emissions reduction of 40 percent below the 1990 levels by 2030. SB 32 went into effect on January 1, 2017.

AB 197, which was signed into law on September 8, 2016, becomes operative only if SB 32 is enacted and becomes effective on January 1, 2017. This bill creates the Joint Legislative Committee on Climate Change Policies; this Committee will advise and make recommendations to the Legislature concerning the state's programs, policies, and investments related to climate change.

AB 197 will require CARB to publish an annual emission inventory of GHGs, criteria pollutants, and toxic air contaminants for each facility that reports to the state board and local air districts. It also requires CARB, when updating rules and regulations to achieve GHG emissions reductions beyond the statewide GHG emission limit, to follow specified requirements, consider the social costs of the emissions of GHG, and prioritize specified emission reduction rules and regulations in an effort to protect impacted and disadvantaged communities.

California Code of Regulations, Section 95100

This rule establishes mandatory GHG reporting, verification, and other requirements for certain facilities, including electrical power facilities. SCLF GHG emissions are estimated to exceed 25,000 metric tons CO_2e per year; therefore, the facility will report emissions in accordance to the rule reporting requirements.



4.6.2.3 Local

South Coast Air Quality Management District Rule 1714 – Prevention of Significant Deterioration for Greenhouse Gases

This rule sets forth preconstruction review requirements for GHG emissions. As discussed in the above section of 40 CFR, Part 52, Subpart A, Section 52.21, the proposed Project is not expected to exceed the PSD threshold of 75,000 CO_2e tons per year; therefore, PSD permitting is not required for the proposed Project.

Greener Glendale Plan for Community Activities

In March 2012, the Glendale City Council adopted the Greener Glendale Plan for Community Activities to promote sustainability toward environmental protection and reductions in greenhouse gas emissions. This plan specifies that the City will meet Southern California Association of Governments (SCAG) regional GHG reduction targets of eight percent by 2020 and 13 percent by 2023. Additionally, due to Clean Car & Fuel Standards, the City estimates to achieve a 25 percent reduction in transportation related GHG by 2020 and an additional ten percent by 2034.

The Plan incorporates the following strategies to reduce GHG emissions within the community:

1) Transportation
   a) Comply with California vehicle and fuel standards
   b) Implement programs to assist business for electronic vehicles (EV) charging stations
   c) Continue to purchase and provide EV to the community

2) Energy
   a) Increase renewable energy portfolio (REP) to 33% by 2020
   b) Implement energy efficiency audits and upgrades for building sales

3) Water
   a) Implement water efficiency audits and upgrades
   b) Provide rebates for turf reduction
   c) Reduce community water consumption through promotion, education, and outreach campaigns
   d) Implement stormwater management practices to protect water quality and replenish local groundwater resources

4) Waste
   a) Develop and implement a zero waste plan by community education and working with restaurants to encourage use of biodegradable take out materials and elimination of disposable/non-recyclable materials, such as Styrofoam and plastic bags.

5) Urban Design and Nature
   a) Implement green building standards, such as requirements to include shade trees, cool paving and roofing, and increased permeability through natural landscaping
   b) Develop Zone changes
   c) Implement the GWP Tree Power Program

d) Plant 3,400 trees by 2020 and additional 7,750 trees by 2035

Greener Glendale Plan for Municipal Operations

In November 2011, the Glendale City Council adopted the Greener Glendale Plan for Municipal Operations to achieve sustainability in municipal operations. The Greener Glendale Plan for Municipal Operations shows the City's GHG reduction target of 8% below 2004 levels by 2020; 13% below 2004 levels by 2035; and 30% below 2004 levels after 2035. The plan includes strategies similar to those of the Plan for Community Activities with the additional focus on climate change adaptation and adherence to climate change policies, including renewable energy standards.

Section 4.4 (Energy) contains additional information regarding the Greener Glendale Plan.

4.6.3 Methodology and Thresholds of Significance

4.6.3.1 Methodology

The GHG emissions from construction and long-term operation of the proposed Project is conducted as follows.

Construction Impacts

The GHG emissions during construction phase of the project would be mainly from fuel combustion of off-road and on-road equipment. These emissions were calculated using California Emissions Estimator Model (CalEEmod) version 2016.3.1.

Operational Impacts

GHG emissions in the long-term operation of the proposed Project would be contributed by the LFG combustion in the engines and facility occupancy. CalEEMod were used to calculate GHG emissions due to facility occupancy, which include the emission from vehicles, building utilities, and waste generated. USEPA emission factors were used to calculate GHG emissions from the LFG combustion in the proposed electrical generating equipment.

4.6.3.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would have a significant impact related to GHG emissions if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

The SCAQMD significance threshold for an increase in GHG emissions from an industrial project is 10,000 metric tons (MT) CO_2e per year for industrial facilities. This threshold is a total of GHG emissions from both construction and operation of the proposed Project. SCAQMD policy allows construction GHG



emissions to be amortized over a 30-year project lifespan. For this analysis, however, construction emissions reflect the project total, without amortization. GHG due to Project operations include emissions from both stationary and mobile sources.

4.6.4 Project Impacts

Threshold: Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

The proposed Project will emit GHG emissions from construction and operation activities. The construction GHG emissions would be generated primarily by the off-road equipment and on-road vehicles.

During the operations phase of the proposed Project, the electrical generation units will be the primary contributor of GHG emissions. LFG will be transferred from the existing flare operations to electrical generating units with the exception of periods when the system is under maintenance or repair. During these periods, the existing flares will serve as backup devices. Facility occupancy related activity, such as water usage, power usage, and vehicles will also generate a small level of GHG emissions.

CalEEMod was used to calculate GHG emissions from the construction and facility occupancy activities. USEPA emission factors and an estimated LFG production rate of 5,000 scfm were used to calculate GHG emissions from the proposed electrical generating equipment. CalEEMod results are provided in Appendix B.

Additionally, natural gas (NG) may be utilized to augment ignition when the LFG heating value is unusually low. GHG emissions from NG combustion were calculated. **Tables 29** and **30** summarizes the potential net increase of GHG emissions that could occur during construction and operation of the proposed Project. A GHG emission inventory is provided in Appendix F.

Table 29 Net Increase of GHG Emissions from the Construction Activities

Device/Activity	CO_2 (MT/year)	CH_4 (MT/year)	N_2O (MT/year)	Total CO_2e (MT/year)
Construction	257	0.06	0	258

Table 30 Net Increase of GHG Emissions from the Operation Activities

Device/Activity	CO_2 (MT/year)	CH_4 (MT/year)	N_2O (MT/year)	Total CO_2e (MT/year)
Proposed Engines	48,146	2.76	0.53	48,375
Occupants	49	0.13	1.29×10^{-3}	52
			Total GHG Emissions:	48,427
			Total Baseline GHG Emissions:	43,621
			Net Increase of GHG Emissions:	4,806

As shown in **Tables 29** and **30**, the potential net increase of GHG emissions from the proposed Project is below the significance threshold of 10,000 MT per year. The proposed Project would therefore not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment and potential impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold: Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The proposed Project would generate GHG emissions at a level that is below the applicable SCAQMD threshold of significance. The proposed Project would comply with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions by following ways:

- The proposed Project is a renewable energy project which aligns with CARB AB 32 GHG emissions reduction plan in expanding the Renewable Portfolio Standard (RPS). Governor Schwarzenegger signed Executive Order S-14-08 requiring all electricity retailers shall serve 33 percent of their load with renewable energy by 2020. The proposed Project is also consistent with the Greener Glendale Plan that includes measures such as creating electricity from biogas to reduce GHG emissions associated with energy production.
- Since the GHG emissions of the proposed Project were calculated to exceed 25,000 MT CO_2e per year, the facility is expected to comply with CARB mandatory GHG reporting regulation, which requires an annual reporting and verification.

As a result, the potential GHG emissions of the proposed Project would be expected to be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than Significant Impact

4.6.5 Cumulative Impacts

The proposed Grayson Repower Project is located approximately five miles from the proposed Project. Because the Grayson project is also a combustion project, it will also produce GHGs. The emission increases from the Grayson Repower Project will be offset through allowances and offset credits pursuant to AB 32 so there will be no net emission increase from that project. As shown in **Tables 29** and **30**, the potential net increase of GHG emissions from the proposed Project is below the significance threshold of 10,000 MT per year and would remain below the 10,000 MT per year threshold even when considering potential GHG emissions from the proposed Grayson Repowering Project. The climate change impact of GHG emissions from the proposed Project would therefore be less than significant on a project-specific and cumulative scale. The proposed Project would not have cumulatively considerable GHG emissions impacts.

4.7 HAZARDS AND HAZARDOUS MATERIALS

Acronyms

BMPs	Best Management Practices
CalARP	California accidental release prevention
Cal/OSHA	California Division of Occupational Safety and Health
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CUPA	Certified Unified Program Agency
DOT	Department of Transportation
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
GFD	Glendale Fire Department
HCS	Hazard Communication Standard
LEL	Lower explosive limit
LFG	Landfill gas
MSDS	Material Safety Data Sheet
OSHA	Occupational Safety and Health Administration
RCRA	Resource Conservation and Recovery Act of 1976
SCAQMD	South Coast Air Quality Management District
SCLF	Scholl Canyon Landfill
SPCC	Spill prevention, control, and countermeasure
SWPPP	Stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
USEPA	United States Environmental Protection Agency
WUI	Widland-urban interface

This section evaluates the potential effects on the public or environment from the storage and use of hazardous materials for the proposed Project. This section also discusses reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. It presents the laws, ordinances, regulations and standards related to hazardous materials, describes existing conditions, identifies potential impacts on the public and environment from routine transport, use, and disposal of hazardous materials, and presents mitigation measures to reduce potentially significant impacts. In some cases, compliance with these existing laws and regulations would serve to reduce or avoid certain impacts that might otherwise occur with the implementation of the proposed Project.



Data collection for this section was conducted through a review of the following general resources:

- City of Glendale municipal resources
- County of Los Angeles municipal resources
- Consultation with the Applicant

4.7.1 Environmental Setting

This section describes the potential hazards, other than geologic hazards, associated with the proposed Project. The potential safety issues associated with the transport, use or disposal of hazardous materials, impairment of the implementation of an adopted emergency response plan, airports and flight paths, or exposure of people or structures to risk of wildland fires, are analyzed in this section. A Phase I Environmental Site Assessment and Pre-Demolition Asbestos and Lead-Based Paint Survey were conducted for the facility and are included as Appendices G and H.

4.7.1.1 Existing Conditions

Hazardous material can be defined as any material that, because of its quantity, concentration, or physical or chemical characteristics, may pose a hazard to human health or the environment. Hazardous materials can be categorized as flammable and combustible material, toxic material, corrosive material, oxidizers, aerosols, and compressed gases. They can be highly reactive and cause irritation to skin and eyes. The term “hazardous substances” encompasses chemicals regulated by both the United States Department of Transportation (DOT) hazardous materials regulations and the United States Environmental Protection Agency (USEPA) hazardous waste regulations. Hazardous wastes require special handling and disposal because of their potential to damage to public health and the environment.

The proposed Project includes activities that will involve procedures, chemicals, and materials which pose some risk of fires, spills, gaseous releases, or other health and environmental hazards. These risks are primarily related to the transportation, storage, handling or disposal of potentially toxic and/or hazardous materials associated with construction, operation, and maintenance of the proposed Project.

4.7.1.2 Existing Hazards

As mentioned above, hazardous wastes require special handling and disposal, therefore California Department of Toxic Substances Control (DTSC) regulates the generation, handling, treatment and disposal of hazardous waste and regulates hazardous waste disposal and cleanup in the State, including from industrial sites with soil and groundwater contamination. The following resources provide information regarding the facilities or sites identified as meeting Government Code Section 65962.5 (Cortese List) requirements.

- Envirostor Data Management System: a comprehensive publicly available web site and data base (http://www.envirostor.dtsc.ca.gov/public/). EnviroStor provides information on permits and corrective action at hazardous waste facilities, as well as site investigations, cleanups, permitting, and planned, current, or completed corrective actions under DTSC’s oversight;



- Water Board GeoTracker database: List of leaking Underground Storage Tank sites by county and fiscal year (https://geotracker.waterboards.ca.gov/);
- List of solid waste disposal sites identified by Water Board with waste constituents above hazardous waste levels outside the waste management unit (www.calepa.ca.gov);
- List of active Cease and Desist Orders and Cleanup and Abatement Orders from the Water Board (www.calepa.ca.gov).

No Cortese List cleanup sites are located within an approximately two-mile radius of the proposed Project site. There are no hazardous materials sites listed in the State Water Resources Control Board (SWRCB) Geotracker data management system for tracking contaminated sites that could potentially affect groundwater and are located within the vicinity of the proposed Project.

4.7.1.3 Surrounding Land Uses

Surrounding land uses within one mile of the proposed Project natural gas and water pipeline alignments consist exclusively of residential and recreational land uses within the Cities of Glendale, Pasadena, and Los Angeles. The nearest residence is located approximately one-half mile to the east. The Hollywood Burbank Airport is located approximately ten miles to the west. The proposed Project is approximately 9.75 miles outside the airport's area of influence boundary at the nearest point. The closest wastewater treatment plant is the Los Angeles-Glendale Water Reclamation Plant, approximately five miles to west. The nearest school, Dahlia Heights Elementary School is located approximately one mile to the southwest of the proposed Project site. Hospital/medical facilities and elderly care facilities are located within the City, approximately five to eight miles to the west from the proposed Project site.

The Glendale Fire Department (GFD) would be the first responder to a fire at the proposed Project site. The closest fire station, Station 23, located at 3303 E Chevy Chase Drive, is approximately five miles from the proposed Project.

4.7.1.4 Wildfire Risk

Wildfire risk is analyzed in greater detail in Section 4.14 (Wildfire). In general, wildland fires (wildfires) can occur in open spaces containing a mixture of flammable and nonflammable vegetation cover. The native areas surrounding the active landfill operation area are vulnerable to wildfires due to the steep topography, highly flammable scrub vegetation and limited access for firefighting. The County Fire Department has published Fire Hazard Severity Zone Maps for the City and has listed the proposed Project site, as shown on Tile 4 of these maps, in the Very High Fire Hazard Zone. The Fire Department has also published a map identifying Proposed High Fire Hazard Areas. The Scholl Canyon Landfill (SCLF) and the surrounding area are within the current High Fire Hazard Area. Discussed further in Section 4.14, despite the mapping designations, the proposed Project site has little wildfire potential due to the large areas with little or no native vegetation (fuel). The majority of the front face of the landfill has been landscaped with ornamental vegetation that is unlikely to burn as it is irrigated. In the case of a wildfire, expansive un-vegetated areas at the adjacent SCLF would provide access for site evacuation or waiting for a surrounding fire to be controlled (Sanitation District of Los Angeles County Planning Section

and AECOM, 2014). In addition, site evacuation would be available via Glenoaks Boulevard or Scholl Canyon Road, depending on potential wildfire location.

4.7.2 Laws, Ordinances, Regulations and Standards

This section contains a summary of the Laws, Ordinances, Regulations, and Standards which are applicable to the proposed Project.

4.7.2.1 Federal

Federal Toxic Substances Control Act

The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established an USEPA-administered program to regulate the generation, transport, treatment, storage, and disposal of hazardous waste.

Resource Conservation and Recovery Act of 1976

The RCRA was amended in 1984 by the Hazardous and Solid Waste Act, which affirmed and extended the “cradle to grave” system of regulating hazardous waste.

Department of Transportation Hazardous Materials Regulations (49 Code of Federal Regulations 100-185)

U.S. DOT Hazardous Materials Regulations cover all aspects of hazardous materials packaging, handling, and transportation. Parts 107 (Hazard Materials Program), 130 (Oil Spill Prevention and Response), 172 (Emergency Response), and 177 (Highway Transportation), would all apply to the proposed Project and/or surrounding uses.

29 Code of Federal Regulations 1910.200 - Hazard Communication Standard

The federal Occupational Safety and Health Act of 1970 established the Occupational Safety and Health Administration (OSHA) within the United States Department of Labor. The original Act included language to the effect that employees should be apprised of all hazards to which they are exposed to on the job. In the early 1980’s, OSHA implemented this instruction by enacting the Hazard Communication Standard (HCS) as 29 Code of Federal Regulations (CFR) 1910.1200. The HCS became effective in 1986. A fundamental premise of the HCS is that employees who may be exposed to hazardous chemicals in the workplace have a right to know about the hazards and how to protect themselves. For this reason, the HCS is sometimes referred to as the Worker Right-to-Know Legislation. The HCS sets forth guidelines and requirements in six areas: Chemical labeling, Material Safety Data Sheets (MSDS), Hazard Determination, Written Implementation Program, Employee Training, and Trade Secrets.



4.7.2.2 State

California Health and Safety Code

The California DTSC, a department of the California Environmental Protection Agency, is the primary agency in the State for regulating hazardous waste, cleaning up existing contamination, and finding ways to reduce the amount of hazardous waste produced in California. DTSC regulates hazardous waste primarily under the authority of the Federal RCRA and the California Health and Safety Code (primarily Division 20, Chapters 6.5 through 10.6, and California Code of Regulations (CCR) Title 22, Division 4.5). Division 20, Chapter 6.5 deals with hazardous waste control through regulations pertaining to transportation, treatment, recycling, disposal, enforcement, and permitting of hazardous waste. Division 20, Chapter 6.10 contains regulations applicable to the cleanup of hazardous materials releases. CCR Title 22, Division 4.5 contains the environmental health standards for the management of hazardous waste. This includes standards for identification of hazardous waste (Chapter 11) and standards applicable to transporters of hazardous waste (Chapter 13).

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (California Health and Safety Code, Division 20, Chapter 6.11, Sections 25404–25404.9) consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the environmental and emergency response programs and provides authority to the Certified Unified Program Agency (CUPA). The CUPA is designed to protect public health and the environment from accidental releases and improper handling, storage, transportation, and disposal of hazardous materials and wastes. This is accomplished via inspections, emergency response, enforcement, and site mitigation oversight. The CUPA for Glendale is the GFD The CUPA is also responsible for reviewing and approving the hazardous materials business plan required for the proposed Project.

California Code of Regulations, Title 8 – Industrial Relations

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Division of Occupational Safety and Health (Cal/OSHA) and the federal OSHA are the agencies responsible for assuring worker safety in the workplace. Cal/OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices. These standards would be applicable to both construction and operation of the proposed Project. The standards included in CCR, Title 8 include regulations pertaining to hazard control (including administrative and engineering controls), hazardous chemical labeling and training requirements, hazardous exposure prevention, hazardous material management, and hazardous waste operations.

California Labor Code

The California Labor Code includes the regulation of the workplace to ensure appropriate training on the use and handling of hazardous materials and the operation of equipment and machines that use, store, transport, or dispose of hazardous materials. Division 5, Part 1, Chapter 2.5 ensures employees that are in charge of the handling of hazardous materials are appropriately trained on, and informed of, the



materials they are handling. Division 5, Part 7 ensures employees who work with volatile flammable liquids are outfitted in appropriate safety gear and clothing.

California Department of Forestry and Fire Protection Fire Prevention Program

This program encompasses multiple facets of fire prevention techniques, including fire engineering, vegetation management, fire planning, education, and law enforcement. These techniques can include fire break construction and other fire fuel reduction activities that lessen the risk of wildfire to communities and evacuation routes, and brush clearance around communities, along roadways, and along evacuation routes. The fire prevention program also includes defensible space inspections, emergency evacuation planning, fire prevention education, fire hazard severity mapping, implementation of the state Fire Plan, and fire-related law enforcement activities such as arson investigation.

4.7.2.3 Local

Certified Unified Program Agency

The GFD is certified by the California Environmental Protection Agency as a CUPA, and is thereby responsible for the implementation and enforcement of regulations and guidelines for the CUPA that includes the following:

- Hazardous materials handling, release response plans and inventory Disclosure program (business plans).
- California accidental release prevention (CalARP) Program.
- Underground storage tank program pursuant to Health and Safety Code Section 25283 and as that section may be subsequently amended.
- Aboveground petroleum storage act requirements for spill prevention, control and countermeasure (SPCC) plans pursuant to Health and Safety Code Sections 25502(a)(1) and 25404 and as those sections may be subsequently amended.
- Hazardous waste generator and onsite hazardous waste treatment (tiered permitting) Programs pursuant to Health and Safety Code Sections 25502(a)(1) and 25404 and as those sections may be subsequently amended.
- California fire code hazardous material management plans and hazardous material inventory statements pursuant to this Volume VI of the Glendale Building and Safety Code, 2014.

City of Glendale General Plan, Safety Element

The Glendale General Plan, Safety Element includes the following policies applicable to hazardous materials:

Goal 5: Reduce threats to the public health and safety, and to the environment, from hazardous materials.

- **Policy 5-1:** The City shall strive to reduce the potential for residents, workers, and visitors to Glendale to being exposed to hazardous materials and wastes.

4.7.2.4 Regional

County of Los Angeles General Plan

The goals and policies listed below are related to safety, and more specifically hazardous materials safety.

Policy AQ 1.1: Minimize health risks to people from industrial toxic or hazardous air pollutant emissions, with an emphasis on local hot spots, such as existing point sources affecting immediate sensitive receptors

4.7.3 Methodology and Thresholds of Significance

4.7.3.1 Methodology

The proposed Project area includes the greater SCLF, the proposed power generation facility footprint, and the natural gas and water pipeline rights-of-way through SCLF. Baseline conditions within this area are defined as the existing physical environmental setting by which a lead agency determines whether an impact is significant. (State CEQA Guidelines, § 15125, subd. (a)). A significant environmental effect or impact is defined as a substantial or potentially substantial change in the environment. (Pub. Resources Code, §§ 21068, 21100, subd. (d); 20 State California Environmental Quality Act [CEQA] Guidelines, § 15358.). The impact analysis in this section examines the changes in the environment, specifically related to hazardous materials, which may result from the construction and operation of the proposed Project. The Initial Study determined that the proposed Project would not emit hazardous emissions or handle hazardous materials within one-quarter mile of a school, would not be located on a Cortese List site, would not be located within an airport land use plan, or impair implementation of or interfere with an adopted emergency response plan. As such, these impacts are not analyzed within this section. Please refer to the Initial Study (Appendix A) for the full description of those impacts.

The analysis in this section is prepared with the understanding that the Applicant would obtain all required permits and approvals from other agencies and comply with all legally applicable terms and conditions associated with those permits and approvals. The analysis in this section relies on numerous publicly available maps and datasets, including those published by the City of Glendale, County of Los Angeles, aerial imagery and photographs, and site reconnaissance documenting the conditions.

4.7.3.2 Thresholds of Significance

As determined in the Initial Study, the proposed Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school, as there are no schools located within one-quarter mile of the proposed Project site. The nearest school, Dahlia Heights Elementary School, is located approximately one mile to the southwest of the proposed Project site. In addition, the proposed Project site is not located on a Cortese List (Government Code 65962.5) cleanup site. Furthermore, there are no Cortese List cleanup sites located within a two-mile radius of the proposed Project site. There would be no Project-related impacts to airport uses, as the proposed Project site is located approximately ten miles from the nearest airport,



Hollywood Burbank Airport. As such, the proposed Project location would not result in a safety hazard for people residing or working in the proposed Project area. The Project would comply with all applicable emergency response plans and emergency evacuation plans, and it would not impair implementation of such plans. In addition, the proposed Project does not include construction of residences or facilities that would require evacuation. As there would be no resulting impacts for these four topics, the following three checklist questions were determined to result in potentially significant impacts and are evaluated in this Environmental Impact Report (EIR).

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would have a significant impact related to hazards and hazardous materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Expose people or structures, either directly or indirectly, to a significant risk of loss., injury or death involving wildland fires.

4.7.4 Project Impacts

Threshold: Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

4.7.4.1 Construction

Construction activities associated with the proposed Project would use hazardous materials such as gasoline, diesel fuel, oil, acetylene, oxygen, antifreeze, and lubricants associated with construction equipment and other vehicles and would use and store hazardous materials such as mineral oil, cleaning solvents, paints, adhesives, vehicle fuels, oil, hydraulic fluid, and other vehicle and equipment maintenance fluids in the construction staging yards and at the location of the proposed Project.

Some materials associated with construction are considered hazardous because they are flammable and/or may contain toxic compounds, such as volatile organic compounds and heavy metals. All project construction phases would use gasoline, diesel fuel, hydraulic oils, equipment coolants, paints, solvents, and wastes that may include hazardous characteristics. All hazardous materials and wastes associated with the proposed Project construction would be handled, transported, and disposed of in compliance with all applicable federal, state, and local laws, regulations, and guidelines. MSDS will be made available at the construction-site for all workers as required by OSHA.

No acutely hazardous materials would be stored or used on location or at staging yards during construction. Acutely hazardous wastes are wastes that would cause death, disabling personal injury, or serious illness if exposed. These wastes are more hazardous than ordinary hazardous wastes. Minor spills or releases of ordinarily (as opposed to acutely) hazardous materials could occur due to improper handling and/or storage practices of hazardous materials during construction activities.

The proposed Project would disturb more than one-acre of land, therefore a stormwater pollution prevention plan (SWPPP) would be prepared and implemented for Project construction, as required by the Construction General Permit Order (SWRCB Order No. 2009-009-DWQ as amended by Order 2010-0014-DWQ and Order 2012-0006-DWQ). The SWPPP shall contain Best Management Practices (BMPs) to address material handling and hazardous material management, as required by the Construction General Permit. BMPs identified in the proposed Project SWPPP will be implemented during Project construction to minimize the risk of an accidental release of hazardous materials and to provide the necessary information for emergency response. For more information on the SWPPP, please see Section 4.8 (Hydrology and Water Quality).

The City would also be required to prepare and submit the appropriate hazardous materials business plan for the construction and the operation of the proposed Project as required for the quantity of fuel stored on-site. The business plan would be submitted to the GFD (the designated CUPA), via the California Environmental Reporting System.

The activities and processes performed during the construction of the proposed Project have the potential to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, including but not limited to fuel/hazardous material spills during construction activities, and roadway accidents. However, compliance with applicable regulations, including the CCR Title 22, 23, 26, & 27, 29 CFR 1910.119, California Fire Codes CFR Title 24 and GFD Health and Safety code, impacts would be reduced to a less than significant level for the proposed Project to the public or the environment through the routine transport, use, or disposal of hazardous materials.

With preparation and implementation of the various required plans and compliance with existing regulations, the proposed Project is not expected to create a significant hazard to the public or the environment through the transport, storage, use, or disposal of hazardous materials. Avoiding collisions and other accidents through implementation of the required plans reduces the likelihood of any releases through the implementation of preventative measures and the likelihood of a large release would be further reduced. In accordance with the mitigation measures outlined below, potential impacts to the environment and sensitive receptors can be reduced to a less-than-significant level during construction of the proposed Project.

Mitigation Measures

HAZ-1: Worker Training

Prior to construction, all construction-site workers will be trained to recognize and respond to spills as mandated by the required plans, including which authorities to contact. The crews will be supplied with, and trained in, the use of containment devices and spill kits which contain at a minimum sorbent booms and pads, personal protective equipment and detailed emergency response guidance. The workers will also be trained in the proper response to a small incidental spill and the proper procedures in the event of a spill or landfill gas leak as the proper containment and disposal procedures. Records of all training will be sent to the City at the end of each Project construction phase along with a report detailing the training plans.



HAZ-2: Maintain Equipment

Prior to entry on the construction-site, and periodically during construction, all construction equipment will be inspected for line breakage and leakage. Any equipment found to be chronically or continuously leaking will be either immediately removed off site or repaired either in place or within the equipment service areas.

HAZ-3: Equipment Service Areas

The Applicant shall designate at least one Equipment Service Area prior to the beginning of construction. The Equipment Service Area shall have a corrosion-resistant secondary containment system installed around the facility. The secondary containment system shall meet the following requirements (at a minimum):

- All hazardous materials (including fuel) must be stored either within the Equipment Service Area, or within their own secondary containment systems.
- The system must be impervious, cover the entire Equipment Service Area, and free of cracks or gaps.
- All primary containers shall be elevated above the surface of the secondary containment area.
- The secondary containment systems shall have sufficient capacity to contain at least 15 percent of the total volume of the primary containers or 110 percent of the volume of the largest container, whichever is greater.
- Precipitation or run-on must be prevented from entering the secondary containment system, unless the system has sufficient capacity to contain any run-on in addition to the volume capacity requirement.
- All waste (such as spills, leaks, or run-on) that accumulates in the secondary containment area must be removed and disposed of as soon as possible.

HAZ-4: Refueling Practices

Absorbent material such as secondary containment, pads, or drip pans will be placed underneath all vehicles and equipment during equipment refueling or maintenance. Refueling shall be performed within equipment service areas, parking areas, and gas and oil storage areas whenever possible. Any refueling activity on the site must also be conducted at least 100 feet (30.5 meters) from all designated drainages or areas of native vegetation. Any and all fluids drained from equipment will be collected in leak-proof containers and disposed of at an appropriate recycling facility if possible. If no recycling facility is available, an appropriate disposal facility may be used.

Level of Significance After Mitigation

As discussed above, construction of the proposed Project would involve the routine transport, use, or disposal of hazardous materials, and would require implementation of mitigation measures to reduce related risks to less than significant levels. Mitigation Measure HAZ-1 would ensure that all workers on the proposed Project were knowledgeable about hazardous waste requirements and possessed the proper training to respond to small incidental spills which may occur during construction activities. Mitigation



Measures HAZ-2, HAZ-3, and HAZ-4 serve to strengthening the existing regulatory requirements by further removing potential spill sources and enhancing on-site spill containment capabilities.

Although construction of the proposed Project would routinely use small quantities of hazardous materials, with implementation of Mitigation Measures HAZ-1, HAZ-2, HAZ-3, and HAZ-4, Project-related construction impacts would be less than significant.

4.7.4.2 Operation

Hazardous materials on-site during the operations and maintenance phase would include an approximately 2,000-gallon lube oil storage tank, as well as a 3,000-gallon capacity waste oil storage tank. Spent materials will be disposed of in accordance with required rules and regulations. Waste oil contained in 55-gallon barrels will be located throughout the facility. The facility will also contain a refrigerant chiller system. The City proposes to use R134a refrigerant or equivalent allowed by CARB and South Coast Air Quality Management District (SCAQMD). R134a refrigerant is not a hazardous material and is commonly used instead of anhydrous ammonia which is a hazardous material. The chiller will be filled via a truck at Project startup and no additional filling should be required.

Transport, use, and disposal of hazardous materials operations phase of the proposed Project would be minimal, consisting primarily of waste lube-oil disposal after oil water separation. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold: Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

4.7.4.3 Construction

Accidents involving hazardous materials during construction could occur from small-scale releases during refueling or routine maintenance of equipment. Any releases that occur during construction would be reported to the applicable regulatory agencies and appropriately responded to in accordance with the required site Spill Contingency Plan. Further, the proposed Project is located on a portion of an active landfill that is not frequented by the general public. Any release of hazardous materials into the environment would be immediately addressed per applicable state and local regulations such as CCR Titles 22, 23, 26, & 27, 29 CFR 1910.119, California Fire Codes CFR Title 24 and GFD Health and Safety Code. The existing gas pipeline connecting the SCLF to the Grayson Power Plant would be purged with an inert gas such as nitrogen and capped/plugged on both ends and would therefore not represent a hazard to the public when decommissioned in place. Therefore, impacts during the construction phase would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.7.4.4 Operation

The proposed facility could be subject to risk of upset conditions associated with the explosive properties of methane gas. Risk of explosion occurs when the concentration of methane in the air exceeds its lower explosive limit (LEL). The LEL of methane is approximately five percent by volume in air, hence only a small proportion of landfill gas (LFG), which contains 50 percent by volume methane, is required to create an explosive condition. The risk of explosion is also associated with confined spaces that have limited ventilation. LFG explosions have occurred in structures on or near landfill sites. These occurrences are generally attributed to LFG migrating through the soil and accumulating within nearby structures. LFG explosions occur at an interface where the concentration of methane in the air is between five and 15 percent.

The SCLF contains an existing LFG collection system specifically designed to minimize LFG with emissions through the use of landfill surface or lateral migration underground. Boundary probes are routinely monitored to detect possible off-site LFG migration. In accordance with SCAQMD Rule 1150.1, surface gas monitoring is conducted every quarter and any exceedances found are mitigated. The proposed Project will not interfere with or modify the existing SCLF LFG collection system. The proposed facility will include an impermeable membrane under the building foundation with proper ventilation to prevent any LFG from entering the building. A plastic liner with perforated pipes under it will channel any LFG to the outside of all buildings. All buildings will also be equipped with methane detection monitors in each room. The proposed gas line will operate at the same pressure as a standard gas service line provided by SoCalGas to a typical retail customer. Installation of the service line would be subject to the provisions of 49 CFR Part 192, which provides design and construction measures specifically to reduce risk of upset conditions associated with operation of gas lines.

The Project's three-inch diameter natural gas pipeline would be designed in accordance with applicable pipeline safety standards and would be installed above ground except for road crossings. United States DOT, Pipeline and Hazardous Materials Safety Administration developed an equation that estimates the distance from a potential natural gas pipeline explosion at which death, injury, or significant property damage could occur. This distance is known as the "Potential Impact Radius". The Potential Impact Radius is calculated by the formula $r = 0.69* (\text{square root of } (p*d^2))$, where 'r' is the radius of a circular area in feet surrounding the point of pipeline failure, 'p' is the maximum allowable operating pressure in the pipeline in pounds per square inch and 'd' is the nominal diameter of the pipeline in inches.

The natural gas pipeline proposed as part of the Project would have a maximum operating pressure of 20 pounds per square inch and a diameter of three inches. The distance from an explosion at which death, injury, or significant property damage could occur is 9.26 feet. Considering that there are no residences or other habitable structures within the Potential Impact Radius and the pipeline is in a location not open to public access, a pipeline explosion would have a low risk of resulting in death, injury, or significant property damage. The Project would result in decommissioning the existing 5.5-mile-long LFG pipeline from the SCLF to Grayson Power Plant. That pipeline has a maximum operating pressure of 50 pounds per square inch, a diameter of 14 inches, and a resulting distance from a potential explosion at which



death, injury, or significant property damage could occur of 46 feet (Compliance Services Inc., 2016)[69]. Implementation of the Project includes decommissioning the existing LFG pipeline and therefore reduces risks associated with a potential explosion from that pipeline.

As described in Section 2.0 (Project Description), the proposed Project would use 19-percent aqueous ammonia in the Selective Catalytic Reduction process to control emissions of nitrogen oxides from the generation equipment. 19-percent aqueous ammonia would be stored at the site in up to a 12,000-gallon capacity above ground storage tank.

According to the Clean Air Act Regulations (40 CFR 68, Section 112(r)), the threshold of aqueous ammonia above which this chemical presents a risk for formation of toxic plume is 20,000 gallons of solution and use of aqueous ammonia of concentration that exceeds 20 percent. The proposed aqueous ammonia volume and concentration are lower than the regulation threshold levels. The CalARP regulates the use of aqueous ammonia with a concentration of one percent or greater if a threshold quantity of 500 pounds of ammonia is reached. To evaluate the potential risks to the public from an accidental release of 19-percent aqueous ammonia, an offsite consequence analysis was performed using the USEPA approved Lawrence Livermore National Laboratory Atmospheric Dispersion Model for Denser-Than-Air-Releases (SLAB Model). The analysis assumed the complete failure of the 12,000-gallon capacity storage tank, the immediate release of the contents of the tank and the formation of an evaporating pool of aqueous ammonia within the secondary containment structure. Under this scenario, evaporative emissions of ammonia would be subsequently released into the atmosphere. The dispersion and transport of these emissions into the atmosphere would be subject to meteorological conditions at the time of the release. To be conservative, worst-case meteorological data were used in the offsite consequence analysis pursuant with USEPA's Risk Management Program Guidance for Offsite Consequence Analysis (EPA, 2009)[70].

To provide a conservative analysis of potential offsite consequences of an ammonia release, a concentration of 75 parts per million ammonia considered by the CEC to be the concentration the public could be exposed to during a one-time event without experiencing serious adverse effects was used for screening purposes. For comparison, the OSHA's Immediately Dangerous to Life and Health concertation for ammonia is 300 parts per million and USEPA's Accidental Release Prevention Program Toxic Endpoint concentration for ammonia is 200 parts per million. As it relates to the Project, a concentration of ammonia exceeding 75 parts per million beyond the SCLF property boundary would be considered a potentially significant impact.

The results of the Off-site Consequence Analysis for Aqueous Ammonia for the worst-case release of ammonia are included in Appendix I and indicate that the 75 parts per million concentration, would extend approximately 150 feet from the ammonia tank/release. This distance would not extend beyond the SCLF

[69] Compliance Services Inc., 2016, Part 192 Jurisdictional, Class Location, & High Consequence Area Analysis, Scholl Canyon Landfill Biogas Pipeline. Note: Calculation of Potential Impact Radius considers a natural gas factor specific to the landfill gas).
[70] EPA. 2009. Risk Management Program Guidance for Off-site Consequence Analysis. Available: https://www.epa.gov/sites/production/files/2013-11/documents/oca-chps.pdf.

property boundary, and therefore such a condition represents a low public safety risk and would be a less than significant impact not requiring any mitigation.

With implementation of the features and measures and compliance with applicable regulations described above to address potential risk of upset conditions, impacts would to be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold: Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

4.7.4.5 Construction

Described in detail in Section 4.14 (Wildfire), the proposed Project and the surrounding area are within the current City's designated High Fire Hazard Area. Despite the mapping designations, the proposed Project site has little wildfire potential due to the large areas with little or no native vegetation (fuel). The majority of the front face of the landfill has been landscaped with ornamental vegetation that is less likely to burn as it is irrigated. In the case of a wildfire, expansive un-vegetated areas would provide access for site evacuation or waiting for a surrounding fire to be controlled (Sanitation District of Los Angeles County Planning Section and AECOM, 2014). The proposed Project will also contain a 12-inch water line, which will be connected to two fire hydrants for fire suppression as required by GFD. Access roads for the proposed Project site will be designed to specification of the Glendale Building and Safety Code and Glendale Fire Code in order to accommodate emergency response vehicles. Also, per Glendale Fire Prevention regulations, proper vegetation management procedures such as weed abatement and brush clearance programs will be required. Impacts associated with wildland fires are discussed further in Section 4.14 (Wildfire).

In addition, alternative site evacuation routes would be available via Scholl Canyon Road, and through various existing roads throughout the landfill depending on potential wildfire location. Further, the proposed Project does not involve development of residential dwellings and will not increase the size of the wildland-urban interface (WUI), defined as the area where structures and other human development meet or intermingle with undeveloped wildland or natural open space.

Therefore, with the implementation of Project elements that would minimize impacts of wildland fires such as fire hydrants, the mitigation measures described in Section 4.14 (Wildfire), and compliance with established local codes and regulations, impacts would be less than significant.

Mitigation Measures

FIRE-1: Fire Protection Plan

FIRE-2: Smoking and Open Fires

FIRE-3: Firefighting Water Supply

Level of Significance After Mitigation

As discussed above, baseline wildfire risks would be not be exacerbated and significant risk of loss, injury or death involving wildland fires was unlikely to occur during construction of the proposed Project. Project design features, existing regulatory requirements, and implementation of Mitigation Measures FIRE-1, FIRE-2, and FIRE-3 would serve to ensure that the operation of the proposed Project would not result in an increased baseline risk exposure. Therefore, impacts would be less than significant.

4.7.4.6 Operation

Described in detail in Section 4.14 (Wildfire), operational impacts associated with exacerbated wildfire risks and significant risk of loss, injury or death involving wildland fires could occur if operation of the proposed Project would result in an increased baseline wildfire risk or generate increased unmitigated sources of ignition. Significant risks would be generated only if operation of the proposed Project were to result in a wildland fire which originated within the proposed Project, and then spread offsite into the surrounding San Rafael Hills. The Project does not propose any habitable structures or residences which could become threatened by fires originating onsite during operation of the proposed Project.

As discussed in Section 2.7 (Project Operations), the proposed Project would be operated adjacent to the existing LFG collection and LFG flaring systems. The blowers and flares would remain pursuant to the existing SCAQMD permit. After the proposed Project is in operation, the flares would only be used as required during power generation facility maintenance or in the unlikely event that there is excess LFG being produced that cannot be used for generating electricity. Fuel (vegetation) management would occur regularly in accordance with regulations. The electrical generating combustion engines would be operated within fire protection enclosures with fire suppression systems, and electrical equipment would be operated in enclosures insulated with an inert gas, thereby further reducing potential sources of ignition. The existing flares would remain and do not represent a new source of potential wildfire or an increase above the baseline wildfire risk. Discussed in Section 4.14.4.2, implementation of Mitigation Measure FIRE-4 (Firefighting Tools) would ensure that an abundance of fire protection capabilities remain on-site at all times and that on-site personnel can immediately respond in the event of an unforeseen circumstance. Implementation of Mitigation Measure FIRE-1 is also warranted, as it would also further reduce risk of wildfire during Project operation.

Mitigation Measures

FIRE-1: Fire Protection Plan

FIRE-4: Firefighting Tools

Level of Significance After Mitigation

As discussed above, baseline wildfire risks would be not be exacerbated and significant risk of loss, injury or death involving wildland fires was unlikely to occur during operation of the proposed Project. Project design features, existing regulatory requirements, and implementation of Mitigation Measures FIRE-1 and FIRE-4 would serve to ensure that the operation of the proposed Project would not result in an increased baseline risk exposure. Therefore, impacts would be less than significant.



4.7.5 Cumulative Impacts

There would be a temporary increase in the transport, use, storage, and disposal of hazardous materials during construction of the proposed Project. These materials are common to the construction and industrial trade and are the subject of compliance with regulations, including the CCR Title 22, 23, 26, and 27, 29 CFR 1910.119, California Fire Codes CFR Title 24 and GFD Health and Safety code. Transport, use, and disposal of hazardous materials during the operation phase of the proposed Project would be limited to aqueous ammonia used in the refrigerant chiller system and waste oil generated during routine facility operation. The proposed Project would utilize the existing LFG collection system designed to eliminate/reduce LFG off site migration and surface migration from landfill operations. By combusting the LFG at the source, the proposed Project would result in abandoning the existing five-mile-long LFG pipeline between the SCLF and Grayson Power Plant. The existing LFG pipeline would be filled with inert nitrogen gas and plugged.

There are no nearby uses which, when considered with the proposed Project and others included in this analysis that increase any hazard risks on-site or to areas surrounding the site. The proposed Project would not have cumulatively considerable hazards and hazardous materials impacts.



4.8 HYDROLOGY AND WATER QUALITY

Acronyms

AB	Assembly Bill
Basin Plan	Los Angeles Region Water Quality Control Plan
bgs	Below ground surface
BMPs	Best Management Practices
CDWR	California Department of Water Resources
CCR	California Code of Regulations
CWA	Clean Water Act
ERAs	Exceedance Response Actions
FEMA	Federal Emergency Management Agency
GCP	General Construction Permit
GWP	Glendale Water and Power
LADPW	Los Angeles Department of Public Works
MRP	Monitoring and reporting program
NALs	Numeric action levels
NECs	No Exposure Certifications
NOI	Notices of Intent
NOT	Notices of Termination
NPDES	National Pollutant Discharge Elimination System
NSWDs	Non-stormwater discharges
PRDs	Permit Registration Documents
ROWD	Report of waste discharge
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCLF	Scholl Canyon Landfill
SGMA	Sustainable Groundwater Management Act
SMARTS	Stormwater Multiple Application and Report Tracking System
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
WDRs	Waste discharge requirements

4.8.1 Environmental Setting

4.8.1.1 Regional Setting

According to the California Department of Water Resources (CDWR) Bulletin 118 Report, the proposed Project site is not located within a mapped groundwater basin. The closest groundwater basin is the San Fernando Valley Groundwater Basin of the South Coast Hydrologic Region (Number 4-12), located to the west of the Project site. The basin is approximately 226 square miles and is bounded on the north and northwest by the Santa Susana Mountains, on the north and northeast by the San Gabriel Mountains, on the east by the San Rafael Hills, on the south by the Santa Monica Mountains and Chalk Hills, and on the west by the Simi Hills (CDWR, 2003).

The surface and ground waters of this basin are used extensively for domestic, agricultural, and industrial purposes. The water-bearing sediments consist of the lower Pleistocene Saugus Formation, Pleistocene and Holocene age alluvium. The groundwater in this basin is mainly unconfined with some confinement within the Saugus Formation in the western part of the basin and in the Sylmar and Eagle Rock areas. Regional groundwater flow direction is generally reported toward the south southwest (CDWR ,2003).

Third Quarter 2015 quarterly groundwater monitoring results at the adjacent site (Inactive Scholl Canyon Landfill [SCLF]) reported the depth to water to be approximately 50 feet below ground surface (bgs) (SCS Engineers, 2015).

The SCLF and proposed Project site are part of the Los Angeles River Watershed, which receives drainage from an 834 square-mile area of Los Angeles County, with headwaters in the Santa Monica Mountains, Simi Hills, Santa Susana Mountains and San Gabriel Mountains. The upper watershed contains a network of flood control dams and debris basins that flow to the Los Angeles River. The lower part of the river flows in a concrete-lined channel through a heavily urbanized portion of the county before becoming a soft bottom channel as it discharges into the San Pedro Bay. The Los Angeles River passes the SCLF and project site approximately four miles to the west. Stormwater from the SCLF enters the Los Angeles River south of the Glendale Narrows via a storm drain system with a tributary in Glenoaks Boulevard just west of the SCLF (Sanitation District of Los Angeles County Planning Section and AECOM, 2014).

4.8.1.2 Existing Conditions

Flood Zones

The Project site is located in a Federal Emergency Management Agency (FEMA) National Flood Insurance Program Category Zone D on the Flood Insurance Rate Map, indicating the absence of any flood hazard.

The SCLF is at the headwaters of the Scholl Canyon sub-watershed. The majority of the annual rainfall in the region occurs from November through April. The Los Angeles Department of Public Works (LADPW) estimates the average seasonal rainfall of Los Angeles County to be 15.65 inches. Typical rainfall at SCLF averages approximately 18.32 inches per year (based on actual rainfall measurements recorded by an on-site precipitation gauge between 1982 and 2010).



Local Stormwater Infrastructure

In accordance with State requirements, the current permanent stormwater diversion and control facilities at the SCLF have been designed to accommodate a calculated 100-year, 24-hour storm. The system of down drains and drainage structures transport stormwater via a concrete box culvert under Scholl Canyon Park to the Scholl Debris Basin. The debris basin has a design debris capacity of 8,400 cubic yards and an 80-feet wide concrete spillway that discharges to a concrete box culvert at the upstream end of a branch of the LADPW's stormwater collection and conveyance system (Sanitation District of Los Angeles County Planning Section and AECOM, 2014).

4.8.2 Laws, Ordinances, Regulations and Standards

Stormwater quality and quantity at municipal landfills is subject to comprehensive federal, state, and local regulations. The surface water drainage system at the SCLF directly adjacent to the proposed Project site has been optimized to comply with these regulatory requirements by implementing measures such as preventing run-on into the active landfill area, minimizing surface water contact with refuse, diverting stormwater from the active disposal area away from the local storm drain, and minimizing the erosion potential of surface water drainage. The proposed Project, which will be located within a non-filled portion of the landfill, will be subject to many of the same regulations regarding hydrology and water quality as the adjacent active landfill, as included below.

4.8.2.1 Federal

Clean Water Act Section 402 National Pollutant Discharge Elimination System Permit

The Clean Water Act (CWA) (33 USC Section 1251 et seq.), formally the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA required states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain nonpoint – source discharges to surface water. Those discharges are the regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). In California, NPDES permitting authority is delegated to, and administered by, the nine Regional Water Quality Control Boards (RWQCBs). The proposed Project site is within the Los Angeles RWQCB. Projects that disturb one or more acres, including the proposed Project, are required to obtain NPDES coverage under the Construction General Permit. The applicable NPDES regulations are described further below.

General Construction Permit

Section 402 of the CWA authorizes the State Water Resources Control Board (SWRCB) to issue a NPDES General Construction Storm Water Permit (Water Quality Order 2009-0009-DWQ), referred to as the "General Construction Permit." Construction activities can comply with and be covered under the General Construction Permit provided that they:

- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting

stormwater and with the intent of keeping all products of erosion from moving off site into receiving waters.

- Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation.
- Perform inspections of all BMPs.
- Certify and submit all permit-related compliance documents via the Storm Water Multiple Application and Report Tracking System (SMARTS). Dischargers shall certify and submit these documents which include, but are not limited to, Permit Registration Documents (PRDs) including Notices of Intent (NOI), SWPPPs, as well as Annual Reports, and Notices of Termination (NOT).

NPDES regulations are administered by the Los Angeles RWQCB. Projects that disturb one or more acres, including the proposed Project, are required to obtain NPDES coverage under the Construction General Permit.

Industrial General Permit

Section 402 of the CWA authorizes the SWRCB to issue a NPDES Industrial General Storm Water Permit (Water Quality Order 2014-0057-DWQ), referred to as the "Industrial General Permit." Industrial activities can comply with and be covered under the Industrial General Permit provided that they:

1. Eliminate unauthorized non-storm water discharges (NSWDs);
2. Develop and implement a SWPPP that includes BMPs;
3. Implement minimum BMPs, and advanced BMPs as necessary, to achieve compliance with the effluent and receiving water limitations of the Industrial General Permit;
4. Conduct monitoring, including visual observations and analytical storm water monitoring for indicator parameters;
5. Compare monitoring results for monitored parameters to applicable numeric action levels (NALs) derived from the USEPA 2008 Multi-Sector General Permit for Storm Water Discharge Associated with Industrial Activity and other industrial storm water discharge monitoring data collected in California;
6. Perform the appropriate Exceedance Response Actions (ERAs) when there are exceedances of the NALs; and,
7. Certify and submit all permit-related compliance documents via the SMARTS. Dischargers shall certify and submit these documents which include, but are not limited to, PRDs including NOIs, No Exposure Certifications (NECs), and SWPPPs, as well as Annual Reports, NOTs, Level 1 ERA Reports, and Level 2 ERA Technical Reports.

NPDES regulations are administered by the Los Angeles RWQCB. Industrial storm water dischargers from the proposed Project would be regulated under the Industrial General Permit for the Scholl Canyon Landfill.

4.8.2.2 State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Water Code Sections 13000 et seq.), passed in 1969, requires protection of water quality by appropriate designing, sizing, and construction of erosion and sediment controls. The Porter-Cologne Act established the SWRCB and divided California into nine regions, each overseen by a RWQCB. The SWRCB is the primary State agency responsible for protecting the quality of the State's surface and groundwater supplies and has delegated primary implementation authority to the nine RWQCBs.

The Porter-Cologne Act assigns responsibility for implementing the CWA Sections 401 through 402 and 303(d) to the SWRCB and the nine RWQCBs. The Porter-Cologne Act requires the development and periodic review of water quality control plans (basin plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters, provide the technical basis for determining waste discharge requirements, identify enforcement actions, and evaluate clean water grant proposals. The basin plans are updated every three years. Compliance with basin plans is primarily achieved through implementation of the NPDES, which regulates waste discharges as discussed above.

The Porter-Cologne Water Quality Control Act requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer system, which could affect the quality of the "waters of the State," file a report of waste discharge (ROWD). Absent a potential effect on the quality of "waters of the State," no notification is required. However, the RWQCB encourages implementation of BMPs similar to those required for NPDES storm water permits to protect the water quality objectives and beneficial uses of local surface waters as provided in the Los Angeles Region Water Quality Control Plan (Basin Plan) (RWQCB, 2014).

Waste Discharge Requirements

Waste discharges that can be exempted from the California Code of Regulations (CCR) requirements are issued waste discharge requirements (WDRs) and are regulated by the SWRCB WDR Program. For groundwater protection and monitoring, the RWQCB has issued WDRs and a monitoring and reporting program (MRP) for the SCLF. Landfill operations are regulated by the conditions in WDRs Order Nos R4-2019-0037 and R4-2011-0052.

Sustainable Groundwater Management Act of 2014

The Sustainable Groundwater Management Act (SGMA) consists of a three-bill legislative package (Assembly Bill [AB] 1739, Senate Bill [SB] 1168, and SB 1319) that is collectively known as the SGMA. It provides a framework for sustainable groundwater management in California, by requiring governments and water agencies with high and medium priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Groundwater basins are prioritized based on a variety of factors identified in the legislation, such as population and the number of wells in a basin. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans.



Critically overdrafted basins would be required to comply with SGMA limitations by 2040, with the remaining high- and medium-priority basins required to comply by 2042. SGMA empowers local agencies to form Groundwater Sustainability Agencies to manage basins sustainably, requiring them to adopt Groundwater Sustainability Plans for crucial groundwater basins in California. Furthermore, CDWR provides ongoing support to local agencies through guidance and financial and technical assistance.

There are no high- or medium-priority basins that are under the jurisdiction of GWP or located within the City of Glendale and other cities surrounding it. Under the latest basin reprioritization plans, portions of the City of Glendale are located in a very low priority zone. As such, the SGMA groundwater drafting limitations are not applicable to Glendale Water and Power (GWP) and wells in its jurisdiction.

4.8.2.3 Local

City of Glendale Building Code

The Glendale Building Code (2016) contains provisions for BMPs, preparation of a SWPPP, and requirements for engineered grading requirements, including proposed drainage structures, for all grading permit applications.

City of Glendale Municipal Code; Chapter 13.42, Storm Water and Urban Runoff Pollution Prevention Control

Chapter 13.42 of the Glendale Municipal Code, Storm Water and Urban Runoff Pollution Prevention Control, contains provisions to address storm water pollution issues in development and construction projects. The regulations are designed to protect the environment, improve water quality of receiving waters, and protect the health, safety and general welfare of the citizens by:

1. Complying with all federal and state laws, lawful standards, and orders applicable to stormwater and urban runoff pollution control;
2. Prohibiting any discharges which may interfere with the operation of, or cause any damage to the storm drain system;
3. Prohibiting any eliminating illicit discharges and illegal connections to the storm drain system;
4. Reducing stormwater runoff pollution to the maximum extent practicable;
5. Reducing pollutant loads in stormwater and urban runoff from land uses and activities identified in the municipal NPDES permit; and
6. Providing regulations and giving legal effect to certain requirements of that certain NPDES permit issued to Los Angeles County and eighty-five (85) cities by the Los Angeles Regional Water Quality Control Board, Los Angeles Region, on November 8, 2012, and as may subsequently be amended (Ord. 5857 § 3, 2015; 5268 § 5, 2001).

4.8.3 Methodology and Thresholds of Significance

4.8.3.1 Methodology

Potential hydrology and water quality impacts of the proposed Project are analyzed in consideration of the thresholds of significance below and compliance with applicable water quality-related regulations promulgated to protect water quality.

4.8.3.2 Thresholds of Significance

As determined in the Biogas Renewable Generation Project Initial Study, the proposed Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge, as the proposed Project site is not located within a mapped groundwater basin, nor is there any recharge potential existing at the proposed Project site. The proposed Project site is not located in FEMA National Flood Insurance Program Category Zone D on the Flood Insurance Rate Map, indicating the absence of any flood hazard. In addition, the proposed Project site is over 20 miles from the Pacific Ocean, so there is no potential impact related to tsunami. The Project site is also not susceptible to impacts resulting from seiche because of the distance from any enclosed bodies of water. As there would be no resulting impacts related to these three topics, only the following six checklist questions were determined to result in potentially significant impacts and are evaluated in this EIR.

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would have a significant impact related to hydrology and water quality if it would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    - Result in substantial erosion or siltation on- or off-site;
    - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; or
    - Create or contribute to runoff water which would exceed the capacity of existing or planned stormwater drainage systems of provide substantial additional sources of polluted runoff.
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

4.8.4 Project Impacts

Threshold: Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

4.8.4.1 Construction

Construction activities could result in the degradation of water quality, releasing sediment, oil and greases, and other chemicals into the existing storm drain system. Construction materials such as fuels, solvents, and paints may present a risk to surface water quality. Refueling and parking of construction vehicles and other equipment on-site during construction may result in oil, grease, or related pollutant leaks and spills that may discharge into the storm drain system.

To minimize these potential impacts, the proposed Project will be required to comply with the NPDES General Construction Permit (GCP) as well as prepare a SWPPP that requires the incorporation of BMPs to control sedimentation, erosion, and hazardous materials contamination of runoff during construction. The SWRCB mandates that projects that disturb one or more acres must obtain coverage under the Statewide GCP. Since the proposed Project will involve development of an area greater than one acre 2.2, it will be subject to these requirements.

Per the provisions of the SWPPP and the NPDES Permit, stormwater flow from the proposed Project site would either be routed to the existing storm drains within the existing project footprint or into temporary energy dissipating structures or silt traps, all of which ultimately drain into the active landfill's permanent drainage system. These measures would ensure no violations to water quality standards or waste discharge requirements or conflict with the Basin Plan would occur during construction of the facility. Therefore, construction impacts would be less than significant.

Mitigation Measures

No Mitigation Measures Required

Level of Significance After Mitigation

Less than Significant Impact

4.8.4.2 Operation

Potential runoff from the Project site would be limited to oils, grease, fuel, antifreeze, and byproducts of combustion (such as cadmium, nickel, and other metals) generated by onsite personnel vehicles. Runoff will be collected in a catch basin on the north side of the facility and into a 10-inch underground pipe that will drain into the adjacent landfill drainage system. Runoff originating from the proposed Project will be subject to the provisions of the existing NPDES permit carried by the SCLF. In addition, the Project would comply with the waste discharge prohibitions and water quality objectives established by the RWQCB that are incorporated into the project as design features. As such, it is not anticipated that the proposed Project would violate any water quality standards or waste discharge requirements or conflict with the Basin Plan. Therefore, operational impacts would be less than significant.

Mitigation Measures

No Mitigation Measures Required

Level of Significance After Mitigation

Less than Significant Impact

Threshold: Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?

4.8.4.3 Construction

The proposed Project is located within the boundaries of an existing landfill. Some grading would be required in order to expand the footprint of the existing facility. The proposed Project includes permanent drainage structures that will direct all site drainage into the existing landfill drainage system. Temporary erosion control measures will be implemented during the construction phase. No streams or rivers would be affected as there are none located within the proposed Project vicinity. Therefore, impacts would be less than significant.

Mitigation Measures

No Mitigation Measures Required

Level of Significance After Mitigation

Less than Significant Impact

4.8.4.4 Operation

The proposed Project includes permanent drainage structures that will direct all site drainage into the existing landfill drainage system. No streams or rivers would be affected as there are none located within the proposed Project vicinity. Therefore, impacts would be less than significant.

Mitigation Measures

No Mitigation Measures Required

Level of Significance After Mitigation

Less Than Significant Impact

Threshold: Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

4.8.4.5 Construction

The proposed Project is located within the boundaries of an existing landfill. Some grading would be required in order to expand the footprint of the existing facility. The proposed Project includes permanent drainage structures that will direct all site drainage into the existing landfill drainage system. Temporary erosion control measures will be implemented during the construction phase. No streams or rivers would be affected as there are none located within the proposed Project vicinity. Therefore, impacts would be less than significant.

Mitigation Measures

No Mitigation Measures Required

Level of Significance After Mitigation

Less than Significant Impact

4.8.4.6 Operation

The proposed Project includes permanent drainage structures that will direct all site drainage into the existing landfill drainage system. No streams or rivers would be affected as there are none located within the proposed Project vicinity. Therefore, impacts would be less than significant.

Mitigation Measures

No Mitigation Measures Required

Level of Significance After Mitigation

Less than Significant Impact

Threshold: Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which substantially increase the rate or amount of surface runoff in a manner which would Create or contribute to runoff water which would exceed the capacity of existing or planned stormwater drainage systems of provide substantial additional sources of polluted runoff?

4.8.4.7 Construction

The proposed Project would be developed on approximately 2.2 acres. The proposed Project design would not result in a substantial increase in runoff compared to existing conditions, which are primarily impervious surfaces.

As required by the site-specific SWPPP provisions of the NPDES permit, BMPs and permanent drainage systems will be implemented across the site, during both the construction and operational phases. These BMPs and permanent drainage systems will control and prevent the release of sediment, debris, and other pollutants from entering the storm drain system.

As described in impact analysis descriptions, above, stormwater runoff during construction would be required to comply with all of the requirements in the State GCP, including and submittal of a SWPPP to the SWRCB prior to the start of construction activities. Therefore, impacts would be less than significant.

Mitigation Measures

No Mitigation Measures Required

Level of Significance After Mitigation

Less than Significant Impact

4.8.4.8 Operation

All operational Project-generated runoff will be collected into the proposed facility catch basin and routed into the existing landfill drainage system. Chemicals stored onsite will have redundant collection systems capable of trapping the maximum 100 percent of storage vessel volumes so that no accidentally spilled chemicals inadvertently enter the storm drain system. Therefore, impacts would be less than significant.

Mitigation Measures

No Mitigation Measures Required

Level of Significance After Mitigation

Less than Significant Impact

Threshold: Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

4.8.4.9 Construction

As discussed in Section 4.8.4.1, the proposed Project would not violate a water quality standard and would be consistent with the Basin Plan. The proposed Project is limited to beneficial use of LFG at the existing LFG collection site proposed for improvement and does not involve substantial water use. Water use during construction would be limited to dust suppression and compliance with fire protection preparedness requirements. Construction of the proposed Project would not conflict with or obstruct



implementation of a water quality control plan or sustainable groundwater management plan and potential impacts would be less than significant.

Mitigation Measures

No mitigation Measure are required.

Level of Significance After Mitigation

Less than Significant Impact.

4.8.4.10 Operation

As discussed in Section 4.8.4.1, the proposed Project would not violate a water quality standard and would be consistent with the Basin Plan. The proposed Project is limited to beneficial use of LFG at the existing LFG collection site proposed for improvement and does not involve substantial water use. Water use during operation would be limited to sanitary use for employees and compliance with fire protection preparedness requirements. A substantial increase in personnel necessary to operate the proposed Project beyond those that already occur for existing LFG management is not anticipated. Operation of the proposed Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan and potential impacts would be less than significant.

Mitigation Measures

No mitigation Measure are required.

Level of Significance After Mitigation

Less than Significant Impact.

4.8.5 Cumulative Impacts

During construction, the proposed Project would be required to comply with the NPDES GCP as well as prepare a SWPPP that requires the incorporation of BMPs to control sedimentation, erosion, and hazardous materials contamination of runoff during construction. The proposed Project would comply with the waste discharge prohibitions and water quality objectives established by the RWQCB that are incorporated into the project as design features. As such, it is not anticipated that the proposed Project would violate any water quality standards or waste discharge requirements. The proposed Project includes permanent drainage structures that will direct all site drainage into the existing landfill drainage system. The proposed Project would not have cumulatively considerable hydrology and water quality impacts.



4.9 LAND USE AND PLANNING

Acronyms

CalRecycle	California Department of Resources Recycling and Recovery
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CUP	Conditional Use Permit
EA	Enforcement agency
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
JPA	Joint Powers Agreement
LFG	Landfill gas
NESHAP	National Emission Standards for Hazardous Air Pollutants
NMOCs	Non-methane organic compounds
PRC	Public Resources Code
R1R	Restricted Residential
ROW	Right-of-way
RWQCB	Regional Water Quality Control Board
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCLF	Scholl Canyon Landfill
SR	Special Recreation

4.9.1 Environmental Setting

4.9.1.1 Existing Conditions

The Scholl Canyon Landfill (SCLF) is a cooperative effort of the City, the County of Los Angeles and the Los Angeles County Sanitation Districts. The landfill site occupies approximately 535 acres and is operated by the Sanitation Districts pursuant to a Joint Powers Agreement (JPA) between the City, County, and Sanitation Districts on lands owned by the City, County, and Southern California Edison. The SCLF is classified as a Class III nonhazardous landfill that accepts municipal solid waste and is not a generator of, or repository for, hazardous wastes. The active landfill site is 314 acres, within which refuse has been landfilled on 210 acres.

Gathering and combustion of the landfill gas (LFG) is a mitigation measure for South Coast Air Quality Management District (SCAQMD) to prevent its release into the environment.

The purpose of the proposed Project is to capture the methane-rich renewable LFG and instead of flaring it to beneficially use it as fuel to generate electricity. It includes construction and operation of an



approximately 12-megawatt power generation facility on approximately 2.2-acres of land at the SCLF. The proposed Project will be located adjacent to the existing LFG flare station. In addition, approximately 0.67 miles of natural gas pipeline will be constructed to connect the facility to the existing SoCalGas pipeline system located at the eastern end of Scholl Canyon Drive. This three-inch steel gas pipeline will be located above ground except for road crossings within the active landfill. The natural gas will be utilized to augment the LFG if the heat content of the refines it for the electrical generating equipment. The existing LFG pipeline connected to Grayson Power Plant will be abandoned in place. A 12-inch diameter water pipeline approximately one mile long will also be constructed and will connect to an existing 16-inch pipeline located on Glenoaks Boulevard to the new facility.

On-Site Uses

The proposed Project area is located within the SCLF facility boundary and directly north between Glenoaks Boulevard and the northwest corner of the SCLF and traverses six parcels, located within the City of Glendale, Los Angeles County, California, as shown in **Table 31**. The total combined acreage for the parcels is 532.80. The disturbance footprint for the proposed Project facilities is approximately 2.2-acres. The footprint for the proposed gas pipeline sub area and ten-foot right-of-way (ROW) is 0.76 acres. The footprint for the proposed water pipeline sub area and 14-foot ROW is 1.49 acres.

Table 31 Project Area Parcel Acreage, Zoning and Land Use Designation

Project Component	Assessor's Parcel Number	Total Parcel Acreage	Zoning	Land Use Designation
Proposed Main project area, Gas Line, Water Line	5666002901	152	SR- Special Recreation	Recreation/Open Space
Proposed Main project area, Gas Line, Water Line	5666002902	9.08	SR- Special Recreation	Recreation/Open Space
Proposed Main project area, Gas Line, Water Line	5666001904	367.77	SR- Special Recreation	Recreation/Open Space
Proposed Main project area	5666002900	1.76	SR- Special Recreation	Recreation/Open Space
Proposed Gas Line	5666026001	0.94	R1R- Restricted Residential	Very Low Density/Open Space
Proposed Water Line	5662023900	1.25	SR- Special Recreation	Recreation/Open Space
	Total Acreage:	**532.80**		

Adjacent Land Uses

Surrounding land use is comprised of residential properties and Glenoaks Boulevard to the west; a golf course, open space and Glenoaks Boulevard to the north; open space and Scholl Canyon Road to the south; and open-space and disturbed land to the east.

4.9.2 Laws, Ordinances, Regulations and Standards

4.9.2.1 Federal

Code of Federal Regulations Title 40 Part 258 – Criteria for Municipal Solid Waste Landfills

Code of Federal Regulations (CFR) Title 40 Part 258 governs location restrictions, design and operation standards, monitoring requirements, corrective actions, LFG migration controls, and closure requirements. The Environmental Protection Agency (EPA) guidelines and National Emission Standards for Hazardous Air Pollutants (NESHAP) require large municipal solid waste landfills to collect and burn LFG in order to reduce non-methane organic compounds (NMOCs) by 98 percent. Landfills are required to have their gas collection systems to be well-designed and well-maintained and are required to collect gas from all landfill areas, monitor collection wells monthly, and monitor surface methane emissions.

Code of Federal Regulations Title 49 Part 192 – Transportation of Natural and Other Gas by Pipeline

This section prescribes minimum safety requirements for pipeline facilities and the transportation of gas, including pipeline facilities and the transportation of gas, including installation, valves, metering, and materials requirements for service lines.

4.9.2.2 State

California Code of Regulations Title 27 Division 2 – Solid Waste and Environmental Protection

California Code of Regulations (CCR) Title 27 Division 2 governs solid waste concerning environmental protection. Regulatory standards set forth by the California Department of Resources Recycling and Recovery (CalRecycle) are provided in order to protect the environment, public health, and public safety. The CalRecycle standards apply to any disposal sites that are active, inactive, closed or abandoned as defined in Section 40122 of the Public Resources Code (PRC), and include equipment or facilities operated at the disposal sites. As defined by the CalRecycle, state minimum standards shall be enforced by the enforcement agency (EA) in consultation, when applicable, with the Regional Water Quality Control Board (RWQCB) or other responsible agency (State of California, 2012).

4.9.2.3 Local

South Coast Air Quality Management District Rule 1150.1 – Control of Gaseous Emissions from Municipal Solid Waste Landfills

The SCAQMD provides air pollution control for Orange County, and urban areas of Los Angeles, San Bernardino, and Riverside Counties. The SCAQMD regulates air emissions primarily from stationary air pollution sources, which include power plants, refineries, gas stations, and consumer products such as paints and solvents.



SCAQMD Rule 1150.1 requires the installation of an LFG control system sufficient to draw LFG toward the gas collection devices without overdraw that would adversely affect the system. This rule is designed to limit LFG emissions from landfills in order to prevent public nuisance and possible detriment to public health caused by exposure to such emissions.

The SCLF is located within the South Coast Air Basin (SCAB) and is regulated by the SCAQMD.

City of Glendale General Plan Land Use Element

The City's General Plan Land Use Element directs land use management within the City to allow for "growth and development in a compatible spatial relationship in order to minimize adverse impacts on the community. This Land Use Plan provides for a redistribution of land use classes located for mutual interest and benefit" (City of Glendale Planning Division, 1986).

City of Glendale Municipal Code Title 30 - Zoning

The Glendale Municipal Code Title 30 governs permitted and conditional uses for designated zones within the City. The ordinance states that the City's objective is "to designate, regulate and restrict the location and use of buildings, structures and land to protect residential, commercial, and industrial and recreation/open space areas alike from harmful encroachment by incompatible uses" (City of Glendale, 1995).

4.9.2.4 Existing Land Use Designations

The proposed Project and water pipeline components of the proposed Project are designated as Recreation/Open Space. The proposed gas pipeline component would be located on lands designated as Recreation/Open Space and Very Low Density Residential/Open Space (**Table 32** and **Figure 4.9-1**).

4.9.2.5 Existing Zoning Designations

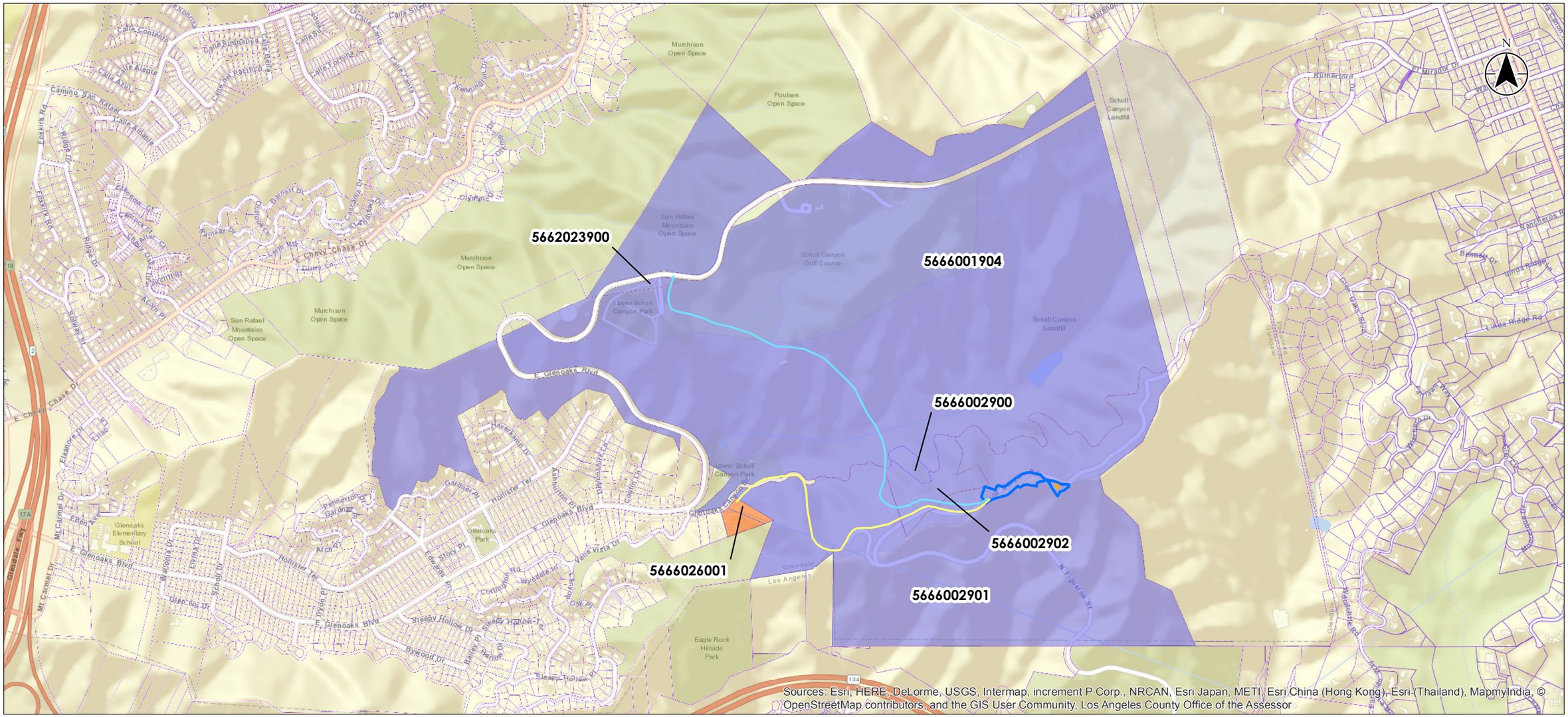
The proposed Project and water pipeline components of the proposed Project are zoned as Special Recreation (SR). The proposed gas pipeline component is zoned as SR and Restricted Residential (R1R) (**Table 32**). **Table 32** below describes permitted and conditionally permitted uses for each zone, as applicable to the proposed Project. Permitted uses refer to uses and structures already permitted within a particular zone. Conditional uses refer to uses and structures that require a Conditional Use Permit (CUP) prior to development. As indicated below, construction of the proposed power plant, water and gas pipelines will require approval of a CUP.

Additional regulations pertaining to the proposed Project emissions are provided in Section 4.2, Air Quality.

Table 32 Project Area Zoning, Land Use Designation and Permit Requirements

Zoning	Land Use Designation	Permitted Uses	Conditional Uses (CUP Required)
SR- Special Recreation	Recreation/Open Space	Open space/conservation areas	Sanitary landfills and related recovery of materials; utility and transmission facilities
R1R- Restricted Residential	Very Low Density/Open Space	Open space	Utility and transmission facilities

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Legend

- Proposed Gas Pipeline
- Proposed Water Pipeline
- Proposed Power Plant Facility Boundary
- New Water Tank

Parcel Zoning & Land Use

- R1R - Restricted Residential, Very Low Density/Open Space
- SR - Special Recreation, Recreation/Open Space
- Parcels

0 1,000 2,000 Feet

1:12,000 (At original document size of 11x17)

Stantec

Project Location
Glendale, CA

Project No.: 2057123300
Prepared by JT on 2017-07-18
Technical Review by CH on 2017-07-18

Client/Project
City of Glendale Water and Power
Biogas Renewable Generation Project
Environmental Impact Report

Figure No.
4.9-1

Title
Project Area Parcels, Zoning, and Land Use Designations

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4.9.3 Methodology and Thresholds of Significance

4.9.3.1 Methodology

Information from the City of Glendale General Plan Land Use Element was included for the analysis supporting impact conclusions in the following section. Data and conclusions from the analyses were used to determine potential impacts from the proposed Project to and from Project land use and planning. These impacts were compared against the Thresholds of Significance set forth below in Section 4.9.3.2 to determine their significance.

4.9.3.2 Thresholds of Significance

As determined in the Initial Study, the proposed Project would not physically divide an established community because there are no existing residential uses or communities within the proposed Project site. In addition, the proposed Project would not involve the displacement of any residential uses within any of the parcels on which any components of the proposed Project traverses. As there would be no resulting impacts for this topic, the following checklist question was evaluated in this Environmental Impact Report (EIR).

In accordance with Appendix G of the State California Environmental Quality Act (CEQA) Guidelines, the proposed Project would have a significant impact related to land use and planning if it would:

- Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

4.9.4 Project Impacts

Threshold: Would the proposed Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

4.9.4.1 Construction

The proposed Project will occur on lands that are designated Recreational/Open Space and Very Low Density/Open Space in the City of Glendale General Plan Land Use Element. These lands have zoning designations of SR and R1R. Portions of the proposed Project site are located within a designated ridgeline. Please refer to Section 4.1.4 for an evaluation of the proposed Project's potential to impact visual resources, including ridgelines. A CUP is only allowable because of the existing utility use. The existing and future utility use related to LFG capture and mitigation which is limited to an approximate 2.2-acre site of the larger 535-acre landfill property would not conflict with the potential closure of the landfill or future use for open space or recreation. After CUP approval and compliance with any required project conditions, the proposed Project will not conflict with any applicable land use plan, policy or regulation. Therefore, impacts would be less than significant.



Mitigation Measures

No mitigation measures are required.

4.9.4.2 Operation

Please refer to Section 4.9.4.1.

Mitigation Measures

No mitigation measures are required.

4.9.5 Cumulative Impacts

The proposed Project is located within the SCLF and a primarily pre-disturbed area currently used for LFG collection. The proposed Project is a conditionally permitted use. The proposed Project will not conflict with any applicable land use plan, policy or regulation. The proposed Project would not have cumulatively considerable land use impacts.

4.10 NOISE

Acronyms

dB	decibel
dBA	A-weighted decibel
CadnaA	Decibel Computer Aided Noise Abatement
Cal/OSHA	California Division of Occupational Safety and Health
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
EIR	Environmental Impact Report
Hz	Hertz
In/s	Inches per second
In/s2	Inches per second squared
L	Sound level
LdB	Sound level Decibel
LFG	Landfill gas
Leq	Energy equivalent sound level
Ldn	Day/night average sound level
Lmax	A-weighted noise level during the measurement period
Lmin	Computer Aided Noise Abatement Minimum A-weighted noise level during the measurement period
OSHA	Occupational Safety and Health Administration
PPA	Peak particle acceleration
PPV	Peak particle velocity
P-waves	Primary or compression waves
R-waves	Rayleigh waves
S-waves	Secondary or shear waves
SB	Senate Bill
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency

4.10.1 Environmental Setting

4.10.1.1 Terminology and Fundamentals of Environmental Acoustics

The decibel (dB) is the preferred unit used to measure sound levels utilizing a logarithmic scale to account for large ranges in audible sound intensities. A general rule for the decibel scale is that a ten dB increase in sound is perceived as a doubling of loudness by the human ear. For example, a 55 dB sound level will sound twice as loud as a 45 dB sound level. The average healthy person cannot detect differences of one dB whereas a five dB change is clearly noticeable.

Several sound measurement descriptors are used to assess the effects of sound on the human environment. These include the energy equivalent sound level (Leq,) which is the level of a constant sound that has the same sound energy as the actual fluctuating sound. It is similar to the average sound level. The day-night sound level, (Ldn,) is similar to the 24-hour Leq except that a ten dB penalty is added to sound levels between 10:00 pm and 7:00 am to account for the greater sensitivity of people to sound at night. The Community Noise Equivalent Level (CNEL) also places a weighted factor on sound events occurring in the evening hours. The L90 value is the sound level (L) that is exceeded 90 percent of the time and is often used to describe the background or residual sound level.

Acoustics is defined as the science of sound, including the generation, transmission, and effects of sound waves, both audible and inaudible. Noise, on the other hand, is generally defined as loud, unpleasant, unexpected or undesired sound that disrupts or interferes with normal human activities. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The objectionable nature of sound is caused by its pitch or loudness. Pitch is the height or depth of a tone or sound wave, depending on the relative rapidity (frequency) of the sound vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. Loudness is intensity of sound waves combined with the reception characteristics of the ear. Intensity is a measure of the amplitude or height of the sound wave. Frequency describes the sound's pitch and is measured in Hertz (Hz), while intensity describes the sound's loudness and is measured in dB.

The dB is the preferred unit for measuring sound that indicates the relative amplitude (height) of a particular sound wave. The zero (0) on the decibel scale is based on the lowest sound level that a healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic scale. Thus, an increase of ten dB represents a ten–fold increase in acoustic energy, while a 20 dB increase is 100 times more intense, and a 30 dB increase is 1,000 times more intense. There is a direct relationship between the subjective noisiness or loudness of a sound and its intensity. Each ten dB increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. The A–weighted decibel (dBA) is a method of sound measurement, which assigns weighted values to selected frequency bands in an attempt to reflect how the human ear responds to sound. Definitions of common acoustical terms are summarized below in **Table 33**. The range of human hearing is from zero dBA (the threshold of hearing) to about 140 dBA which is the threshold of pain. Examples of noise and their dBA levels are shown in **Table 34**. In general, a three to five dBA change in community noise levels starts to become noticeable, while one to two dBA changes are generally not perceived. Quiet suburban areas typically have noise levels in the range of 40–50 dBA, while those along arterial streets are in the 50–60 dBA or greater range. Normal conversational levels are in the 60–65 dBA ranges.



In addition to the actual instantaneous measurements of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. To analyze the overall noise levels in an area, noise events are combined for an instantaneous value or averaged over a specific time period. The time–weighted measure is referred to as equivalent sound level and represented by).Leq The percentage of time that a given sound level is exceeded also can be designated as L10, L50, and L90. The subscript denotes the percentage of time that the noise level was exceeded during the measurement period. Namely, an L10 indicates the sound level is exceeded ten percent of the time and is generally taken to be indicative of the highest noise levels experienced at the proposed Project Site. The L90 is that level exceeded 90 percent of the time and this level is often called the base level of noise at a location. The L50 sound (that level exceeded 50 percent of the time) is frequently used in noise standards and ordinances.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within ±1 dBA. The data is then imported into computer sound models. These computer models are used to predict environmental noise levels from sources such as roadways and airports over a given area using equal sound level contours. The accuracy of the predicted models depends upon the distance the receptor is from the noise source and natural attenuation caused by structures and other sound barriers. The closer to the noise source, the greater is the model's accuracy (±1–2 dBA).

Since the sensitivity to noise increases during the evening and at night (because excessive noise interferes with the ability to sleep) 24–hour descriptors have been developed that incorporate artificial noise penalties that are added to quiet–time noise events. The CNEL is a measure of the cumulative noise exposure in a community during a 24–hour period. The Ldn is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three–hour period are grouped into the daytime period.

Noise sources occur in two forms: 1) point sources, such as stationary equipment, loudspeakers, or individual motor vehicles; and 2) line sources, such as a roadway with a large number of point sources (motor vehicles). Sound generated by a point source typically diminishes (attenuates) at a rate of six dBA for each doubling of distance from the source to the receptor at acoustically "hard" sites and 7.5 dBA at acoustically "soft" sites (United States Department of Transportation [USDOT], Federal Highway Administration. For example, a 60 dBA noise level measured 50 feet from a point source at an acoustically hard site would be 54 dBA 100 feet from the source and 48 dBA 200 feet from the source. Sound generated by a line source typically attenuates at a rate of three dBA and 4.5 dBA per doubling of distance from the source to the receptor for hard and soft sites, respectively. Sound levels can also be attenuated by man-made or natural barriers. Solid walls, berms, or elevation differences typically reduce point and line source noise levels by five to ten dBA (USDOT, FHWA, 2006). Sound levels for a source may also be attenuated three to five dBA by a first row of houses and 1.5 dBA for each additional row of houses (T.M. Barry and J.A. Reagan, 1978).



Table 33 Definitions of Acoustical Terms

Terms	Definitions
dB, Decibel	Unit of measurement of sound level
dBA, decibel A-Weighted	A unit of measurement of sound level corrected to the A–weighted scale, as defined in ANSI S1.4–1971 (R1976), using a reference level of 20 micropascals (0.00002 Newtons per square meter).
A – Weighted Scale	A sound measurement scale, which corrects the pressures of individual frequencies according to human sensitivities. The scale is based upon the fact that the region of highest sensitivity for the average ear is between 2,000 and 4,000 Hz. Sound levels are measured on a logarithmic scale in decibels, dB. The universal measure for environmental sound is the A–weighted sound level, dBA.
Hz, Hertz	Unit of measurement of frequency, numerically equal to cycles per second.
Loudness	A listener's perception of sound pressure incident in his ear.
L01, L10, L50, L90	The A–weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Leq, Equivalent Noise Level	Also called the equivalent continuous noise level. It is the continuous sound level that is equivalent, in terms of noise energy content, to the actual fluctuating noise existing at the location over a given period, usually one hour. Leq is usually measured in hourly intervals over long periods in order to develop 24–hour noise levels.
CNEL, Community Noise Equivalent Level	The CNEL is a measure of the cumulative noise exposure in the community, with greater weights applied to evening and night time periods. This noise descriptor is the equivalent noise level over a 24–hour period mathematically weighted during the evening and night when residents are more sensitive to intrusive noise. The daytime period is from 7:00 am to 7:00 pm; evening from 7:00 pm to 10:00 pm; and nighttime from 10:00 pm to 7:00 pm. A weighting factor of one dB is added to the measured day levels defined as 7:00 am to 7:00 pm, evening levels (7:00 pm to 10:00 pm) have a weighting factor of three and ten dB to the night time levels (10:00 pm to 7:00 am). The weighted levels over a 24–hour period are then averaged to produce the single number CNEL rating.
Ldn, Day/Night Noise Level	The same as CNEL except that the evening time period is not considered separately, but instead it is included as part of the daytime period. Measurements of both CNEL and Ldn in the same residential environments reveal that CNEL is usually slightly higher (by less than one dB) than Ldn due to the evening factor weighting.
Lmin, Lmax	The minimum and maximum A–weighted noise level during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.



Table 34 Typical Sound Levels Measure in the Environment

A–Weighted Sound Level in dBA	Outdoor	Indoor	Subjective Impression
Pain Threshold			
130	• Jackhammer • Stock Car Races		
120	• Ambulance Siren • Leaf Blower (110 dBA) • Rock Concert (110 dBA) • Car Horn (110 dBA)	• Baby Crying on Shoulder (110 dBA)	
100	• Snowmobile • Lawnmower (96dBA) • Backhoe (75-95 dBA) • Pile driver at 50’ (90-105 dBA)		Very Loud
90	• Motorcycle at 25’ • Propeller Airplane flyover at 1000’ (88 dBA) • Diesel Truck at 50’ @ 40mph (84 dBA)	• Shouted Conversation • Vacuum cleaner (60-85 dBA)	
80	• Car at 25’ @ 65mph (77 dBA)	• Garbage Disposal • Ringing Telephone • Living Room Music or TV (70-75 dBA)	Moderately Loud
70		• Dishwasher (55-70 dBA) • Normal Conversation (60-65 dBA)	
60	• Air-conditioner at 100’	• Sewing Machine	
50		• Refrigerator	
40	• Quiet Residential Area		Quiet
30			
20	• Rustling of Leaves	• Whispering at 5’	
10			
0	Threshold of Hearing		

4.10.1.2 Fundamentals of Ground Vibration

Ground vibration can be defined as oscillatory displacement of the ground as a result of a disturbance (excitation) from vibration source. The disturbance propagates away from the source by means of vibration waves. The main vibration waves are the: “primary” or “compression” waves (P-waves), “secondary” or “shear” waves (S-waves), and Rayleigh waves (R-waves). The first two waves are called “body waves”. The third one is a type of a surface wave as it is confined to a zone near the surface. The motion of ground particles associated with a P-wave is the back and forth movements along the direction of the wave travel. The motion of ground particles associated with an S-wave is in a direction transverse to the direction of the wave. For R-waves, the motion of ground particles has both horizontal and vertical components and these movements attenuate rapidly with depth. Since Rayleigh waves are confined to a narrow zone along the surface of the ground, they tend to carry more energy and do not attenuate with distance as much as the P-waves or S-waves. The main properties of ground vibration are the vibration amplitude – the maximum displacement and the vibration frequencies.

Ground vibration can induce vibration of buildings and structures that it supports. Construction as well as traffic induced vibration in buildings can be a common source of annoyance affecting residents and, in some cases, can degrade the performance of precision measuring equipment (MRI, etc.). Any perceptible vibration from extraneous sources tends to result in residential concerns about possible building (structure) damage, even when the associated amplitudes of vibration are much, much lower than those barely sufficient to cause superficial damage such as cracks stucco or drywall. Also, vibration below the threshold of perception can affect people through their sense of hearing if causes airborne noise from rattling objects or building surfaces. Traffic (including heavy trucks) on major highways, rarely generates vibration amplitudes high enough to cause any type of structural or cosmetic damage and in most instances the resulting vibrations would not be perceptible. Traffic along secondary roadways closer to residences where vehicles travel over potholes or other discontinuities in the pavement can induce high enough vibration levels to result in complaints from the residents. Freight trains and light-rail trains can also be significant sources of ground vibration.

Most construction and traffic induced vibration involve sources of vibration at or near the surface, making the R-waves the primary waves of concern. Even when the actual vibration sources are below the surface (e.g., pile driving) R-waves form at the surface within a short distance from the location of the source. Therefore, propagation of vibration from construction or traffic sources is typically modeled assuming R-waves. Vibration can be continuous or transient. According to the California Department of Transportation (Caltrans) Vibration Guidance Manual (2013a), the following vibration sources result in the continuous vibration:

- excavation equipment,
- static compaction equipment,
- tracked vehicles,
- traffic on a highway,
- vibratory pile drivers,
- pile-extraction equipment, and
- vibratory compaction equipment.



Transient and low-rate repeated vibration may result from the following activities:

- impact pile drivers,
- blasting,
- drop balls,
- “pogo stick” compactors, and
- crack-and-seat equipment.

The effects of vibration on people or structures is primarily a function its amplitude and frequency. The typical frequency range of interest in ground and building vibration is from one to 80 Hz. Most of construction and traffic induced vibration occurs in the frequency range of ten to 30 Hz. Single-number vibration amplitude limits for construction are generally set assuming the corresponding vibration frequencies are between ten and 30 Hz.

The ground and building vibration can be measured directly using velocity transducers or accelerometers. The most common descriptors for ground and building vibration amplitude is the peak particle velocity (PPV) and peak particle acceleration (PPA) defined in inches per second (in/s) and inches per second squared (in/s^2), respectively. Similarly, to noise, the amplitude of vibration is also commonly expressed in decibels. The most common descriptors here are the vibration velocity level and vibration acceleration level.

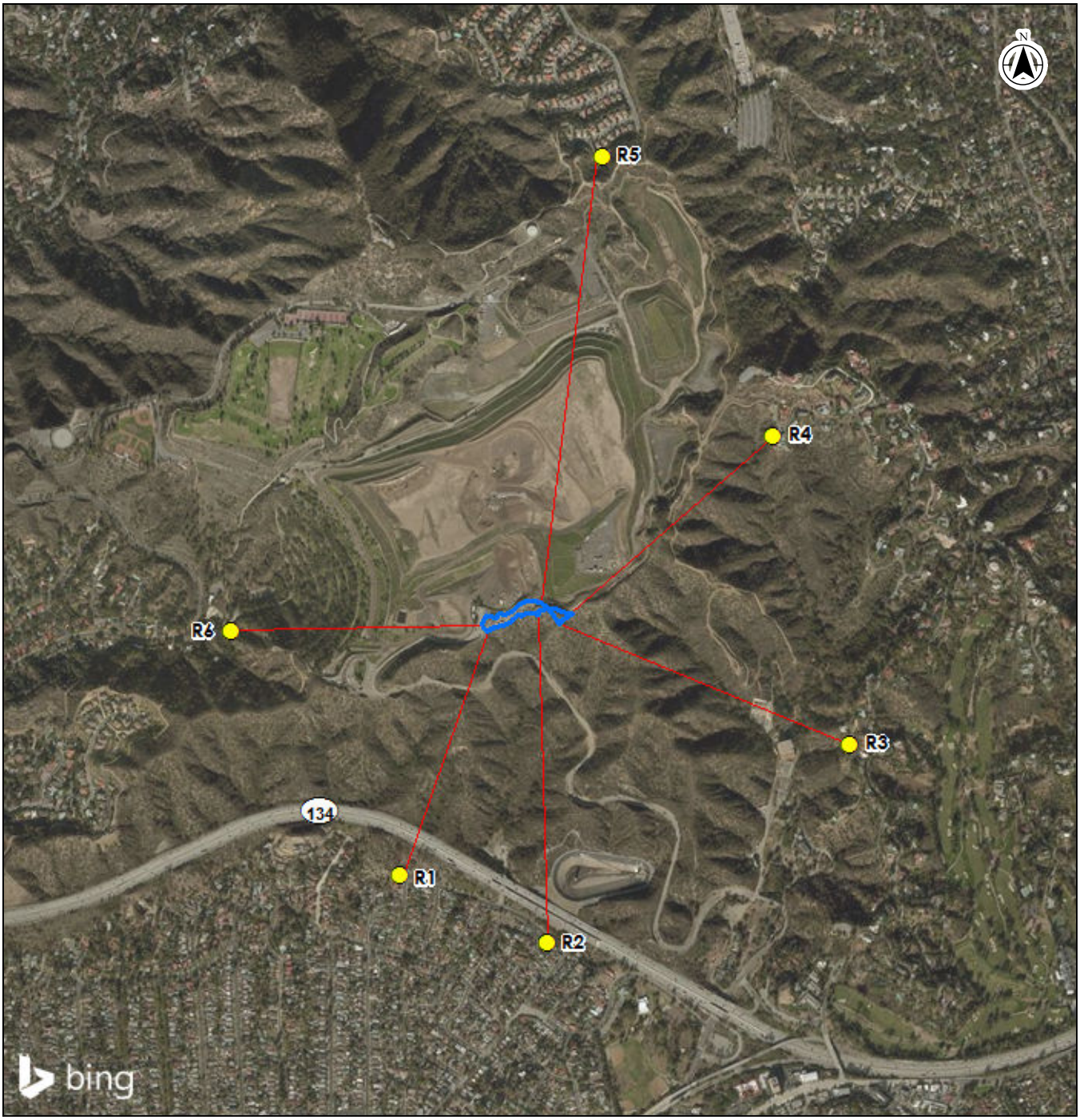
4.10.1.3 Sensitive Receptors and Existing Noise Environment

Six representative sensitive receptors (residential land uses) were selected for evaluations that are located within areas that could be potentially impacted by noise generated by the proposed Project. Stantec measured the day- and night-time ambient noise levels at each of the six identified sensitive receptors on October 21 and 22, 2015 using a Bruel & Kjaer Type 2236 noise meter. The sensitive receptors, proximity to the proposed Project site, and the ambient noise level are presented in **Table 35**. Ambient noise measurement data collection sheets are included as Appendix J. The locations of the sensitive receptors are shown in **Figure 4.10-1**.

Table 35 Sensitive Receptors in Close Proximity to Project Site

Receptor Identification	Receptor Type	Receptor Location	Distance from proposed Project (feet)	Daytime Ambient Noise Level (Leq)*	
				Day	Night
R1	Residence	5471 Mount Helena Avenue, Los Angeles	2,389	54.0	56.8
R2	Residence	1233 Cedaredge Avenue, Los Angeles	3,033	65.2	64.3
R3	Residence	325 Woodcliffe Road, Pasadena	2,970	54.5	47.8
R4	Residence	1600 Glen Oaks Boulevard, Pasadena	2,607	37.1	47.1
R5	Residence	1037 Marengo Drive, Glendale	4,271	43.4	39.1
R6	Residence	2840 Glenoaks Canyon Road, Glendale	2,281	46.4	46.5
*Data collected by Stantec Personnel on 10/21-22/2015 during daytime and nighttime hours.					

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Legend

- Sensitive Noise Receptor
- Proposed Power Plant Facility Boundary

Stantec

Project Location
Glendale, CA

Project No.: 20571 23300
Prepared by JT on 2017-07-18
Technical Review by CH on 2017-07-18

Client/Project
City of Glendale Water and Power
Biogas Renewable Generation Project
Environmental Impact Report

Figure No.
4.10-1

Title
Sensitive Noise Receptor Map

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

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4.10.2 Laws, Ordinances, Regulations and Standards

4.10.2.1 Federal

Federal regulations safeguard the hearing of workers exposed to occupational noise, enforced by Occupational Safety and Health Administration (OSHA) (e.g. 29 Code of Federal Regulations [CFR] 1919.120). For example, it is unlawful for employees to be exposed to noise levels in excess of 115 dBA for more than 15 minutes during any working day. The United States Environmental Protection Agency (USEPA) has developed guidelines on recommended maximum noise levels to protect public health and welfare (USEPA, 1978). The USEPA identifies a 24-hour exposure level of 70 dBA as the level of environmental noise which will prevent any measurable hearing loss over a lifetime. Likewise, levels of 55 dBA outdoors and 45 dBA indoors are identified as activity interference and annoyance (USEPA, 1978).

4.10.2.2 State

California encourages each local government to perform noise studies and implement a noise element as part of their general plan. Standards and implementation are administered by the /Cal/OSHA which are based on the USEPA occupational guidelines to protect the hearing of workers.

According to Cal/OSHA, the standard is set at the noise threshold where hearing loss may occur from long–term exposures. The maximum allowable level is 90 dBA averaged over an eight-hour time period.

Senate Bill (SB) 4 Section 2, Article 3, Section 3160.(a)(4) requires that operators consider, among several other items, potential noise pollution.

4.10.2.3 Local

City of Glendale

The City Noise Ordinance (GMC Chapter 8.36) applies the most stringent noise limits of all the affected cities of 55 to 60 dBA Leq, depending on the type of residential, for the daytime period (7:00 am to 10:00 pm) and 45 dBA Leq for the nighttime period (10:00 pm to 7:00 am) at the nearest residential property. Also, the noise level cannot exceed 65 dBA Leq at any time at an adjacent commercial property, and 70 dBA Leq at any time at an adjacent industrial property.

Chapter 8.36.050 Minimum and Maximum Ambient Noise Levels, states, A) Where the actual ambient is less than the presumed ambient, the actual ambient shall control and any noise in excess of the actual ambient, plus five dBA, shall be a violation. B) Where the actual ambient is equal to or more than the presumed ambient, the actual ambient shall control and any noise may not exceed the actual ambient by more than five dBA; however, in no event may the actual ambient exceed the presumed noise standards by five dBA.

The Glendale Noise Ordinance (Chapter 8.36.080) prohibits noise from construction activity for certain time periods. Construction buildup, structures, or Projects may take place between 7:00 am and 7:00 pm Monday through Saturday. Construction will not be allowed at any time on a Sunday or on holidays.



4.10.3 Methodology and Thresholds of Significance

4.10.3.1 Methodology

The noise levels that could occur from construction and operation of the proposed Project were modeled using the Computer Aided Noise Abatement (CadnaA) modeling software. The following considerations were used in the model:

- Terrain;
- Noise source in full octave band;
- Wind speed and direction;
- Ground condition; and
- Barrier effects from buildings.

The modelled construction and operation noise levels were then added to the ambient noise levels recorded at the nearest sensitive receptors and compared to the thresholds of significance summarized below.

Per the City of Glendale's Noise Ordinance (Chapter 8.36 of the Glendale Municipal Code), single family residences shall not be exposed to exterior noise levels exceeding 45 dBA during nighttime or 55 dBA during daytime. Where the actual ambient noise level is less than the presumed ambient (e.g., 45 dBA during nighttime or 55 dBA during daytime), the actual ambient shall control and any noise in excess of the actual ambient, plus five dBA, shall be a violation. Where the actual ambient is equal to or more than the presumed ambient, the actual ambient shall control and any noise may not exceed the actual ambient by more than five dBA; however, in no event may the actual ambient exceed the presumed noise standards by five dBA. Based on these noise ordinance requirements, the noise level thresholds applicable to the proposed Project are summarized below in **Table 36**.

Table 36 Noise Impact Thresholds for Project Construction and Operation

Receptor	Exiting Ambient Noise Level (dBA)[1]		Presumed Ambient Noise Level (dBA)		Applicable Noise Limits (dBA)	
	Day	Night	Day	Night	Day	Night
R1	54	56.8	54	50	59	55
R2	65.2	64.3	60	50	65	55
R3	54.5	47.8	54.5	47.8	59.5	52.8
R4	37.1	47.1	37.1	47.1	42.1	52.1
R5	43.4	39.1	43.4	39.1	48.4	44.1
R6	46.4	46.5	46.4	46.5	51.4	51.5

Notes:
Day and night sound levels expressed in Leq.
1. Data collected by Stantec Personnel during daytime and nighttime hours.
2. Five dB above the Presumed Ambient Sound Level

On-Site Construction Noise

Construction of the proposed Project will result in noise from the operation of conventional construction equipment and associated vehicles. All construction related activities will be conducted during the work week (Monday through Friday) between the hours of 7:00 am and 7:00 pm. Equipment uses (types, number, loading factors) were modelled for all phases of construction with the demolition phase having the highest noise levels. The demolition phase was therefore used as the worst-case scenario used to analyze potential construction noise impacts from the proposed Project. The results of the noise attenuation modeling for the proposed Project construction are summarized below in **Table 37**. Modeled noise level contour maps are included in Appendix H.

Table 37 Noise Level Summary for Project Construction

Receptor	Presumed Ambient	Construction Noise	Combined Noise Ambient + Construction[1]	Increase from Ambient	Exceed 5 dBA Increase? Exceed 55 dBA Exterior Noise Standard?
	Day (dBA)	Day (dBA)	Day (dBA)	Day (dBA)	
R1	54.0	40.3	54.2	0.2	No No
R2	60.0	44.1	60.1	0.1	No Yes
R3	54.5	43.4	54.8	0.3	No No
R4	37.1	41.0	42.5	5.4	Yes No
R5	43.4	38.6	44.6	1.2	No No
R6	46.4	35.9	46.8	0.4	No No

Notes:
Sound levels expressed in Leq.
1. Logarithmic addition of Presumed Ambient Daytime Sound Level and project case

On-Site Stationary Point-Source Noise (Operation)

Operation of the proposed Project would result in noise from the operation of stationary power generating and ancillary equipment including but not limited to compressors, coolers, pumps, exhaust fans, exhaust stacks and louvers. Landfill gas (LFG) would be combusted in four reciprocating General Electric Jenbacher Model J 620 GS-16 engines to generate electricity. A list of equipment and assumed noise levels generated by the project are provided as Appendix H. There is not expected to be an increase in motor vehicle use associated with project operation that would lead to a substantial increase in transportation noise levels beyond those that already occur at the site.



Per applicable municipal requirements, single family residences shall not be exposed to exterior noise levels exceeding 45 dBA during nighttime or 55 dBA during daytime. Where the actual ambient noise level is less than the presumed ambient (e.g., 45 dBA during nighttime or 55 dBA during daytime), the actual ambient shall control and any noise in excess of the actual ambient, plus five dBA, shall be a violation. Where the actual ambient is equal to or more than the presumed ambient, the actual ambient shall control and any noise may not exceed the actual ambient by more than five dBA; however, in no event may the actual ambient exceed the presumed noise standards by five dBA. The City has more stringent noise standards applicable to sensitive receptors potentially affected by the proposed Project and they have therefore been adopted as thresholds for determining potentially significant noise impacts. The noise level thresholds applied to the proposed Project are summarized below in **Table 38**.

Table 38 Noise Impact Thresholds for Project Operation

Receptor	Exiting Ambient Noise Level (dBA)[1]		Presumed Ambient Noise Level (dBA)		Applicable Noise Limits (dBA)	
	Day	Night	Day	Night	Day	Night
R1	54	56.8	54	50	59	55
R2	65.2	64.3	60	50	65	55
R3	54.5	47.8	54.5	47.8	59.5	52.8
R4	37.1	47.1	37.1	47.1	42.1	52.1
R5	43.4	39.1	43.4	39.1	48.4	44.1
R6	46.4	46.5	46.4	46.5	51.4	51.5

Notes:
Day and night sound levels expressed in Leq.
1. Data collected by Stantec Personnel during daytime and nighttime hours.
2. Five dB above the Presumed Ambient Sound Level

The expected daytime and nighttime noise generated by the engines as well as ancillary equipment was combined with the presumed ambient sound levels using the CadnaA modeling software. The following considerations were used in the model:

- Terrain;
- Noise source in full octave band;
- Wind speed and direction;
- Ground condition; and
- Barrier effects from buildings.

The results of the noise attenuation modeling for the proposed Project operation are summarized below in **Table 39**. Modeled noise level contour maps are included in Appendix H.

Table 39 Noise Level Summary for Project Operation

Receptor	Presumed Ambient		Facility Noise		Combined Noise Ambient + Facility		Noise Limit		Exceed Limit?
	Day (dBA)	Night (dBA)	Day (dBA)	Night (dBA)	Day (dBA)	Night (dBA)	Day (dBA)	Night (dBA)	
R1	54.0	50.0	38.0	38.0	54.1	50.3	59.0	55.0	No
R2	60.0	50.0	40.0	40.0	60.0	50.4	65.0	55.0	No
R3	54.5	47.8	40.6	40.6	54.7	48.6	59.5	52.8	No
R4	37.1	47.1	35.2	35.2	39.3	47.4	42.1	52.1	No
R5	43.4	39.1	35.1	35.1	44.0	40.6	48.4	44.1	No
R6	46.4	46.5	29.9	29.9	46.5	46.6	51.4	51.5	No

Notes:
Day and night sound levels expressed in Leq.
1. Logarithmic addition of Presumed Ambient Daytime Sound Level and project case
2. Logarithmic addition of Presumed Ambient Nighttime Sound Level and project case

As show in **Tables 38** and **39**, operation of the proposed Project with the use of four General Electric Jenbacher Model J 620 GS-16 engines would not result in an exceedance of an applicable daytime or nighttime noise standard at any of the sensitive receptor locations. Operation related noise would therefore not expose persons to or generate noise levels in excess of established standards and potential impacts would be less than significant.

4.10.3.2 Thresholds of Significance

As determined in the Initial Study, the proposed Project is not located within an airport land use plan or within two miles of a public or public use airport. The closest public airport is the Hollywood Burbank Airport, located approximately ten miles west of the proposed Project site therefore there would be no impacts on an airport land use plan or on any airport. The following two checklist questions were evaluated in this Environmental Impact Report (EIR).

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would have a significant impact related to noise if it would result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the proposed Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Generation of excessive groundborne vibration or groundborne noise levels.

4.10.4 Project Impacts

Threshold: Would the proposed Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

4.10.4.1 Construction Noise

Construction of the proposed Project will result in noise from the operation of conventional construction equipment and associated vehicles. All construction related activities will be conducted during the work week (Monday through Friday) between the hours of 7:00 am and 7:00 pm. Equipment uses (types, number, loading factors) were modelled for all phases of construction with the demolition phase having the highest noise levels. The demolition phase was therefore used as the worst-case scenario to analyze temporary construction noise impacts from the proposed Project. The results of the noise attenuation modeling for the proposed Project construction are summarized below in **Table 40**. Modeled noise level contour maps are included in Appendix J.

Table 40 Noise Level Summary for Project Construction

Receptor	Presumed Ambient	Construction Noise	Combined Noise Ambient + Construction[1]	Increase from Ambient	Threshold of Significance Expressed as Increase from Ambient	Exceed Threshold of Significance?
	Day (dBA)	Day (dBA)	Day (dBA)	Day (dBA)	Day (dBA)	
R1	54.0	41.4	54.2	0.2	5	No
R2	60.0	43.9	60.1	0.1	5	No
R3	54.5	42.4	54.8	0.3	5	No
R4	37.1	40.2	41.9	4.8	5	No
R5	43.4	38.0	44.5	1.1	5	No
R6	46.4	34.7	46.7	0.3	5	No

Notes:
Sound levels expressed in Leq.
1. Logarithmic addition of Presumed Ambient Daytime Sound Level and project case

As shown in **Table 40**, proposed Project construction would potentially increase existing noise level levels by less than five dBA at each sensitive receptor. Because the potential increase is less than the applicable threshold of significance of a five dBA increase, construction of the proposed Project would not expose persons to or generate noise levels in excess of established standards. Potential impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than Significant Impact

4.10.4.2 Operational Noise

Operation of the proposed Project would result in noise from the operation of stationary power generating and ancillary equipment including but not limited to compressors, coolers, pumps, exhaust fans, exhaust stacks and louvers. LFG would be combusted in four reciprocating General Electric Jenbacher Model J 620 GS-16 engines to generate electricity. A list of equipment and assumed noise levels generated by the project are provided as Appendix J. There is not expected to be an increase in motor vehicle use associated with project operation that would lead to a substantial increase in noise levels beyond those that already occur at the site.

The results of the noise attenuation modeling for the proposed Project operation are summarized below in **Table 41**. Modeled noise level contour maps are included in Appendix J.

Table 41 Noise Level Summary for Project Operation

Receptor	Presumed Ambient		Facility Noise		Combined Noise Ambient + Facility		Threshold of Significance		Exceed Threshold?
	Day (dBA)	Night (dBA)	Day (dBA)	Night (dBA)	Day (dBA)	Night (dBA)	Day (dBA)	Night (dBA)	
R1	54.0	50.0	38.0	38.0	54.1	50.3	59.0	55.0	No
R2	60.0	50.0	40.0	40.0	60.0	50.4	65.0	55.0	No
R3	54.5	47.8	40.6	40.6	54.7	48.6	59.5	52.8	No
R4	37.1	47.1	35.2	35.2	39.3	47.4	42.1	52.1	No
R5	43.4	39.1	35.1	35.1	44.0	40.6	48.4	44.1	No
R6	46.4	46.5	29.9	29.9	46.5	46.6	51.4	51.5	No

Notes:
Day and night sound levels expressed in Leq.
1. Logarithmic addition of Presumed Ambient Daytime Sound Level and proposed Project case
2. Logarithmic addition of Presumed Ambient Nighttime Sound Level and proposed Project case

As show in **Table 41**, operation of the proposed Project with the use of four General Electric Jenbacher Model J 620 GS-16 engines would not result in an exceedance of an applicable daytime or nighttime noise standard at any of the sensitive receptor locations. Operation related noise would therefore not expose persons to or generate noise levels in excess of established standards and potential impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than Significant.

Threshold: Would the Project result in generation of excessive groundborne vibration or groundborne noise levels?

4.10.4.3 Construction Vibration

The proposed Project does not include sources known to generate substantial groundborne vibration such as pile driving, vibratory equipment or explosives. Construction will include the use of limited track mounted equipment during grading activities that has the potential to generate localized ground borne vibration. The City of Glendale Noise Ordinance requires that levels of vibration be below the vibration perception threshold defined as 0.01 in/s. Groundborne vibration levels associated with common construction equipment are summarized in **Table 42**.

Table 42 Vibration Source Amplitudes for Construction Equipment

Equipment	Peak Particle Velocity at 25 Feet (In/Sec)
Vibratory Roller	0.210
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozers	0.003
Source: Limits derived from data presented in *Caltrans Construction Vibration Guidance Manual*, September 2013	

The peak particle velocity at any distance from a vibration source can be calculated using the following equation: peak particle velocity of equipment at 25 feet x $(25/\text{distance to receptor})^n$, where n is 1.1 (the value related to the attenuation rate through ground (USEPA, 1978). Using the most conservative vibration source of 0.210 in/s in **Table 42**, the expected resulting vibration at the nearest residence located 2,281 feet from the source would be 0.001 in/sec, or approximately 100 times lower than the threshold of significance. Proposed Project construction would not expose persons to or generate excessive ground borne vibration or ground borne noise levels and potential impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than Significant.

4.10.4.4 Operational Vibration

The proposed Project does not include sources known to generate substantial vibration such as pile driving, vibratory equipment, explosives, or low-frequency noise sources. Considering the lack of substantial sources of groundborne vibration during operation and that the nearest sensitive receptor is located more than 2,200 feet from operational noise sources, the proposed Project would not expose persons to or generate excessive ground borne vibration or ground borne noise levels. Potential impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than Significant Impact.

4.10.5 Cumulative Impacts

The proposed Project and the proposed Grayson Repowering Project are spatially separated such that they would not have the potential to contribute to cumulative noise impacts.

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4.11 TRANSPORTATION

Acronyms

Caltrans	California Department of Transportation
CD	Control delay
CEQA	California Environmental Quality Act
CMP	Congestion Management Program
EIR	Environmental Impact Report
GHG	Greenhouse gas
HCM	Highway Capacity Manual
LADOT	Los Angeles Department of Transportation
LOS	Level of Service
OPR	Governor's Office of Planning and Research
PCE	Passenger Car Equivalent
RTP	Regional Transportation Plan
SB	Senate Bill
SCAG	Southern California Association of Governments
SCLF	Scholl Canyon Landfill
SRTS	Safe Routes to School
V/C	Volume to capacity ratio
VMT	Vehicle miles traveled
vphpl	Vehicles per hour per lane

This section discusses the roadways and existing traffic in the vicinity of the proposed Project, the increase in traffic associated with the construction and operation of the proposed Project, and a discussion of the level of significance of those increases.

For the purposes of this section, the network of freeways and roadways surrounding the proposed Project site is referred to as the existing roadway system. Although the proposed Project site is located within the City of Glendale, California, the roadway system used to access the site is primarily located within the City of Los Angeles, California. Therefore, this section focuses on those roadways relevant to the proposed Project within the City of Los Angeles.



4.11.1 Environmental Setting

4.11.1.1 Existing Conditions

Regional Transportation Network

The existing regional transportation network with the potential to be impacted by the proposed Project includes State Route 134. State Route 134 is an east-west state route through Los Angeles County that provides interregional access to the proposed Project site via the interchange with North Figueroa Street. Part of the Congestion Management Program (CMP), State Route 134 originates at the Route 134/170/101 interchange and runs a distance of 13.34 miles, terminating at the Route 134/210 interchange. State Route 134 is classified as an urban principal arterial and contains four travel lanes and a high occupancy vehicle lane in each direction in the study area.

Local Transportation Network

The existing local transportation network with the potential to be impacted by the proposed Project includes North Figueroa Street. Figueroa Street is a two- to four-lane north-south Secondary Highway that extends north from John S Gibson Blvd. in Los Angeles and terminates at State Route 134 near Eagle Rock. The roadway provides access to the urbanized areas south of State Route 134 and Scholl Canyon Road north of State Route 134. The State Route 134 Eastbound Ramps/North Figueroa Street intersection is controlled by a traffic signal and the State Route 134 Westbound Ramps/North Figueroa Street intersection is controlled by an all-way stop.

Project Vicinity Primary Site Access and Parking

Project Site Access

The proposed Project location is accessed exclusively by Scholl Canyon Road. North Figueroa Street turns into Scholl Canyon Road at the State Route 134 Westbound Ramps/North Figueroa Street intersection. Scholl Canyon Road is a two-lane road that terminates at the Scholl Canyon Landfill (SCLF).

Parking and Temporary Parking Lot Access

Parking for construction workers would be provided on-site within the boundary of the landfill. The laydown and equipment storage area would also be within the boundary of the landfill. No offsite parking or material storage would be required.

Bicycle Facilities

There are no designated bicycle facilities in the proposed Project area.

Railways

There are no designated railways in the proposed Project area.

Transit

There is no designated public transportation in the proposed Project area.

4.11.2 Laws, Ordinances, Regulations and Standards

4.11.2.1 State

Senate Bill 743

Senate Bill (SB) 743 required the Governor's Office of Planning and Research (OPR) to revise the guidelines for conducting transportation analyses and identify new metrics for identifying and mitigating transportation impacts under California Environmental Quality Act (CEQA). OPR identified vehicle miles traveled (VMT) per capita and VMT per employee as the new metrics for transportation analysis. Thus, the reliance on roadway capacity, level of service, and delay as performance measures will no longer constitute a significant environmental effect under CEQA. The intent is to encourage smart growth and infill developments and reduce the amount of greenhouse gas (GHG) emissions produced by vehicle travel.

Agencies, such as the California Department of Transportation (Caltrans), are starting to make progress with early implementation of SB 743 by evolving their transportation analysis to be more multimodal. Caltrans prepared both a Draft Transportation Analysis Framework and Draft Transportation Analysis under CEQA in March 2020. In December 2018, the California Natural Resources Agency certified and adopted the CEQA Guidelines update package, including the Guidelines section implementing Senate Bill 743 (§ 15064.3). The requirement in CEQA Guidelines Section 15064.3 to use VMT as the metric for transportation analysis takes effect on July 1st, 2020. At the time this EIR was prepared, the City had not yet established a VMT threshold. In addition, the proposed Project would not result in a change to long-term Project traffic levels or trip lengths compared to baseline conditions, therefore VMT analysis is not applicable to the proposed Project.

General Roadway Regulation – Caltrans

Caltrans regulates and maintains State and Interstate roadways (state routes, highways, freeways) in the State of California. In areas with State roadways, Caltrans has the responsibility to maintain these roadways while the local jurisdictions (e.g., City and County transportation departments) are responsible for maintaining local roads. Local jurisdictions work with Caltrans to achieve transportation service requirements and improvements.

The Project site is located in Caltrans District 7, which includes Los Angeles County. This district is responsible for planning, designing, and maintaining State highways in the general area of the proposed Project site, including Interstate 5 and State Route 134.

4.11.2.2 Local

Regional Transportation Plan – Southern California Association of Governments

The Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP) is a long-term vision document that outlines transportation goals, objectives, and policies for the SCAG region, including Los Angeles County (SCAG 2016). The latest SCAG RTP, adopted in April 2012, includes an assessment of overall growth and economic trends in the region and provides strategic



direction for transportation capital investments to support more efficient and "sustainable" modes of transportation from 2012 through 2035. Future planning will promote the use of bus and light rail transit, passenger high speed rail, and other Transportation Demand Management strategies.

City of Glendale General Plan
Land Use Element - Circulation

Goal: Ensure that existing development is provided with adequate and safe streets

Goal: Provide adequate streets in advance of development capable of accommodating traffic associated with proposed uses

Circulation Element

Goal 2: Minimization of congestion, air pollution, and noise associated with motor vehicles

Goal 3: Reasonable access to services and goods in Glendale by a variety of transportation modes

Goal 4: Functional and safe streetscapes that are aesthetically pleasing for both pedestrians and vehicular travel

City of Glendale Bicycle Transportation Plan

The Glendale Bicycle Transportation Plan serves as a guide to the City in planning, development, design, and maintenance for new and upgraded bicycle facilities for the next 20 years. The Bicycle Transportation Plan will be updated every five years to inventory and evaluate changes to infrastructure, and to adjust planned facilities based on changing future conditions. The Glendale Bicycle Transportation Plan is compliant with Caltrans Bicycle Transportation Account requirements.

Goal 1: Create an environment where people of all ages can circulate safely and easily on a bicycle

Goal 2: Increase the number of bicyclists by enticing more people to use their bicycles instead of driving

Goal 3: Promote the health of Glendale residents

Goal 4: Enhance the economic viability of Glendale

Goal 5: Reduce greenhouse gas emissions and energy consumption

Goal 6: Develop and implement an educational program for safe bicycling

The Glendale Bicycle Transportation Plan outlines the following policies in order to accomplish these goals.

Policy 1: The City will develop a complete bikeway network throughout Glendale

Policy 2: The City will actively accommodate and encourage safe and convenient bicycle utilitarian trips to schools, employment sites, stores, parks, and other destinations throughout Glendale



Policy 3: The City will take steps to reduce the bicycle-involved crash rate (fewer crashes per mile ridden)

Policy 4: The City will make bicycle parking available, secure, and convenient throughout Glendale

Policy 5: The City will work to implement Safe Routes to School (SRTS) programs in each Glendale school within the next 10 years

Policy 6: The City will ensure that new development is bikeable, walkable, and barrier-free

Policy 7: The City will implement this Bicycle Transportation Plan within 20 years

4.11.3 Methodology and Thresholds of Significance

4.11.3.1 Methodology

4.11.3.2 Level of Service Criteria

The standard measure used to identify intersection and ramp operating conditions is known as the Level of Service (LOS). LOS compares the volume of traffic at an intersection to the capacity the intersection is capable of handling and is expressed as a volume to capacity ratio (V/C). A LOS letter scale from 'A' to 'F' is then assigned to the intersection with LOS A representing free flow conditions and LOS F representing overly congested conditions.

The State Route 134 Westbound Ramps/North Figueroa Street intersection and the State Route 134 Eastbound Ramps/ North Figueroa Street intersection (collectively the 'study area') includes signalized and unsignalized intersections. **Table 43** summarizes the LOS definitions for signalized intersections. The Cities of Glendale and Los Angeles do not provide level of service standards for unsignalized intersections.

Table 43 Level of Service Standards for Signalized Intersections

LOS	Description	V/C Ratio
A	Excellent. No vehicle waits longer than one red light and no approach phase is fully used.	0.000 – 0.600
B	Very good. An occasional approach is fully utilized; mainly drivers begin to feel somewhat restricted within groups of vehicles.	0.601 – 0.700
C	The number of vehicles stopping becomes significant, though many still pass through the intersection without stopping.	0.701 – 0.800
D	The influence of congestion becomes more noticeable. Many vehicles stop and the proportion of vehicles not stopping declines.	0.801 – 0.900
E	Results in delay considered to be unacceptable.	0.901 – 1.000
F	Considered unacceptable to most drivers, often occurs with oversaturation, when arriving traffic exceeds the capacity at the intersection.	>1.000

Los Angeles Department of Transportation, Los Angeles Department of Transportation Traffic Study Policies and Procedures, 2013.

The study area intersections are also within Caltrans' jurisdiction which triggers a review using the Highway Capacity Manual (HCM)[71] method for evaluating intersections. The HCM method measures the 'control delay' (CD) which is the wait time at the intersection in seconds per vehicle. According to the HCM, the following LOS standards, shown in Table 44, are used for intersections at Caltrans ramps:

Table 44 Level of Service Standards for Intersections at Caltrans Ramps

LOS	Description	Control Delay (Signalized)	Control Delay (Un-Signalized)
A	Very low delay. Most vehicles do not stop at the intersection.	≤10 seconds/vehicle	≤10 seconds/vehicle
B	More vehicles stop than with LOS A, causing higher delays.	>10 – 20 seconds/vehicle	>10 – 15 seconds/vehicle
C	The number of vehicles stopping becomes significant, though many still pass through the intersection without stopping	>20 - 35 seconds/vehicle	>15 – 25 seconds/vehicle
D	The influence of congestion becomes more noticeable. Many vehicles stop and the proportion of vehicles not stopping declines.	>35 - 55 seconds/vehicle	>25 – 35 seconds/vehicle
E	Results in delay considered to be unacceptable.	>55 - 80 seconds/vehicle	>35 – 50 seconds/vehicle
F	Considered unacceptable to most drivers, often occurs with oversaturation, when arriving traffic exceeds the capacity at the intersection	>80 seconds/vehicle	>50 seconds/vehicle
Transportation Research Board, Highway Capacity Manual, 2010.			

The study area also contains metered and non-metered on/off ramps. According to the Caltrans Ramp Meter Design Manual, a single lane metered on-ramp can generally handle at most 900 vehicles per hour per lane (vphpl). According to the Highway Design Manual a single non-metered off ramp can accommodate up to 1,500 vphpl. Based on this, the following LOS standards, shown in **Table 45**, are used for the west and east bound ramps:

Table 45 Level of Service Standards for Ramps

Ramp Structure	Capacity (vphpl)	LOS A (V/C=0.6)	LOS B (V/C=0.7)	LOS C (V/C=0.8)	LOS D (V/C=0.9)	LOS E (V/C=1.0)	LOS F (V/C>1.0)
Metered one lane on-ramp	900	540	630	720	810	900	>900
Metered 1.5 lanes on-ramp[1]	1,500	900	1,050	1,200	1,350	1,500	>1,500
Non-Metered one lane off-ramp	1,500	900	1,050	1,200	1,350	1,500	>1,500
vphpl = vehicles per hour per lane; V/C = vehicles to capacity 1 = Two mixed flow lanes at the meter that merge to one lane post meter							

[71] *Highway Capacity Manual*, Transportation Research Board, 2010.

4.11.3.3 Existing Levels of Service

To determine the existing LOS at the subject area, Stantec subcontracted National Data & Surveying Services of Beverly Hills, California to conduct traffic counts on Thursday May 26, 2016. Traffic count results are provided in Appendix K.1 and summarized below in Table**Table 46** and **47**.

Table 46 Existing AM and PM Peak Hour Intersection Levels of Service

Intersection	AM Peak Hour		PM Peak Hour	
	(V/C) / LOS	CD / LOS	(V/C) / LOS	CD / LOS
Figueroa Street/ State Route 134 Eastbound Ramps	0.706 / C	12.2 sec / B	0.697 / B	13.2 sec / B
Figueroa Street/ State Route 134 Westbound Ramps	N/A	59.30 sec / F	N/A	16.91 sec / C

Table 47 Existing Level of Service Standards for Ramps

Ramp Segment	Ramp Conditions	Capacity (vphpl)	AM Peak Hour			PM Peak Hour		
			PCE Vol.	V/C	LOS	PCE Vol.	V/C	LOS
State Route 134 eastbound on-ramp at Figueroa Street	Metered One Lane	900	581	0.646	B	389	0.432	A
State Route 134 eastbound off-ramp at Figueroa Street	Non-Metered One Lane	1,500	604	0.403	A	775	0.517	A
State Route 134 westbound on-ramp at Figueroa Street	Metered 1.5 Lanes	1,500	748	0.499	A	522	0.348	A
State Route 134 westbound off-ramp at Figueroa Street	Non-Metered 1.5 lanes	1,500	282	0.188	A	286	0.191	A

4.11.3.4 Thresholds of Significance

As determined in the Initial Study, the proposed Project would not include or require design improvements or alterations to the public roadway network that could increase design or incompatible use hazards. Only on-road vehicles would be accessing the proposed Project site via the existing roadway network. As there would be no resulting impacts for this topic, only the following three checklist questions are evaluated this Environmental Impact Report (EIR).

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would have a significant impact related to transportation and traffic if it would:

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.
- Conflict or be consistent with CEQA Guidelines section 15064.3 subdivision (b).



- Result in inadequate emergency access.

4.11.4 Project Impacts

Threshold: Would the Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

4.11.4.1 Construction

The construction of the proposed Project is short-term (18 months) and would involve up to 42 PCE (passenger car equivalent) vehicle trips on peak days, which would equate to an average of five trips per hour assuming an eight-hour workday. It is expected that six PCE vehicle trips per day would be generated during the proposed Project's long-term operation, which would equate to an average of one trip per hour assuming an eight-hour workday. Although construction of the proposed Project will increase the volume of traffic present in the existing roadway network, the minimal trip increases will not change the V/C at the study-area intersections or ramps. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.11.4.2 Operation

Refer to Section 4.11.4.1

Mitigation Measures

No mitigation measures are required.

Threshold: Would the Project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

4.11.4.3 Construction

Ramps

The Los Angeles County Congestion Management Program states that a significant adverse traffic impact would occur on a CMP highway network if traffic from a proposed Project results in a ramp operating at an unacceptable LOS of D or F and an increase in the V/C ratio of greater than or equal to 0.02. The existing LOS for ramps in the study area are all currently operating at a LOS A or B. These LOS will not change as a result of the traffic associated with the proposed Project; all ramps would continue to operate at a LOS A or B. Therefore, there is no significant impact.

Intersections

The City of Los Angeles does not have thresholds for unsignalized intersections. The Los Angeles Department of Transportation (LADOT) Traffic Study Policies and Procedures states that a significant

adverse traffic impact would occur at a signalized intersection if: traffic from the proposed Project results in an intersection operating at a LOS C and an increase in the V/C of greater than or equal to 0.04; or if traffic from the proposed Project results in an intersection operating at a LOS D and an increase in the V/C of greater than or equal to 0.02; or if traffic from the proposed Project results in an intersection operating at a LOS E or F and an increase in the V/C of greater than or equal to 0.01. The existing LOS for signalized intersections in the study area is LOS C in the am and LOS B in the pm. The LOS in the am will remain the same; however, the LOS in the pm will change to LOS C as a result of the short-term traffic associated with construction of the proposed Project. The V/C increase associated with the pm change in LOS (0.013) is less than 0.04. Therefore, there is no significant impact.

The study area intersections are also within Caltrans jurisdiction, which triggers an additional review using the Highway Capacity Manual method for evaluating intersections. The existing LOS for intersections in the study area is LOS B in the am and pm (for eastbound ramps) and LOS F in the am and LOS C in the pm (for westbound ramps). These LOS will not change as a result of the traffic associated with the proposed Project. The addition of an average of one peak hour trip would not have the potential to change the intersection levels of service. Therefore, no significant impact would be generated based on Caltrans impact thresholds.

Mitigation Measures

No mitigation measures are required.

4.11.4.4 Operation

Refer to Section 4.11.4.3

Mitigation Measures

No mitigation measures are required.

Threshold: Would the Project result in inadequate emergency access?

4.11.4.5 Construction

Construction vehicles are not anticipated to block roadways or intersections, reduce speed below the speed limit on roadways, or to interfere with access of emergency vehicles. The proposed Project does not include any component that would result in inadequate emergency access to the site or surrounding areas. Therefore, there is no impact.

Mitigation Measures

No mitigation measures are required.

4.11.4.6 Operation

Please refer to Section 4.11.4.5

Mitigation Measures

No mitigation measures are required.

4.11.5 Cumulative Impacts

The proposed Project includes a minor increase in operation phase traffic compared to that which currently exists and does not have the potential to contribute to a cumulatively considerable long-term impact. Although construction of the proposed Project would temporarily increase the volume of traffic present in the existing roadway network, the increase will not cause the LOS to exceed the thresholds for significant impacts. The LOS at ramps or intersections will not change as a result of the traffic associated with the proposed Project. The proposed Project and the proposed Grayson Repowering Project would utilize different roadways and therefore would not have the potential to contribute to potential cumulative impacts.

4.12 TRIBAL CULTURAL RESOURCES

Acronyms

AB	Assembly Bill
CRHR	California Register of Historical Resources
EIR	Environmental Impact Report
MND	Mitigated Negative Declaration
NAHC	California Native American Heritage Commission
NOP	Notice of Preparation
NRHP	National Register of Historic Places
SCCIC	South Central Coastal Information Center
SLF	Sacred Lands File

This section addresses the potential for the existence of tribal cultural resources on the proposed Project Site and in the proposed Project area, and the potential for Project impacts on those resources. The analysis of tribal cultural resources provided in this section is based on a Sacred Lands File (SLF) search conducted by the California Native American Heritage Commission (NAHC), project notification and offer to consult letters sent by the City to Native American individuals and organizations, and follow-up Native American consultation pursuant to Assembly Bill (AB) 52. The findings of these studies are presented in the Cultural Resources Assessment Report within the Initial Study in Appendix A and a Tribal Consult Memorandum is provided as Appendix L of this Draft Environmental Impact Report (EIR).

Tribal cultural resources are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the California Register of Historical Resources (CRHR); or included in a local register of historical resources; or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant. Historical resources, unique archaeological resources, or non-unique archaeological resources may also be tribal cultural resources if they meet these criteria.

4.12.1 Environmental Setting

4.12.1.1 Existing Conditions

Ethnographic Setting

The presence of occupation in this area by the ethnohistoric Gabrielino (Tongva) people began to be demonstrated about 1,000 years ago. The term Gabrielino most likely came from the group's association with Mission San Gabriel Arcangel, established in 1771. However, today the group prefers to be known by their ancestral name Tongva. The proposed Project site appears to be located within the core territory of the Tongva. Ethnohistorically, the Tongva were semi-sedentary hunters and gatherers whose language

is one of the Cupan languages in the Takic family, part of the Uto-Aztecan linguistic stock (Bean and Smith, 1978).

The Tongva territory encompassed a vast area that stretched from Topanga Canyon in the northwest, to the base of Mount Wilson in the north, to San Bernardino in the east, Aliso Creek in the southeast and the Southern Channel Islands, in all an area of more than 2,500 square miles (Bean and Smith, 1978; McCawley, 1996). At European contact, the tribe consisted of more than 5,000 people living in various settlements throughout the area (McCawley, 1996). Some of the villages could be quite large, housing up to 150 people. The Tongva are considered to have been one of the wealthiest tribes and they appear to have greatly influenced tribes they traded with (Kroeber, 1976:621).

The Tongva practiced hunting and gathering economy, and subsistence zones exploited were marine, woodland and grassland (Bean and Smith, 1978). At the time of contact plant foods were the more significant part of the Tongva diet with acorns being the most important food source exploited. Therefore, it was necessary that villages be located near water sources to allow for the leaching or removal of tannic acids from the acorns. Grass seeds and chia were also heavily utilized. Seeds were parched then ground and cooked as mush in various combinations according to taste and availability. Other fruit and plant foods would be eaten raw or cooked and they could be dried for storage. Bulbs, roots, and tubers were dug in the spring and summer and usually eaten fresh. Mushrooms and tree fungus were prized as delicacies. Various teas were made from flowers, fruits, stems, and roots for medicinal cures as well as beverages (Bean and Smith, 1978:538-540).

The principal game animals were deer, rabbit, jackrabbit, woodrat, mice, ground squirrels, antelope, quail, dove, ducks, and other birds (Bean and Smith, 1978). Predators were largely avoided as food, as were tree squirrels and most reptiles (Bean and Smith, 1978). Fresh water fish were caught in the streams and rivers, while salmon were available when they ran in the larger creeks (Bean and Smith, 1978). Sea mammals, fish, and crustaceans were hunted and gathered from both the shoreline and the open ocean, using reed and dugout canoes by coastal Tongva groups. Shellfish were the most common resource, including abalone, turbans, mussels, clams, scallops, bubble shells, and others (Bean and Smith, 1978:538-540).

Houses were domed, circular structures thatched with tule or similar materials (Bean and Smith, 1978:542). The Tongva are renowned for their workmanship of steatite and these artifacts were highly prized (Bean and Smith, 1978). Common everyday items were often decorated with inlaid shell or carvings reflecting the intricately developed skill (Bean and Smith, 1978:542).

Archival Research

As part of the Cultural Resources Assessment Report within the Initial Study (Appendix A), a records search of the entire Project Area was conducted at the South Central Coastal Information Center (SCCIC) on October 15, 2015. The search entailed a review of all previously recorded prehistoric and historic archaeological sites located within a 0.5-mile radius of the proposed Project Area, as well as a review of all known cultural resource survey reports, excavation reports and regional cultural overviews.

Results of the records search indicated that no cultural resources studies were previously conducted within the current Project Area; however, five negative cultural resource surveys (Bonner, 2004a, 2004b; Brunell, 2014; Singer, 1987; Wlodarski, 1981) were conducted within a 0.5-mile radius of the current Project Area (**Table 48**).

Additionally, the records search results indicated that no cultural resources were previously documented within the current Project Area; however, one historic period resource was previously documented within a 0.5-mile radius of the current Project Area. No other cultural resources were previously documented within the proposed Project Area or within a 0.5-mile radius of the proposed Project Area.

As part of the archival research at the SCCIC, the following sources were consulted: the California Archaeological Inventory Records, National Register of Historic Places (NRHP), California Historic Landmark Registry, California Points of Historical Interest, Inventory of Historic Structures, and Historical Landmarks for Los Angeles County. Additionally, the following historic period maps were consulted: Pasadena, CA (1894; 1900 edition, reprinted in 1940; 1953; 1966 and 1995) 15-minute topographic quadrangles.

Table 48 Records Search Results

Author	Year	Level of Investigation	Results	Report Reference Number
Bonner, W.	2004a	Survey	Negative	LA12657
Bonner, W.	2004b	Survey	Negative	LA07446
Brunell, D.	2014	Survey	Negative	LA07453
Singer, C.	1987	Survey	Negative	LA01662
Wlodarski, R.	1981	Survey	Negative	LA00943

4.12.2 Laws, Ordinances, Regulations and Standards

4.12.2.1 State

Assembly Bill 52

AB 52 (Chapter 532, Statutes of 2014) requires lead agencies to consider the effects of projects on tribal cultural resources and to conduct consultation with federally and non-federally recognized Native American Tribes early in the environmental planning process. AB 52 applies specifically to projects for which a Notice of Preparation (NOP) or a Notice of Intent to adopt an EIR has been filed after July 1, 2015.

The goal of AB 52 is to include California Tribes in determining whether a project may result in a significant impact to tribal cultural resources that may be undocumented or known only to the Tribe and its members. This bill specifies that a project that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. AB 52 defines tribal cultural resources as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe” that are either included or determined to



be eligible for inclusion in the CRHR or included in a local register of historical resources (PRC § 21074 (a)(1)).

AB 52 requires that prior to determining whether a Negative Declaration, MND, or Environmental Impact Report (EIR) is prepared for a project, the lead agency must consult with California Native American Tribes, defined as those identified on the contact list maintained by the NAHC, who are traditionally and culturally affiliated with the geographic area of the proposed Project, and who have requested such consultation in writing. Consultation must be initiated by a lead agency within 14 days of determining that an application for a project is complete or that a decision by a public agency to undertake a project. The lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American Tribes that have requested notice. At the very least the notice should consist of at least one written notification that includes a brief description of the proposed Project and its location, the lead agency contact information, and a notification that the California Native American Tribe has 30 days to request consultation pursuant to this section. The lead agency shall begin the consultation process within 30 days of receiving a California Native American Tribe's request for consultation. According to PRC §21080.3.2(b), consultation is considered concluded when either the parties agree to measure to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource, or a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

4.12.3 Methodology and Thresholds of Significance

4.12.3.1 Methodology

As per AB 52, the Fernandeno Tataviam Band of Mission Indians, Soboba Band of Luiseno Indians, and Gabrieleño Band of Mission Indians – Kizh Nation were notified of the proposed Project by City letter and invited to request consultation. Of these three tribes, only the Gabrieleño Band of Mission Indians – Kizh Nation requested consultation. Additionally, information from the Cultural Resources Assessment Report within the Initial Study (Appendix A) was included for the analysis supporting impact conclusions in the following section. These impacts were compared against the Thresholds of Significance set forth below in Section 4.12.3.2 to determine their significance.

4.12.3.2 Thresholds of Significance

As determined in the Initial Study, the proposed Project would not cause a substantial adverse change in the significance of a tribal cultural resource, listed or eligible for listing in the CRHR, or in a local register of historical places. As there would be no resulting impacts for this topic, only the following checklist question was evaluated in this EIR.

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would have a significant impact related to tribal cultural resources if it would:

- Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resource Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

4.12.4 Project Impacts

Threshold: Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resource Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

The City consulted with the Gabrieleño Band of Mission Indians – Kizh Nation regarding the proposed Project's potential to impact Tribal cultural resources on May 1, 2019. The City provided an overview of the proposed Project and the Gabrieleño provided an overview of their tribe's history, cultural importance, and interest in consultation to protect tribal cultural resources. The Gabrieleño explained that tribal cultural resources are most likely to be found along tribal trade routes, travel corridors, and water sources. The landscape, notably the ridges and native vegetation are also of important value. After further discussion and Gabrieleño review of the aforementioned features in comparison to the Biogas Renewable Generation Project, the Gabrieleño determined that the Biogas Renewable Generation Project was unlikely to adversely affect Gabrieleño tribal cultural resources and no further evaluation or mitigation was recommended. The attendees expressed their appreciation of each other's correspondence and participation in the consultation. A memorandum summarizing the tribal consultation meeting is included in Appendix L. In consideration of the results of the tribal consultation meeting and Cultural Resources Assessment, the proposed Project would have a less than significant potential impact on tribal cultural resources.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than Significant Impact

4.12.5 Cumulative Impacts

Construction and operation of the project would include activities limited to the confines of the proposed Project site. As described above, the tribal consultation has determined that the proposed Project is unlikely to adversely affect tribal cultural resources. Therefore, because the proposed Project would not contribute to or cause an impact on tribal cultural resources, no cumulatively considerable impact could occur.

4.13 UTILITIES AND SERVICE SYSTEMS

Acronyms

AB	Assembly Bill
ASSFC	Amalgamated System Sewage Facilities Charge
C&D	Construction and demolition
gpd	Gallons per day
GWP	Glendale Water and Power
LFG	Landfill gas
NPDES	National Pollutant Discharge Elimination System
RWQCB	Regional Water Quality Control Board
SCLF	Scholl Canyon Landfill
WRPs	Water Reclamation Plants

4.13.1 Environmental Setting

4.13.1.1 Existing Conditions

Wastewater Collection

The Sanitation Districts of Los Angeles County operate ten water reclamation plants (WRPs) and one ocean discharge facility. The facilities treat approximately 510 million gallons of wastewater per day. The Sanitation Districts currently maintain three industrial wastewater discharge permits for the Scholl Canyon Landfill (SCLF.) Permit No. W-2762 enables the discharge of landfill gas (LFG) condensate, extracted seep water, and water removed from the radiator filling area to the City's sanitary sewer system. Permit No. W- 3835 enables the discharge of extracted groundwater to the sanitary sewer. Permit No. FIW-1229142 enables the discharge of stormwater from the active disposal area to the sanitary sewer. The Sanitation Districts conduct quarterly monitoring to ensure the discharges meet the conditions specified in the permits (Sanitation Districts of Los Angeles County and AECOM, 2014).

In addition, Glendale Water and Power (GWP) was issued Industrial Waste Water Permit W-4339 that allows the City to discharge liquid condensate from existing LFG recovery operations of up to 4,500 gallons per day (gpd) in summer and 1,500 gpd in winter. The condensate is treated to allow compliance with W-4339 and is disposed of in existing sewer system located at the LFG recovery facility.

It is anticipated that the new facility constructed will be in compliance with conditions mandated in this W-4339 Industrial Waste Permit and the condensate will be disposed of in the existing sewer system.

The City has an agreement with the City of Los Angeles for an Amalgamated System Sewage Facilities Charge (ASSFC) which allows use of the City of Los Angeles wastewater treatment system in return for sewer facilities charges. As part of the agreement, wastewater is transported from the City to the Hyperion Treatment Plant. Fees are adjusted on a yearly basis depending on the anticipated increase of daily discharge (City of Glendale, 2005).



Wastewater Treatment

Sewage from the proposed Project site goes to the Hyperion Treatment Plant, which the City has access to through the Amalgamated Agreement. The Hyperion Treatment Plant has a dry-weather design capacity of 450 million gpd and is currently operating below its design capacity at 362 million gpd. As a result, adequate capacity exists to treat the incremental Project-generated effluent of 135 gpd (360 gpd total) as shown in **Table 49**.

Table 49 Estimated Wastewater Generation

Project Component	Employees	SF	Factor (gpd/sf)	Average Daily Flow (gpd)
Current Project Operations	1	1,500	0.15	225
Proposed Project	6	2,400	0.15	360
Incremental Increase	5	900	0.15	135

Note:
Sewage generation factor based on office land use as contained in the Amalgamated Agreement between City of Glendale and City of Los Angeles (Section 13.40.130 Glendale Municipal Code).

4.13.2 Laws, Ordinances, Regulations and Standards

4.13.2.1 Federal

National Pollution Discharge and Elimination System

The City of Glendale participates in the Los Angeles County Stormwater Program, the local enforcing agency of the National Pollutant Discharge Elimination System (NPDES). NPDES permits are filed with the California Regional Water Quality Control Board, Los Angeles Region. On October 29, 1999, Phase II of NPDES was signed into law. Under this phase of NPDES, areas with 50,000 or more residents, and construction sites one acre or more in size, must file for and obtain an NPDES permit.

4.13.2.2 State

California Integrated Solid Waste Management Act

In September 1989, the California Integrated Solid Waste Management Act (also known as AB 939) was enacted into law. It required each municipality in the state to divert at least 50 percent of its solid waste from landfill disposal through source reduction, recycling, and composting by 2000. This 50 percent requirement also includes the waste stream that comes exclusively through construction and demolition (C&D) of buildings and homes in the County.

4.13.2.3 Regional

City of Glendale General Plan

Goal PS/F 6: A County with adequate public utilities

- **Policy PS/F 6.1:** Ensure efficient and cost-effective utilities that serve existing and future needs
- **Policy PS/F 6.4:** Protect and enhance utility facilities to maintain the safety, reliability, integrity and security of utility services
- **Policy PS/F 6.5:** Encourage the use of renewable energy sources in utility and telecommunications networks
- **Policy PS/F 6.6:** Encourage the construction of utilities underground, where feasible
- **Policy PS/F 6.8:** Encourage projects that incorporate onsite renewable energy systems
- **Policy PS/F 6.9:** Support the prohibition of public access within, and the limitation in areas adjacent to natural gas storage facilities and oil and gas production and processing facilities to minimize trespass and ensure security
- **Policy PS/F 6.10:** Encourage utility siting to be localized and decentralized to reduce impacts; reduce transmission losses, promote local conservation by connecting users to their systems more directly; and reduce system malfunctions.

4.13.2.4 Local

City of Glendale General Plan Community Facilities Element

Goal: Enhance the current level and quality of community facilities and services and improve the accessibility to them.

- **Policy:** Maintain the high standard of utility services.
- **Policy:** Monitor future needs for the increase in utility services.
- **Policy:** Utilize all relevant, technological advancements to provide for the improved quality and quantity of energy at the lowest possible cost within the constraints of environmental considerations

Greener Glendale Plan

The Greener Glendale Plan for Municipal Operations was adopted by the City in November of 2011. This document addresses conservation efforts within internal government operations and assesses what actions have already been taken to be more sustainable and recommends how it can build on these efforts.



City of Glendale Municipal Code

Chapter 8.58 requires all construction and demolition debris be taken to a "certified mixed debris recycling facility" or a recycler must divert all accepted waste from the landfill. A certified mixed debris recycling facility is a processing facility that is certified as having obtained all applicable federal, State, and local permits and diverts a minimum of 50 percent of all incoming mixed construction and demolition debris. In addition, project applicants must pay a diversion security deposit and prepare a waste reduction and recycling plan.

4.13.3 Methodology and Thresholds of Significance

4.13.3.1 Methodology

Information from the City of Glendale Municipal Code and the Sanitation Districts of Los Angeles County – Planning Section and AECOM (2014) Draft EIR, was included for the analysis supporting impact conclusions in the following section. Data and conclusions from the analyses were used to determine potential impacts of the proposed Project to and from Project utilities and service systems. These impacts were compared against the Thresholds of Significance set forth below in Section 4.13.3.2 to determine their significance.

4.13.3.2 Thresholds of Significance

As determined in the Biogas Renewable Generation Project Initial Study, the proposed Project would not include the development of water intensive land uses, and on-site water use would be limited to dust control and soil compaction during construction, restroom facilities, and emergency fire protection. In addition, the proposed Project would not require the expansion or construction of wastewater treatment facilities, since there is adequate capacity to treat the incremental Project-generated effluent. Furthermore, neither construction nor operation of the proposed Project would generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure or otherwise impar the attainment of solid waste reduction goals. As there would be no resulting impacts for these topics, only the following checklist question was determined to result in potentially significant impacts and is evaluated in this EIR.

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would have a significant impact related to utilities and service systems if it would:

- Require or result on the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of would cause significant environmental effects.

4.13.4 Project Impacts

Threshold: Would the Project require or result on the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of could cause significant environmental effects?

4.13.4.1 Construction

Stormwater flow from the proposed Project area will either be routed to the existing storm drains within the existing Project footprint, the new catch basin, or into temporary energy dissipating structures or silt traps, all of which ultimately drain into the active landfill's permanent drainage system. The power generation facility, water tank graded area, and water/gas pipelines footprint would result in a permanent disturbance of approximately 2.2 acres, which would incrementally increase the amount of impervious surface compared to existing conditions. Increase in stormwater flow associated with the proposed Project is expected to be accommodated within the existing landfill drainage systems. No new stormwater drainage facilities or expansion of existing facilities would be required. Therefore, impacts would less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than Significant Impact

4.13.4.2 Operation

Please see Section 4.13.4.1.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than Significant Impact

4.13.5 Cumulative Impacts

The proposed Project would comply with the waste discharge prohibitions and water quality objectives established by the Los Angeles Regional Water Quality Control Board (RWCQB) that will be incorporated into the proposed Project as a project design feature. The proposed Project would not require the expansion or construction of wastewater treatment facilities. No new stormwater drainage facilities or expansion of existing facilities would be required. The water demand of the proposed Project is very small and within the City's capacity to supply. The proposed Project involves capturing and combusting LFG to generate electricity and does not include a component with the potential to contribute to a cumulatively considerable impact on utilities and service systems. Therefore, the proposed Project would not result in cumulatively considerable utilities and service systems impacts.



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4.14 WILDFIRE

Acronyms

AB	Assembly Bill
AMSL	Above mean sea level
CalFire	California Department of Forestry and Fire Protection
CBC	California Building Code
CEQA	California Environmental Quality Act
CFC	California Fire Code
CPUC	California Public Utilities Commission
CUPA	Certified Unified Program Agency
EIR	Environmental Impact Report
FRAP	Fire and Resource Assessment Program
GFD	Glendale Fire Department
GWP	Glendale Water and Power
HMBP	Hazardous Materials Business Plan
LFG	Landfill gas
LRA	Local Responsibility Area
mph	Miles per hour
NEC	National Electrical Code
NFPA	National Fire Protection Association
POU	Publicly owned electric utilities
PRC	Public Resources Code
RICE	Reciprocating internal combustion engines
SAOs	Santa Ana Wind Occurrences
SB	Senate Bill
SCLF	Scholl Canyon Landfill
SCAQMD	South Coast Air Quality Management District
USAR	Urban Search and Rescue
VHFHSZ	Very High Fire Hazard Severity Zone
WMP	Wildfire Mitigation Plan

This section describes the effects on baseline wildfire risk that would be caused by implementation of the proposed Project. The following discussion addresses existing environmental conditions in the affected area, summarizes applicable laws and regulations related to wildfires, analyzes potential environmental impacts of the proposed Project, and recommends measures to reduce or avoid significant impacts anticipated from the proposed Project construction and operation. In some cases, compliance with these existing laws and regulations would serve to reduce or avoid certain impacts that might otherwise occur with the implementation of the proposed Project. The approved Fire Protection Design Basis Plan is included as Appendix M.



4.14.1 Environmental Setting

As discussed in Section 2.2, the proposed Project is located entirely within the boundaries of the existing Scholl Canyon Landfill (SCLF). The proposed Project includes three areas of construction: a partially developed approximately 2.2-acre power plant sub-area including a graded area for the installation of two new water tanks; a proposed approximately 0.62-mile three-inch diameter natural gas pipeline; and a proposed approximately 0.88-mile 12-inch diameter water pipeline.

4.14.1.1 Existing Conditions

Topography

Slope, aspect, and elevation comprise the topography of a geographical area and are highly influential on wildfire behavior. Large upland ridges burn more frequently when compared to valleys, swamps, or riparian areas. Steep slopes promote the preheating of fuels, which can lead to a rapid upslope fire spread. Difficult terrain reduces the effect of fire suppression efforts and often creates barriers for firefighters, aerial attacks, and fire engines. High elevations may contain reduced fuel loads, while mid-elevations may allow for the growth of dense forests and chaparral communities. Elevations across the proposed Project site range from approximately 1,100 to 1,450 feet above mean sea level (AMSL). The Project site is located within the San Rafael Hills, which rise more than 1,200 feet above the alluvial plain within eastern Glendale.

Climate

The Project area has a semi-arid climate characterized as having long, hot summers and moderately cooler winters, which is a typical Mediterranean climate. Mild, wet winters have led to an annual growth of plants and grasses. This vegetation dries out during the hot summer months and becomes exposed to Santa Ana Wind Occurrences (SAOs) during the fall. In general, much of southern California is at baseline risk of wildfires due to regional weather conditions, topography, and native vegetation. Southern California, including the proposed Project site, is periodically affected by SAOs, where hot and dry winds blow from the interior regions towards the Pacific Ocean coastline. The hot and dry nature of these winds, combined with their gusting potential, can create hazardous wildfire conditions. During SAOs, winds in excess of 40 miles per hour (mph) are common, and gusts may exceed 100 mph locally (Glendale 2003). Recent climatic conditions within the City are outlined in **Table 50** below.

Table 50 2018 Monthly Average Temperatures and Precipitation

Month	Temperature (°F)		Precipitation (inches)
	Average High	Average Low	
January	73	51	2.33
February	68	47	0.16
March	69	51	3.66
April	76	56	0.00
May	78	55	0.11
June	77	64	0.00
July	94	71	0.00
August	87	72	0.00
September	81	68	0.00
October	79	65	0.31
November	72	57	1.07
December	63	48	2.60

Source: Wunderground 2018a-l

The average annual precipitation is approximately 17 to 18 inches, with over 74 percent of precipitation occurring between December and March and over 94 percent occurring between November and April (Glendale 2003). However, during dry years (such as 2018), precipitation could be less. Little precipitation occurs during summer, because a high-pressure cell blocks migrating storm systems over the eastern Pacific Ocean.

Winds across the proposed Project area are an important meteorological parameter, as they control both the potential for wildfire spread and the initial rate of dilution and direction of pollutant dispersion. The typical wind speeds and directions for the proposed Project area generally south to southeasterly, ranging in speeds from between four to 13 mph. There is a strong onshore flow from the south through southwest, with higher wind speeds and more predominately onshore winds occurring during the day. The average wind speed between 1943 to 2019 was approximately 5.5 mph (aggregate average).

Vegetation and Fuel Load

Fuels are organic material (living or dead) in or on the ground or in the air that would ignite and burn. Fuel conditions are considered a one of two elements of wildfire behavior having anthropogenic (originating from human activities) and natural components. Anthropogenic influences on fuel conditions are a result of active vegetation management (i.e., prescribed burning, brush removal, or eradication of non-native species), which alters the regions vegetation mixture and structure. Moisture content, amount of fuel, and fuel structure and composition are natural components of fuel conditions. As discussed further in Section 3.4 (Biological Resources), the proposed Project site supports a variety of vegetation communities.

Regional Fire History

Table 51 below describes the regional fire history within the greater Glendale Region since 1999, as documented in the California Department of Forestry and Fire Protection (CalFire) Fire and Resource Assessment Program (FRAP). As part of the FRAP program, CalFire tracks wildfire history, prescribed burns, and other fuel modification projects throughout California.

Table 51 Regional Fire History

Fire Name	Year	Acreage	Distance from Project (miles)
Coyote	2017	0.24	6.06
La Tuna	2017	7,051.35	5.96
Wilson	2017	45.12	8.66
Griffith Park	2015	3.05	5.59
Station	2009	160,833.00	4.14
Santa Anita	2008	556.68	8.01
Barham	2007	224.33	7.71
Griffith Park	2007	752.86	11.84
Lowe	2007	14.33	5.37
Dark	2006	34.99	7.12
Pines	2006	114.44	8.09
Wildwood	2003	68.42	6.68
Mountain	2002	749.09	4.24
Santa Anita	2002	27.71	9.36
Wildwood	2002	112.81	9.36
Foothill	2000	6.98	8.36
Fern	1999	69.45	5.41
La Tuna	1999	162.24	7.84
Rafael	1999	502.47	2.07
Santa Anita II	1999	736.10	8.87

Source: CalFire 2019b

Regional Fire Response

The proposed Project is located within the California Governor's Office of Emergency Services, Southern Region, Region I, Area C. Area C covers approximately 126 square miles of Los Angeles County and includes 12 major cities, each with their own fire department. Each of these cities participates in the regional Unified Response, covered by the Verdugo Fire Communications Center dispatch. Unified Response is a regional borderless fire incident response system. The system covers 12 major cities including Alhambra, Arcadia, Burbank, Glendale, Monrovia, Montebello, Monterey Park, Pasadena, San Gabriel, San Marino, Sierra Madre, South Pasadena, and the Hollywood Burbank Airport. As part of Unified Response, there are 46 engines, 13 trucks, five water tenders, and other specialized units such as Hazmat and Urban Search and Rescue (USAR) equipment. Within this established aid agreement, the Verdugo Fire Communications Center immediately dispatches the closest available units, regardless of city boundary (Glendale 2019a).

According to the City of Glendale Fire Department (GFD), in the past several years, only three fires have exceeded three-alarm status within Area C. Each of these were brush fires which reached a four-alarm level, requiring a 20-engine response. As part of Unified Response, even if 20 engines were required in order to fight a wildland fire, at least 20 engines would remain available for other Area C incidents. Many would be deployed at Key Stations (such as those described in the table below) to minimize response times regardless of where any additional incidents may occur (Glendale 2019a).

Departments and Stations

As discussed above, the City of Glendale is responsible for providing fire protection to the proposed Project, though other nearby stations could respond as part of the Area C Unified Response system or other existing mutual aid agreements, such as those with County of Los Angeles Fire Department, City of Los Angeles Fire Department, and the U.S. Forest Service. **Table 52** lists the closest regional fire stations to the proposed Project site.

Table 52 2018 Regional Fire Stations

Station	Address	Distance (miles)
Pasadena Fire Department Station 39	50 Ave. 64 Pasadena, CA 91105	1.20
Pasadena Fire Department Station 38	1150 Linda Vista Ave. Pasadena, CA 91103	1.33
City of Los Angeles Fire Department Station 42	2021 Colorado Blvd. Los Angeles, CA 90041	1.47
Glendale Fire Department Station 23	3301 E. Chevy Chase Dr. Glendale, CA 91206	1.49
Glendale Fire Department Station 24	1734 Canada Blvd. Glendale, CA 91208	2.48
City of Los Angeles Fire Department Station 55	4455 E. York Blvd. Eagle Rock, CA 90041	2.50
Pasadena Fire Department Station 31	135 S. Fair Oaks Ave. Pasadena, CA 91105	2.51
Glendale Fire Department Station 25	353 N. Chevy Chase Dr. Glendale, CA 91206	2.55
Pasadena Fire Department Station 36	1140 N. Fair Oaks Ave. Pasadena, CA 91103	2.59
City of Los Angeles Fire Department Station 12	5921 N. Figueroa St. Los Angeles, CA 90042	2.91

Source: County of Los Angeles, 2016.

Baseline Fire Risk

The proposed Project is located within a Local Responsibility Area (LRA) mapped by CalFire as Very High Fire Hazard Severity Zone (VHFHSZ). An LRA is an area where fire protection is typically provided by city fire departments rather than by CalFire. Areas which have been mapped as VHFHSZ are the most at risk for fire within the State. The fire hazard severity model used by CalFire to map these areas consists of two key elements: probability of burning and probable fire behavior. The model also includes probability of flames and embers threatening buildings and considers potential flame length, ember generation potential, and overall likelihood of an area burning. Actions such as creating defensible space around buildings or thinning of nearby vegetation can reduce the fire risk of an area. Fire risk is evaluated as a combination of existing hazards plus mitigations (such as vegetation clearance).

In general, the fire hazard of an area is based on a combination of several variables. Some of these include:

- Fuel Load (vegetation type, density, moisture content)
- Topography (slope)
- Weather



- Building construction (considering combustible roof coverings)
- Wildfire history, and
- Whether there are local measures in place to help reduce the zone's fire rating.

According to the City of Glendale General Plan Safety Element (Glendale 2003), the portions of the San Rafael hills containing the proposed Project are mapped as having a high fire severity hazard due to the steep topography, the presence of flammable vegetation, and the limited access in the area. The region has a history of fires, with the entire northern two-thirds of the City having burned since the 1800s. According to the Safety Element, some areas within the City experience a wildfire at least once a decade. In order to reduce the risk of fires, the City has adopted a stringent fuel modification ordinance and requires the use of fire-resistant building materials in accordance with the City's Building and Safety Code (Glendale 2003).

Landfill Gas Release and Fire Risk

The landfill gas (LFG) generated by the existing SCLF, which is currently flared on-site, is substantially less flammable than typical natural gas. In general, natural gas contains roughly 98 percent methane, whereas the LFG generated by the existing landfill contains approximately 35 percent methane. The low flammability of this LFG requires the gas be mixed with typical natural gas, in order for it to ignite within the reciprocating internal combustion engine. In its current composition, the existing LFG will not self-ignite and requires an open flame for ignition. Currently, the LFG is combusted at the landfill in a flaring system at a higher pressure than would be required for the proposed Project. While the proposed Project does include LFG compression associated with operating the power generation equipment, the compression pressure would be lower than that currently existing under baseline conditions. The electrical generating reciprocating internal combustion engines (ICE) would be placed in complete fire protection enclosures with fire suppression systems, and electrical equipment would be placed in enclosures insulated with an oxygen displacing inert gas to further prevent ignition. The existing flares would remain and be used as backup to flare the LFG in the event the reciprocating internal combustion engines (RICE) are unavailable to combust the LFG due to an upset.

Additionally, the proposed Project includes a fire protection system that consists of a new 60,000-gallon water tank, water conveyance piping, two fire hydrants, and fire protection sprinklers inside buildings. The proposed fire protection system was designed to meet National Fire Protection Agency and California Fire Code requirements. The GFD, as the Certified Unified Program Agency has reviewed and approved the proposed Project's fire protection design, which includes verifying compliance with all applicable national, state, and local fire codes.

4.14.2 Laws, Ordinances, Regulations and Standards

This section contains a summary of the Laws, Ordinances, Regulations, and Standards which are applicable to the proposed Project.

4.14.2.1 Federal

National Fire Protection Association

The National Fire Protection Association (NFPA) provides codes and standards (including the National Electrical Code [NEC]), research, trainings, and education for fire protection. The NFPA publishes more than 300 codes and standards intended to minimize the possibility and effects of fire and other risks.

4.14.2.2 State

Assembly Bill 337 – The Bates Bill

Assembly Bill (AB) 337 (September 29, 1992) known as The Bates Bill was a direct result of the great loss of lives and homes in the Oakland Hills Tunnel Fire of 1991. The Bates Bill requires CalFire, in cooperation with local fire authorities, to identify VHFHSZs in LRAs throughout California. Local jurisdictions that do not follow the Bates system are required to follow, at a minimum the model ordinance developed by the State Fire Marshal for mitigation purposes. The City has developed its own fire hazard maps and has adopted stringent hazard mitigation programs which exceed the requirements established by state regulations.

Assembly Bill 3819 – The Brown Bill

AB 3819 (September 25, 1994) known as The Brown Bill expands the roof covering requirements of the Bates Bill. The Brown Bill requires a Class A roof for all new buildings, all roof repairs and replacements, and for existing buildings where 50 percent or more of the roof area is re-roofed, for buildings located within VHFHSZ. Class A roofs provide the highest resistance to fire, and include coverings such as concrete, metal, or clay roof tiles.

Senate Bill 1028

Senate Bill (SB) 1028 was signed into law in September 2016. It requires public electric utilities (San Diego Gas & Electric, Southern California Edison and Pacific Gas & Electric) to conduct a survey of electric lines and equipment which may cause a significant risk of a catastrophic wildfire(s) and prepare annual wildfire mitigation plans for reducing fire threats and to identify who specifically would be responsible for implementing them.

Senate Bill 901

SB 901 was signed into law in September 2018. It reinforces the requirement for public electric utilities to have a Wildfire Mitigation Plan (WMP) and sets an independent review requirement for the WMP. It sets a deadline of January 1, 2020 for the adoption of the WMP by the governing board of municipal/public utilities.



Assembly Bill 111

AB 111 was signed into law in July 2019. It establishes the Wildfire Safety Division within the California Public Utilities Commission (CPUC) and establishes the California Wildfire Safety Advisory Board to oversee and enforce investor owned utilities' safety compliance and evaluate all electrical utilities' compliance with their wildfire mitigation plans.

Assembly Bill 1054

AB 1054 was signed into law in July 2019. It enables the California Wildfire Safety Advisory Board to: make recommendations to the Wildfire Safety Division related to wildfire safety and mitigation; make recommendations related to contents of WMPs; and provide other advice and recommendations related to wildfire safety as requested by the Wildfire Safety Division. Publicly owned electric utilities (POUs) must submit their adopted WMP to the California Wildfire Safety Advisory Board no later than July 1, 2020.

CalFire Wildland Hazard/Building Codes

Included as part of the 2007 California Building Code (CBC), CalFire has established the Wildland-Urban Fire Area Building Standards, which are applicable to all structures located within an LRA VHFHSZ. These requirements establish minimum standards for materials and material assemblies and provide a reasonable level of exterior wildfire exposure protection for buildings in Wildland-Urban Interface Fire Areas. The use of ignition resistant materials and design to resist the intrusion of flames or burning embers projected by a vegetation fire (wildfire exposure) will prove to be the most prudent effort California has made to try and mitigate the losses resulting from our repeating cycle of interface fire disasters (CalFire 2019).

California Building Code

The CBC contains applicable fire safety standards and the California Fire Code (CFC). The CBC follows standards recommended by the California Building Standards Commission and the latest International Fire Code. The CBC sets buildings standards ensuring all structures are designed to provide the required emergency access. Additionally, the CBC contains guidance on design features, including fire sprinklers, fire flow standards, emergency access roads standards, and/or storage of flammable materials, which comply with fire department minimum requirements.

California Fire Code (California Code of Regulations Title 24, Part 9)

Based on the 2015 International Fire Code, and as published by the California Building Standards Commission, the CFC regulates minimum fire safety requirements for new and existing buildings, facilities, storage, and processes. The CFC addresses fire prevention and protection, life safety, safe storage, and use of hazardous materials. The CFC is a design document which sets forth the minimum requirements for hazards and contains the requirements for maintaining life safety of building occupants, protection of emergency responders, and limits damage to a building and its contents as a result a fire, explosion, or unauthorized hazardous materials discharge.

California Public Resources Codes

A number of California Public Resources Code (PRC) sections are applicable to the proposed Project, as listed below:

Code 4119: Authorizes agencies to inspect all properties, except a dwelling's interior, to ascertain compliance with state forest and fire laws, regulations, or use permits.

Code 4290: Contains regulations for implementing minimum fire safety standards related to defensible space that are applicable to lands designated as VHFHSZ.

Code 4291: Requires 100 feet of defensible space around all structures.

4.14.2.3 Local

City of Glendale
Wildfire Mitigation Plan

In accordance with SB 901 the City Council of the City of Glendale, on December 17, 2019 adopted the City's WMP, prepared and presented by Glendale Water and Power. (GWP). The WMP considers and includes all required and necessary elements of SB 901 including, but not limited to, an accounting of the responsibilities of persons responsible for executing the WMP, a description of the preventive strategies and programs to minimize the risk of its electrical equipment causing catastrophic wildfires, protocols for deenergizing portions of the electrical distribution system, and its plans for vegetation management. The WMP can be accessed, in its entirety at https://www.glendaleca.gov/home/showdocument?id=54585.

General Plan Safety and Seismic Safety Element

The 2003 City of Glendale General Plan Safety Element describes the natural conditions that pose a hazard within the City of Glendale and presents goals, policies, and programs to reduce the risk to the City and its residents. The goals, policies, and programs outlined in the General Plan are implemented as a part of Project design, and include (but are not limited to) the following:

Policy 4-1: The City shall ensure to the extent possible that fire services, such as fire equipment, infrastructure, and response times, are adequate for all sections of the City.

- **Program 4-1.3:** The City shall ensure that road standards meet the needs for emergency access.

Policy 4-2: The City shall require all new development in areas with a high fire hazard incorporate fire resistant landscaping and other fire hazard reduction techniques into the project design in order to reduce fire hazard.

- **Program 4-2.1:** The City shall encourage residents to plant and maintain drought-resistant, fire-resistant landscape species to reduce the risk of brush fire and soil erosion in areas adjacent to canyons and develop stringent site design and maintenance standards for areas with high fire hazard or soil erosion potential.

- **Program 4-2.2:** The City shall enforce the Weed Abatement Program in high fire hazard areas.
- **Program 4-2.3:** Fuel management plans shall be required for all new development in areas subject to wildfire.
- **Program 4-2.4:** The City shall enforce the Uniform Fire Code and Municipal Fire Code Amendments for new construction in fire hazard areas, including the use of sprinklers in residential structures.
- **Program 4-2.8:** The City shall enforce a Class A Roofing ordinance or better for residential and commercial developments. Residents with existing wood-shingle or unrated roofing materials shall be encouraged to upgrade to fire resistive building materials, including fire resistive eaves and awnings.

City of Glendale Fire Department
Defensible Space Standards for High Fire Hazard Areas of Glendale

GFD divides the defensible space requirements for structures located within the High Fire Hazard Areas of Glendale into three zones. Zone A (zero to five feet from structure), Zone B (five to 30 feet from structure), and Zone C (30 to 100 feet from structure). Each of these zones have separate vegetation clearance requirements designed to protect the structure, provide areas for firefighting to take place, and modifications to native vegetation to reduce potential fire intensity and flame length. Each of these sets of requirements would be applicable to the proposed Project as the specific distances (Zone A requirements apply from zero to feet from the structure, Zone B requirements apply from five to 30 feet from the structure, and Zone C requirements apply from 30 to 100 feet from the structure).

Glendale Fire Code Amendments

Updated in 2017, the Glendale Fire Code Amendments contains information regarding the implementation and enforcement of regulations and guidelines for fire safety within the City. These amendments have been adopted by the City as changes to the CFC and contain more site-specific guidance and requirements.

4.14.3 Methodology and Thresholds of Significance

4.14.3.1 Methodology

The proposed Project includes the proposed power generation facility footprint, and the natural gas and water pipeline alignments. Baseline conditions within this area are defined as the existing physical environmental setting by which a lead agency determines whether an impact is significant. (State California Environmental Quality Act [CEQA] Guidelines, § 15125, subd. (a)). A significant environmental effect or impact is defined as a substantial or potentially substantial change in the environment. (Pub. Resources Code, §§ 21068, 21100, subd. (d); 20 State CEQA Guidelines, § 15358.). The impact analysis in this section examines the changes in the environment, specifically related to wildfire risk, which may result from the construction and operation of the proposed Biogas Renewable Generation Project.



The analysis in this section relies on numerous publicly available maps and datasets, including those published by the City of Glendale, County of Los Angeles, CalFire, aerial imagery and photographs, and site reconnaissance documenting the vegetative conditions. These sources were used to determine wildfire risk in the vicinity of the proposed Project site. Published literature on fire behavior and indirect impacts on natural resources were also reviewed to assess potential indirect impacts.

4.14.3.2 Thresholds of Significance

As determined in the Biogas Renewable Generation Project Initial Study, the proposed Project would not substantially impair an adopted emergency response plan or emergency evacuation plan. While the proposed Project could increase the risk of wildland fires by introducing new infrastructure into a mapped VHFHSZ, the proposed Project does not include an element that would conflict with the City's Emergency Plan. As there would be no resulting impacts for this topic, only the following three checklist questions were determined to result in potentially significant impacts and are evaluated in this Environmental Impact Report (EIR).

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would have a significant impact related to wildfire, if located in or near state responsibility areas or lands classified as very high fire hazard severity zones and the proposed Project would:

- Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of wildfire.
- Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.
- Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

4.14.4 Project Impacts

Threshold: Would the Project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of wildfire?

4.14.4.1 Construction

Construction activities involving the use of vehicles and heavy machinery, and personnel smoking at the proposed Project site could result in the ignition of a wildfire. During construction, heavy equipment and passenger vehicles driving on vegetated areas prior to clearing and grading could increase the risk of fire. Heated mufflers, and improper disposal of cigarettes could potentially ignite surrounding vegetation and lead to a wildlife. The use of heavy equipment, such as bulldozers and graders during construction activities and to clear vegetation, has the potential to ignite a wildland fire from sparks created when equipment blades strike rocks or metal objects.



Described above in Section 4.7 (Hazards and Hazardous Materials), the construction and operation of the proposed Project would involve the use of some flammable materials such as gasoline, diesel fuel, hydraulic oils, paints, solvents, or other wastes. There is a low risk of fire if these materials were not handled correctly, or if an accidental release were to occur.

The Project site is mapped as a VHFHSZ, during extreme weather conditions an uncontrolled wildfire originating at the proposed Project site could spread off-site and down the slopes of the adjacent San Rafael Hills, posing a risk to life and property. However, the probability of a wildfire to occur as a result of unmitigated Project construction would be low due to the low vegetative fuel load present, expansive un-vegetated areas at the adjacent SCLF, the proposed moderate level of heavy equipment use, and the short term duration of construction activity. Nonetheless, any fire that escapes control or spreads into the surrounding area could result in a large amount of damage, and the risk of fire as a result of unmitigated Project construction is therefore considered potentially significant.

All construction equipment is required to have fire suppression equipment (such as a fire extinguisher) on board or at the work site. Additionally, permitting requirements of the jurisdictional fire agencies, existing fire codes, and the development of a Project-specific fire plan, as required by Mitigation Measure FIRE-1 (Fire Protection Plan), would mitigate this potentially significant impact to below a level of significance.

Project personnel that smoke could start a wildfire by improperly disposing of burning tobacco in areas covered with wildland vegetation and within 50 feet of combustible material storage. Implementation of Mitigation Measure FIRE-2 (Smoking and Open Fires) would address this potential ignition source by prohibiting all smoking or open fires on the proposed Project site and within SCLF in its entirety.

The Applicant has been working with GFD to develop the proposed Project to meet stringent fire safety standards for the San Rafael Hills The approach to fire prevention and defense includes both facility design and planned operational activities. The Project includes a fire protection system that complies with all applicable national, state, and local fire codes.

Trained firefighting personnel and equipment would be stationed on-site during construction activities, and the proposed Project site would be equipped with sufficient water tank capacity to support prompt firefighting response. Implementation of Mitigation Measure FIRE-3 (Firefighting Water Supply) would ensure that firefighting capabilities would be present at all times

With implementation of Mitigations Measures FIRE-1, FIRE-2, and FIRE-3, the proposed Project would have a less than significant impact with mitigation on wildfire risk.

Mitigation Measures

FIRE-1: Fire Protection Plan

The Applicant shall prepare a construction phase Fire Protection Plan. The Plan shall contain, but not be limited to, the following provisions:

1. Comply with all applicable laws of the State of California and the Fire Prevention Plan. Ensure that a copy of this Fire Prevention Plan and any special permits are to be known and in possession of Project foreman/supervisor on work site daily.

2. A full-time fire watch with appropriately trained personnel and appropriate fire-fighting equipment shall be available and on-site during all times when construction work is taking place. The Applicant shall designate a qualified on-site fire supervisor during Project construction to implement the Fire Protection Plan.

   Fire Watch personnel shall be responsible for patrolling the construction work area for the prevention and detection of fires, and to make sure all fire regulations and fire prevention plans are met, and to take/direct suppression action where necessary. The Fire Watch personnel shall not be permitted to perform other non-fire-related duties. Fire Watch personnel shall remain on duty for at least one hour after the close of work or sunset (whichever comes first).

3. All construction equipment shall be fitted with appropriate spark arrestors. Spark arrestors shall meet the standards set forth in the National Wildfire Coordinating Group publication for Multi-position Small Engines, #430-1, or General Purpose and Locomotive, #430-2.

   Unless determined appropriate by the GFD spark arrestors are not required on equipment powered by exhaust-driven turbo charged engines or motor vehicles equipped with a maintained muffler.

4. All construction vehicles and equipment shall carry at least one fully charged fire extinguisher. Fire extinguishers shall be of the type and size set forth in the California PRC Section 4431. Fire extinguishers shall be appropriately maintained throughout construction. The following conditions shall also be incorporated:

   i. Each truck, personnel vehicle, tractor, grader or piece of heavy equipment shall have one shovel, one axe (or Pulaski) and a fully charged fire extinguisher.

   ii. Each welder shall have one shovel and one five-gallon water-filled tank with pump. Shovel and five-gallon water-filled tank with pump must be kept within 25 feet of tools when in use.

   iii. Each gasoline powered tool (such as chainsaws, chippers, rock drills, etc.) shall have one shovel and one pressurized fire extinguisher. Shovels must be kept within 25 feet of tools when in use.

   iv. All tools and equipment above shall be in good workable conditions, with employee's trained on their use.

   v. Shovels shall be "O" or larger and be not less than 46 inches in over length.

   vi. Axes (or Pulaskis) shall have 2.5-pound or larger heads and be not less than 28 inches in overall length

5. Confine welding activities to areas having a minimum radius of ten feet cleared to mineral soil, wet down an area of 25 feet in all directions from the center of welding operations with a 0.3 percent Class A Foam Solution, utilize a welding tent or metal shield where possible to deflect sparks. Fire Watch shall be on standby during welding activities with fire prevention tools including fire extinguishers, shovels, immediate access to a minimum of five gallons of water equipped with a dispensing application. Welding or other hot work shall not occur during red flag events.

6. Refueling shall be performed within previously developed areas a minimum of 25 feet from areas with substantial vegetation or potential ignition source.

7. The Applicant shall participate in the Red Flag Warning program with local fire agencies and the National Weather Service. The Applicant shall stop work during Red Flag conditions. If a Red Flag Warning were to occur during critical work activities, or work activities that cannot be

stopped (such as a heavy lift), the GFD shall be immediately notified. Communication protocols shall be outlined in the plan. The GFD shall approve resumption of construction activities.

FIRE-2: Smoking and Open Fires

Smoking and open fires shall be prohibited for all Project personnel at the site during construction. A copy of the notification prohibiting smoking and fires shall be posted at the construction work areas and included in the worker trainings. This notice shall be provided to the GFD within five business days, upon their request.

FIRE-3: Firefighting Water Supply

The Applicant shall furnish a water truck or trailer on or immediately adjacent to the proposed Project area during construction specifically for firefighting water supply. Fire watch personnel shall be trained on how to access these water tanks in the event of a fire-related incident. The Applicant shall maintain and provide appropriate firefighting equipment to access the water, such as hoses or wrenches. The truck or trailer shall meet the following minimum specifications:

- Water truck and operator must be ready to put fires out at all times
- Water truck or trailer shall contain or meet the following specifications:
    - At least 300 gallons of water
    - A combination straight stream and fog nozzle with 300 feet of one-inch fire hose, with no segment longer than 50 feet
    - Fire hose with nozzle closed shall be capable of withstanding 200 psi pump pressure without leaking, slipping or couplings, distortions, or other failures
    - Nozzle discharge rating of six to 20 gallons per minute
    - A Pump capable of delivering 23 gallons per minute at 175 pounds psi at sea level
    - Power unit for pump shall have fuel for at least two hours of operation, be in good working order, with ample transport available for immediate safe movement of tank over roads serving the project area; pump outlet shall be equipped with 1.5 inch National Standard Fire Hose thread
    - The Water Truck or Trailer MAY NOT be used for other work on the contract
    - If the proposed Project area in inaccessible to water truck or trailer accessibility, a charged hose capable of reaching 100 feet beyond the proposed Project area is required.

Level of Significance After Mitigation

As discussed above, baseline wildfire risks would be exacerbated during construction and would require the implementation of mitigation measures to reduce related risks to less than significant levels. Mitigation Measure FIRE-1 would require firefighting capabilities to be present on-site during Project construction. Mitigation Measures FIRE-2 and FIRE-3 serve to strengthening the requirements of FIRE-1 by further removing potential ignition sources and enhancing on-site firefighting capabilities. Although construction of the proposed Project would result in an increased baseline risk of wildfire, with implementation of



Mitigation Measures FIRE-1, FIRE-2, and FIRE-3, Project-related wildfire construction impacts would be less than significant.

4.14.4.2 Operation

Operational impacts associated with exacerbated wildfire risks and increased potential exposures to pollutant concentrations from a wildfire or an uncontrolled spread of wildfire could occur if operation of the proposed Project would result in an increased baseline wildfire risk or generate increased unmitigated sources of ignition.

As discussed in Section 2.7 (Project Operations), the proposed Project would be operated adjacent to the existing LFG collection and flaring system. The blowers and flares would remain pursuant to the existing South Coast Air Quality Management District (SCAQMD) permit. After the proposed Project is in operation, the flares would only be used as required during power generation facility maintenance or in the unlikely event that there is excess LFG being produced that cannot be used for generating electricity. Fuel (vegetation) management would continue to occur regularly in accordance with GFD regulations.

The electrical generating combustion engines would be placed in fire protection enclosures with fire suppression systems, and electrical equipment would be placed in enclosures insulated with an inert gas, thereby reducing related ignition risks. The existing flares would remain and do not represent a new source of potential wildfire or an increase above the baseline wildfire risk.

The fire protection system has been reviewed and approved by GFD, as the Certified Unified Program Agency. The potential impact radius[72] of an explosion originating from the proposed natural gas pipeline is approximately 9.26 feet. Considering that there are no residences or other habitable structures within the potential impact radius, the vegetation maintenance setback required by GFD, and the pipeline is not publicly accessible, a pipeline explosion would have an extremely low risk of resulting in a wildfire. Additionally, the proposed facilities include a fire protection system that consists of a new 60,000-gallon water tank, water conveyance piping, two fire hydrants, and fire protection sprinklers inside buildings. The proposed fire protection system was designed to meet NFPA and CFC requirements. The Certified Unified Program Agency (CUPA), GFD, has reviewed and approved the proposed Project's fire protection design, which includes verifying compliance with all applicable national, state, and local fire codes.

Potentially hazardous materials would be stored on-site in quantities which would necessitate the preparation of a Hazardous Materials Business Plan (HMBP) per California Health and Safety Code Chapter 6.95. Contained within the HMBP would be information necessary for first responders in order to prevent or mitigate damage to the public health and safety and to the environment. The HMBP would also contain an inventory of hazardous materials at the facility, the emergency response plans and procedures, provisions for training all employees, and a site map. Access roads to the proposed Project

[72] United States Department of Transportation, Pipeline and Hazardous Materials Safety Administration developed an equation that estimates the distance from a potential natural gas pipeline explosion at which death, injury, or significant property damage could occur. This distance is known as the "Potential Impact Radius". The Potential Impact Radius is calculated by the formula r = 0.69* (square root of (p*d2)), where 'r' is the radius of a circular area in feet surrounding the point of pipeline failure, 'p' is the maximum allowable operating pressure in the pipeline in pounds per square inch and 'd' is the nominal diameter of the pipeline in inches.



have been designed to meet the GFD requirements. Compliance with existing rules and regulations would serve to ensure that wildfire related impacts during operation would be less than significant.

Level of Significance After Mitigation

As discussed above, baseline wildfire risks would be not be exacerbated during operation of the proposed Project. Operation of the proposed Project would result in the continuation of compliance with existing rules and regulations governing the handling of hazardous materials, design and maintenance of the fire protection system, and the use of flaring. Operation-related impacts for this threshold would be less than significant, no mitigation measures are warranted.

Threshold: Would the proposed Project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

4.14.4.3 Construction

Improvements to the proposed Project site would include a small access road which would run directly through the site to accommodate emergency fire access in accordance with applicable code requirements, installation of a 60,000-gallon capacity firewater suppression tank, a facility fire detection and suppression system, and routine vegetation clearance 100 feet from the power generation facility footprint. The risk of wildfire during construction for these activities in described above.

This road modification would be only within the proposed Project area, as existing SCLF access roads would be used to access the proposed Project site. The access road within the proposed Project site will be constructed according to the Los Angeles County Code Title 32 (“Fire Code”). In addition, the parking lot and water tank areas would be paved/hardscaped. A security fence and gate would be installed along the perimeter of the proposed Project site. Once constructed, the City would oversee ongoing maintenance of the access road. As discussed above, construction of the proposed Project would include implementation of Mitigation Measures FIRE-1 through FIRE-3 to reduce potential fire risk.

The proposed Project is a generation facility and would not require a utility service connection to power the Project. The proposed Project would include electrical switchgear that would allow connection of the produced electricity to the existing GWP electrical system. No other modifications to the existing and current electrical transmission system on-site are proposed. Therefore, the proposed new electrical interconnection would not exacerbate fire risk as it would not alter the existing electrical system on-site, and impacts would be less than significant with mitigation incorporated.

Mitigation Measures

FIRE-1: Fire Protection Plan

FIRE-2: Smoking and Open Fires

FIRE-3: Firefighting Water Supply

Level of Significance After Mitigation

Construction of the proposed Project would temporarily increase the baseline wildfire risk from construction equipment which represents a potential source of ignition. As discussed above, implementation of Mitigation Measures FIRE-1, FIRE-2 and FIRE-3 would serve to reduce the risk of fire during construction. The Project would utilize existing access roads for site access and install a new access road only within the proposed Project site. The Project would not substantially alter or enhance the existing electrical system on-site. With implementation of Mitigation Measures FIRE-1, FIRE-2 and FIRE-3, Project- related construction impacts related to the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment would be less than significant.

4.14.4.4 Operation

Operation of the proposed Project would be limited to activities related to renewable energy generation within the enclosed Project site footprint. During operation of the proposed Project, the 60,000-gallon water storage tank would provide access to water for fire protection at all times. Therefore, the proposed Project would ensure adequate on-site water is available for firefighting and would not exacerbate fire risk.

With respect to potential operational impacts, ongoing vegetation maintenance has a limited ability to exacerbate fire risk. As part of the existing infrastructure, the proposed Project site owners are currently required to perform periodic vegetation maintenance, in accordance with GFD's Defensible Space Standards for High Fire Hazard Areas of Glendale (Glendale 2019f). This fuel modification regime would continue as part of the proposed Project and would serve to reduce and remove, rather than exacerbate, potential fire risk associated with maintenance of Project-related infrastructure. Impacts associated with ongoing routine vegetation maintenance are discussed in Section 4.3 (Biological Resources). As such, Project-related operational impacts would be less than significant. As discussed, operation of the proposed Project would not require or result in any additional infrastructure installation beyond that which is already proposed during the construction phase. Operation-related impacts for this threshold would be less than significant, no mitigation measures are warranted.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than Significant Impact.

Threshold: Would the Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

4.14.4.5 Construction

As discussed in greater detail in Section 4.5 (Geology and Soils), the proposed Project site is located within an area that is designated as having the potential for landslides, which is also the case for most of the San Rafael Hills. The proposed Project site, as part of the larger SCLF, has been operating as an industrial use since 1961, when the City of Glendale opened SCLF. The proposed Project does not include extensive excavation or new structures that would significantly alter soil stability. While grading would be performed as part of the proposed Project, the grading would be conducted in accordance with applicable codes/standards pursuant with a grading permit. Given that the nearest residence is approximately 2,500 feet for the proposed power generation facility, the proposed Project would not expose persons or structures to substantial effects from landslides after a wildfire, when compared to other existing uses and risks in the area.

A majority of the proposed Project area is open space/landfill and its drainage pattern is defined primarily by an existing storm drain system. There are no streams or river courses on or near the proposed Project site, and no substantial changes are proposed to the site that would alter the drainage or cause flooding or erosion. The Project would establish a new paved parking area, thus creating new impermeable surfaces; however, storm drainage from the parking area would flow to the existing stormwater system within the SCLF. The proposed Project would not substantially alter the existing drainage pattern of the site and surrounding area. Therefore, the proposed Project would not increase the risk of flooding or landslides after a wildfire compared to existing conditions. Construction impacts would be less than significant. As discussed above, construction of the proposed Project would not expose people or structures to increased or significant risks as a result of runoff, post-fire slope instability, or drainage changes. The Project establishes a small new paved parking area, but stormwater drainage would be accommodated by the existing SCLF drainage system and would not substantially change from existing conditions. Construction of the proposed Project would not substantially alter the risk of landslides after a wildfire compared to other uses and risks in the area. Construction related impacts would be less than significant and no mitigation measures are warranted.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than Significant Impact.

4.14.4.6 Operation

The proposed Project would not require periodic earthmoving or drainage changes which could substantially alter the condition of the site during the operation phase. Impacts which could result from increased risks to downslope or downstream areas would be similar to those currently posed by the existing SCLF and would not increase during operation of the proposed Project. As discussed above, operation of the proposed Project would not expose people or structures to increased or significant risks as a result of runoff, post-fire slope instability, or drainage changes. Operation of the proposed Project would not result in ongoing earthmoving or drainage changes which could substantially change the area. Operation of the proposed Project would not substantially alter the risk of landslides after a wildfire, as compared to other uses and risks in the area. As such, impacts would be less than significant and no mitigation measures are warranted.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than Significant Impact.

4.14.5 Cumulative Impacts

The proposed Project is located approximately five miles from the proposed Grayson Repowering Project with an urban interface separating the two. The proposed Project would not result in a cumulatively considerable wildfire impact.

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5.0 ALTERNATIVES

Acronyms

ALOHA	Areal Locations of Hazardous Atmospheres
bhp	Brake horsepower
Btu/scf	British Thermal Unit per standard cubic foot
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNG	Compressed Natural Gas
CO	Carbon Monoxide
CPUC	California Public Utilities Commission
deg F	Degrees Fahrenheit
EIR	Environmental Impact Report
GE	General Electric
GWP	Glendale Water and Power
hp	horsepower
IS/MND	Initial Study/ Mitigated Negative Declaration
kW	Kilowatt
kWh	Kilowatt hour
LFG	Landfill Gas
LNG	Liquid Natural Gas
mmBtu	One million British Thermal Units
mmscfd	Million standard cubic feet per day
MW	Megawatt
MWe	Megawatts electric
NOx	Nitrogen Oxides
PHMSA	Pipeline and Hazardous Materials Safety Administration
PRC	Public Resources Code
READ	Renewable Energy Anaerobic Digester
RICE	Reciprocating internal combustion engines
RNG	Renewable NGNatural Gas
SCAQMD	South Coast Air Quality Management District
SCLF	Scholl Canyon Landfill
SCR	Selective catalytic reduction
TSA	Temperature swing adsorption
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds
WWTP	Wastewater treatment plant

5.1 INTRODUCTION

Under California Environmental Quality Act (CEQA), and as indicated in California Public Resources Code (PRC) Section 21002.1(a), the identification and analysis of alternatives to a proposed Project is a fundamental aspect of the environmental review process and is required to ensure the consideration of ways to mitigate or avoid the significant environmental effects of a project. Here, the Final Initial Study/ Mitigated Negative Declaration (IS/MND) for the Biogas Renewable Generation Project concluded that the proposed Project would not result in potentially significant and unavoidable environmental impacts; however, in response to various public concerns City of Glendale Planning Commission elected not to adopt the Final IS/MND and requested preparation of this Environmental Impact Report (EIR) which would provide an opportunity to explore project alternatives. This section analyzes project alternatives required for an EIR under the CEQA Guidelines. The alternatives selected for analysis represent a reasonable range that meet the project objectives, reduce project impacts is some areas, and which will assist in informed decision-making. Alternatives need be environmentally superior to the project in only some respects. Sierra Club v City of Orange (2008) 163 CA4th 523, 547; Mira Mar Mobile Community v City of Oceanside (2004) 119 CA4th 477. The CEQA Guidelines refer to alternatives that are capable of substantially reducing or avoiding any significant project impacts. (14 Cal Code Regs §15126.6(a)). Here, the proposed Project's significant impacts can be mitigated to below a level of significance, so the selection of alternatives looks at those impacts that required mitigation to see if any of those impacts could be lessened or avoided. The alternatives selected here are ones that could avoid or substantially lessen one or more effects. (14 Cal Code Regs §15126.6(c)). It should be noted that agencies are not precluded from presenting alternatives that would substantially reduce some impacts but increase others and a comparative explanation of impacts is included, although in less detail than is required for an analysis of the project's impacts. (14 Cal Code Regs §15126.6(d)).

Guidance regarding the definition of project alternatives is provided in State CEQA Guidelines Section 15126.6(a) as follows:

> *An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.*

The State CEQA Guidelines emphasize that the selection of project alternatives be based primarily on the ability to reduce significant impacts relative to the proposed project, "even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly."[73] The State CEQA Guidelines further direct that the range of alternatives be guided by a "rule of reason," such that only those alternatives necessary to permit a reasoned choice are analyzed.[74]

In selecting project alternatives for analysis, potential alternatives should be feasible. The State CEQA Guidelines Section 15126.6(f)(1) explains that:

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73 CEQA Guidelines, Section 15126.6(b).
74 CEQA Guidelines, Section 15126.6(f).

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> *Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site.*

The State CEQA Guidelines require the analysis of a "no project" alternative and, depending on the circumstances, evaluation of alternative location(s) for the proposed Project, if feasible. Based on the alternative's analysis, an environmentally superior alternative is to be designated. In general, the environmentally superior alternative is the alternative with the least adverse impacts on the environment. If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify another environmentally superior alternative among the other alternatives.[75]

Section 15126.6(d) of the State CEQA Guidelines states that alternatives analysis need not be presented in the same level of detail as the assessment of the proposed Project. Rather, the EIR is required to provide sufficient information to allow for meaningful evaluation, analysis, and comparison with the proposed Project. If an alternative would cause one or more significant impacts in addition to those of the proposed Project, analysis of those impacts is to be discussed, but in less detail than for the proposed Project.

The United States Environmental Protection Agency (USEPA) maintains landfill gas (LFG) to energy project information through the Landfill Methane Outreach Program and Landfill Gas Energy Project Database. **Table 53** below presents operational and planned LFG to energy projects in the State of California. While the USEPA maintains information on projects throughout the United States, **Table 53** is limited to those in California to provide insight on how other landfills currently or plan to beneficially utilize LFG within the regulatory setting of California. As shown in **Table 53**, the predominant beneficial use of LFG in California is generation of electricity at the LFG source.

[75] CEQA Guidelines, Section 15126.6(e)(2).

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Table 53 Operational and Planned LFG to Energy Projects in California

Landfill Name	Current Project Status	Project Name	Project Start Date	Project Type Category	LFG Use Details	Actual MW Generation	Rated MW Capacity	LFG Flow to Project (mmscfd)
BOILER								
Acme LF	Operational	Project #1	1/1/1982	Direct	--	--	--	1.5
City of Sacramento Landfill	Operational	Project #1	1/1/1990	Direct	fuel for almond grower's boilers	--	--	1.6
Cold Canyon LF Solid Waste Disposal Site	Operational	Project #1	1/1/1999	Direct	LFG piped 2 miles to oilfield to fuel steam generators, the steam is used to increase the productivity of the oil wells, LFG providing 20% of fuel needs	--	--	1.008
COGENERATION								
Acme LF	Operational	Project #2	1/1/1999	Electricity	IC engine	1.9	--	--
Monterey Peninsula SLF	Operational	Project #1, Expansion #5	1/1/2006	Electricity	Replacement: (1) Caterpillar 3520 replaced Caterpillar 3516	1.6	1.6	--
North Miramar SLF	Operational	Combination Project #1 (MBC Cogen)	6/30/1997	Electricity	Plant with (8) 800-kW Caterpillar 3516 engines produces 6.4 MW of electricity, 10 mmBtu/hr of 180 F water, & 6 mmBtu/hr of chilled water (2.8 MW used onsite, balance sold to the grid)	6.4	6.4	4.41
Santa Maria Regional Landfill	Operational	Project #1	8/15/2007	Electricity	GE-Jenbacher JGS320 engine	1	--	0.432
Savage Canyon LF	Operational	Project #1	8/1/2006	Electricity	Reciprocating engine	2	--	1.008
Shoreline LF at Mountain View	Operational	Project #3	11/1/2005	Electricity	1.25-mile pipeline delivers processed gas to (3) 970-kW generators to power buildings, waste heat used in absorption chillers and to heat water, the total heat recovery for all 3 engines is ~25 mmBtu/hr	2.91	2.91	--



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Landfill Name	Current Project Status	Project Name	Project Start Date	Project Type Category	LFG Use Details	Actual MW Generation	Rated MW Capacity	LFG Flow to Project (mmscfd)
University of California at Davis SLF	Operational	Project #1	4/22/2014	Electricity	Renewable Energy Anaerobic Digester (READ) project blends LFG with biogas from university's food/other waste AD to generate electricity from microturbines; AD will divert 20,000 tons/yr of waste; secondary product from AD is fertilizer and soil amendments	0.14	0.8	--
West Miramar SLF	Operational	Combination Project #1 (MBC Cogen)	6/30/1997	Electricity	plant with (8) 800-kW Caterpillar 3516 engines produces 6.4 MW of electricity, 10 mmBtu/hr of 180 F water, & 6 mmBtu/hr of chilled water (2.8 MW used onsite, balance sold to the grid)	6.4	6.4	4.41
COMBINED CYCLE								
Mission Hills	Operational	Project #1	1/1/1984	Electricity	4.5-mile pipeline delivers LFG to (2) 14.5 MW combustion turbine generators fueled by 65% NG/35% LFG and (1) condensing steam turbine electric generator	7.5	29	2.88
Olinda Alpha SLF	Operational	Project #3	6/28/2012	Electricity	2-train, 2-stage siloxane removal system; (4) Solar turbines each with a Rentech HRSG to capture waste exhaust heat to supply steam to a single Dresser Rand steam turbine generator for 45% project efficiency; post-combustion SCR to control N_2O	20.5	32.5	11
DIRECT THERMAL								
Palo Alto LF	Operational	Project #2	8/1/2005	Direct	sewage sludge drying operations at WWTP, LFG used in place of NG	--	--	0.648
FUEL CELL								
Coyote Canyon SLF	Planned	Project #2	12/31/2020	Electricity	(2) 2.35 Mwac FCE SureSource Hydrogen carbonate fuel cell power plants producing 1270 kg of vehicle quality hydrogen daily, 46 mmBtu/hr input	4	--	2.736

Landfill Name	Current Project Status	Project Name	Project Start Date	Project Type Category	LFG Use Details	Actual MW Generation	Rated MW Capacity	LFG Flow to Project (mmscfd)
GAS TURBINE								
Altamont Landfill & Resource Recovery Facility	Operational	Project #1	1/1/1989	Electricity	(2) Solar Centaur units (nameplate 3.1 MW each) installed in 1988	4.7	6.2	--
BKK Landfill-Phases I & II	Shutdown	Project #1	1/1/1985	Electricity	--	4.3	--	--
	Operational	Project #1, Replacement	1/1/1997	Electricity	Solar Taurus 60	4.9	4.9	--
Calabasas SLF	Operational	Project #2	7/12/2010	Electricity	(3) Solar Mercury 50 turbines	13.8	--	5.6
Chiquita Canyon SLF	Operational	Project #1	11/23/2010	Electricity	(2) Solar Mercury 50 turbines	6	9.2	3.9
Highway 59 Landfill	Planned	Project #1	12/31/2018	Electricity	Dresser-Rand KG2 non-combustion gas turbine in externally fired configuration with Ener-Core's Power Oxidizer Technology (oxidation of the dilute gas occurs in seconds, produces heat and removes pollutants); steam (22 mmBtu/hr) from the waste heat	2	--	--
San Marcos LF	Operational	Project #1	1/1/1989	Electricity	2 recuperated gas turbines driving 933 kW generator; 2 Saturn units installed in 1988	1.7	1.866	1
Sunshine Canyon Landfill	Operational	Project #2	9/1/2014	Electricity	(5) Solar Mercury 50 CTG turbines, each at 43.28 mmBtu/hr and driving a nominal 4.9 MW electric generator	20	20	12
Sycamore SLF	Shutdown	Project #1	12/31/1988	Electricity	(2) 10.8 mmBtu/hr Saturn recuperated gas turbines driving 933 kW generators	1.48	1.866	--
	Operational	Project #1, Expansion #1	4/1/2004	Electricity	(1) 45 mmBtu/hr Centaur gas turbine	2.5	--	--



Landfill Name	Current Project Status	Project Name	Project Start Date	Project Type Category	LFG Use Details	Actual MW Generation	Rated MW Capacity	LFG Flow to Project (mmscfd)
	Operational	Project #1, Replacement Units	5/16/2011	Electricity	(2) Solar turbines rated at 1.2 MW each	1.5	2.4	--
MICROTURBINE								
Acme LF	Operational	Project #3	8/1/2003	Electricity	4 70kW Ingersoll-Rand microturbines	0.28	0.28	0.216
All Purpose Landfill	Operational	Project #2	12/18/2009	Electricity	(3) Ingersoll-Rand 250-kW microturbines	0.75	0.75	0.34
BKK Landfill-Phases I & II	Planned	Project #3	1/31/2019	Electricity	(1) EC-250 Ecostation at 250 kW; patented Power Oxidizer technology generates clean power from low-quality gases	0.25	--	--
Burbank LF Site No. 3	Operational	Project #3	4/1/2005	Electricity	(10) 30 kW Capstone microturbines and (1) 250 kW Ingersoll-Rand microturbine	0.55	0.55	--
Colton Sanitary Landfill	Operational	Project #1	3/1/2003	Electricity	--	1.2	--	0.864
Operating Industries, Inc. LF (OII)	Operational	Project #1	8/12/2002	Electricity	6 Ingersoll-Rand microturbines rated at 70 kW each	0.42	0.42	0.36
Shoreline LF at Mountain View	Operational	Project #2	12/1/2004	Electricity	(2) 70 kW Ingersoll-Rand microturbines	0.14	0.14	0.086
Toland Road SLF	Operational	Project #1	8/1/2004	Electricity	(1) 70 kW Ingersoll-Rand microturbine	0.07	0.07	--
Toyon Canyon LF	Planned	Project #2	12/31/2019	Electricity	(1) EC-250 EcoStation at 250 kW and (2) EC-333 EcoStations; patented Power Oxidizer technology generates clean power from low-quality gases	0.916	--	--

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Landfill Name	Current Project Status	Project Name	Project Start Date	Project Type Category	LFG Use Details	Actual MW Generation	Rated MW Capacity	LFG Flow to Project (mmscfd)
Union Mine Disposal Site	Operational	Project #1	1/1/2004	Electricity	(3) Ingersoll Rand microturbines rated at 70 kW each, electricity used to supplement the power used to run on-site wastewater treatment facility	0.21	0.21	0.115
RECIPROCATING ENGINE								
Badlands SLF	Operational	Project #1	2/1/2001	Electricity	--	1.1	--	0.576
Buena Vista Drive SLF	Operational	Project #2	2/2/2006	Electricity	(3) 1,060 kW spark-ignited, turbocharged, after-cooled GE Jenbacher engines total, expected minimum availability of 90%	3.18	3.18	1.54
City of Santa Cruz SLF	Operational	Project #2	11/23/2009	Electricity	(1) Caterpillar 3520 engine	1.6	1.6	--
Clover Flat Landfill	Operational	Project #1	12/31/2014	Electricity	(1) Jenbacher engine	0.75	--	0.35
Cold Canyon LF Solid Waste Disposal Site	Operational	Project #2	7/31/2013	Electricity	(1) 1.6-MW G3520 CAT engine	1.6	1.6	--
Corona Disposal Site	Operational	Project #1	3/4/1986	Electricity	--	0.6	--	--
Crazy Horse Landfill	Planned	Project #2	12/31/2018	Electricity	(2) GE Jenbacher engines	1.6	--	--
Foothill Sanitary Landfill, Inc.	Operational	Project #1	4/24/2014	Electricity	(2) GE Jenbacher engines	3.6	4.2	1.55
Forward Landfill	Operational	Project #1	2/22/2014	Electricity	(2) GE Jenbacher 2.1-MW engines	3.4	4.2	1.55

ALTERNATIVES

Landfill Name	Current Project Status	Project Name	Project Start Date	Project Type Category	LFG Use Details	Actual MW Generation	Rated MW Capacity	LFG Flow to Project (mmscfd)
Frank R. Bowerman SLF	Operational	Project #2	3/29/2016	Electricity	fuel clean-up system, (7) Caterpillar CG260 internal combustion engines, and selective catalytic reduction (SCR) and oxidation catalyst units installed on each engine exhaust system to reduce NOx, CO, and VOC emissions	22.4	--	10.75
Johnson Canyon SLF	Operational	Project #1	5/12/2013	Electricity	(1) GE Jenbacher engine	1.4	1.4	0.53
	Planned	Project #1, Expansion #1	12/31/2019	Electricity	--	--	--	--
Keller Canyon LF	Operational	Project #1	8/1/2009	Electricity	(2) GE Jenbacher engines	3.8	3.8	1.63
Kiefer LF	Operational	Project #1	1/1/1999	Electricity	3 Caterpillar 3616 engines	9	--	4.752
	Operational	Project #1, Expansion #1	1/1/2006	Electricity	2 Caterpillar 3616 engines	6	--	3.2
Lopez Canyon SLF	Operational	Project #1	1/5/1999	Electricity	(2) 3616 Caterpillar engines	6	--	2.67
Mid-Valley Sanitary LF	Operational	Project #1	3/1/2003	Electricity	(2) Deutz model TBG620V16K engine-generators	2.52	--	1.58
Milliken SLF	Operational	Project #1	3/1/2003	Electricity	(2) engines	2.2	--	1.94
Monterey Peninsula SLF	Shutdown	Project #1	1/1/1983	Electricity	Original project: 2 Waukesha engine generators	1.2	--	--
	Shutdown	Project #1, Expansion #1	1/1/1994	Electricity	Expansion: (1) Caterpillar 3516	0.8	0.8	--
	Shutdown	Project #1, Expansion #2	1/1/1997	Electricity	Expansion: GE-Jenbacher 320 engine	0.987	--	--

Landfill Name	Current Project Status	Project Name	Project Start Date	Project Type Category	LFG Use Details	Actual MW Generation	Rated MW Capacity	LFG Flow to Project (mmscfd)
	Operational	Project #1, Expansion #3	1/1/1998	Electricity	Replacement: GE-Jenbacher 320 engine replaced an original Waukesha engine.	0.987	--	--
	Operational	Project #1, Expansion #4	1/1/2002	Electricity	Replacement: GE-Jenbacher 320 engine replaced an original Waukesha engine.	1.057	--	--
	Operational	Project #1, Expansion #6	1/1/2009	Electricity	Replacement: GE-Jenbacher 420 replaced GE-Jenbacher 320	1.4	--	--
Neal Road Recycling and Waste Facility	Operational	Project #1	2/13/2013	Electricity	(1) GE Jenbacher 420 engine	1.4	1.4	0.85
North Miramar SLF	Operational	Combination Project #1, Expansion #1 (MP2)	6/14/2012	Electricity	(2) Caterpillar G3520C engines provide 51% of MCAS' base energy load, new 6.5-mile power line delivers electricity to MCAS	3.2	3.2	1.73
Orange Avenue Disposal Inc.	Operational	Project #1	11/30/2015	Electricity	containerized 2G agenitor 206 with MAN engine, optimized for efficient operation on biogas, with a complete LFG treatment system and a special hot ambient temperature package	0.22	0.22	--
Otay LF	Operational	Project #1	12/1/1986	Electricity	(1) Cooper-Superior model 16SGTA lean-burn engine-generator set with 1,850 kW capacity (2,650 hp)	1.8	1.85	--
	Operational	Project #1, Expansion #1	12/1/1991	Electricity	(1) Cooper-Superior model 16SGTA lean-burn engine-generator set with 1,850 kW capacity (2,650 hp)	1.8	1.85	--
	Operational	Project #1, Expansion #2	3/1/2007	Electricity	(2) Cooper-Superior model 16SGTA lean-burn engine-generator sets with 1,850 kW capacity (2,650 hp)	3.7	3.7	--

ALTERNATIVES

Landfill Name	Current Project Status	Project Name	Project Start Date	Project Type Category	LFG Use Details	Actual MW Generation	Rated MW Capacity	LFG Flow to Project (mmscfd)
	Operational	Project #1, Expansion #3	8/1/2013	Electricity	(2) Caterpillar 3520 engines	3.2	3.2	--
Ox Mountain SLF	Operational	Project #1	4/1/2009	Electricity	(6) GE Jenbacher 1.92-MW JGS 616 GS-LL engines in all, using GE's temperature swing adsorption (TSA)	9.7	11.4	4.8
Potrero Hills SLF	Operational	Project #1	4/30/2016	Electricity	(5) Caterpillar lean-burn 3520 engines, advanced environmental controls to reduce sulfur content prior to combustion and post-combustion catalytic reduction	7	8	3.7
Prima Deshecha SLF	Operational	Project #1	6/1/1999	Electricity	(2) Caterpillar 3616 engines (3,150 kW each)	5.5	6.3	3.24
Recology Hay Road LF	Operational	Project #1	7/2/2013	Electricity	(1) Caterpillar G3520C RICE generator rated at 1.6 MWe	1.6	1.6	1.0498
Recology Ostrom Road LF	Operational	Project #1	1/9/2009	Electricity	(1) Caterpillar G3520C genset	1.6	1.6	0.9979
	Operational	Project #1, Expansion #1	9/11/2013	Electricity	(1) Caterpillar G3520C genset rated at 1.95 Mwe	1.95	1.95	1.215
Redwood SLF	Operational	Project #2	9/20/2017	Electricity	(2) CAT 3520+ models at 2 MW each; engine exhaust is treated to remove CO and NOx; LFG is pre-treated to remove particulates, moisture, sulfur and siloxanes	3.3	3.9	1.78
Sonoma County Central Disposal Site	Shutdown	Project #1	3/1/1994	Electricity	(4) CAT 3516 engines installed in 1993	3.2	3.2	1.38
	Shutdown	Project #1, Expansion #1	6/1/1996	Electricity	4 CAT 3516 engines installed in 1996	3.2	3.2	1.38
	Shutdown	Project #1, Expansion #2	3/1/2003	Electricity	2 CAT 3516 engines	1.1	1.6	0.2

ALTERNATIVES

Landfill Name	Current Project Status	Project Name	Project Start Date	Project Type Category	LFG Use Details	Actual MW Generation	Rated MW Capacity	LFG Flow to Project (mmscfd)
	Shutdown	Project #1, De-Expansion #1	1/1/2006	Electricity	--	3	--	--
	Operational	Project #1, De-Expansion #2	1/1/2018	Electricity	(2) lean-burn ICE / generator sets (Caterpillar G3516)	1.6	1.6	1
Sunnyvale LF	Operational	Project #1	1/1/1998	Electricity	LFG co-fired with WWTP digester gas; (2) 800-kW Caterpillar 3516 engine-generators combust 75% LFG/25% digester gas	1.2	1.6	0.656
Tajiguas SLF	Operational	Project #1	3/31/2000	Electricity	Caterpillar G3616 IC engine (rated at 4231 bhp) is prime mover that generates electrical energy via a Kato Model CO87-0546 electrical generator	3.1	--	1.5
Vasco Road SLF	Operational	Project #1	2/22/2014	Electricity	(2) GE Jenbacher engines	4.3	--	2.04
West Contra Costa SLF	Operational	Project #1	1/1/1985	Electricity	(3) Waukesha engines	2	--	--
	Operational	Project #1, Expansion #1	1/1/2010	Electricity	Original (3) Waukesha engines (overhauled multiple times) still in place, original generators have been rebuilt or replaced which increased capacity from 675 kW each to 700-750 kW each	0.15	--	--

ALTERNATIVES

Landfill Name	Current Project Status	Project Name	Project Start Date	Project Type Category	LFG Use Details	Actual MW Generation	Rated MW Capacity	LFG Flow to Project (mmscfd)
West Miramar SLF	Operational	Project #2 (NCCF)	3/1/1999	Electricity	(4) 950-kW Caterpillar 3516 engines; most electricity is used on site, balance sold to the grid	3.3	3.8	--
	Planned	Project #2 (NCCF), Expansion #1	12/31/2019	Electricity	--	1.6	1.6	--
	Operational	Combination Project #1, Expansion #1 (MP2)	6/14/2012	Electricity	(2) Caterpillar G3520C engines provide 51% of MCAS' base energy load, new 6.5-mile power line delivers electricity to MCAS	3.2	3.2	1.73
Western Regional SLF	Operational	Project #1	7/1/2004	Electricity	2 Caterpillar engines	1.6	1.6	--
	Operational	Project #1, Expansion #1	3/1/2008	Electricity	1 additional Caterpillar engine	0.8	0.8	--
Yolo County Central LF	Operational	Project #1	3/1/1997	Electricity	(4) Caterpillar G399 at 600kW each, producing 1,500-2,000 kW with 250 kW parasitic drain	1.75	2.4	1.4
	Future Potential	Project #1, Expansion #1	--	Electricity	--	--	--	--
STEAM TURBINE								
BKK Landfill-Phases I & II	Operational	Project #2	1/1/1992	Electricity	--	6	6.8	--

ALTERNATIVES

Landfill Name	Current Project Status	Project Name	Project Start Date	Project Type Category	LFG Use Details	Actual MW Generation	Rated MW Capacity	LFG Flow to Project (mmscfd)
Puente Hills LF	Shutdown	Project #3, Steam Cycle Plant	8/8/1986	Electricity	Conventional Rankine Cycle Steam power plant firing LFG in the plant's boilers to produce superheated steam which is then used to drive the steam turbine/generator to generate electric power	50	50	33.1
	Shutdown	Project #3, De-Expansion #1	1/1/2013	Electricity	Conventional Rankine Cycle Steam power plant firing LFG in the plant's boilers to produce superheated steam which is then used to drive the steam turbine/generator to generate electric power	33	--	--
	Operational	Project #3, De-Expansion #2	1/1/2016	Electricity	Conventional Rankine Cycle Steam power plant firing LFG in the plant's boilers to produce superheated steam which is then used to drive the steam turbine/generator to generate electric power	24	--	24.5
UNKNOWN								
West Central LF	Planned	--	12/1/2020	Unknown	--	2	--	1
VEHICLE FUEL								
Altamont Landfill & Resource Recovery Facility	Operational	Project #3	9/1/2009	Renewable Natural Gas (LU)**	System's multi-step process includes compression, chilling, adsorption, and membranes to remove impurities, cleaned LFG is then cooled to -260 deg F to create 13,000 gal/day LNG for garbage trucks	--	--	3.6
Bakersfield Metropolitan SLF (BENA)	Planned	Project #1	1/1/2020	Renewable Natural Gas (PI)**	60% of LFG to create RNG vehicle fuel and 40% of LFG to generate electricity at local power plant	--	--	1.87
Frank R. Bowerman SLF	Planned	Project #3	12/31/2020	Renewable Natural Gas (LU)**	LFG upgrading to vehicle fuel, transport by tube trailer to end user; 1,252 mmBtu/day output	--	--	1.728

ALTERNATIVES

Landfill Name	Current Project Status	Project Name	Project Start Date	Project Type Category	LFG Use Details	Actual MW Generation	Rated MW Capacity	LFG Flow to Project (mmscfd)
Monterey Peninsula SLF	Planned	Project #2	3/31/2020	Renewable Natural Gas (LU)**	--	--	--	--
Newby Island SLF Phases I, II, & III	Planned	Project #3	12/31/2019	Renewable Natural Gas (PI)**	--	--	--	--
Prima Deshecha SLF	Planned	Project #2	12/31/2022	Renewable Natural Gas (LU)**	LFG upgrading to vehicle fuel, transport by tube trailer to end user; 3,000 mmBtu/day output.	--	--	4.32
Santiago Canyon SLF	Planned	--	12/1/2020	Renewable Natural Gas (LU)**	LFG will be upgraded to be used in solid waste hauling trucks	--	--	0.345

*Source: The USEPA's Landfill Methane Outreach Program and Landfill Gas Energy Project Database dated July 2019

** Delivery Method – LU = Local Use
PI = Pipeline Injection

"—"=No Data

5.2 PRELIMINARY ALTERNATIVES SCREENING EVALUATION

A reasonable range of alternatives to the proposed Project was considered based on the types of operational and planned LFG to energy projects in California presented in **Table 53**, that consist of projects that put LFG to beneficial use, which is one of the Project objectives. The range of alternatives is as well as public input received during preparation of the previous IS/MND and public scoping for preparation of this EIR. Sections 5.3 and 5.4 introduce alternatives selected for analysis and alternatives considered and not selected for further analysis, respectively.

5.3 ALTERNATIVES SELECTED FOR ANALYSIS

Pursuant to Section 15124(b) of the CEQA Guidelines, the description of the proposed Project must contain "a clearly written statement of objectives" that would aid the lead agency in developing a reasonable range of alternatives to evaluate in the EIR, and to aid decision makers in preparing findings, and if necessary, a statement of overriding considerations. The objective of the proposed Project is to safely capture all the LFG generated by the Scholl Canyon Landfill (SCLF) as required by regulatory standards and use the captured LFG generated by the SCLF for beneficial purposes such as combusting the LFG to generate power. The following alternatives are evaluated in this EIR.

1. Alternative 1: No Project. LFG would continue to be captured and combusted by flare at SCLF. The South Coast Air Quality Management District (SCAQMD) passed new regulations in January 2019 that requires landfills that do not convert 80 percent or more of LFG to beneficial use to replace the existing LFG flares with new flares that comply with lower NO_X and VOC emissions rates. Because the No Project Alternative would involve combusting 100 percent of the LFG in flares with no beneficial reuse, Alternative 1 assumes that the existing flares would be replaced with new flares required by SCAQMD regulation within the next three to four years. Alternative 1 is discussed further in Section 5.6.1.
2. Alternative 2: Convert the LFG to Natural Gas. Alternative 2 includes converting the LFG to natural gas and delivering the natural gas to a connection with an existing SoCalGas natural gas transmission pipeline. Alternative 2 would include removing gas impurities through an LFG gas cleanup system at the SCLF to meet higher natural gas purity standards. After cleaning the LFG to meet SoCalGas standards, the natural gas would be compressed using new equipment at SCLF and delivered to SoCalGas through a new high-pressure pipeline. The existing flares would remain at SCLF and would be used as backup in the event natural gas was unable to be produced or delivered to SoCalGas due to equipment and pipeline repair or maintenance activities. Alternative 2 is discussed further in Section 5.6.2.
3. Alternative 3: Convert LFG to Liquid Natural Gas. (LNG). Alternative 3 includes converting the LFG to LNG at SCLF and utilizing the LNG as vehicle fuel at a new LNG storage and fueling facility at SCLF or transporting the LNG to a commercial user off-site via trucks. LNG is natural gas that is cooled to a temperature at which natural gas becomes a liquid. The conversion process includes a cleanup system to remove impurities from the LFG. The LFG is then cooled and liquefied via a cryogenic process to a temperature of approximately minus 260º F. The volume of the liquid is 600 times smaller than the gaseous form. The LNG would be stored at the landfill in an insulated LNG vessel. The LNG then can be used as vehicle fuel on-site or transported to a commercial user off-site via trucks. Alternative 3 would require a more extensive LFG cleanup system, additional process equipment, and LNG storage vessels at SCLF. The

existing flares would remain at SCLF and would be used as backup in the event LNG was unable to be produced due to equipment repair or maintenance activities or LNG storage capacity is reached. Alternative 3 is discussed further in Section 5.6.3.

4. Alternative 4: Locate Engine Generators at an Another Location. Alternative 4 includes relocating the proposed internal combustion engine generators at Grayson Power Plant. The LFG compression and cleanup system would be located at SCLF. The cleaned LFG would be transported from SCLF to Grayson Power Plant through the existing LFG pipeline. The existing flares would remain at SCLF and would be used as backup in the event LFG was unable to be periodically combusted in the engine generators at Grayson Power Plant due to equipment repair or maintenance activities. Alternative 4 is discussed further in Section 5.6.4.

5.4 ALTERNATIVES CONSIDERED AND NOT SELECTED FOR FURTHER ANALYSIS

State CEQA Guidelines Section 15126.6(c) recommends that an EIR identify alternatives which were considered for analysis but rejected as infeasible and briefly explain the reasons for their rejection. According to the State CEQA Guidelines, the following factors may be used to eliminate alternatives from detailed consideration: the alternative's failure to meet most of the basic Project Objectives, the alternative's infeasibility, or the alternative's inability to avoid significant environmental impacts. Alternatives that have been considered and rejected as infeasible are discussed below. These technology and scale-based alternatives were considered in part as the result of public input during preparation of the previous IS/MND and scoping meetings conducted for this EIR. The following alternatives were considered and not selected for further analysis:

- Generate Electricity in Microturbines
- Generate Electricity in Combustion Turbines
- Reduce Number of Internal Combustion Engines from Four to Three
- Generate Electricity with Fuel Cells
- Convert LFG to Compressed Natural Gas

5.4.1 Generate Electricity in Microturbines

This alternative would involve consuming the LFG in microturbines to generate electricity. An LFG treatment system would be required, and the existing backup flares would remain to support this alternative. Due to the size of microturbines, which inherently limits the generation capacity of each microturbine, this alternative would require the equivalent of approximately 70 microturbines to generate the same electrical output as the proposed Project. This alternative would require development of an additional approximately ½ acre of site compared to the proposed Project to accommodate the 70 microturbines. The microturbines could not be located on the active landfill due to potential surface instability and landfill settling.

The USEPA maintains LFG to energy project information through the Landfill Methane Outreach Program and Landfill Gas Energy Project Database. The most recent database dated July 29, 2019, lists eight LFG projects in operation and two additionally planned within California that generate electricity in microturbines. The largest of the ten projects has a generation output of 1.2 MW, approximately ten times smaller than what would be required to generate electricity in microturbines with the SCLF LFG as fuel (USEPA, 2019). This alternative would result in grading and development of an additional ½ acre of previously undisturbed areas adjacent to the active landfill compared to the proposed Project, therefore this alternative would result in an increase in impacts to aesthetics, biological resources, cultural resources, and land use from an increase in development of previously undisturbed land adjacent to the active landfill compared to the proposed Project.

While this alternative would meet the Project objective to put the LFG to beneficial use, it would result in a higher magnitude of environmental impacts. As noted in the Landfill Gas Energy Project Database, an LFG project generating electricity using microturbines on the scale needed to beneficially use the SCLF LFG is not in operation or currently planned in the state of California. While technically feasible, this alternative would include 70 microturbines that would substantially increase the size of the operation and maintenance activities compared to the proposed Project that utilizes four gas engines. This alternative would not avoid significant environmental impacts of the proposed Project and would substantially increase operation and maintenance activities associated with the number of many microturbines, therefore, this alternative was not considered further analysis.

5.4.2 Generate Electricity in Combustion Turbines

This alternative is similar to the proposed Project but would combust the LFG in gas turbines to generate electricity rather than in reciprocating internal combustion engines (RICE). The existing backup flares would remain to support this alternative. Gas turbines require high pressure inlet gas and the installation of high-pressure gas compressors would reduce the proposed Project's electrical output at a higher capital cost due to the increase in gas compression equipment and energy use required to compress the LFG compared to that required for RICEs associated with the proposed Project . Additionally, two turbines would be required to combust the LFG which would result in reduced flexibility and efficiency also with a higher cost. The potential environmental impacts of gas turbines would be comparable to gas engines, would result in increased operational costs, and does not prevent otherwise potentially significant impacts from occurring compared to the proposed Project, therefore this alternative was not considered for further analysis.

5.4.3 Reduce Number of Internal Combustion Engines from Four to Three

This alternative involves reducing the number of internal combustion engines from four to three. The existing backup flares would remain to support this alternative. Each of the three internal combustion engines would operate at a higher load factor than the four engines associated with the proposed Project.

Initially, the volume of available LFG would exceed the combustion capacity of only three engines, requiring some LFG to be flared. It is assumed that the existing flares would need to be replaced to meet

the recent SCAQMD rule for flare emissions. The operating load factor of each engine would be reduced, and each engine decommissioned as the LFG available decreases over time. This alternative would occur at the same site as the proposed Project and is of comparable technology type and space requirements. The potential environmental impacts of removing one gas engine and flaring excess gas would be comparable to the proposed Project but would not avoid any potentially significant environmental impacts. As this alternative would not reduce or avoid significant environmental impacts and would not beneficially use the LFG to the same degree as the proposed Project, this alternative was not considered for further analysis.

5.4.4 Generate Electricity with Fuel Cells

This alternative involves consuming the LFG in fuel cells at the SCLF to generate electricity. The existing backup flares would remain to support this alternative. A fuel cell directly converts chemical energy to electrical energy without combustion. It is an electrochemical process that combines hydrogen produced from the fuel, in this case methane from the LFG, with oxygen from the air in an anode-cathode electrolyte cell configuration to produce direct current. Oxygen atoms with negative charge from the cathode are transported through a media to the fuel rich positive charged anode where the oxygen ions react with hydrogen ions to produce a current. Each anode-cathode cell consumes small amounts of methane and produces very small amounts of direct current, therefore numerous cells would be required to be combined together to consume all the available methane from the landfill. Direct current is then converted to alternating current via inverters. This chemical reaction produces electricity without producing direct emissions of air pollutants and would reduce air quality impacts when compared to the proposed Project.

There are two main drawbacks of utilizing fuel cells to make electricity from methane derived from LFG.

1. The LFG would have to be scrubbed to remove all siloxanes, silicones, sulfur, VOCs and other constituents of the LFG that would be attracted to the anode and which would poison the anode rendering the fuel cell ineffective.
2. Each cell consumes very small amount of methane and therefore numerous cells would have to be packaged together making a fuel cell package large in size and numerous packages would have to be combined together to consume all the methane available.

To prevent the LFG from poisoning the anode, the LFG cleanup system would have to be significantly more rigorous for fuel cells than for the proposed Project. The process to clean the LFG prior to use in a fuel cell would involve more equipment and would have higher energy consumption associated with processing the LFG for beneficial use compared to the proposed Project and RICEs that can combust the LFG with less pre-treatment.

Each existing commercial fuel cell module generates 300 kWh of electricity utilizing cleaned LFG is approximately 33 ft by 5 ft and 8 ft tall. It would require 40 fuel cell modules coupled together to utilize all the available LFG to generate the approximately gross 13 MW of electricity produced by the engines. Due to the high energy consumption of the fuel cell cleanup system, less electricity would be available to the City than would be generated by the engines.



To accommodate the additional fuel cell cleanup system and the numerous fuel cell modules the size of facility footprint would be increased by an additional ½ acre compared to that needed for the proposed Project. Due to the topography and proximity of the landfill on the north side, steep drop off on the south side, and existing equipment on the west side, the additional half an acre of land would have to be on the east side where significant grading, retaining walls and topographic disturbance would be required.

To overcome the land constraint at SCLF, if the LFG could be cleaned to fuel cell requirements, one option would be to place the LFG cleanup system at SCLF and transport the cleaned gas to Grayson via the existing Scholl to Grayson pipeline. The LFG cleanup system would still require a process flare to be located near the cleanup system at SCLF to combust and destroy the unwanted constituents that are removed from the LFG; however, in this case the fuel cell modules could be placed at Grayson and the electricity generated at Grayson.

The USEPA's Landfill Methane Outreach Program and Landfill Gas Energy Project Database dated July 2019, does not list any operational LFG projects using fuel cells to generate electricity. The database does list one planned LFG project in Newport Beach that would involve a combination of generating electricity and hydrogen vehicle fuel using fuel cells. The project would include two 2.35 MW capacity fuel cells and would produce 1,270 kg/day hydrogen fuel (USEPA, 2019).

The largest obstacles to generating electricity from fuel cells with LFG are the high cost and energy requirement of the LFG cleanup system and unreliability of existing technology to effectively remove siloxanes, silicones, sulfur, VOC's and other unwanted constituents from the LFG. LFG cleanup system technology has not developed sufficiently to promote operations of fuel cells on LFG at the scale needed to consume the available LFG at the SCLF. While this alternative would achieve the proposed Project objective, it is not technically or economically feasible at the scale required and therefore was not considered for further analysis.

5.4.5 Convert LFG to Compressed Natural Gas

This alternative would consist of converting the available LFG to Compressed Natural Gas (CNG) and using the CNG as vehicle fuel. The existing backup flares would remain to support this alternative. The conversion process begins by removing water and compressing the LFG to a higher pressure required by the LFG cleanup system. This alternative would require a more extensive LFG cleanup system than currently exists to remove gas impurities such as sulfur compounds, carbon dioxide, siloxane, additional moisture, nitrogen and oxygen. Similar to the proposed Project, the LFG cleanup system would require a process flare to be located near the cleanup system to combust and destroy some of the impurities that would be removed from the LFG. The cleaned gas is then compressed a second time and either used directly to fuel vehicles in a slow fill system or is stored in high pressure vessels to fuel vehicles in a fast fill system. Removing the large quantities of oxygen, nitrogen and carbon dioxide contained in the LFG prior to converting to CNG would require more energy compared to the proposed Project.

As shown in **Table 53**, there is one operational and six planned LFG to RNG projects in California. The operational project involves converting LFG to LNG use as vehicle fuel. All six planned LFG to RNG projects are listed as vehicle fuel uses with two including pipeline conveyance of produced RNG. Based



on available data from the USEPA included in **Table 53**, it is not clear if any of the vehicle use applications involve CNG as the fuel type.

This alternative has the following considerations:

- The available cleaned LFG would produce tens of thousands of gallons of CNG per day, sufficient to fuel hundreds of trucks per day. It is assumed the necessary gas cleanup system would be located at the SCLF in approximately the same area as the existing gas cleanup system.
- Due to the equipment and space requirements related to a fueling facility, the area needed to accommodate the gas cleanup and compression system as well as the fueling station would necessitate development of an additional one and one-half acres of previously undisturbed areas adjacent to the active landfill compared to the proposed Project.
- CNG would be stored in cylinders measuring 24 inches in diameter by 103 feet long, referred to as “bullets”. Bullets are commonly placed in series of three referred to as a “stack”. There would need to be 82 stacks to hold the amount of CNG produced daily. Each stack would have an approximate volume of 112.5 actual cubic feet of natural gas compressed to a pressure of approximately 4,500 psig.
- There are two options available to fuel trucks with CNG. Slow fill that would require CNG to be compressed, have the trucks park at the fueling station and fuel the trucks slowly over night; or quick fill that would require the trucks to be driven to the fueling station and more quickly be fueled from high pressure storage vessels as they would in a gas station.
- Locating the CNG vehicle fueling station at the SCLF would avoid the need to convey the CNG to an off-site location. An option would be to transport the cleaned LFG at low pressure via the existing pipeline between SCLF and Grayson Power Plant, compress the cleaned LFG to high pressure CNG requirements at Grayson Power Plant and install a truck fueling system at Grayson Power Plant.
- An additional option would be to construct a new approximately 5-mile long pipeline to transport the cleaned LFG to the City of Glendale’s only CNG fueling station located on West Cerritos Avenue, compress the cleaned LFG to high pressure CNG requirements, and utilize the existing fueling station to fuel CNG vehicles.

This alternative would not have any potential environmental impacts less than the proposed Project. It would have lower operation phase emissions of air pollutants, greenhouse gases, and noise compared to combustion of the LFG in internal combustion engines to generate electricity. However, the emissions and noise associated with hundreds of truck fueling trips per day would likely result in comparable operational emissions and noise as the proposed Project. Because the construction disturbance size and duration would be greater, emissions, noise, and traffic during construction of this alternative would be greater than those associated with the proposed Project. Additionally, more grading of previously undisturbed areas and removal of native vegetation would result and therefore this alternative would have a greater potential impact to biological resources, geology and soils, and hydrology and water quality; particularly during construction. The additional site size and grading required would have also have a greater potential for aesthetics and land use impacts. There would be an increase in energy use due to the compression of the natural gas and traffic during operation of this alternative related to vehicles fueling at the CNG fueling station whether located at SCLF or Grayson Power Plant. The handling and

storage of CNG represents a greater consequence in the event of an accidental release compared to the aqueous ammonia storage associated with the proposed Project for emissions control. USEPA's ALOHA model (https://www.epa.gov/cameo/aloha-software) was used to screen the potential hazards and fire risks from a worst-case release of CNG which equates to a complete release of one stack of CNG storage vessels which equates to 112.5 actual cubic feet of stored CNG at 4,500 psi. The ALOHA input and output files are included as Appendix O (Off-site Consequence Analysis for LFG to CNG). The ALOHA screening demonstrates that flame patches associated with the flammable area of vapor cloud could extend 867 feet from the release site. Similarly, a vapor cloud explosion could shatter glass located within 735 feet of the release site. The toxic area vapor cloud could also result in adverse health effects to people located within 453 feet of the release site. These potential hazards are greater than those associated with a worst-case release of aqueous ammonia associated with the proposed Project.

Potential construction air quality, greenhouse gas emissions, biological resources, geology and soils, hydrology and water quality, noise, and traffic and transportation impacts would be greater than those of the proposed Project. Potential operation phase aesthetics, hazards and hazardous materials, land use and planning, traffic and transportation noise, energy, and wildfire impacts would be greater than those of the proposed Project. While this alternative meets the proposed Project objective of beneficial reuse of the LFG, it would not generate electricity and will not assist the City in meeting the Renewable Portfolio Standard requirements. Consequently, converting the LFG to CNG for use as vehicle fuel was not considered further as an alternative due to substantially greater potential environmental impacts and not meeting the objectives as well as the proposed Project.

5.5 ANALYSIS FORMAT

In accordance with State CEQA Guidelines Section 15126.6(d), each alternative is evaluated in sufficient detail to determine whether the overall environmental impacts would be less than, similar to, or greater than the corresponding impacts of the proposed Project. Furthermore, each alternative is evaluated to determine whether the proposed Project objectives, identified in Chapter 2.0, Project Description would be substantially attained by the alternative. The evaluation of each of the alternatives follows the process described below:

- A description of the alternative.
- The net environmental impacts of the alternative for each environmental issue area analyzed in the EIR are described. Where applicable, the evaluation is divided between temporary impacts that would occur during the alternative's construction phase and impacts that would occur during the alternative's operational phase.
- Potential environmental impacts of the alternative and the proposed Project are compared for each environmental topic area. Where the impact of the alternative would be clearly less than the impact of the proposed Project, the comparative impact is said to be "less." Where the alternative's net impact would clearly be more than the proposed Project, the comparative impact is said to be "greater." Where the impacts of the alternative and Project would be roughly equivalent, the comparative impact is said to be "similar."
- The comparative analysis of the impacts is followed by a general discussion of the extent to which the underlying purpose and Project Objective are attained by the alternative.

At the end of the section, a relative comparison of the alternative's impacts and consistency with Project Objectives is provided. Pursuant to CEQA Guidelines Section 15126.6(e)(2) an "Environmentally Superior Alternative" is also identified.

5.6 ALTERNATIVES ANALYSIS

5.6.1 Alternative 1: No Project

5.6.1.1 Description of the Alternative

Under the No Project Alternative (Alternative 1), the naturally occurring LFG would continue to be flared at the SCLF. The SCAQMD passed new regulations in January 2019 that requires landfills that do not convert 80 percent or more of LFG to beneficial use to replace the existing LFG flares with new flares that comply with more lower NO_X and VOC emissions rates. Alternative 1, which would flare 100 percent of the LFG, therefore assumes that the LFG would be combusted in the existing flares until replacement flares would be installed and not be beneficially used. Alternative 1 includes construction activities associated with replacing the existing flares. Under the SCAQMD rule, an application to replace the flares would need to be submitted to SCAQMD within 12 months after the flares combust greater than 20 percent of the available LFG for two consecutive calendar years. The replacement flares would also need to be installed within 18 months of receiving the SCAQMD permit. It is therefore assumed that the existing flares would be replaced within the next three to four years under Alternative 1.

5.6.1.2 Environmental Impacts

The following are the potential environmental impacts that would result from Alternative 1.

Potential Environmental Impacts Less than Those of the Proposed Project

Due to the decreased construction activity, reduced disturbance size and reduced construction duration, emissions, noise, and traffic during construction of Alternative 1 would be less than those associated with the proposed Project, even if the flares are replaced. Alternative 1 would avoid grading previously undisturbed areas and removal of native vegetation and would therefore have less of a potential impact to biological resources, geology and soils, and hydrology and water quality; particularly during construction. Operation phase air emissions of Alternative 1 would be less than those of the proposed Project because the flares emit lower concentrations of air pollutants than the RICEs associated with the proposed Project. In addition, the LFG in flares would be expected to have lower noise levels than combustion for power generation associated with the proposed Project. Replacing the flares would have a similar aesthetic impact as existing conditions and less than the proposed Project that would include grading of previously undisturbed areas and installation of engine exhaust stacks with an approximate 40-foot elevation profile, likely higher than a 30 foot elevation profile for replacement flares. Alternative 1 would not require issuance of a land use permit and would also avoid risks associated with an accidental release of aqueous ammonia used for emissions control for the proposed internal combustion engines. Potential construction air quality, greenhouse gas emissions, biological resources, geology and soils, hydrology and water quality, noise, and traffic and transportation impacts and operation phase aesthetics, air

quality, hazards and hazardous materials, land use, and noise impacts of Alternative 1 would be less than those of the proposed Project.

Potential Environmental Impacts Similar to Those of the Proposed Project:

Under Alternative 1, impacts associated with the LFG collection and flare system would remain. Both Alternative 1 and the proposed Project would have to comply with applicable fire code requirements such as emergency access, fire prevention/suppression equipment, and brush clearance/fuel control. Alternative 1 would include flares as the primary combustion source of wildfire risk whereas the proposed Project's primary combustion source would be internal combustion engines in enclosures equipped with an inert gas fire suppression system. Neither Alternative 1 nor the proposed Project would occur on lands zoned or used for agriculture, residential, mineral resource development, or with known cultural resources sensitivities. While the site is zoned Special Recreation, it is within the SCLF and is not used for recreation. Demand for public services and utility access/use between Alternative 1 and the proposed Project are comparable. Alternative 1 would have similar impacts as the proposed Project with respect to agriculture and forestry resources, cultural resources, mineral resources, population and housing, public services, recreation, tribal cultural resources, utilities and service systems, and wildfire.

Potential Environmental Impacts Greater than Those of the Proposed Project:

Alternative 1 would not utilize the naturally occurring LFG as a renewable electricity resource to assist in meeting Renewable Portfolio Standard requirements. Flaring the LFG would not provide any energy benefit and would waste a designated renewable energy source. Alternative 1 would not be as consistent with state and local plans for renewable energy or energy efficiency. Therefore, Alternative 1 would have greater indirect greenhouse gas emissions/climate change and energy impacts compared to the proposed Project because other potentially non-renewable energy sources would make up the amount of renewable energy available from the Project but not generated.

5.6.1.3 Objectives Consistency Evaluation

The naturally occurring LFG would be captured it would not be put to beneficial use and therefore, Alternative 1 would not meet the proposed Project objectives.

5.6.1.4 Summary

The City is required to generate a portion of its electricity from renewable resources. In addition to not meeting the proposed Project objective of beneficial use of the LFG, Alternative 1 would prevent using the naturally occurring LFG as an additional renewable electricity source to help meet State-mandated Renewable Portfolio Standard requirements. Recent SCAQMD regulatory action that requires lower flare emissions limits when less than 80 percent of LFG is used for beneficial purposes would result in replacement of the existing flares under Alternative 1.

Potential construction air quality, greenhouse gas emissions, biological resources, geology and soils, hydrology and water quality, noise, and traffic and transportation impacts and operation phase aesthetics, air quality, hazards and hazardous materials, land use, and noise impacts of Alternative 1 would be less

than those of the proposed Project. However, long-term greenhouse gas emissions and energy impacts of the Alternative 1 would be greater than those of the proposed Project.

5.6.2 Alternative 2: Convert Landfill Gas to Natural Gas

5.6.2.1 Description of the Alternative

Alternative 2 includes converting the LFG to natural gas at SCLF. The existing backup flares would remain to support this alternative. It is presumed a high-pressure pipeline would be constructed and operated to deliver the natural gas to a connection with an existing SoCalGas natural gas transmission pipeline. A gas compressor system would have to be installed at SCLF to deliver the cleaned LFG to the SoCalGas transmission system. Alternative 2 would have a similar site size at SCLF compared to the proposed Project.

SoCalGas can accept this renewable natural gas (RNG) provided that the RNG meets California Public Utilities Commission (CPUC) approved SoCalGas Rule 30 terms and conditions. **Table 54** below summarizes some of these requirements in comparison to the existing LFG at SCLF.

Table 54 CPUC Renewable Natural Gas Specification Compared to Scholl Canyon LFG

Specification	CPUC Standard for RNG	Existing Scholl Canyon LFG*
Heating value	Between 990 and 1,150 Btu/scf	350 Btu/scf
Carbon dioxide content	Less than 3%	30%
Oxygen content	No greater than .2%	5.2%
Nitrogen content	No greater than 4%	26.5%

*Source: AtmAA Inc., 2018

There are additional unwanted components in the LFG, such as sulfur compounds, silicones, siloxanes, and non-methane organic compounds that would have to be removed and additional specifications met before the SoCalGas would accept the LFG. The LFG cleanup system would require a process flare to be located near the cleanup system to combust and destroy the unwanted constituents that are removed from the LFG.

If the LFG could be cleaned to comply with SoCalGas Rule 30, it would have to be conveyed via a high-pressure pipeline to a SoCalGas transmission pipeline where it would mix with the natural gas within the SoCalGas pipeline. There are no SoCalGas transmission pipelines near the landfill, therefore Alternative 2 assumes converting the LFG to natural gas at SCLF and transporting the cleaned gas via the existing pipeline between SCLF and Grayson Power Plant. Under this scenario, a gas compression system would be installed at Grayson to compress the natural gas to transmission line pressure of approximately 500 psig. The natural gas would then be conveyed through a new approximately 1/3-mile-long high-pressure pipeline in and around San Fernando Road towards the 134 freeway to an interconnection with a SoCalGas transmission line.

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As shown in **Table 53**, there is one operational and six planned LFG to renewable natural gas projects in California. The operational project involves converting LFG to LNG for use as vehicle fuel. All six planned LFG to RNG projects are listed as vehicle fuel uses with two including pipeline conveyance of produced RNG.

5.6.2.2 Environmental Impacts

Following are the potential environmental impacts that would result from Alternative 2.

Potential Environmental Impacts Less than Those of the Proposed Project

Alternative 2 would have a similar site size at SCLF but would have a lower elevation profile (30 feet) compared to the proposed Project (40 feet). Converting LFG to natural gas would have lower operation phase direct emissions of air pollutants and greenhouse gases and noise compared to combustion of the LFG in internal combustion engines to generate electricity. Alternative 2 would reduce operation phase combustion sources of wildfire risk. Potential long-term aesthetics, air quality, greenhouse gas emissions, noise, and wildfire impacts of Alternative 2 would be less than those of the proposed Project.

Potential Environmental Impacts Similar to Those of the Proposed Project

Alternative 2 would result in similar disturbances to the same previously undisturbed areas compared to the proposed Project. Neither Alternative 2 nor the proposed Project would occur on lands zoned or used for agriculture, residential, mineral resource development, or with known cultural resources sensitivities. While the site is zoned Special Recreation, it is within the SCLF and is not used for recreation. Demand for public services and utility access/use between Alternative 2 and the proposed Project are comparable. Alternative 2 would have similar impacts as the proposed Project to agriculture and forestry resources, biological resources, cultural resources, mineral resources, population and housing, public services, recreation, tribal cultural resources, and utilities and service systems.

Potential Environmental Impacts Greater than Those of the Proposed Project

It is expected that construction activities at SCLF associated with the Alternative 2 would be similar to those of the proposed Project. However, because Alternative 2 would require a new natural gas pipeline installed in the public right of way of an urbanized area to connect the Grayson Power Plant to a SoCalGas transmission pipeline near Highway 134, it is expected construction air quality, greenhouse gas emissions, geology and soils, hydrology and water quality, land use and planning, noise, and traffic and transportation impacts of Alternative 2 would be greater than those of the proposed Project. Cleaning the LFG to standards that SoCalGas can accept into their transmission system, as well as conveying it to the point of connection with the SoCal Gas pipeline, would require more compression energy and have higher energy related impacts than that of the proposed Project. Alternative 2 includes a risk of upset and release of natural gas from conveying it through pipelines in urbanized areas to Grayson Power Plant and a connection with a SoCalGas transmission pipeline. Alternative 2 would have greater hazards and hazardous materials impacts related to continuing to operate the existing SCLF to Grayson Power Plant LFG pipeline and a new high-pressure natural gas pipeline in an urban area compared to the proposed Project that would abandon in place the existing SCLF to Grayson Power Plant LFG pipeline.

5.6.2.3 Objectives Consistency Evaluation

The naturally occurring LFG would be put to beneficial use and therefore Alternative 2 would meet the proposed Project objective.

5.6.2.4 Summary

Although technically feasible, and it has been done under certain test conditions, removing the unwanted components of the LFG, especially the large quantity of CO_2, O_2, and N_2 required to comply with the Rule 30 specifications would be a significant, energy consuming, and expensive challenge because it would require more equipment and processing of the LFG compared to combusting it in RICEs

The City is required to generate a portion of its electricity from renewable resources. While Alternative 2 may be eligible for Low Carbon Fuel Standard credits, this alternative would prevent the City from using the naturally occurring LFG as an additional renewable electricity source to help meet and exceed State-mandated Renewable Portfolio Standard requirements. Additionally, Alternative 2 would not allow the City to decommission the existing pipeline between SCLF and Grayson Power Plant and would require the construction of a new ½ mile long pipeline to convey the gas to existing SoCalGas infrastructure.

Construction air quality, greenhouse gas emissions, geology and soils, hydrology and water quality, land use and planning, noise, and traffic and transportation impacts of Alternative 2 would be greater than those of the proposed Project. Potential long-term aesthetics, air quality, greenhouse gas emissions, hazards and hazardous materials, noise, and wildfire impacts of Alternative 2 would be less than those of the proposed Project.

5.6.3 Alternative 3: Convert Landfill Gas to Liquid Natural Gas

5.6.3.1 Description of the Alternative

Alternative 3 would convert LFG to LNG; which is natural gas in its liquid phase. The existing backup flares would remain to support this alternative. The conversion process begins by removing water and compressing the LFG to a higher pressure required by the LFG cleanup system. Alternative 3 would require a more extensive LFG cleanup system than currently exists to remove gas impurities such as sulfur compounds, carbon dioxide, siloxane, additional moisture nitrogen and oxygen. Similar to the proposed Project, the LFG cleanup system would require a process flare to be located near the cleanup system to combust and destroy some of the impurities that would be removed from the LFG. The cleaned LFG is then cooled and liquefied via a cryogenic process to a temperature of approximately minus 260ºF. The LNG would be stored at the landfill in an insulated LNG vessel. The LNG then can be used as vehicle fuel on-site or transported to a commercial user off-site via trucks. Alternative 3 is technically feasible; however, removing the large quantities of oxygen, nitrogen and carbon dioxide entrained in the LFG plus liquefying the gas is more energy consuming and involves more equipment related to the extensive gas cleanup system required compared to the proposed Project. As shown in **Table 53**, there is one operational LFG to LNG project in California that uses the produced LNG to fuel garbage trucks.

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Alternative 3 has the following considerations:

- The gas treatment, liquification, storage, and vehicle fueling facilities would include equipment that would require approximately one acre of additional site development compared to the proposed Project.
- Would either require vehicles to travel to the site to be fueled or require that LNG be transported off-site for commercial use using trucks. Alternative 3 would produce 32,000 gallons of LNG per day.
- A filling station would create additional infrastructure consisting of LNG pumps that would circulate the LNG through cryogenic loading arms and back to the storage tank. Additional vehicle trips to/from the Project site would be required. Also, vehicles would need to be converted to use LNG or new vehicles purchased.
- The LNG would need to be stored in an approximately 70,000-gallon vessel which would be 12.5 feet diameter by 103 feet long. Stored LNG has an increased safety risk. If a leak occurs in the LNG system, the liquid LNG would vaporize, expand at a volume 600 times that of the liquid and could create an explosive mixture with the atmosphere over a wide area.
- Alternative 3 would allow Glendale Water and Power (GWP) to decommission the existing SCLF pipeline to the Grayson Power Plant.
- The City does not currently have any vehicles fueled by LNG. In order to utilize the produced LNG as vehicle fuel, Alternative 3 would require the City to sell the LNG or introduce hundreds of LNG-fueled vehicles to the City's fleet to consume the available LNG.
- There would be no credit to Glendale's attainment of the California Renewable Portfolio Standard as the LFG would not be used to generate electricity.
- The Pipeline and Hazardous Materials Safety Administration (PHMSA) is the primary Federal Administration responsible for ensuring that pipelines are safe, reliable, and environmentally sound. The rules governing pipeline safety are included in Title 49 of the Code of Federal Regulations (CFR). Part 193 specifically addresses safety standards for LNG facilities. The existing pipeline between Scholl Canyon and Grayson was designed to convey LFG at ambient temperature at low pressure. The pipeline does not meet the design and safety standards promulgated in Part 193 for conveying cryogenic LNG under high pressure and could not be used to convey LNG produced at the SCLF to Grayson. A new pipeline would need to be constructed in order to convey LNG to Grayson to a new vehicle fueling station.

5.6.3.2 Environmental Impacts

The following are the potential environmental impacts that would result from Alternative 3.

Potential Environmental Impacts Less than Those of the Proposed Project:

Alternative 3 would have lower operation phase emissions of air pollutants and greenhouse gases compared to combustion of the LFG in internal combustion engines to generate electricity. Potential long-term air quality and greenhouse gas emissions impacts of Alternative 3 would be less than those of the proposed Project.



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Potential Environmental Impacts Similar to Those of the Proposed Project:

Neither Alternative 3 nor the proposed Project would occur on lands zoned or used for agriculture, residential, mineral resource development, or with known cultural resources sensitivities. While the site is zoned Special Recreation, it is within the SCLF and is not used for recreation. Demand for public services and utility access/use between Alternative 3 and the proposed Project are comparable. Alternative 3 and the proposed Project would include construction and operation noise at the same site, which would result in comparable noise levels at the nearest sensitive receptors which are located more than 2,200 feet away. Alternative 3 would have similar impacts as the proposed Project to agriculture and forestry resources, cultural resources, mineral resources, noise, population and housing, public services, recreation, tribal cultural resources, and utilities and service systems.

Potential Environmental Impacts Greater than those of the proposed Project:

The construction disturbance size is one acre greater than that needed for the proposed Project, therefore emissions, noise, and traffic during construction of Alternative 3 would be greater than those associated with the proposed Project. Alternative 3 would include more grading of previously undisturbed areas and removal of native vegetation and would have a greater potential impact to biological resources, geology and soils, and hydrology and water quality; particularly during construction. The additional site size and grading required would have a greater potential for aesthetics and land use impacts as there would be an increase in development of previously undisturbed areas compared to the proposed Project. Converting LFG to LNG and operating an LNG fuel station would require more energy resulting in higher energy related impacts than that of the proposed Project. There would be an increase in traffic during operation of this alternative related to vehicles fueling at the LNG station or transportation of LNG to an off-site location.

The handling and storage of up to 70,000 gallons of LNG represents a greater consequence in the event of an accidental release compared to the aqueous ammonia storage associated with the proposed Project for emissions control. Cameo's Areal Locations of Hazardous Atmospheres (ALOHA) model (https://www.epa.gov/cameo/aloha-software) was used to screen the potential hazards and fire risks from a worst-case release of LNG which equates to a complete release of 70,000 gallons of stored LNG. The ALOHA input and output files are included as Appendix N (Off-site Consequence Analysis for LFG to LNG). As the LNG is released, it transforms from a liquid phase to a gas phase and expands in volume by 600 times. This rapid expansion can create what is referred to as a boiling liquid expanding vapor explosion. The ALOHA screening demonstrates that flame patches associated with the flammable area of vapor cloud could extend 1.2 miles from the release site. Similarly, a vapor cloud explosion could shatter glass located within one mile of the release site. The toxic area vapor cloud could also result in adverse health effects to people located within 0.69 miles of the release site. The potential hazards and wildfire impact of Alternative 3 are greater than those associated with the proposed Project.

Potential construction air quality, greenhouse gas emissions, biological resources, geology and soils, hydrology and water quality, noise, and traffic and transportation impacts of Alternative 3 would be greater than those of the proposed Project. Potential operation phase aesthetics, energy, hazards and hazardous materials, land use and planning, traffic and transportation, and wildfire impacts of Alternative 3 would be greater than those of the proposed Project.

5.6.3.3 Objectives Consistency Evaluation

The naturally occurring LFG would be put to beneficial use and therefore, Alternative 3 would meet the proposed Project objective.

5.6.3.4 Summary

The City is required to generate a portion of its electricity from renewable resources. Converting LFG to LNG would prevent using the renewable LFG to generate electricity and therefore, the City would not receive credit towards meeting the mandated requirements of generating electricity from renewable sources. Alternative 3 would allow the City to decommission the existing pipeline between SCLF and Grayson Power Plant.

Potential long-term air quality and greenhouse gas emissions impacts of Alternative 3 would be less than those of the proposed Project. Potential construction air quality, greenhouse gas emissions, biological resources, geology and soils, hydrology and water quality, noise, and traffic and transportation impacts of Alternative 3 would be greater than those of the proposed Project. Potential operation phase aesthetics, energy, hazards and hazardous materials, land use and planning, traffic and transportation, and wildfire impacts of Alternative 3 would be greater than those of the proposed Project.

5.6.4 Alternative 4: Locate Engine Generators at Another Location

5.6.4.1 Description of the Alternative

Alternative 4 includes relocating the proposed internal combustion engine generators to an alternate location such as Grayson Power Plant or other City owned location within the City. The LFG compression and cleanup system, including the process flare, would be located at the landfill. The existing flares would remain at SCLF and would be used as backup in the event LFG was unable to be periodically combusted in the engine generators due to equipment repair or maintenance activities. Because at least 80 percent of the LFG is expected to be combusted in engine generators under this alternative, the existing flares would not be subject to SCAQMD regulations requiring their replacement with cleaner burning flares. The cleaned LFG would be transported by the existing pipeline to Grayson Power Plant. The four engine generators, jacket water coolers, aqueous ammonia storage (NOx and CO emissions control) and generation electrical equipment would be located at Grayson.

This alternative requires the installation and operation of new electrical generation equipment to combust the LFG at Grayson Power Plant because the existing electrical generation equipment at Grayson Power Plant is either not designed to combust LFG or can no longer combust LFG as a result of SCAQMD regulations. The potential environmental impacts of constructing new infrastructure including a new



conveyance pipeline to a different site would result in substantially greater impacts than which would occur from siting the engine generators at Grayson Power Plant. As such, other site locations are not considered further in this alternatives evaluation.

Alternative 4 has the following considerations:

- The existing LFG pipeline with its required maintenance would remain in service.
- Grayson has the necessary space and required infrastructure to support operation of the engine generators.
- Siting the engine generators at Grayson would require that Glendale purchase additional emission offset credits since the SCAQMD would not make credits available from the Priority Reserve. The Priority Reserve was established by the SCAQMD to provide emissions credits for specific priority sources including small electrical generating facilities. The additional cost would be $20 to $25 million.
- At Grayson Power Plant, the nearest sensitive receptor and dwelling is located approximately 300 feet from power plant whereas the nearest sensitive receptor to the proposed Project is located more than 2,200 feet away.

5.6.4.2 Environmental Impacts

Following are the potential environmental impacts that would result from Alternative 4.

Potential Environmental Impacts Less than Those of the Proposed Project

Alternative 4 would require less land at the SCLF and therefore would avoid grading previously undisturbed areas and removal of native vegetation. Alternative 4 would therefore have less of a potential impact to biological resources, geology and soils, and hydrology and water quality; particularly during construction. The LFG would be combusted at Grayson Power Plant which is an existing developed power generation facility located in an area of lower wildfire hazard severity area then the SCLF and surrounding area. Alternative 4 would reduce development on lands zoned as Open Space and would occur in an area of generally lower aesthetic sensitivity compared to the proposed Project that would include an incremental increase in development in proximity to a ridgeline. Potential aesthetics, land use, and wildfire impacts of Alternative 4 would be less compared to the proposed Project.

Potential Environmental Impacts Similar to Those of the Proposed Project

Alternative 4 involves similar activities and equipment as the proposed Project but places the engine generators at a different site location. Neither would occur on lands zoned or used for agriculture, mineral resource development, or with known cultural resources sensitivities. While the site is zoned Special Recreation, it is within the SCLF and is not used for recreation. While the geologic conditions vary between the two sites, both Alternative 4 and the proposed Project would be designed in accordance with applicable building code requirements that take into account site-specific geologic conditions, seismic safety design, and settlement considerations. Alternative 4 and the proposed Project would incorporate similar construction stormwater best management practices and stormwater/industrial drainage facilities/requirements during operation. Demand for public services, traffic volumes, and utility

access/use between Alternative 4 and the proposed Project are comparable. Alternative 4 would have similar impacts as the proposed Project to agriculture and forestry resources, cultural resources, geology and soils, hydrology and water quality, mineral resources, population and housing, public services, recreation, transportation and traffic, tribal cultural resources, and utilities and service systems.

Potential Environmental Impacts Greater than Those of the Proposed Project

Potential hazards associated with a release during operation of the LFG pipeline would be greater with Alternative 4 compared to decommissioning the pipeline with the proposed Project. Emissions of criteria air pollutants and toxic air contaminants as well as noise from the engine generators would occur in closer proximity to sensitive and residential receptors and would have higher potential health risk and noise impacts compared to the proposed Project. Additionally, there would be an increase in indirect greenhouse gas emissions from energy used to convey the LFG to Grayson Power Plant compared to combusting the LFG at SCLF due to the additional energy required to transport the LFG to another location. Alternative 4 would have greater air quality, energy, greenhouse gases, hazardous and hazardous materials, and noise impacts than the proposed Project.

5.6.4.3 Objectives Consistency Evaluation

The naturally occurring LFG would be put to beneficial use and therefore Alternative 4 would meet the proposed Project objective.

5.6.4.4 Summary

Alternative 4 would generate electricity that meets Renewable Portfolio Standard eligibility and would assist the City in meeting those requirements. Alternative 4 would not allow the City to decommission the existing pipeline between SCLF and Grayson Power Plant. Relocating the engine generators from SCLF would also preclude the City from obtaining Priority Reserve credits from the SCAQMD which would result in a 20 to $25 million cost increase compared to the proposed Project. The Priority Reserve was established by SCAQMD to provide credits for specific priority sources, of which they have indicated would apply to power generation using LFG at the SCLF.

Alternative 4 would have less of a potential impact to biological resources, geology and soils, and hydrology and water quality during construction. Potential aesthetics, land use, and wildfire impacts of resulting from Alternative 4 would also be less compared to the proposed Project. Alternative 4 would have greater air quality, energy, greenhouse gases, hazardous and hazardous materials, and noise impacts than the proposed Project and these impacts would be in closer proximity to residential uses.

5.6.5 Comparison of Alternatives

A comparison of the alternatives carried forward for analysis relative to the proposed Project with respect to the alternative's ability to meet the proposed Project objectives and relative environmental impacts is summarized in **Table 55**.

Table 55 Comparison of Alternatives

		Alternative 1 No Project	Alternative 2 Convert Landfill Gas to Natural Gas	Alternative 3 Convert Landfill Gas to Liquid Natural Gas	Alternative 4 Locate Engine Generators at an Another Location
Ability to Meet Project Objective					
Would the alternative provide beneficial use of naturally occurring LFG?		No	Yes	Yes	Yes
Environmental Factor	**Project Impacts**	**Comparison of Potential Environmental Impacts to Project**			
Aesthetics	Less than Significant Impact	Less	Less	Greater	Less
Agriculture & Forestry Resources	No Impact	Similar	Similar	Similar	Similar
Air Quality	Less than Significant Impact	Less	Less	Less	Greater
Biological Resources	Less than Significant Impact with Mitigation	Less	Similar	Greater	Less
Cultural Resources	No Impact	Similar	Similar	Similar	Similar
Energy	Less than Significant Impact	Greater	Greater	Greater	Greater
Geology & Soils	Less than Significant Impact	Less	Greater	Greater	Similar
Greenhouse Gas Emissions	Less than Significant Impact	Greater	Less	Less	Greater
Hazards & Hazardous Materials	Less than Significant Impact	Less	Greater	Greater	Greater
Hydrology & Water Quality	Less than Significant Impact	Less	Greater	Greater	Similar
Land Use and Planning	Less than Significant Impact	Less	Greater	Greater	Less
Mineral Resources	No Impact	Similar	Similar	Similar	Similar
Noise	Less than Significant Impact	Less	Less	Similar	Greater
Population & Housing	No Impact	Similar	Similar	Similar	Similar
Public Services	No Impact	Similar	Similar	Similar	Similar
Recreation	No Impact	Similar	Similar	Similar	Similar
Transportation and Traffic	Less than Significant Impact	Less	Greater	Similar	Similar
Tribal Cultural Resources	Less than Significant Impact	Similar	Similar	Similar	Similar

		Alternative 1 No Project	Alternative 2 Convert Landfill Gas to Natural Gas	Alternative 3 Convert Landfill Gas to Liquid Natural Gas	Alternative 4 Locate Engine Generators at an Another Location
Utilities and Service Systems	Less than Significant Impact	Similar	Similar	Similar	Similar
Wildfire	Less than Significant Impact with Mitigation	Similar	Less	Greater	Less

5.6.6 Identification of the Environmentally Superior Alternative

CEQA requires that an EIR identify the environmentally superior alternative(s) of a project other than the proposed project or the "no project" alternative (CEQA Guidelines Section 15126.6 (e)(2)) if the no project alternative is the environmental superior. As stated at the beginning of this chapter, the purpose of this alternatives analysis is to consider a reasonable range of alternatives that could feasibly attain the basic project objective and avoid or substantially lessen significant project impacts.

The No Project Alternative would not satisfactorily meet the proposed Project objective.

As shown above in **Table 55**, the proposed Project, prior to incorporating mitigation, has the potential to significantly impact biological resources and wildfire. Of the alternatives considered in this evaluation, Alternative 4 is the only alternative that would reduce or avoid the potentially significant environmental effects of the proposed Project in the areas of biological resources and wildfire. However, placing the engine generators at Grayson Power Plant and significantly closer to sensitive and residential receptors would increase health risks and noise levels compared to the proposed Project. Additionally, an increase in energy use, indirect greenhouse gas emissions, and risk of upset/hazards from continued use of the SCLF to Grayson Power Plant pipeline would result compared to the proposed Project.

Alternative 2 would have incrementally less impacts to five environmental factors and incrementally greater impacts to six environmental factors compared to the proposed Project. Alternative 3 would have incrementally greater impacts to eight environmental factors and incrementally less impacts to two environmental factors when compared to the proposed Project. Alternative 4 would have incrementally greater impacts to five environmental factors and incrementally less impacts to four environmental factors when compared to the proposed Project.

As a result of this analysis, Alternative 2 is the environmentally superior alternative because it would reduce more proposed Project impacts when compared to the other alternatives. These include reductions in impacts to aesthetics, air quality, noise, greenhouse gas emissions and wildfire risk. Alternative 2 impacts on biological resources is similar to the proposed Project. Alternative 2 decreases more impacts compared to the proposed Project and also when compared to the other alternatives. Alternative 4 would have greater impacts on greenhouse gas emissions, air quality and noise in closer proximity to residential uses and sensitive receptors when compared to the proposed Project and to

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Alternative 2. Alternative 2 would incrementally increase impacts on energy, hydrology and water quality, land use planning, geology and soils, and traffic compared to the proposed Project. However, these incremental increases in impacts compared to the proposed Project are in impact categories that have already been determined to be “less than significant”. The incremental increase in these impacts from Alternative 2 are not significant and unavoidable and are capable of being mitigated to below a level of significance. Further, and similar to the proposed Project, Alternative 2’s impacts would not occur in close proximity to residential uses when compared to Alternative 4. For these reasons, Alternative 2 is the environmentally superior alternative.

6.0 OTHER CEQA CONSIDERATIONS

This section considers and discusses other topics identified in the State California Environmental Quality Act (CEQA) Guidelines, including the potential for the proposed Project to induce growth and the identification of irreversible impacts.

6.1 SIGNIFICANT AND UNAVOIDABLE IMPACTS

As demonstrated in the environmental impact analyses in Section 4.0 of this Environmental Impact Report (EIR), the proposed Project would not result in any significant and unavoidable environmental impacts.

6.2 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

6.2.1 Irreversible Commitment of Resources

The proposed Project involves utilizing the landfill gas (LFG) as a beneficial resource to generate Renewable Portfolio Standard eligible renewable energy. Considering the objective of the proposed Project is to beneficially use the LFG compared to baseline conditions that include flaring the LFG with no beneficial use, the proposed Project would not result in an irreversible commitment of resources.

6.2.2 Irreversible Environmental Changes

Irreversible long-term environmental changes associated with the proposed Project would include the permanent disturbance of approximately 4.2.8 acres of previously undisturbed/undeveloped land adjacent to active landfill operations (see Table 1, Project Temporary and Permanent Site Modification). This increase in site development necessary to manage the LFG for renewable energy generation would result in a loss of some native vegetation due to vegetation clearance activities to comply with Glendale Fire Department (GFD)requirements. The potential impacts to biological resources would be mitigated to less than significant by incorporating Mitigation Measures BIO-1 through BIO-7. There would be an incremental increase in air emissions associated with combusting the LFG in reciprocating internal combustion engines compared to new flares that would be required by recent South Coast Air Quality Management District (SCAQMD) rule development under the No Project Alternative. However, emissions and potential air quality impacts of the proposed Project would be below applicable thresholds of significance and less than significant. Therefore, few irreversible environmental changes are expected to occur.

6.2.3 Potential Environmental Damage from Accidents

The Project site is located within a seismically active region and would be exposed to ground shaking during an earthquake. Conformance with the regulatory provisions of the City of Glendale, the California Building Code (CBC), and all other applicable building codes pertaining to construction standards would minimize, to the extent feasible, damage, and injuries in the event of such an occurrence.

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The modeling conducted for the worst-case release of aqueous ammonia used for emissions control during Project operation demonstrates that the public would not be exposed to ammonia concentrations that exceed public health standards. The City proposes to use R134a refrigerant or equivalent which is allowed by CARB and SCAQMD in the proposed facility's chiller system. R134a refrigerant is not a hazardous material and is commonly used instead of anhydrous ammonia which is a hazardous material. Additionally, Mitigation Measures FIRE-1, FIRE-2, and FIRE-3 would be implemented to reduce impacts resulting from a potential wildfire.

6.3 GROWTH INDUCING IMPACTS

Section 15126.2(d) of the CEQA Guidelines requires discussion of the ways by which a project may directly or indirectly foster spatial, economic, or population growth, including factors that would remove obstacles to such growth. This discussion should include characteristics of the project that may facilitate other activities that might significantly affect the environment. Growth should not be considered either beneficial or detrimental. It should also not be considered of little significance. The purpose of this section is to evaluate the growth inducing potential and impact of the proposed Project.

In general, a project may foster spatial, economic, or population growth if it meets any one of following criteria.

- Removal of an impediment to growth (e.g., establishing an essential public service or providing new access to an area)
- Economic expansion or growth (e.g., constructing additional housing, growth in employment)
- Establishment of a precedent-setting action (e.g., innovating, changing zoning)
- Development or encroachment in an isolated or adjacent area of open space (being constructed on a greenfield)

Should a project meet any of these criteria, it can be considered growth inducing. An evaluation of this proposed Project compared against these growth-inducing criteria is provided in the following.

6.3.1 Removal of an Impediment to Growth

Growth in an area may result from removing physical impediments or restrictions to growth, as well as removing planning impediments caused by land use plans and policies. Physical growth impediments may include nonexistent or inadequate access to a site or a lack of essential public services, such as water or electricity. Planning impediments may include restrictive zoning and/or general plan designations.

The proposed Project involves utilizing existing LFG as a resource to generate renewable energy rather than combusting it in flares. The energy generated from the proposed Project would support existing City electrical demand and replace an equivalent amount of electricity that the City currently obtains through other sources, some of which could be carbon based. This would directly increase the City's ability to meet and exceed the State's Renewable Portfolio Standard requirements. Not beneficially using LFG to

generate renewable energy would indirectly result in the City generating an equivalent amount of energy to serve City electrical demand through other sources, some of which could be carbon based and Renewable Portfolio Standard ineligible sources of electricity generation. The proposed Project would serve to support existing City electrical demand and would not substantially increase the City's electrical supply capacity that would have the potential to induce growth because it is a renewable replacement source of electricity to support existing electrical demand in order to meet the renewable portfolio standards.

The naturally occurring waste decomposition process at the closed and active portions of Scholl Canyon Landfill (SCLF) will continue for many years. Because LFG will continue to be produced regardless of whether SCLF continues to operate or closes and must continue to be collected and controlled, the proposed Project has independent utility from the SCLF operation and is not dependent on SCLF operation. The proposed Project does not involve construction of housing, a land use or zone change, or general plan amendment. Considering the above, the proposed Project would not remove an impediment to future growth.

6.3.2 Economic Growth

The second criterion by which induced growth can be measured involves economic factors. In the short-term, the proposed Project would provide construction opportunities. Long-term growth is not expected to occur, as the proposed Project is limited to assisting the City meet its current electrical demand and increasing state mandates of generating electricity from renewable resources by utilizing the LFG to generate electricity. Therefore, the proposed Project should not be considered growth inducing.

6.3.3 Precedent-Setting Actions

The proposed Project would have a beneficial contribution and is representative of the City of Glendale's effort to meet and exceed the State's Renewable Energy Standard Mandate. The proposed Project would not result in other precedent-setting actions.

6.3.4 Development on Isolated or Adjacent Area of Open Space

The proposed Project would encompass and be developed adjacent to the existing LFG collection and flaring facility on the property of the SCLF. While the majority of the site has been previously disturbed, the proposed Project would include the permanent disturbance development of approximately 4.782.2 acres of previously undisturbed/currently undeveloped land adjacent to active landfill operations which is designated Open Space (see Table 1, Project Temporary and Permanent Site Modification). This incremental increase in site development necessary to manage the LFG for renewable energy generation would result in a loss of some native vegetation. The potential impacts to biological resources would be mitigated to less than significant by incorporating Mitigation Measures BIO-1 through BIO-7. The proposed Project does not include the construction of residential land uses and maximizes the use of existing infrastructure to minimize disturbances to open space. The proposed Project does not include any component that has the potential for growth inducement from development on isolated or adjacent area of open space.

6.4 EFFECTS FOUND NOT TO BE SIGNIFICANT

Based on the findings of the Initial Study, the proposed Project would result in no impact to the environmental factors shown below in Table 56.

Table 56 Effects Found Not to be Significant

Issues	No Impact
AESTHETICS: Would the proposed Project:	
Have a substantial adverse effect on a scenic vista?	☒
There are no designated scenic vistas near the proposed Project site or within other parts of the existing SCLF, nor are there any designated scenic vistas from which the proposed Project would be visible. Therefore, the proposed Project would have no impact on a scenic vista.	
Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☒
There are no state-designated scenic highways in the City of Glendale (DOT, 2017). Therefore, the proposed Project would not damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. There would be no impact.	
AGRICULTURE AND FORESTRY RESOURCES: Would the proposed Project:	
Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☒
There is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within or adjacent to the proposed Project area. No agricultural use zone currently exists within the City of Glendale, nor are any agricultural zones proposed. Therefore, no impacts related to the conversion of farmland to non-agricultural use would occur.	
Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☒
The Project would not conflict with existing zoning for agricultural use or a Williamson Act contract because no agricultural zones exist within the City of Glendale, nor is the proposed Project within or adjacent to agricultural land that would require a Williamson Act contract. Therefore, no impacts related to existing agricultural zone use or Williamson Act contracts would occur.	
Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526, or timberland zoned Timberland Protection (as defined by Government Code section 51104(g))?	☒
The Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Protection because none of the lands within or adjacent to the proposed Project are identified as "forest land," "timberland," or "Timberland Protection" as defined in the Public Resources Code Section 12220(g) and Section 4526, or Government Code Section 51104 (g). Therefore, no impacts related to zoning of forest land, timberland, or Timberland Protection would occur.	
Result in the loss of forest land or conversion of forest land to non-forest use?	☒
The Project would not result in the loss of forest land or conversion of forest land to non-forest use because none of the lands within and adjacent to the proposed Project are identified as forest land as defined in the Public Code Section 12220(g). Therefore, no impacts related to loss or conversion of forest land would occur.	
Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use?	☒

OTHER CEQA CONSIDERATIONS

Issues	No Impact
The Project would not involve other changes in the existing environment that could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use because there is no farmland or forest land within or adjacent to the proposed Project area. Therefore, no impacts related to conversion of farmland to non-agricultural use or conversion of forest land to non-forest use would occur.	
AIR QUALITY: Would the proposed Project:	
Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☒
There may be odors associated with the use or refuel of the diesel and gasoline powered equipment, or from painting activity or other surface treatments (i.e., building roofing or roadway paving) during construction and maintenance activities. These potential sources are expected to be temporary and highly localized and are common to conventional construction activities including those that routinely occur throughout the landfill operation area. The LFG gas collection system already exists, and the proposed Project does not include a component that would substantially increase the risk of a release of LFG that could create an odor. Considering the lack of substantial new odor sources associated with the proposed Project and the potential odors related to the existing landfill operation itself, the proposed Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. No impact would occur.	
BIOLOGICAL RESOURCES: Would the proposed Project:	
Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	☒
According to the Glendale General Plan, there is no habitat conservation plan or natural community conservation plan in the City of Glendale. There is, however, a Significant Ecological Area (SEA) program in the City of Glendale, which is implemented with the intention to preserve these designated sensitive areas. The Project site is not located within an SEA. As such, implementation of the proposed Project would not conflict with the SEA program or other habitat conservation plans. Therefore, there would be no impact.	
CULTURAL RESOURCES: Would the proposed Project:	
Cause a substantial adverse change in the significance of a historical resource as defined in *§15064.5*?	☒
Approximately 20.2 acres of land were inventoried to determine whether cultural resources would be affected by the proposed Project. There were no historical resources identified during the survey and no historical resources were previously documented within the proposed Project area (see Cultural Resources Assessment Report provided as Appendix A). Based on the findings in this study, the proposed Project will not cause a substantial adverse change to the significance of historical resources as defined in Section 15064.5, nor will the proposed Project have impacts on significant local resources as defined in Chapter 15.20 of the City of Glendale Municipal Code; therefore, there would be no impact.	
Cause a substantial adverse change in the significance of an archaeological resource pursuant to *§15064.5*?	☒
Similar in respect to historical resources, above, the potential to encounter archaeological resources is low because the majority of the proposed Project area has been previously disturbed by landfill and other urban activities. There were no archaeological resources identified during the survey and no archaeological resources were previously documented within the proposed Project area (see Cultural Resources Assessment Report provided as Appendix A). Based on the findings in this study the proposed Project will not cause a substantial adverse change to the significance of archaeological resources as defined in Section 15064.5, nor will the proposed Project have impacts on significant local resources as defined in Chapter 15.20 of the City of Glendale Municipal Code; therefore, there would be no impact.	
Disturb any human remains, including those interred outside of formal cemeteries?	☒

OTHER CEQA CONSIDERATIONS

Issues	No Impact
The potential to disturb any human remains is low because the majority of the proposed Project area has been previously disturbed by landfill and other urban activities. The Project would not be expected to disturb any human remains, including those interred outside of formal cemeteries; therefore, there would be no impact. In the event human remains are encountered during construction, State Health and Safety Code Section 7050.5 requires that no further work shall continue at the location of the find until the County Coroner has made all the necessary findings as to the origin and distribution of such remains pursuant to Public Code Resources Code Section 5097.98. The County Coroner must be notified within 24 hours of the discovery, and within two working days of notification of the discovery shall make such a determination. If the County Coroner determines that the remains are or are believed to be Native American, the County Coroner shall notify the NAHC in Sacramento within 24 hours. In accordance with Section 5097.98 of the California PRC, the NAHC must immediately notify those persons it believes to be the most likely descended from the deceased Native American. The descendants shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the County Construction Engineer, the treatment and disposition of the human remains.	
GEOLOGY AND SOILS: Would the proposed Project:	
Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☒
The Project does not include the construction of new septic tanks or alternative wastewater disposal systems. Therefore, there would be no impact.	
Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☒
Similar in respect to historical resources and archaeological resources, above, the potential to encounter unique paleontological resources is low because the majority of the proposed Project area has been previously disturbed by landfill and other urban activities. The Project will not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; therefore, there would be no impact.	
HAZARDS AND HAZARDOUS MATERIALS: Would the proposed Project:	
Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☒
No schools are located or proposed to be located within 0.25 mile of any of the proposed Project components. The nearest school, Dahila Heights Elementary, is located approximately 1 mile to the southwest of the proposed Project site. Therefore, no impacts would occur.	
Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☒
As described above, no Cortese List (Government Code Section 65962.5) cleanup sites are located within an approximately two-mile radius of the proposed Project site. Therefore, there would be no impact.	
For a project located within an airport land use compatibility plan or, where such a plan has not been adopted, within two miles of a public airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☒
The Project is located approximately 10 miles from the nearest airport, Hollywood Burbank, in Burbank. The project location would not result in a safety hazard for people residing or working in the proposed Project area. Therefore, there would be no impact.	
Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☒

OTHER CEQA CONSIDERATIONS

Issues	No Impact
The Project would comply with all applicable emergency response plans and emergency evacuation plans adopted in accordance with Area Plan and Business Plan regulations (Health and Safety Code, §25500-25520 and *Cal. Code Reg., tit. 19, § 2720 et seq.*). In addition, the proposed Project does not include construction of residences or facilities that would require evacuation. As such, the proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, no impacts are anticipated.	
HYDROLOGY AND WATER QUALITY: Would the proposed Project:	
Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☒
The Project site is not located within a mapped groundwater basin. The closest groundwater basin is the San Fernando Valley Groundwater Basin of the South Coast Hydrologic Region (Number 4-12), located to the west of the site. Considering the fact that no groundwater recharge potential exists at the existing site and expansion of the existing facility would have no bearing on groundwater recharge capabilities, there would be no impact.	
In flood hazard, tsunami, or seiche zones, risk release of pollutants due to inundation?	☒
The Project site is located over 20 miles from the Pacific Ocean, at an elevation of 1,410 feet AMSL. Tsunamis typically affect coastlines and areas up to ¼-mile inland. Due to the proposed Project's distance from the coast, potential impacts related to a tsunami are non-existent. Additionally, the proposed Project site is not susceptible to impacts resulting from a seiche because of its distance from any enclosed bodies of water. The Project site is located in a FEMA National Flood Insurance Program Category Zone D on the Flood Insurance Rate Map, indicating the absence of any flood hazard. There would be no potential impact.	
LAND USE AND PLANNING: Would the proposed Project:	
Physically divide and established community?	☒
The Project would not physically divide an established community because there are no existing residential uses or communities within the landfill property. In addition, the proposed Project would not involve the displacement of any residential uses of any land designated for residential uses within any of the parcels in which any components of the proposed Project transverses. Therefore, there would be no impact.	
MINERAL RESOURCES: Would the proposed Project:	
Result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the states?	☒
The Project area is designated as MRZ-3 where there are areas containing mineral deposits the significance of which cannot be evaluated from available data. Although data on mineral deposits is unavailable, the proposed Project is located within the boundaries of a landfill and therefore does not have the potential to adversely impact known mineral resources though loss of availability, nor is it located in an area designated as MRZ-2. Therefore, no impact is anticipated.	
Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☒
No locally important mineral resources are delineated within the proposed Project area or any other specific plan or land use plans. Therefore, implementation of the proposed Project would have no impact on the loss of availability of locally important mineral resources. Therefore, no impact is anticipated.	
NOISE: Would the proposed Project:	
For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☒

OTHER CEQA CONSIDERATIONS

Issues	No Impact
The Project is not located within an airport land use plan or within two miles of a public or public use airport. The closest public airport is the Hollywood Burbank Airport located approximately ten miles west of the proposed Project. No impact would occur.	
POPULATION AND HOUSING: Would the proposed Project:	
Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☒
The Project will convert methane-rich renewable LFG generated at the SCLF to fuel and produce electricity from a power generation facility. It will be operated by a total of four full-time personnel and two on call technicians from existing local resources. The Project does not include the construction of new homes or businesses or expand the capacity of any roads or existing infrastructure for residential uses, however, the proposed Project will require construction of new infrastructure to support the proposed Project. This infrastructure will not induce substantial population growth because all the infrastructure is associated with the LFG capture, generation and operating facilities. The Project will not change or conflict with the existing population, employment, housing policies, projections or distributions established by government agencies with jurisdiction over the proposed Project; therefore, there would be no impact.	
Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☒
The Project is located within the footprint of an existing landfill and would not include any activities that would affect or displace existing housing; therefore, there would be no impact.	
PUBLIC SERVICES: Would the proposed Project:	
Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:	
Fire protection?	☒
The Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts.	
Police Protection?	☒
The Project does not include any residential development or other component that will substantially increase population growth or an increase in the demand for public services. Any anticipated calls for police protection would not likely require the need for additional police protective services. Construction impacts associated with the proposed Project would not result in substantial adverse physical impacts with the provision of newly constructed or physically altered governmental facilities. Police protection would continue to be provided and acceptable service ratios, response times and other performance objectives for the City would be maintained. Therefore, no impacts are anticipated.	
Schools?	☒
There will be no population increase that would require additional schools. The Project does not include any residential development or other component that will substantially increase population growth and demand for public services. The Project would not require the provision of new or physically altered school facilities. No impacts are anticipated.	
Parks?	☒
There will be no population increase that would require additional park facilities. The Project does not include any residential development or other component that will substantially increase population growth and demand for public services. Therefore, no impacts are anticipated.	
Other public facilities?	☒

OTHER CEQA CONSIDERATIONS

Issues	No Impact
The Project would create no demand on other public facilities which can be reasonably foreseen. Therefore, no impacts are anticipated.	
RECREATION: Would the proposed Project:	
Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☒
The Project would not entail the construction of residential or commercial uses that would result in an increased use of area parks or recreational facilities. The Project will not increase the number of people utilizing local recreational areas. Therefore, no impacts are anticipated.	
Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☒
The Project does not include a recreational facility component or require the construction or expansion of recreational facilities. While the site is zoned Special Recreation, it is within the SCLF and is not used for recreation. Therefore, there would be no impact.	
TRANSPORTATION: Would the proposed Project:	
Substantially increase hazards to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☒
Only on-road vehicles will be accessing the site via the existing roadway network. The Project does not include or require design improvements or alterations to the public roadway network that could increase design or incompatible use hazards. There would be no impact.	
TRIBAL CULTURAL RESOURCES: Would the proposed Project:	
Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	
Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☒
Based on the results of the Cultural Resources Assessment Report (Appendix A), the proposed Project would not cause an adverse change in the significance of a tribal cultural resource listed or eligible for listing in the CRHR, or in a local register of historical resources. The Project would have no impact to historical resources and no mitigation is required.	
UTILITIES AND SERVICE SYSTEMS: Would the proposed Project:	
Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☒
The Project does not include the development of water intensive land uses. Water use would be limited to that needed for dust control and soil compaction during construction, domestic/sanitary purposes for the four operators and two technicians would be responsible for operations and routine maintenance of the facility, and emergency fire protection. The Project would use limited volumes of water for these purposes that are well within GWP's water supply availability to service. Therefore, there would be no impact.	
Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☒
Sewage from the proposed Project site goes to the Hyperion Treatment Plant, which the City has access to through the Amalgamated Agreement. The Hyperion Treatment Plant has a dry-weather design capacity of 450 million gallons per day (gpd) and is currently operating below its design capacity at 275 million gpd. As a result, adequate	

OTHER CEQA CONSIDERATIONS

Issues	No Impact
capacity exists to treat the incremental Project-generated effluent of 135 gpd (360 gpd total). The Project would not require the expansion or construction of wastewater treatment facilities. Therefore, there would be no impact.	
Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☒
The adjacent SCLF operates with all necessary state and local permits and authorities, as described above. The Project would generate negligible quantities of solid waste but would still be subject to helping the City meet its waste diversion goal of 50 percent as mandated by State law (AB 939). The Project would comply with AB 939, known as the California Integrated Waste Management Act which requires 50 percent diversion of cities and counties solid waste from landfills by 2000, and AB 341, which establishes a State policy goal that no less than 75 percent of solid waste generated be source reduced, recycled, or composted by 2020, and the City's Construction and Demolition Debris Diversion Program; a GMC Code which states that demolition, construction and remodeling shall divert 50 percent of waste tonnage from area landfills. Demolition debris generated during construction will be sent to licensed recycling facilities as appropriate. Asphalt will be used by the Sanitation District for landfill road base and concrete will be used on the proposed Project site for road base. Approximately 75,000 cubic yards of clean soil will also be transferred to the adjacent landfill for daily cover. The Project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. The Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste and no impact would occur.	
Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☒
Please see response to c), above.	
WILDFIRE: Would the proposed Project:	
Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☒
The Project could increase the risk of wildland fires as discussed; the proposed Project does not include an element that would conflict with the City of Glendale's Emergency Plan. The Los Angeles County Operational Area Primary Disaster Routes identified for the City of Glendale are State Route 134, State Route 2, and Interstate 5. The Secondary Disaster Routes in the City of Glendale are Verdugo Road/Canada Boulevard, Foothill Boulevard, Colorado Street, and San Fernando Road (Los Angeles County Department of Public Works, 2012). Nearby Figueroa Street is also designated as a Secondary Disaster Route for the City of Los Angeles. It is important to note that according to Los Angeles County, disaster routes are not evacuation routes. The Project site is located approximately ½ mile from State Route 134 (the nearest Primary Disaster Route) and more than ¾ mile from the Figueroa Street (the nearest Secondary Disaster Route). The proposed Project would comply with all applicable emergency response plans and emergency evacuation plans adopted in accordance with Area Plan and Business Plan regulations (Health and Safety Code, §25500-25520 and Cal. Code Reg., tit. 19, § 2720 et seq.). In addition, the proposed Project does not include construction of residences that would require evacuation. Therefore, no impacts are anticipated.	

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8.0 LIST OF EIR PREPARERS AND ORGANIZATIONS AND PERSONS CONTACTED

8.1 CITIES

8.1.1 City of Glendale

Glendale Water and Power

Maurice Oillataguerre
Environmental Program Administrator

Community Development Department

Erik Krause
Deputy Director of Planning

Office of the City Attorney

Gillian van Muyden
Chief Assistant City Attorney

Christine Godinez
Principal Assistant City Attorney

Dorine Martirosian
Senior Assistant City Attorney

8.1.2 City of Burbank

Xavier Thomas,
Planner

City of Burbank Water and Power

Robert Cranmer

8.1.3 City of Los Angeles

Elva Nuno-O'Donnell
City Planning Valley Division Major Projects Unit

8.1.4 City of Pasadena

John Bellas
Contract Planner

Pasadena Water and Power

Mandip Samara
Power Unit

8.1.5 City of La Canada-Flintridge

City of La Canada-Flintridge Community Development Department, Planning Division
Gary Yesayan
Assistant Planner

8.2 COUNTIES

8.2.1 Los Angeles County Department of Public Works

David Nguyen

8.2.2 Los Angeles County Department of Regional Planning

Richard Claghorn

8.3 EIR PREPARATION

8.3.1 Stantec Consulting Services Inc.

Michael Weber
Principal Scientist, CEQA Project Manager
Environmental Services

StephAnnie Roberts
Senior Project Manager, CEQA Deputy Project Manager
Environmental Services

Dalton Lavoie
PLA, ASLA, ULI, LEED AP, Landscape Architect, Aesthetics
Environmental Services

Steven Brady, C.E.G., C.HG.
Senior Principal, Geology and Soils
Environmental Services

Paul Wierzba, Ph.D., P.Eng.
Senior Noise Engineer, Noise
Environmental Services

Kristy Edblad, P.E., QSD/P, CAPP
Senior Engineer, Transportation and Traffic
Environmental Services

Colleen Hulbert
Staff Geologist/Archeologist, Tribal Cultural Resources
Environmental Services

Patrick Meddaugh
Associate Scientist, Wildfire
Environmental Services

Christine Abraham, Esq.
Principal Environmental Planner, Aesthetics, Hydrology and Water Quality
Environmental Services

Jared Varonin
Principal Biologist/Ecosystems Practice Leader
Environmental Services

8.3.2 Montrose Air Quality Services

Karl Laney
Vice President
Air Quality Regulatory Compliance Services

Edward Krisnadi,
Senior Project Manager
Montrose Air Quality Services
Regulatory Compliance Services Division

LIST OF EIR PREPARERS AND ORGANIZATIONS AND PERSONS CONTACTED

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APPENDICES

Appendix A NOTICE OF PREPARATION AND INITIAL STUDY

NOTICE OF PREPARATION AND SCOPING MEETING

Date: March 21, 2019

To: See Attached Mailing List

From: City of Glendale
633 East Broadway, Room 103
Glendale, California 91206

Subject: Notice of Preparation of a Draft Environmental Impact Report and Public Scoping Meeting for the Biogas Renewable Generation Project

The City of Glendale, as Lead Agency (per CEQA Guidelines Section 15052), has requested that an Environmental Impact Report (per CEQA Guidelines Section 15161) be prepared for the City of Glendale Biogas Renewable Generation Project (Project). The City of Glendale Community Development Department solicits the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the Project. Your agency will need to use the Environmental Impact Report prepared by our agency when considering your permit or other approvals of the project.

The Project description, location, and the potential environmental effects are described in the attached materials. A copy of the Initial Study is attached. Due to the time limits mandated by state law, your response must be sent at the earliest possible time but not later than 30 days after receipt of this notice.

Please send your response to Erik Krause, Deputy Director of Community Development Department, 633 East Broadway, Room 103 Glendale, California 91206. You may also email your response to: ekrause@glendaleca.gov

Please provide the name of a contact person at your agency.

Date: 3/19/19

Signature: [signature]

Name: ERIK KRAUSE

Title: DEPUTY DIRECTOR OF COMMUNITY DEVELOPMENT

NOTICE OF PREPARATION AND SCOPING MEETING

Reference: California Administrative Code, Title 14 (State CEQA Guidelines), Sections 15082(a), 15103, 15375.

PROJECT LOCATION

The Project site is located completely within the boundaries of the existing Scholl Canyon Landfill, in Los Angeles County, at 3001 Scholl Canyon Road, Glendale, California, 91206. Regional access to the landfill is from the Ventura Freeway (State Route 134) at the Figueroa Street exit. Figure 1 shows the location of the landfill and Proposed Project.

PROJECT DESCRIPTION

The Project includes construction and operation of an approximately 12-megawatt (MW) power generation facility that would utilize landfill gas as fuel to generate renewable energy. The primary elements of the Project are shown in Figure 2. The majority of the existing equipment owned and operated by Glendale Water and Power required to treat the landfill gas (LFG) prior to sending it to the Grayson Power Plant would be demolished; only the existing blowers and LFG flaring station would remain. Existing equipment to be demolished or removed is shown on Figure 3. The Project would be located adjacent to the existing LFG flare station and would include the following equipment and systems:

- LFG compressors to increase the LFG pressure so that the LFG can be treated and conveyed to the electrical generation equipment.
- LFG treatment system to prevent damage to the electrical generation equipment and would consist of vessels, coolers, heat exchangers and control systems designed to remove moisture and impurities from the LFG. The treatment system would also include a regeneration ground flare to assure that the LFG treatment system is performing efficiently and continuously.
- Condensate treatment system to allow collected condensate to comply with the City's existing Industrial Waste Discharge requirements prior to disposing the condensate into the existing sewer system.
- Electrical generating equipment consisting of reciprocating engine generators to produce electricity using the LFG as fuel. Each of the electrical generating equipment would be self-contained and located in individual enclosures.

- Combustion exhaust gas cleanup system to comply with South Coast Air Quality Management District (SCAQMD) regulations, consisting of reactive catalyst using 19 percent Aqueous Ammonia as reactant to minimize the emissions of nitrogen oxides and a carbon monoxide catalyst to minimize the emissions of carbon monoxide.
- Continuous emission monitoring systems installed on the engines to assure that the exhaust gas emissions comply with SCAQMD regulations.
- Electric switchgear to allow connection of the produced electricity to the existing GWP electrical system. No electric transmission system modification is anticipated.
- Small office and small storage building, less than 1,000 square feet each, required for operating and maintaining the Project.
- Fire protection and safety system to comply with National Fire Protection Association and Glendale Fire Department requirements.
- A new 60,000-gallon fire water tank would be constructed to provide water for fire protection. In addition, a new approximately 10,000-gallon water storage tank would be provided for domestic purposes.

Figure 4 shows the location of major equipment.

Approximately two-thirds of a mile (3,500 feet) of natural gas pipeline would be constructed to connect the facility to the existing Southern California Gas Company pipeline system located at the eastern end of Scholl Canyon Drive. This three-inch, schedule 40 steel gas pipeline would be located within the boundary of the landfill, aboveground except for at road crossings. The natural gas would be utilized to assure continuous operations of the internal combustion engines on the naturally occurring landfill gas.

To provide water to the Project an approximately one-mile-long, 12-inch steel or high-density polyethylene pipeline would be connected to an existing 16-inch pipeline located north of the landfill on Glenoaks Blvd. This water line would also be aboveground except for road crossings. The water line would be connected to fire hydrants as required by the City of Glendale Fire Department. Additional water pipelines would be installed belowground to connect the power plant facility with the new fire protection and domestic water tanks, which would be located just east of the facility. A water fill-line would be installed belowground extending across the Project facility from a water tie-in

at the southwest portion of the Project site to facilitate the new water tanks. The water and natural gas pipelines are shown on Figure 2.

The existing approximately five-mile-long underground pipeline that has been used to carry LFG to the Grayson Power Plant would be abandoned in place. As part of the abandonment process, the line would be purged with an inert gas such as nitrogen and capped with cement plugs or similar items on each end. The existing line follows surface streets within an existing utility corridor.

After the power plant is in operation, the flares would only operate as required during maintenance or in the unlikely event that there is excess LFG being produced that cannot be used for generating electricity. A total of four operators and two technicians would be responsible for operations and routine maintenance of the facility. Personnel would be available and on call during non-business hours. Periodic maintenance would be performed by qualified personnel that would travel to the Project site during business hours as needed to perform the required maintenance. Consumables such as lube oils, filters, cleaning media, 19 percent Aqueous Ammonia, and other similar materials would be delivered to the Project as they become depleted. Restroom facilities would be provided, and the existing sewer system would be utilized.

For security, the entire Project site would be enclosed within an eight-foot-high security fence with automatic gates. Security and safety lighting systems would be provided.

The life of the Project is anticipated to be 20 years, or as long as the LFG can be used to generate electricity; after which time equipment and equipment foundations would be removed and the area would become part of the landfill reclamation plan.

DISCRETIONARY APPROVAL ACTIONS

Discretionary approval from the City of Glendale and SCAQMD would be necessary for implementation of the Project and may include, but not be limited to, the following:

- Conditional Use Permit and Special Recreation Development Plan Review
- SCAQMD Permit to Construct/Operate

NOTICE OF PREPARATION AND SCOPING MEETING

PROBABLE ENVIRONMENTAL EFFECTS

Based on a preliminary review of the Project consistent with Section 15060 of the California Environmental Quality Act (CEQA) Guidelines, the City of Glendale has determined that an EIR should be prepared for this Project. In addition, consistent with Section 15082 of the State CEQA Guidelines, the City of Glendale has identified the following potential environmental effects of the Project, which will be further analyzed in the EIR for this Project:

- Aesthetics
- Air Quality
- Biological Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Transportation and Traffic
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

The City of Glendale has determined that there would be no impacts related to the following environmental topics; and therefore, the below environmental topics will not be further analyzed in the EIR:

- Agriculture/Forestry Resources
- Cultural Resources
- Mineral Resources
- Public Services
- Population/Housing
- Recreation

SCOPING MEETING

The City of Glendale will conduct two public scoping meetings; both to be held on **Thursday, April 4, 2019,** at **2:00 PM** and at **6:00 PM**; to solicit input and comments from public agencies and the general public on the scope of the EIR being prepared for the Biogas Renewable Generation Project. These meetings will be held in the **Glendale Police Department Community Room at 131 N. Isabel Street in Glendale, CA**.

NOTICE OF PREPARATION AND SCOPING MEETING

The meetings will include presentation of a Project overview followed by an opportunity for the public to submit oral and/or written comments related to the scope of the EIR. The City of Glendale will consider comments received in response to this Notice of Preparation and public scoping meetings in determining the scope and content of the EIR for this Project. Any comments provided should identify specific topics of environmental concern and your reason for suggesting the study of these topics in the EIR. Please provide your comments by **April 21, 2019.**

Please provide your comments in writing to:

Erik Krause
Deputy Director of Community Development
Community Development Department
633 East Broadway, Room 103
Glendale, California 91206
ekrause@glendaleca.gov

Thank you for your participation in the environmental review of this Project. Additional information can be found on the City's Project Website located at glendalebiogasgeneration.com.

LEAD AGENCY DIRECT CERTIFIED MAILING LIST

U. S. FISH & WILDLIFE SERVICE
6010 HIDDEN VALLEY RD
CARLSBAD, CA 92011

SOUTH COAST AIR QUALITY
MANAGEMENT DISTRICT
21865 COPLEY DRIVE
DIAMOND BAR, CA 91765

LOS ANGELES COUNTY DEPT. OF PUBLIC
WORKS - ENVIRONMENTAL PROGRAMS
DIVISION
900 SOUTH FREMONT AVENUE
ALHAMBRA, CA 91803-1331

TONGVA ANCESTRAL TERRITORIAL TRIBAL
NATION
4712 ADMIRALTY WAY, SUITE 172
MARINA DEL REY, CA 90292

METROPOLITAN TRANSPORTATION
AUTHORITY
ONE GATEWAY PLAZA
LOS ANGELES, CA 90012

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
100 MAIN STREET
LOS ANGELES, CA 90012

SOUTHERN CALIFORNIA EDISON
14799 CHESTNUT STREET
WESTMINISTER, CA 92683

SOUTHERN CALIFORNIA ASSOCIATION OF
GOVERNMENTS
900 WILSHIRE BLVD., STE. 1700
LOS ANGELES, CA 90017

CITY OF LOS ANGELES DEPARTMENT OF
PUBLIC WORKS ENVIRONMENTAL
MANAGEMENT GROUP
BUREAU OF ENGINEERING
1149 S. BROADWAY, SUITE 600
LOS ANGELES, CA 90015

SANITATION DISTRICTS OF
LOS ANGELES COUNTY
PLANNING SECTION
1955 WORKMAN MILL ROAD
WHITTIER, CA 90601

LA CITY/COUNTY NATIVE AMERICAN
INDIAN COMMUNITY
3175 WEST 6TH STREET, RM 403
LOS ANGELES, CA 90020

GABRIELENO/TONGVA SAN GABRIEL BAND
OF MISSION INDIANS
PO BOX 693
SAN GABRIEL, CA 91778

LOS ANGELES COUNTY CLERK
12400 IMPERIAL HIGHWAY
NORWALK, CA 90650-1208

JULIA C. WEISSMAN
SENIOR DEPUTY COUNTY COUNSEL
PUBLIC WORKS DIVISION
500 W. TEMPLE STREET, SUITE 651
LOS ANGELES, CA 90012

EXECUTIVE DIRECTOR
PLANNING, DEVELOPMENT & FACILITIES
GLENDALE UNIFIED SCHOOL DISTRICT
349 W MAGNOLIA AVE.
GLENDALE, CA 91204

FRED RAMIREZ, CITY OF BURBANK
COMMUNITY DEVELOPMENT
DEPARTMENT
150 N THIRD STREET
BURBANK, CA 91502

CITY OF LOS ANGELES
200 N. SPRING STREET
LOS ANGELES, CA 90012

JENNIFER PAIGE
PASADENA PLANNING & COMMUNITY
DEVELOPMENT DEPARTMENT
175 NORTH GARFIELD AVENUE
PASADENA, CA 91101

LOS ANGELES DEPARTMENT OF WATER
AND POWER
111 HOPE STREET
LOS ANGELES, CA 90012

ENVIRONMENTAL PROTECTION AGENCY
75 HAWTHORNE STREET
SAN FRANCISCO, CA 94105

SUSAN KOLEDA
CITY OF LA CANADA FLINTRIDGE CITY HALL
PLANNING DEPARTMENT
ONE CIVIC CENTER DRIVE
LA CANADA FLINTRIDGE, CA 91011

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BLVD.
LOS ANGELES, CA 90017

COUNTY OF LOS ANGELES
DEPARTMENT OF REGIONAL PLANNING
320 W. TEMPLE STREET
LOS ANGELES, CA 90012

HOLLYWOOD BURBANK AIRPORT
2627 N HOLLYWOOD WAY
BURBANK, CA 91505

LA COUNTY SANITATION DISTRICT 5
1955 WORKMAN MILL ROAD
WHITTIER, CA 90607

CITY OF LOS ANGELES
DIRECTOR OF CITY PLANNING
200 NORTH SPRING STREET, 5TH FLOOR
LOS ANGELES, CA 90012-2601

FERNANDENO TATAVIAM BAND OF
MISSION INDIANS
1019 SECOND STREET
SAN FERNANDO, CA 91340

UNIVERSITY OF CALIFORNIA
OFFICE OF THE PRESIDENT
1111 FRANKLIN STREET
OAKLAND, CA 94607

SOBOBA BAND OF LUISENO INDIANS
TRIBAL ADMINISTRATION
23904 SOBOBA ROAD
SAN JACINTO, CA 92583

OFFICE OF COUNCILMEMBER JOSÉ HUIZAR
CITY OF LOS ANGELES COUNCIL DISTR. 14
2035 COLORADO BLVD.
LOS ANGELES, CA 90041

OFFICE OF COUNCILMEMBER JOSÉ HUIZAR
CITY OF LOS ANGELES COUNCIL DISTR. 14
200 N. SPRING STREET, ROOM 465
LOS ANGELES, CA 90012

LEAD AGENCY RECOMMENDED STATE CLEARINGHOUSE DISTRIBUTION LIST

CALIFORNIA HIGHWAY PATROL
601 NORTH 7TH STREET
SACRAMENTO, CA 95811

CALIFORNIA PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102

CALIFORNIA NATURAL RESOURCES AGENCY
1416 NINTH STREET, SUITE 1311
SACRAMENTO, CA 95814

DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY
P.O. BOX 4025
SACRAMENTO, CA 95812-4025

STATE WATER RESOURCES CONTROL BOARD
P.O. BOX 100
SACRAMENTO, CA 95812-0100

CALIFORNIA DEPARTMENT OF WATER RESOURCES
P.O. BOX 942836
SACRAMENTO, CA 94236-0001

CALTRANS DISTRICT 7
DIVISION OF PLANNING
100 SOUTH MAIN STREET
LOS ANGELES, CA 90012

SAN GABRIEL & LOWER LA RIVERS & MOUNTAIN CONSERVANCY
100 N. OLD SAN GABRIEL CANYON RD
AZUSA, CA 91702

DEPARTMENT OF FISH AND WILDLIFE
SOUTH COAST REGION
4949 VIEWRIDGE AVENUE
SAN DIEGO, CA 92123

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814

CALIFORNIA AIR RESOURCES BOARD
9528 TELSTAR AVE
EL MONTE, CA 91731

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814

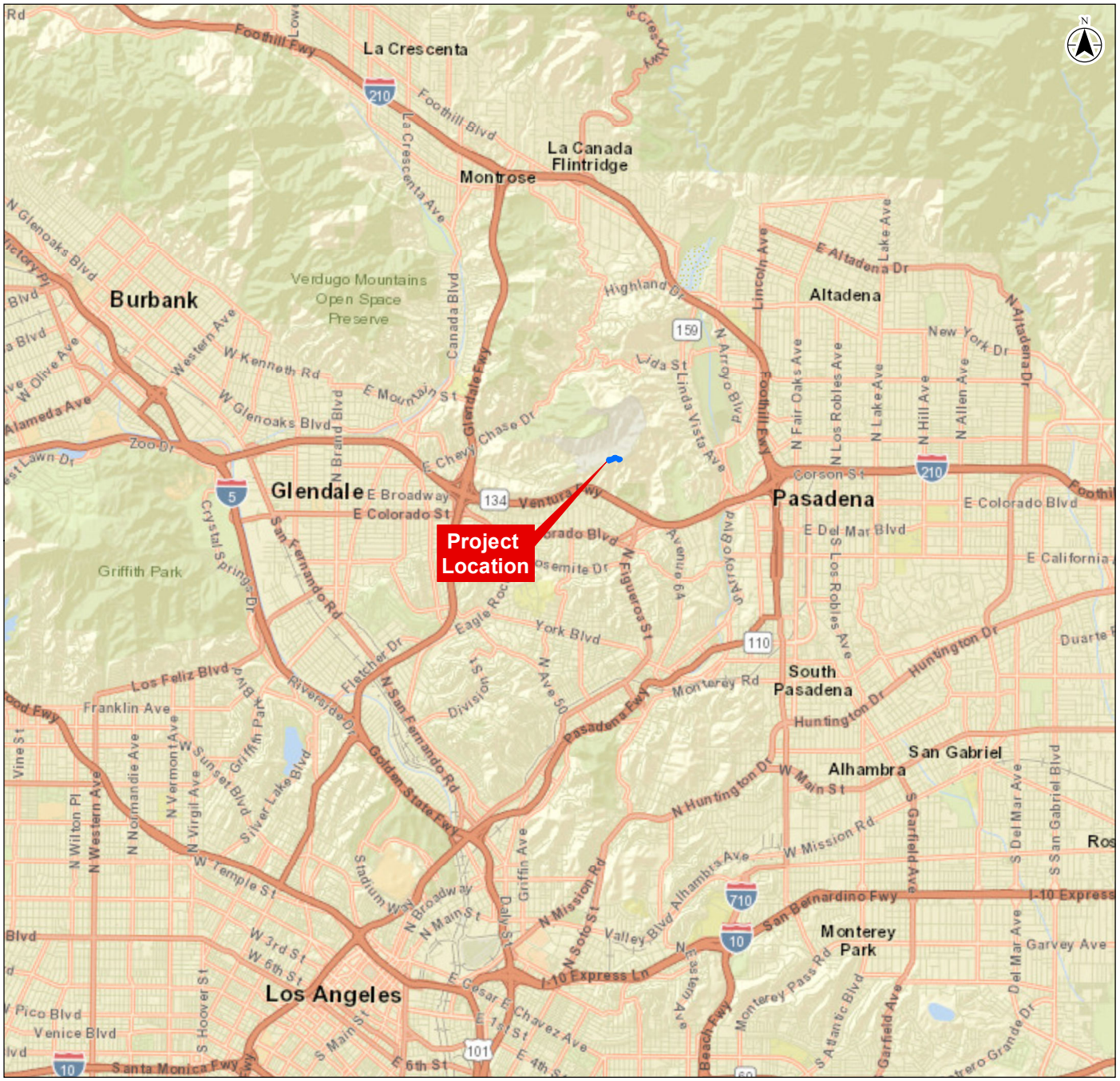
JULIANNE POLANCO
OFFICE OF HISTORIC PRESERVATION
1725 23RD STREET, SUITE 100,
SACRAMENTO, CA 95816

DEPARTMENT OF TOXIC SUBSTANCES CONTROL
1001 I STREET
SACRAMENTO, CA 95814-2828

CALIFORNIA STATE PARKS
1416 9TH STREET, ROOM 116
SACRAMENTO, CA 95814

CALIFORNIA STATE LANDS COMMISSION
100 HOWE AVENUE, SUITE 100 SOUTH
SACRAMENTO CA 95825

REGIONAL WATER QUALITY CONTROL BOARD
320 WEST FOURTH STREET, SUITE 200
LOS ANGELES, CA 90013


Project Location
La Crescenta
Montrose
La Canada Flintridge
Burbank
Verdugo Mountains Open Space Preserve
Glendale
Pasadena
Altadena
Griffith Park
South Pasadena
San Gabriel
Alhambra
Monterey Park
Los Angeles
Foothill Fwy
Ventura Fwy
Glendale Fwy
Pasadena Fwy
San Bernardino Fwy
Santa Monica Fwy
Golden State Fwy
Foothill Blvd
Colorado Blvd
Huntington Dr
Valley Blvd
Monterey Rd
York Blvd
Los Feliz Blvd
Franklin Ave
Sunset Blvd
Hollywood Blvd
Venice Blvd
Pico Blvd
Garvey Ave
Del Mar Blvd
Corson St
Lake Ave
Allen Ave
Hill Ave
Fair Oaks Ave
Los Robles Ave
Lincoln Ave
Rosemead Blvd
Arroyo Blvd
Linda Vista Ave
Canada Blvd
Brand Blvd
San Fernando Rd
Figueroa St
Broadway
Main St
Mission Rd
Soto St
Griffin Ave
Vermont Ave
Western Ave
Wilton Pl
Normandie Ave
Virgil Ave
Silver Lake Blvd
Griffith Park Dr
Riverside Dr
Fletcher Dr
Eagle Rock Blvd
Division St
Ave 50
Ave 64
Del Mar Ave
Garfield Ave
Atlantic Blvd
Monterey Pass Rd
Beach Ave
Eastern Ave
Soto St
Mission Rd
Alhambra Ave
Huntington Dr
Main St
Garvey Ave
Del Mar Ave
San Gabriel Blvd
Rosemead Blvd
Foothill Fwy
Foothill Blvd
Lincoln Ave
Lake Ave
Altadena Dr
New York Dr
Allen Ave
Hill Ave
Los Robles Ave
Fair Oaks Ave
Arroyo Blvd
Linda Vista Ave
Highland Dr
Canada Blvd
La Crescenta Ave
Glenoaks Blvd
Kenneth Rd
Mountain St
Chevy Chase Dr
Brand Blvd
Zoo Dr
Olive Ave
Alameda Ave
Western Ave
Crystal Springs Dr
Yosemite Dr
Eagle Rock Blvd
Fletcher Dr
Riverside Dr
Griffith Park Dr
Silver Lake Blvd
Sunset Blvd
Vermont Ave
Virgil Ave
Normandie Ave
Western Ave
Wilton Pl
Vine St
Franklin Ave
Los Feliz Blvd
Hollywood Blvd
Golden State Fwy
Stadium Way
Broadway
Main St
Griffin Ave
Mission Rd
Soto St
Valley Blvd
Alhambra Ave
Huntington Dr
Main St
Garvey Ave
Del Mar Ave
San Gabriel Blvd
Rosemead Blvd
Monterey Pass Rd
Beach Ave
Eastern Ave
Atlantic Blvd
Garfield Ave
Del Mar Ave
Garvey Ave
Monterey Rd
Huntington Dr
Pasadena Fwy
Ventura Fwy
Glendale Fwy
Foothill Fwy
San Bernardino Fwy
Santa Monica Fwy
Golden State Fwy
Foothill Blvd
Colorado Blvd
Huntington Dr
Valley Blvd
Monterey Rd
York Blvd
Los Feliz Blvd
Franklin Ave
Sunset Blvd
Hollywood Blvd
Venice Blvd
Pico Blvd
Garvey Ave
Del Mar Blvd
Corson St
Lake Ave
Allen Ave
Hill Ave
Fair Oaks Ave
Los Robles Ave
Lincoln Ave
Rosemead Blvd



Stantec

Legend

- Proposed Gas Pipeline
- Proposed Water Pipeline
- Proposed Power Plant Facility Boundary
- New Water Tank

0 250 500 Feet

1 in = 500 feet (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet

2. Basemap: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community



Project Location:
Glendale, CA

Project No.: 185804356
Prepared by JT on 2019-02-25
Technical Review by MW on 2019-02-25

Client/Project:
City of Glendale
Biogas Renewable Generation Project
Notice of Preparation

Figure Number/Title:

Figure 2
Proposed Project Elements

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Legend

Proposed Power Plant Facility Boundary

Area to be Demolished

0 80 160 Feet

1:961 (At original document size of 11x17)

Stantec

Project Location
Glendale, CA

Project No.: 185804356
Prepared by JT on 2019-02-25
Technical Review by MW on 2019-02-25

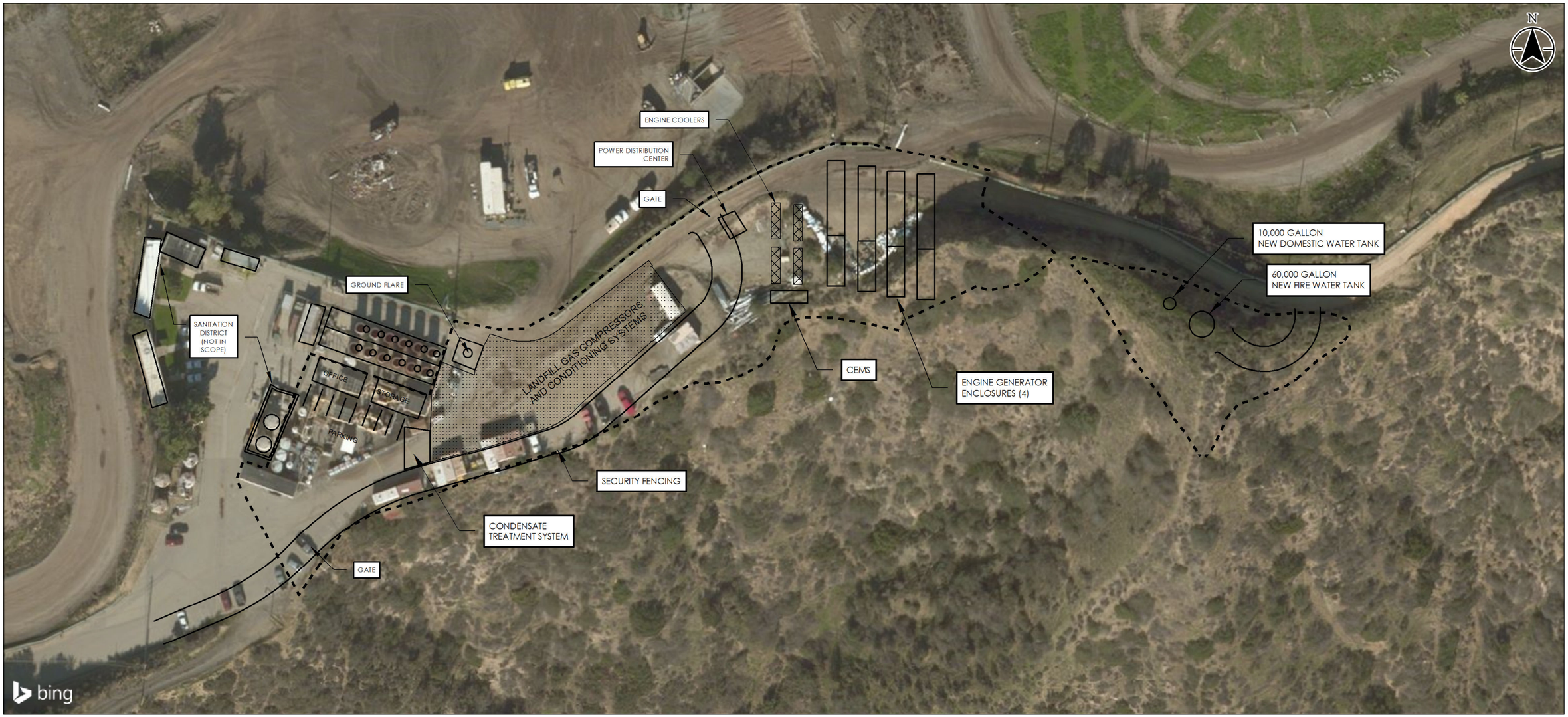
Client/Project
City of Glendale
Biogas Renewable Generation Project
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Figure No.
3

Title
Existing Facility Demolition Plan

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Legend

Proposed Power Plant Facility Boundary

0 80 160 Feet

1:961 (At original document size of 11x17)

Stantec

Project Location
Glendale, CA

Project No.: 185804356
Prepared by JT on 2019-02-25
Technical Review by MW on 2019-02-25

Client/Project
City of Glendale
Biogas Renewable Generation Project
Notice of Preparation

Figure No.
4

Title
Major Equipment Location Plan

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BIOGAS RENEWABLE GENERATION PROJECT INITIAL STUDY

Lead Agency:
City of Glendale
Community Development Department
Planning Division
633 E. Broadway, Room 103
Glendale, California 91206

Proponent:
City of Glendale
141 North Glendale Avenue
Glendale, California 91206

Consultant:

Stantec Consulting Services Inc.
290 Conejo Ridge Avenue
Thousand Oaks, California 91361

March 21, 2019

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Abbreviations

AB	Assembly Bill
AMSL	Above Mean Sea Level
A-P Zone	Alquist-Priolo Earthquake Special Studies Zone
AQMP	Air Quality Management Plan
ASSFC	Amalgamated System Sewage Facilities Charge
bgs	below ground surface
CAAQS	California Ambient Air Quality Standards
CalRecycle	California Department of Resources Recycling and Recovery
CARB	California Air Resources Board
CDWR	California Department of Water Resources
CEQA	California Environmental Quality Act
CFC	Chlorofluorocarbons
CH4	Methane
CHP	California Highway Patrol
City	City of Glendale
CIWMB	California Integrated Waste Management Board
CMP	Congestion Management Program
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Equivalent Amount of Carbon Dioxide
DOT	Department of Transportation
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
FSZ	Farmland Security Zone
GFD	Glendale Fire Department
GHG	Greenhouse Gases
gpd	gallons per day
GPD	Glendale Police Department
GUSD	Glendale Unified School District
GWP	Glendale Water and Power
GWTP	Glendale Water Treatment Plant
HFC	Hydrofluorocarbons
IS	Initial Study

JPA	Joint Powers Agreement
LADPW	Los Angeles Department of Public Works
LAUSD	Los Angeles Unified School
LCA	Land Conservation Act
LFG	Landfill Gas
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zone
MW	Megawatt
MWD	Metropolitan Water District
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NO_2	Nitrogen Dioxide
NOx	Nitrogen Oxides
N_2O	Nitrous Oxide
O_3	Ozone
Pb	Lead
PFC	Perfluorocarbons
PM_{10}	Particulate Matter 10 micrometers or less in diameter
$PM_{2.5}$	Particulate Matter 2.5 micrometers or less in diameter
Project	Biogas Renewable Generation Project
PTC	Permit to Construct
PTO	Permit to Operate
R1R	Restricted Residential
RPS	Renewables Portfolio Standard
RWQCB	Regional Water Quality Control Board
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCLF	Scholl Canyon Landfill
SEA	Significant Ecological Area
SF_6	Sulfur hexafluoride
SMARA	Surface Mining and Reclamation Act
SO_2	Sulfur Dioxide
SOx	Sulfur Oxides
SR	Special Recreation
SR-134	California State Route 134
SWFP	Solid Waste Facility Permit
UWMP	Urban Water Management Plan

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1.0 INTRODUCTION

1.1 OVERVIEW

This document is an Initial Study (IS) prepared by the City of Glendale (City) in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Sections 21000 et seq., and the State CEQA Guidelines, Sections 15000 et seq. for the Biogas Renewable Generation Project (Project).

Under California law, each public agency must adopt local implementation guidelines to establish objectives, criteria, and specific procedures for administering its responsibilities under CEQA. This IS was prepared pursuant to the City's adopted CEQA Guidelines. The City is the CEQA lead agency for all projects implemented within the City limits.

An IS is prepared by a lead agency to determine if a project may have a significant effect on the environment. The determination may be based on City regulations, practices, standards or thresholds, and policies in place. If the IS shows that there is no substantial evidence that the project may have a significant environmental effect, a Negative Declaration shall be prepared. If the project would cause significant environmental effects, but mitigation measures are available to reduce impacts to a less than significant level, a Mitigated Negative Declaration (MND) shall be prepared. If the IS shows that the project would cause significant environmental effects that cannot be reduced to a less than significant level with mitigation, an Environmental Impact Report (EIR) shall be prepared. The Director of Planning reports to the lead agency's decision-making bodies for determining the significance level of environmental impacts and what environmental document is required for a project under CEQA.

The City previously prepared an IS/MND for the Project (City of Glendale and Stantec, 2018). The City Planning Commission did not adopt the IS/MND and recommended an EIR be prepared in order to evaluate a reasonable range of alternatives to the Project. The City has elected to prepare the EIR recommended by the Planning Commission. As a result of feedback received during the public review process and an interest in updating the previously completed environment impact analysis to conform to the recently updated State CEQA Guidelines, the City has decided to prepare this new IS specific to the EIR process for the Project.

1.2 PURPOSE AND OBJECTIVES

The purpose of the Project is to beneficially utilize the methane-rich renewable landfill gas (LFG) generated by the Scholl Canyon Landfill as fuel to generate electricity on-site at the source of the LFG instead of either 1) transmitting the gas across town in an underground pipeline for combustion at the Grayson Power Plant, or 2) flaring it at the landfill. The Biogas Renewable Generation Project has the following objectives:

- Provide beneficial use of naturally occurring LFG;
- Utilize an available renewable energy resource to help the City increase its California mandated Renewable Energy Portfolio;
- Abandon the existing pipeline between the landfill and Grayson Power Plant, which would in turn allow the South Coast Air Quality Management District (SCAQMD) to make priority reserve offsets available and offsets would not have to be purchased on the open market.

1.3 PROJECT TITLE

Biogas Renewable Generation Project

1.4 PROPONENT

City of Glendale

1.5 LEAD AGENCY

City of Glendale

The Project is located entirely within the City but is primarily accessed from Figueroa Street in the City of Los Angeles. The City has the authority for design review, issuance of a Conditional Use Permit, and is funding the Project. For this reason, the City is the public agency in the position to act as lead agency for the Project (CEQA Guidelines §15051(b)). Pursuant with the City's adopted CEQA Guidelines, CEQA processing is the responsibility of the City Planning Division for all projects where the lead agency is the City of Glendale or Glendale Housing Authority.

1.6 INTENDED USES OF THE INITIAL STUDY/MITIGATED NEGATIVE DECLARATION AND PERMIT REQUIREMENTS

This Initial Study is an informational document intended to inform the lead agency, other responsible or interested agencies, and the general-public of potential environmental effects of the Project. The environmental review process has been established to enable public agencies to evaluate potential

environmental consequences and to examine and implement methods of eliminating or reducing any potentially significant adverse impacts. This document is intended to be used for the following permits/approvals and consultations, as described in Table 1 below:

Table 1 Agency Permits and Environmental Review Requirements

Agency	Permits and Other Approvals	Environmental Review/Consultation Requirements
City of Glendale	• Design Approval • Conditional Use Permit • Grading Permit • Fire Department Permit • Industrial Waste Permit • Electrical Permit • Building Permit • Mechanical Permit • Plumbing Permit • Hazardous Materials Business Plan	• CEQA lead agency
South Coast Air Quality Management District (SCAQMD)	• SCAQMD Regulation XXX: Title V Permits (Permit to Construct (PTC) and Permit to Operate (PTO)	• Responsible Agency
United States Environmental Protection Agency	• None	• Opportunity to review and comment on Title V Permit prior to approval and issuance by SCAQMD.
California Department of Fish and Wildlife	• None	• Trustee Agency
California State Lands Commission	• None	• Trustee Agency
California Department of Parks and Recreation	• None	• Trustee Agency
University of California	• None	• Trustee Agency
Los Angeles Regional Water Quality Control Board (RWQCB)	• California's General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities	• Stormwater Pollution Prevention Plan approval.
County of Los Angeles	• None	• Notified of Project by City of Glendale pursuant to the Scholl Canyon Joint Powers Agreement.
Sanitation Districts of Los Angeles County	• None	• Notified of Project by City of Glendale pursuant to the Scholl Canyon Joint Powers Agreement
Soboba Band of Luiseno Indians	• None	• Notified of Project by City of Glendale pursuant to AB 52 and provided opportunity for consultation related to tribal cultural resources.
Fernandeno Tataviam Band of Mission Indians	• None	• Notified of Project by City of Glendale pursuant to AB 52 and provided opportunity for consultation related to tribal cultural resources.

Responsible agencies that may have discretionary approval authority over the Project, and trustee agencies having jurisdiction over natural resources affected by the Project which are held in trust for the people of the State of California, would have the opportunity to review and provide comments during the review period. Listing of the trustee agencies above is not indicative that resources under that agency's jurisdiction would be affected by the Project. The City has elected to notice this IS to all trustee agencies in California.

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2.0 PROJECT DESCRIPTION

2.1 PROJECT OVERVIEW

The Project is located at Scholl Canyon Landfill (SCLF), an existing Class III nonhazardous landfill facility that accepts municipal solid waste and is not a generator of, or repository for, hazardous wastes. The landfill site occupies approximately 535 acres with portions respectively owned by the City of Glendale, Los Angeles County, and by Southern California Edison Company (Sanitation Districts of Los Angeles County & AECOM, 2014). The proposed approximately 2.2-acre Project would be located on a portion of an approximately 95-acre site owned by Los Angeles County within the City of Glendale. At the current fill rate, the closing date of the landfill is estimated to be in the mid 2020's. A proposed but not yet approved expansion of the landfill may increase the life of the landfill up to an additional 22 to 32 years (Sanitation Districts of Los Angeles County & AECOM, 2014). The landfill's permitted capacity is based on volume; therefore, the closing date of the landfill, including the request for increased life, could be sooner or later depending on disposal rates as well as regulatory approval for expansion. However, the Project has independent utility, and is not dependent in any way on expansion of the existing landfill. LFG is and will continue to be generated for many years by the natural waste decomposition process occurring at the existing active landfill and within the closed portion of the existing landfill, whether or not an expansion of the landfill is approved and implemented. The Project would beneficially use this naturally occurring LFG and capturing it and burning it will provide environmental and economic benefits regardless of the ultimate capacity of the landfill.

The SCAQMD requires the installation of a LFG collection system to minimize the emissions of LFG (which contains methane and other constituents) from the surface of the landfill. At many landfills, the LFG is combusted in flares and not put to beneficial use. Other landfill operators remove moisture and impurities from the LFG and utilize the LFG in power generation equipment as fuel for electricity generation.

2.1.1 Existing Facility

The current LFG collection system at SCLF conveys the collected LFG to a central location within the landfill property where the LFG is compressed, liquids are removed, and the raw LFG is either piped to Glendale Water and Power's (GWP) Grayson Power Plant via an underground dedicated pipeline or the LFG is flared at the landfill pursuant to an existing SCAQMD permit. Rather than flaring all of the LFG, the City can mix the LFG with natural gas and combust it in boilers at Grayson to make steam for electricity generation. LFG combusted in the old and inefficient boilers have higher emissions of air pollutants compared to more modern generation units equipped with emissions control systems. As a result of considering and evaluating potential environmental impacts of modernizing (or "repowering") the Grayson Power Plant, the City learned that emissions at Grayson, primarily as a result of the LFG combustion in the boilers exceeded potential health risk notification and action plan thresholds established by the

SCAQMD. Subsequently, the City had to cease combusting LFG at Grayson and has been flaring all of the LFG at the SCLF since April 1, 2018 in compliance with an existing SCAQMD permit.

The Sanitation Districts of Los Angeles County has portable and temporary offices, and landfill condensate and groundwater collection systems located adjacent to where the Project would be located. These facilities would not be disturbed.

Photographs of the existing facility are provided on the following pages.



Photo1: View west of existing facility from east of the Project site within active landfill property.



Photo 2: View west of existing facility with landfill pipeline in foreground. Trailers in center are temporary and not part of Project.



Photo 3: Existing LFG processing facility to be demolished.



Photo 4: Existing flare system to remain.

2.2 PROJECT LOCATION

The Project site is located completely within the boundaries of the existing SCLF, in Los Angeles County, at 3001 Scholl Canyon Road, Glendale, California, 91206. Regional access to the landfill is from the Ventura Freeway (State Route 134) at the Figueroa Street exit. Figure 1 shows the location of the landfill and Project.

2.3 PROJECT ELEMENTS

The Project would involve temporary and permanent disturbances to approximately 2.16 and 2.2 acres of land, respectively. This would include the proposed power generation facility, natural gas pipeline, water pipeline and two water tanks. A summary of disturbances can be found in Table 2 below.

Table 2 Project Temporary and Permanent Site Modification

Project Components	Temporary Disturbance (acres)	Permanent Disturbance (acres)
Power Generation Facility	0.00	1.73
Natural Gas Pipeline (above and below ground)	0.75	0.01
Water Pipeline (above and below ground)	1.40	0.10
Water Tank Graded Area	0.00	0.35
Water Tank Pipelines (underground)	0.01	0.00
Total Disturbance:	**2.16**	**2.19**
Cleared/Developed Areas		
Previously Cleared/Developed	1.13	1.45
Not Previously Cleared/Developed	1.03	0.74

The Project includes the following components, which can be found in Figure 2:

2.3.1 Power Generation Facility

The Project includes construction and operation of an approximately 12-megawatt (MW) power generation facility that would utilize LFG as fuel to generate renewable energy (electricity).

The majority of the existing equipment owned and operated by GWP required to treat the LFG prior to sending it to the Grayson Power Plant would be demolished; only the existing blowers and LFG flaring station would remain. Existing equipment to be demolished or removed is shown on Figure 3. The Project would be located adjacent to the existing LFG flare station and would include the following equipment and systems:

- LFG compressors to increase the LFG pressure so that the LFG can be treated and conveyed to the electrical generation equipment.

- LFG treatment system to prevent damage to the electrical generation equipment consisting of vessels, coolers, heat exchangers and control systems designed to remove moisture and impurities from the LFG. The regeneratable siloxane removal system utilizes media to capture siloxanes in a passthrough bed. When the media is saturated with siloxanes, the biogas is shifted to a parallel vessel. The original vessel is regenerated by heating to drive off the captured siloxanes with the regeneration gas taken to a ground flare for disposal. All this is done prior to the biogas combustion in the reciprocating engine generators.

- Condensate treatment system to allow collected condensate to comply with the City's existing Industrial Waste Discharge requirements prior to disposing the condensate into the existing sewer system.

- Electrical generating equipment consisting of reciprocating engine generators to produce electricity using the LFG as fuel. Electrical generating equipment would be self-contained and located in individual enclosures.

- Combustion exhaust gas cleanup system to comply with SCAQMD regulations, consisting of reactive catalyst using 19 percent Aqueous Ammonia as reactant to minimize the emissions of nitrogen oxides (NOx) and a Carbon Monoxide (CO) catalyst to minimize the emissions of CO.

- Continuous emission monitoring systems installed on the engines to assure that the exhaust gas emissions comply with SCAQMD regulations.

- Electric switchgear to allow connection of the produced electricity to the existing GWP electrical system. No electric transmission system modification is anticipated.

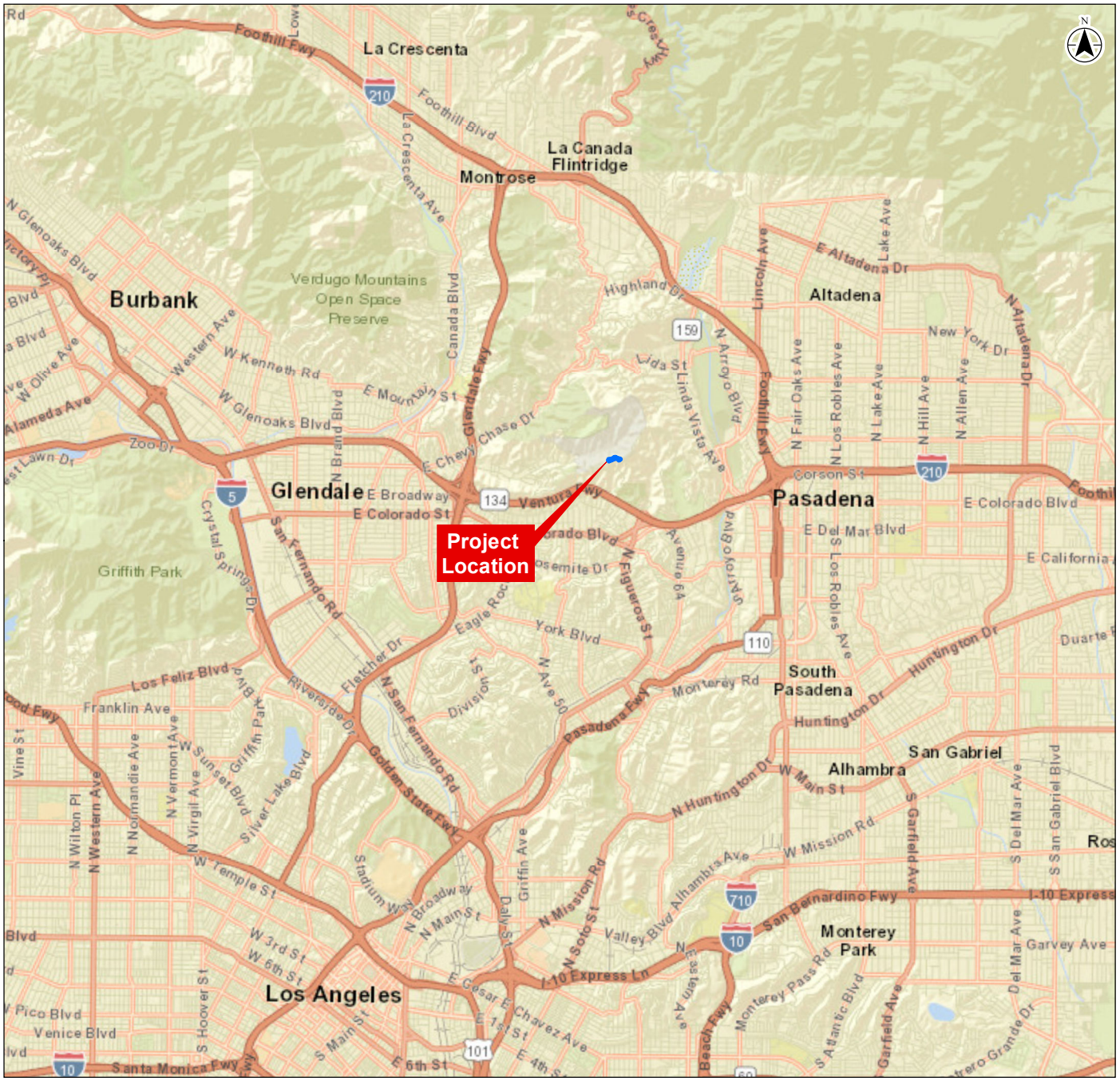
- Small office and small storage building, less than 1,000 square feet each, required for operating and maintaining the Project.

- Fire protection and safety system to comply with National Fire Protection Association and Glendale Fire Department requirements.

- A new 60,000-gallon fire water tank would be constructed to provide water for fire protection. In addition, a new approximately 10,000-gallon water storage tank would be provided for domestic purposes.

- The entire facility would be enclosed in security fencing, and area lighting for safety and security would be provided.

Figure 4 shows the location of major equipment.


Project Location
La Crescenta
Montrose
La Canada Flintridge
Burbank
Verdugo Mountains Open Space Preserve
Glendale
Pasadena
Altadena
Griffith Park
South Pasadena
San Gabriel
Alhambra
Monterey Park
Los Angeles
Foothill Fwy
Ventura Fwy
Glendale Fwy
Pasadena Fwy
San Bernardino Fwy
Santa Monica Fwy
Golden State Fwy
Foothill Blvd
Colorado Blvd
Huntington Dr
Valley Blvd
Monterey Rd
Los Feliz Blvd
Franklin Ave
Venice Blvd
Pico Blvd
Garvey Ave
Del Mar Blvd
Mission Rd
Alhambra Ave
Main St
Broadway
Western Ave
Vermont Ave
Sunset Blvd
Silver Lake Blvd
Riverside Dr
San Fernando Rd
Fletcher Dr
York Blvd
Eagle Rock
Figueroa St
Arroyo Blvd
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Lake Ave
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Lake Ave
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Crescenta Ave
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Linda Vista Ave
Mountain St
Chevy Chase Dr
Brand Blvd
Kenneth Rd
Glenoaks Blvd
Olive Ave
Alameda Ave
Zoo Dr
Lawn Dr
Crystal Springs Dr
Yosemite Dr
Avenue 64
Corson St
Del Mar Blvd
California
Duarte
Rosemead
Temple St
1st St
6th St
3rd St
Griffin Ave
Soto St
Lorena St
Eastern Ave
Beach Fwy
Atlantic Blvd
Garfield Ave
Del Mar Ave
San Gabriel Blvd
Rosemead Blvd
Hoover St
Main St
Stadium Way
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Western Ave
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Virgil Ave
Griffith Park
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Ave 50
Huntington Dr
Monterey Pass Rd
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Blvd
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Alameda Ave
Zoo Dr
Lawn Dr
Crystal Springs Dr
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Los Feliz Blvd
Franklin Ave
Vine St
Wilton Pl
Western Ave
Normandie Ave
Vermont Ave
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Griffith Park
Silver Lake Blvd
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Hoover St
Pico Blvd
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Santa Monica Fwy
Los Angeles
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Mission Rd
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Rosemead Blvd
Garvey Ave
Monterey Pass Rd
Monterey Park
Alhambra
San Gabriel
Pasadena
South Pasadena
Glendale
Burbank
Altadena
La Crescenta
Montrose
La Canada Flintridge
Verdugo Mountains Open Space Preserve
Griffith

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Stantec

Legend

- Proposed Gas Pipeline
- Proposed Water Pipeline
- Proposed Power Plant Facility Boundary
- New Water Tank

0 250 500 Feet

1 in = 500 feet (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet

2. Basemap: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community



Project Location:
Glendale, CA

Project No.: 185804356
Prepared by JT on 2019-02-25
Technical Review by MW on 2019-02-25

Client/Project:
City of Glendale
Biogas Renewable Generation Project
Initial Study

Figure Number/Title:

Figure 2
Proposed Project Elements

C:\Users\jtrook\Desktop\ARCHIVE_205712300\mxd\20190225\Fig2_Proposed_Project_Elements_11x17L.mxd Revised: 2019-02-25 By: jtrook

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Legend

Proposed Power Plant Facility Boundary

Area to be Demolished

0 80 160 Feet

1:961 (At original document size of 11x17)

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Project Location
Glendale, CA

Project No.: 185804356
Prepared by JT on 2019-02-25
Technical Review by MW on 2019-02-25

Client/Project
City of Glendale
Biogas Renewable Generation Project
Initial Study

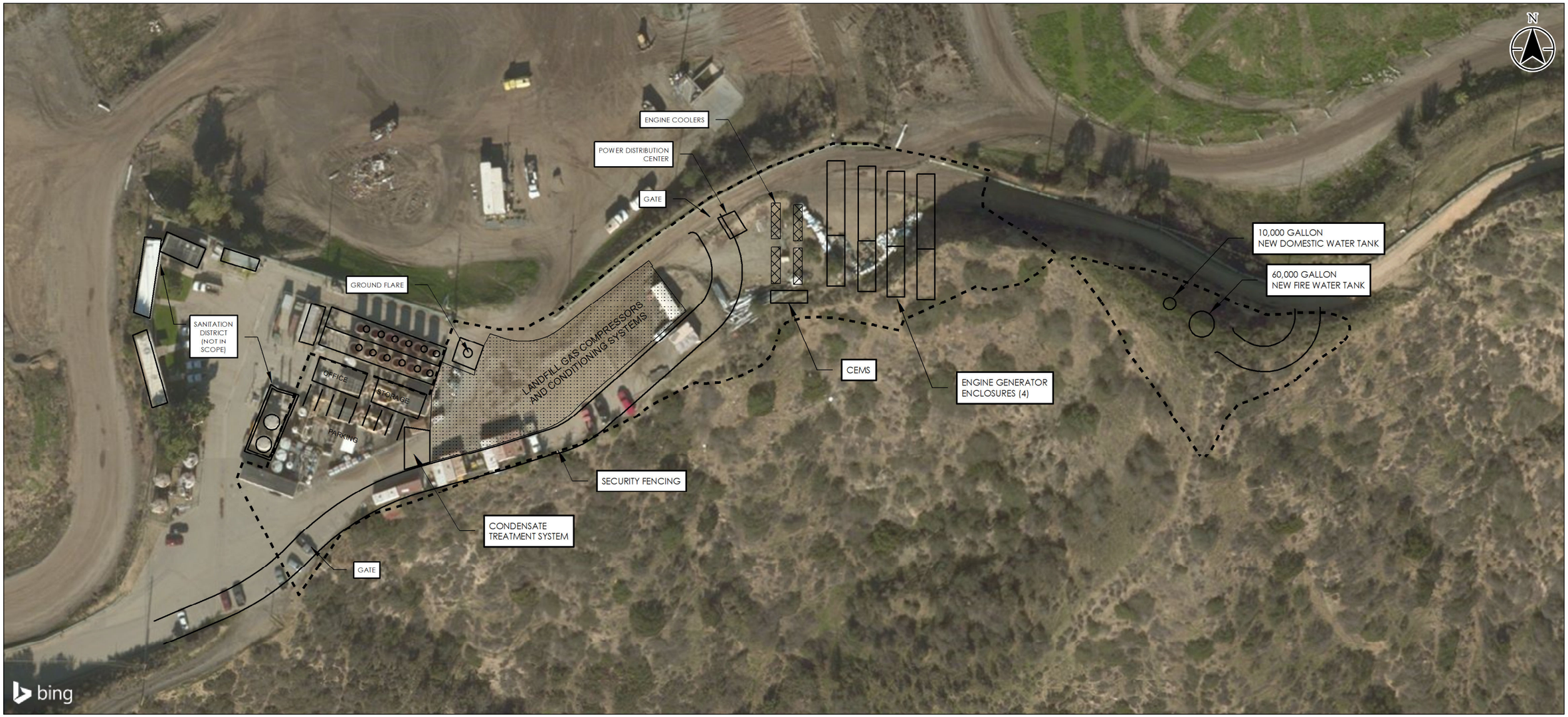
Figure No.
3

Title
Existing Facility Demolition Plan

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Legend

Proposed Power Plant Facility Boundary

0 80 160 Feet

1:961 (At original document size of 11x17)

Stantec

Project Location
Glendale, CA

Project No.: 185804356
Prepared by JT on 2019-02-25
Technical Review by MW on 2019-02-25

Client/Project
City of Glendale
Biogas Renewable Generation Project
Initial Study

Figure No.
4

Title
Major Equipment Location Plan

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2.3.2 Natural Gas and Water Pipelines

Approximately two-thirds of a mile (3,500 linear feet) of natural gas pipeline would be constructed to connect the facility to the existing Southern California Gas Company pipeline system located at the eastern end of Scholl Canyon Drive. This three-inch, schedule 40 steel gas pipeline would be located within the boundary of the landfill, aboveground except for at road crossings. The natural gas would be utilized to assure continuous operations of the internal combustion engines used to burn the naturally occurring LFG. SCAQMD regulations allow the LFG to be augmented by up to a maximum of ten percent of the total fuel consumed by the engines to be natural gas.

A new 60,000-gallon water storage tank for fire protection and a new approximately 10,000-gallon domestic water storage tank would also be installed. To provide water to the Project an approximately one-mile-long, 12-inch steel or high-density polyethylene pipeline would be connected to an existing 16-inch pipeline located north of the landfill on Glenoaks Blvd. This water line would also be aboveground except for road crossings. The water line would be connected to fire hydrants as required by the City of Glendale Fire Department. Additional water pipelines would be installed belowground to connect the power generation facility with the new fire protection and domestic water tanks, which would be located just east of the facility. A water fill-line would be installed belowground extending across the Project facility from a water tie-in at the southwest portion of the Project site to facilitate the new water tanks. The water and natural gas pipelines are shown on Figure 2.

When the unprocessed LFG as comes from the landfill it is saturated with liquids that need to be separated from the LFG, collected, and piped to a condensate treatment system where impurities of the condensate would be removed, collected, and disposed of in accordance with required rules and regulations. After the impurities are removed the remaining liquids would be piped to the existing sewer system located nearby.

During construction, water would be used for dust control, soil compaction, concrete curing, and similar construction activities. All cooling systems would be closed circulating glycol type with no open cooling towers required. Besides using water for domestic purposes, fire protection and construction, no other water consumption is contemplated.

2.3.3 Existing Pipeline Decommissioning

The existing approximately five-mile-long underground pipeline that can be used to carry LFG to the Grayson Power Plant would be abandoned in place. As part of the abandonment process, the line would be purged with an inert gas such as nitrogen and capped with cement plugs or similar items on each end. The existing line follows surface streets within an existing utility corridor.

2.4 PROJECT OPERATIONS

The Project would be constructed and operated adjacent to the existing LFG collection and LFG flaring systems. There are two existing LFG blowers delivering LFG to the LFG flaring system consisting of 12

existing eight-foot diameter, 16-foot high ground flares. The blowers and the flares would remain, and pursuant to the existing SCAQMD permit, would be operating and disposing LFG during Project construction. After the proposed power generation facility is in operation, the flares would only operate as required during power generation facility maintenance or in the unlikely event that there is excess LFG being produced that cannot be used for generating electricity.

A total of four operators and two technicians would be responsible for operations and routine maintenance of the facility. Personnel would be available and on call during non-business hours. Periodic maintenance would be performed by qualified personnel that would travel to the Project site during business hours as needed to perform the required maintenance. Consumables such as lube oils, filters, cleaning media, 19 percent aqueous ammonia, and other similar materials would be delivered to the Project site as they become depleted. Restroom facilities would be provided and the existing sewer system would be utilized.

For security, the entire Project site would be enclosed within an eight-foot-high security fence with automatic gates. Security and safety lighting systems would be provided.

The life of the Project is anticipated to be 20 years, or as long as the LFG can be used to generate electricity; after which time equipment and equipment foundations would be removed and the area would become part of the landfill reclamation plan.

2.5 PROJECT SCHEDULE

Project construction would occur in three phases over an approximately 15- to 18-month period. Parking for construction workers would be provided on-site within the boundary of the landfill. The laydown and equipment storage area would also be within the boundary of the landfill. No offsite parking or material storage would be required.

2.5.1 Phase I – Demolition and Removal of Existing Equipment

Phase I would be implemented over four to five months and would entail demolition and removal of existing equipment from the site to make room for the new power generation facility. Tanks, piping, electrical systems, fencing, containers, office buildings, and other facilities would be dismantled and removed. The existing concrete foundations and existing asphalt roads would be demolished. Asphalt will be used by the Sanitation District for landfill road base and concrete will be used on the Project site for road base**.** Figure 3 shows the demolition plan. During this four to five-month period, approximately five trucks and ten worker vehicles would be driven each way to the Project location each work day.

2.5.2 Phase II – Site Grading and Construction

After Phase I is complete, Phase II would be implemented over the next nine to ten months. Earth moving equipment would be brought to the site for grading, excavation and site preparation and civil construction. It is anticipated that during the grading process approximately 20,000 cubic yards of soil would be

excavated, of which 6,000 cubic yards of soil would be used on-site as fill and 14,000 cubic yards of clean soil would be used as cover at the landfill. Figure 4 shows the extent of grading.

Phase II would also entail building concrete foundations, delivering, and installing electrical generating equipment located within individual enclosures, compressors, LFG and condensate conditioning and treatment systems, electrical switchgear and other equipment and construction materials required to build the power generation facility. Existing landfill condensate and groundwater collection system, piping systems and power lines located within the facility would be relocated. A single, less than 1,000 square foot storage building, and a less than 1,000 square foot office building would be constructed; pipes, conduits, and wires would be delivered and installed; and, security, and fire protection system would also be installed. LFG, natural gas, and water pipelines, and the new water tanks would be installed, and access roads would be constructed (Figure 2 and 4). During this nine to ten-month period, approximately ten trucks and 12 vehicles would be driven each way to the Project location each work day.

2.5.3 Phase III – System Startup

After Phase II is complete, Phase III would be implemented over the next two to three months. Phase III would entail sandblasting, priming and painting the facility, delivery of consumables/materials, and verifying the operational capabilities of all systems required to make the facility safe and operational. During this two to three-month period, approximately three trucks and 20 worker vehicles would be driven each way to the Project location each work day.

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3.0 ENVIRONMENTAL SETTING AND IMPACT ANALYSIS

This Project is evaluated based upon its potential effect on the twenty (20) categories of environmental factors presented below. The environmental factors checked below indicate that this IS determined that the Project may result in potentially significant impacts and those environmental factors will be analyzed in the Project EIR.

☒	Aesthetics	☒	Land Use and Planning
☐	Agriculture and Forest Services	☐	Mineral Resources
☒	Air Quality	☒	Noise
☒	Biological Resources	☐	Population and Housing
☐	Cultural Resources	☐	Public Services
☒	Energy	☐	Recreation
☒	Geology and Soils	☒	Transportation and Traffic
☒	Greenhouse Gas Emissions	☒	Tribal Cultural Resources
☒	Hazards and Hazardous Materials	☒	Utilities and Service Systems
☒	Hydrology and Water Quality	☒	Wildfire

A detailed analysis of environmental impacts will be presented for each resource area (listed above) utilizing the model Environmental Checklist Form found in Appendix G of the CEQA Guidelines Section 15063(f). Impacts to the environment for construction and operation of the Project will be assessed and described, and the level of significance of impacts will be measured against criteria that have been established by regulation, accepted standards, or other definable criteria. The use of an MND is only permissible if all potentially significant environmental impacts assessed in the IS are rendered less than significant with incorporation of mitigation measures.

Each environmental resource area is reviewed by analyzing a series of questions (i.e., Initial Study Checklist) regarding level of impact posed by the project. Substantiation is provided to justify each determination. One of four following conclusions is then provided as a determination of the analysis for each of the major environmental factors.

No Impact. A finding of no impact is made when it is clear from the analysis that the project would not affect the environment.

Less than Significant Impact. A finding of a less than significant impact is made when it is clear from the analysis that a project would cause no substantial adverse change in the environment and no mitigation is required.

Less than Significant Impact with Mitigation Incorporated. A finding of a less than significant impact with mitigation incorporated is made when it is clear from the analysis that a project would cause no substantial adverse change in the environment when mitigation measures are successfully implemented by the project proponent. In this case, the City of Glendale is the project proponent and would be responsible for implementing measures identified in a Mitigation Monitoring Program.

Potentially Significant Impact. A finding of a potentially significant impact is made when the analysis concludes that the Project could have a substantially adverse change in the environment for one or more of the environmental resources assessed in the checklist. In this case, typically preparation of an EIR would be required.

3.1 AESTHETICS

3.1.1 Setting

The Project is located at 3001 Scholl Canyon Road, within the non-operational portion of the Scholl Canyon Landfill (SCLF).[1] The property is located approximately one-half mile north of the 134 Freeway in the City of Glendale. Public access to the SCLF is via Scholl Canyon Road, the northern extension of North Figueroa Street, and Highway 134. The SCLF and the Project site are surrounded by multiple jurisdictions: Glendale to the north, south, east, and west; La Cañada Flintridge to the northeast; Pasadena to the east; South Pasadena to the southeast; Los Angeles to the south, southwest, and west. The site is also located west of Highway 210 north of State Route 34, and east of State Route 2.

The SCLF property consists of a total of 535 acres, 440 acres of which are designated for landfill operations and 95 acres of which are designated for related operations (site access). The 440-acre operation area includes 314 acres of active area (Scholl Canyon) and 126 acres of inactive area (northern canyon). Most of the 314 acres have been graded and/or excavated for landfill purposes, filled with solid waste, and covered with soil. Some areas have been vegetated. The permitted height of the landfill is 1,525 feet above mean sea level (AMSL), with an average top deck elevation of approximately 1,500 feet AMSL (Sanitation Districts of Los Angeles County & AECOM, 2014). The Project will be located on an approximately 2.2-acre segment of land within the non-operational portion of the landfill at an elevation of approximately 1,410 feet AMSL. It is located along the southern boundary of the SCLF, bordering Scholl Canyon Road.

Uses surrounding the Project are primarily residential, with some open space, special recreation (parks, golf course), and commercial development. The Rose Bowl and the Arroyo Seco are located approximately 1.4 miles to the east, separated by the ridge adjacent to the eastern boundary of the SCLF. The Scholl Canyon Golf and Tennis Complex is located on fill on the northwest closed portion of the landfill. Scholl Canyon Ballfields are located midway up E. Glenoaks Boulevard, below the Golf and Tennis Complex. Scholl Canyon Park is located to the west at the base of the landfill along E. Glenoaks Boulevard.

Scenic Vistas

The City is bordered on the north by the San Gabriel Mountains, on the northwest by the Verdugo Mountains, and on the east by the San Rafael Hills. The easternmost edge of the Santa Monica Mountains, in Los Angeles's Griffith Park, lies just beyond the City's boundary to the southwest.

According to the Open Space and Conservation Element of Glendale's General Plan, the Verdugo Mountains and the San Rafael Hills are the most significant physical landmarks in the community because these topographic features flank the central portion of the City. These landforms are important

[1] The "non-operational" portion of the landfill referenced here is that portion of the landfill that is not receiving fill, as distinguished from the inactive portion of the landfill which is where the landfill has been closed and is being used for recreational purposes, such as the Scholl Canyon golf course.

in that they create a dominant visual and physical resource that can be seen throughout the community. In the San Rafael Hills the overall ridgeline form is less definitive in that it is separated by numerous, well developed canyon areas such as Scholl Canyon. Within this area, however, the ridgelines can be readily identified (City of Glendale, 1993).

The City's Open Space and Conservation Element further identifies visual and scenic resources as aesthetic functions that contain natural beauty, such as lush or colorful vegetation, prominent topographical stature, unique physical features, and an interesting visual effect (City of Glendale, 1993). There are no designated scenic vistas near the Project or within other parts of the existing SCLF, nor are there any designated scenic vistas from which the Project would be visible.

According to Map 4-25, "Ridgelines and Streams of the San Rafael Hills", Scholl Canyon is not a primary or secondary ridgeline (City of Glendale, 1993), and therefore is characterized as an area of "low visual sensitivity."

Scenic Highways

There are no state-designated scenic highways in the City of Glendale (Department of Transportation, 2011).

Light and Glare

Existing sources of light and glare in the Project vicinity include automatic night lighting in the equipment and scales facility and portable light towers at the adjacent SCLF. Existing light and glare sources at the Project site consist of security lighting located at the Sanitation District office trailers and overlooking the chemical storage areas. The lights are hooded and pointed downward in order to minimize glare. LFG flaring is contained within open cylinder flares, which flares have no directly visible flames and are not a source of light or glare.

3.1.2 Impact Analysis

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
I. AESTHETICS — Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the	☒	☐	☐	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?				
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☒	☐	☐	☐

Discussion of Impacts

a) Have a substantial adverse effect on a scenic vista?

No impact

There are no designated scenic vistas near the Project site or within other parts of the existing SCLF, nor are there any designated scenic vistas from which the Project would be visible. Therefore, the Project would have no impact on a scenic vista. This factor will not be further analyzed in the EIR.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No impact

There are no state-designated scenic highways in the City of Glendale (DOT, 2017). Therefore, the Project would not damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. There would be no impact. This factor will not be further analyzed in the EIR.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Potentially Significant Impact

The Project would include expansion of and interconnection to the existing facility, which is located within the boundaries of the non-operational portion of an existing landfill. The tallest features will be approximately 40 ft (four exhaust stacks) aboveground surface. Equipment height will be approximately 25 ft. Office and warehouse space will be approximately 12 feet high. The Project could be visible from both urbanized and rural areas, including adjacent ridgelines which could degrade the existing visual character of public views or conflict with applicable zoning and other regulations governing scenic quality. Therefore, the Project may have a potentially significant impact on the existing visual character or quality

of public views of the site and its surroundings and this factor will be further analyzed in the EIR.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Potentially Significant Impact

The Project would represent an expansion of an existing use which is presently a limited source of nighttime light and glare from the existing LFG collection facility. It is possible that lighting during permitted nighttime construction (if any), operational lighting associated with the Project, and use of reflective building materials, could create substantial light or glare which would adversely affect day or nighttime views in the area. Therefore, the Project may have a potentially significant impact and this factor will be further analyzed in the EIR.

3.2 AGRICULTURE AND FORESTRY RESOURCES

3.2.1 Setting

Los Angeles County agricultural production value is 32nd in the State, with a reported value of $230,068,000 in 2014, a 14.6 percent increase from 2013. Los Angeles County's leading agricultural commodities in 2014 included nursery woody ornamentals and plants, onions, hay, and alfalfa (California Department of Food and Agriculture, 2015).

Lands within the Project area are within the City of Glendale, which are zoned as Special Recreation and Restricted Residential. No agricultural use zone currently exists within the City of Glendale, nor are any agricultural zones proposed. There are no agricultural or farmland areas on or within the vicinity of the Project area.

- No Farmland Mapping and Monitoring Program (FMMP- designated Prime farmlands are located within the Project area.
- No FMMP- designated Farmland of Statewide Importance are located within Project area.
- No FMMP- designated Unique Farmland are located within the Project area.
- No Williamson Act designated lands are located within the Project area.
- No Land Conservation Act (LCA) Prime Agricultural Lands are located within or adjacent to the Project area.
- No LCA Non-Prime Agricultural Lands are located within or adjacent to the Project area.
- No Mixed Enrollment Agricultural Lands are located within or adjacent to the Project area.
- None of the lands within or adjacent to the Project area are located within a The Farmland Security Zone (FSZ).

3.2.2 Impact Analysis

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
II. AGRICULTURAL AND FOREST RESOURCES — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined by Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d) Result in loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use, or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion of Impacts

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact

There is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within or adjacent to the Project area. No agricultural use zone currently exists within the City of Glendale, nor are any agricultural zones proposed. Therefore, no impacts related to the conversion of farmland to non-agricultural use would occur. This factor will not be further analyzed in the EIR.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact

The Project would not conflict with existing zoning for agricultural use or a Williamson Act contract because no agricultural zones exist within the City of Glendale, nor is the Project within or adjacent to agricultural land that would require a Williamson Act contract. Therefore, no impacts related to existing agricultural zone use or Williamson Act contracts would occur. This factor will not be further analyzed in the EIR.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526, or timberland zoned Timberland Protection (as defined by Government Code section 51104(g))?

No Impact

The Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Protection because none of the lands within or adjacent to the Project are identified as "forest land," "timberland," or "Timberland Protection" as defined in the Public Resources Code Section 12220(g) and Section 4526, or Government Code Section 51104 (g). Therefore, no impacts related to zoning of forest land, timberland, or Timberland Protection would occur. This factor will not be further analyzed in the EIR.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact

The Project would not result in the loss of forest land or conversion of forest land to non-forest use because none of the lands within and adjacent to the Project are identified as forest land as defined in the Public Code Section 12220(g). Therefore, no impacts related to loss or conversion of forest land would occur. This factor will not be further analyzed in the EIR.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use?

No Impact

The Project would not involve other changes in the existing environment that could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use because there is no farmland or forest land within or adjacent to the Project area. Therefore, no impacts related to conversion of farmland to non-agricultural use or conversion of forest land to non-forest use would occur. This factor will not be further analyzed in the EIR.

3.3 AIR QUALITY

3.3.1 Setting

Existing Site Conditions

The Scholl Canyon Landfill site is located within the South Coast Air Basin (SCAB), which is regulated by the SCAQMD.

Regional Climate

The Scholl Canyon Landfill is located on the western side of the San Gabriel Valley of the SCAB. The basin is a coastal plain with the Pacific Ocean to the southwest, and enclosed by mountains to the north and east which trap air and pollutants in the valley. The regional climate is considered semi-arid and characterized by hot summers, mild winters, and infrequent seasonal rainfall. Glendale is located inland, where the temperatures are generally higher than along the coast due to the lack of sea breezes, with average monthly highs from 65°F to 91°F and lows from 44°F to 62°F. The relative humidity inland is also lower than along the coast (Western Regional Climate Center, 2015).

Due to the topography and weather conditions of the basin, temperature inversions that prevent the vertical mixing of warm and cooler layers of the air tend to form and allow pollutants to remain at ground level. The coastal location of the basin also creates a wind pattern that blows offshore at night and onshore during the day, so that air pollutants formed in the heat of the day tend to stay inland. Major cities like Los Angeles with high population density and heavy vehicular traffic, combined with the climate and geographical configuration, influence air quality in the basin.

Ambient Air Quality

The U.S. Environmental Protection Agency (EPA) establishes national ambient air quality standards (NAAQS) to regulate the concentration of six criteria pollutants in the atmosphere: ozone (O3), carbon monoxide (CO), nitrogen dioxide (NO2), sulfur oxides (SOX), particulate matter (PM10 and PM2.5), and lead (Pb). These pollutants are considered harmful to the public health and the environment.

The EPA designates the attainment status of areas in the nation for each criteria pollutant, based on whether NAAQS are met. A “non-attainment area” does not meet the standard and is subject to a State Implementation Plan to attain the standard. Similarly, the California Air Resources Board (CARB) has set its own stricter ambient air quality standards for California and designates regions in the state as attainment or non-attainment based on those standards. The California ambient air quality standards (CAAQS) include sulfates as a criteria pollutant, which is not addressed in the federal standards.

Both state and federal ambient air quality standards are provided as the maximum allowable concentration over an averaging time of measurement. Maximum concentrations reflect levels of pollutants that can adversely affect human health.

The SCAB is not in attainment with federal or California Ozone standards, California PM10 standards, and both federal and California PM2.5 standards. Because the SCAB exceeds these State and federal ambient air quality standards, the SCAQMD is required to implement strategies to reduce pollutant levels to recognized acceptable standards. The SCAQMD in conjunction with the Southern California Association of Governments (SCAG), CARB, and USEPA recently prepared the 2016 Air Quality Management Plan (AQMP) (SCAQMD, 2017). The purpose of the 2016 AQMP is to provide a comprehensive and integrated program to lead the SCAB into compliance with the federal ozone and particulate matter standards.

3.3.2 Air Quality Impact Analysis

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
III. AIR QUALITY — Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☒	☐	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	☒

Discussion of Impacts

a) Conflict with or obstruct implementation of the applicable air quality plan?

Potentially Significant Impact

The Project would result in air pollutant emissions generated during demolition and construction activities as well as during Project operations that, if not mitigated, may have the potential to conflict with or obstruct implementation of the SCAQMD air quality plan. Therefore, the Project may have a potentially significant impact. The construction and operational air emissions associated with the Project will be further analyzed in the EIR.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?

Potentially Significant Impact

The Project has the potential to generate emissions that exceed significance thresholds established by SCAQMD, specifically when considered cumulatively with other current and projects in the vicinity. As a result, the Project could contribute to a cumulatively considerable net increase in one or more criteria pollutants for which the region is in non-attainment under federal or state standards. Therefore, the Project may have a potentially significant impact and this factor will be further evaluated in the EIR.

c) Expose sensitive receptors to substantial pollutant concentrations?

Potentially Significant Impact

Sensitive receptors are defined as populations that are more susceptible to the effects of pollution than the population at large. The SCAQMD identifies the following as sensitive receptors: residences, schools, daycare centers, playgrounds, medical facilities, retirement homes, prisons, and dormitories or similar live-in housing. The Project is in a special recreation zone but may expose nearby residential sensitive receptors to substantial pollutant concentrations during construction and operation. Therefore, the Project may have a potentially significant impact and this factor will be further evaluated in the EIR.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

No Impact

There may be odors associated with the use or refuel of the diesel and gasoline powered equipment, or from painting activity or other surface treatments (i.e., building roofing or roadway paving) during construction and maintenance activities. These potential sources are expected to be highly localized and are common to conventional construction activities including those that routinely occur throughout the landfill operation area. The LFG gas collection system already exists, and the Project does not include a component that would substantially increase the risk of a release of LFG that could create an odor. Considering the lack of substantial new odor sources associated with the Project and the potential odors related to the existing landfill operation itself, the Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. No impact would occur, and this factor will not be further analyzed in the EIR.

3.4 BIOLOGICAL RESOURCES

3.4.1 Setting

The hillside areas of the City contain seven native plant communities including chaparral, southern oak woodland, southern oak riparian woodland, coastal sage, alluvial scrub, walnut woodland and big cone spruce. Glendale contains habitat areas which could support as many as fourteen rare or endangered plant and animal species as currently identified by the California Department of Fish and Wildlife. Two sensitive plant communities, Riversidian alluvial fan sage scrub and southern oak riparian forest/southern sycamore alder riparian woodland, exist within the City (City of Glendale 1993).

3.4.2 Impact Analysis

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES — Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☒	☐	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☒	☐	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☒	☐	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion of Impacts

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Potentially Significant Impact

The Project includes temporary and permanent disturbances to both previously disturbed and previously un-disturbed land at the SCLF which may have the potential to produce a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. Therefore, the Project may have a potentially significant impact and this factor will be further evaluated in the EIR.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Potentially Significant Impact

The Project includes temporary and permanent disturbances to both previously disturbed and previously un-disturbed land at the SCLF which may have a substantial adverse effect on sensitive natural communities identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. Therefore, the Project may have a potentially significant impact and this factor will be further evaluated in the EIR.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Potentially Significant Impact

The Project includes disturbances to previously undisturbed areas as well as installation of linear pipelines to convey water and natural gas to the proposed power generation facility. Construction activities could have a substantial adverse effect on state or federally protected wetlands, if present. Therefore, the Project may have a potentially significant impact and this factor will be further evaluated in the EIR.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Potentially Significant Impact

The Project includes temporary and permanent disturbances to both previously disturbed and previously un-disturbed land at the SCLF. Security fencing will also be erected around the 2.2-acre power generation facility. Both the disturbances during construction and facility operation/fencing could interfere with the movement of wildlife species or with established native resident or migratory wildlife corridors, if present. Therefore, the Project may have a potentially significant impact and this factor will be further evaluated in the EIR.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Potentially Significant Impact

The Project includes temporary and permanent disturbances to both previously disturbed and previously un-disturbed land at the SCLF which may result in impacts to biological resources including trees, that if present, may conflict with local policies or ordinances protecting them. Therefore, the Project may have a potentially significant impact and this factor will be further evaluated in the EIR.

f) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?

No Impact

According to the Glendale General Plan, there is no habitat conservation plan or natural community conservation plan in the City of Glendale. There is, however, a Significant Ecological Area (SEA) program in the City of Glendale, which is implemented with the intention to preserve these designated sensitive areas. The Project site is not located within an SEA. As such, implementation of the Project would not conflict with the SEA program or other habitat conservation plans. Therefore, there would be no impact. This factor will not be further analyzed in the EIR.

3.5 CULTURAL RESOURCES

3.5.1 Setting

Information on the cultural resources setting of the region and Project site are in the Cultural Resources Assessment Report provided as Appendix A.

3.5.2 Impact Analysis

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
V. CULTURAL RESOURCES — Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☐	☒
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

Discussion of Impacts

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

No Impact

Approximately 20.2 acres of land were inventoried to determine whether cultural resources would be affected by the Project. There were no historical resources identified during the survey and no historical resources were previously documented within the Project area (see Cultural Resources Assessment Report provided as Appendix A). Based on the findings in this study, the Project will not cause a substantial adverse change to the significance of historical resources as defined in Section 15064.5, nor will the Project have impacts on significant local resources as defined in Chapter 15.20 of the City of Glendale Municipal Code; therefore, there would be no impact. This factor will not be further analyzed in the EIR.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

No Impact

Similar in respect to historical resources, above, the potential to encounter archaeological resources is low because the majority of the Project area has been previously disturbed by landfill and other urban

activities. There were no archaeological resources identified during the survey and no archaeological resources were previously documented within the Project area (see Cultural Resources Assessment Report provided as Appendix A). Based on the findings in this study the Project will not cause a substantial adverse change to the significance of archaeological resources as defined in Section 15064.5, nor will the Project have impacts on significant local resources as defined in Chapter 15.20 of the City of Glendale Municipal Code; therefore, there would be no impact. This factor will not be further analyzed in the EIR.

c) Disturb any human remains, including those interred outside of formal cemeteries?

No Impact

Similar in respect to historical and archaeological resources above, the potential to disturb any human remains is low because the majority of the Project area has been previously disturbed by landfill and other urban activities. The Project would not be expected to disturb any human remains, including those interred outside of formal cemeteries; therefore, there would be no impact.

In the event human remains are encountered during construction, State Health and Safety Code Section 7050.5 requires that no further work shall continue at the location of the find until the County Coroner has made all the necessary findings as to the origin and distribution of such remains pursuant to Public Code Resources Code Section 5097.98. The County Coroner must be notified within 24 hours of the discovery, and within two working days of notification of the discovery shall make such a determination. If the County Coroner determines that the remains are or are believed to be Native American, the County Coroner shall notify the NAHC in Sacramento within 24 hours. In accordance with Section 5097.98 of the California Public Resources Code, the NAHC must immediately notify those persons it believes to be the most likely descended from the deceased Native American. The descendants shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the County Construction Engineer, the treatment and disposition of the human remains. This factor will not be further analyzed in the EIR.

3.6 ENERGY

3.6.1 Setting

There are a number of state and local regulations requiring energy efficiency. These include but are not limited to the state's Renewable Portfolio Standard (RPS) requirements which mandate an increasing use of renewable energy supplies for electricity generation and the City's Greener Glendale Plan for Municipal Operations intended to promote sustainability.

3.6.2 Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
VI. ENERGY — Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☒	☐	☐	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☒	☐	☐	☐

Discussion of Impacts

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Potentially Significant Impact

Project construction would result in the consumption of petroleum associated with the use of gasoline or diesel-powered trucks, worker vehicles, and grading/construction equipment. Operation of the Project would also combust LFG and natural gas. Project operation would also include the consumption of electricity to operate ancillary facility equipment and lighting. While the LFG and natural gas would be beneficially used to produce electricity, the manner in which it is utilized, or the Project's use of other energy sources described above could result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, the Project may have a potentially significant impact and this factor will be further evaluated in the EIR.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Potentially Significant Impact

The Project would convert LFG to electricity and feed that electricity into existing transmission lines located at Scholl Canyon. While landfill gas is permitted to be flared under existing air permits, it is a

cleaner and more beneficial option to use LFG as fuel for power generation. Utilizing the RPS eligible LFG for electricity generation assists the City in increasing its RPS and meeting the state's RPS requirements. The Project is therefore not expected to conflict with or obstruct the state's RPS Program or the City's ability to meet those requirements. However, the Project could conflict with the Greener Glendale Plan for Municipal Operations if the use of LFG, natural gas, liquid petroleum fuels, electricity, and other building materials were not consistent with the objectives and strategies in the plan. Therefore, the Project may have a potentially significant impact and this factor will be further evaluated in the EIR.

3.7 GEOLOGY AND SOILS

3.7.1 Setting

Regional Hydrogeology

According to the California Department of Water Resources (CDWR) Bulletin 118 Report, the Project site is not located within a mapped groundwater basin. The closest groundwater basin is the San Fernando Valley Groundwater Basin of the South Coast Hydrologic Region (4-12), located to the west of the Project site. The basin is approximately 226 square miles and is bounded on the north and northwest by the Santa Susana Mountains, on the north and northeast by the San Gabriel Mountains, on the east by the San Rafael Hills, on the south by the Santa Monica Mountains and Chalk Hills, and on the west by the Simi Hills (DWR, 2004).

Regional Geology

The Project site is located in the northwestern portion of the Transverse Range Geomorphic Province in the southwestern part of California. The region is separated by an east-west trending series of steep mountain ranges and valleys, sub-parallel to faults branching from the San Andreas Fault. The Project site resides in the portion of the Province drained by the Los Angeles River. Based on interpretation of the ground surface elevation contour lines drawn on the topographic map, the Project site is located at an elevation of approximately 1,410 to 1,485 feet. The topography in the vicinity of the Project site is hilly, with a slope to the south then southwest toward the Los Angeles River.

Local Geology

Based on information depicted on the 2005 Geologic Map of Los Angeles, the Project site is underlain by Mesozoic age quartz diorite deposits composed of plagioclase feldspar (oligoclase- andesine, hornblende, biotite, and minor quartz). Sometimes referred to as the Wilson Diorite, this unit is the most widespread bedrock type in the Glendale area. The bulk of the Verdugo Mountains and the San Rafael Hills are comprised of quartz diorite. The color of the rock is typically a light gray to light brown. The texture is generally medium grained and the structure is massive. In the central part of the San Rafael Hills, just north of Highway 134, at the southeastern margin of Glendale, the mineral grains are aligned, giving the rock a distinct banding or “foliation” resulting in a somewhat layered structure. In this area, the structure dips 60 to 70 degrees to the east and northeast (Earth Consultants International, 2003).

Site Surface Conditions

The Project site is bordered by natural slopes on the south and southeast. The northern, western, and northeastern sides border the existing landfill.

Most of the area to be developed is relatively flat, at an elevation of approximately 1,410 feet. The surface begins to steepen in the northeastern portion of the site, rising to almost 1,500 feet east of the northeast corner of the site, where a cut slope is proposed. The ground surface has been cleared and is devoid of

vegetation, except in limited areas in the northeastern part of the Project site, where portions of the landfill are exposed at the surface. Existing structures and equipment associated with operation of the landfill are located throughout the area.

Seismicity

The Project site, as is most of California, is located in a seismically active area. The Project site is not located within a currently mapped California Earthquake Fault Zone.

Landslides, Slope Stability, and Liquefaction

Landslides are not listed in the Safety Element of the Glendale General Plan as an overlay constraint within Scholl Canyon (identified as "Low landslide incidence"). The SCLF is shown in the General Plan Slope Instability Map (Plate 2-4) as outside any areas identified as having slope instability (Low-Very High). The Project site is also outside of Liquefaction Hazard Zones identified on the Glendale General Plan Hazards Map Plate P-1. Landslide Hazard Zones appear on Plate P-1 to be located directly to the south of the Project site, most likely on the steep slopes where Scholl Canyon Road is located.

3.7.2 Impact Analysis

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
VII. GEOLOGY AND SOILS — Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☒	☐	☐	☐
ii) Strong seismic ground shaking?	☒	☐	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☒	☐	☐	☐
iv) Landslides?	☒	☐	☐	☐
b) Result in substantial soil erosion or the loss of topsoil?	☒	☐	☐	☐
c) Be located on strata or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☒	☐	☐	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial direct or indirect risks to life or property?	☒	☐	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

Discussion of Impacts

Potentially Significant Impact

a) *Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:*

i. *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?*

Potentially Significant Impact

The SCLF and the approximately 2.2-acre site lying within the inactive portion of the landfill proposed for the Project, is located in a seismically active area and may experience strong ground motions during a large earthquake event. The Alquist-Priolo Earthquake Fault Zoning Act mitigates fault rupture hazards by prohibiting the location of structures for human occupancy across the trace of an active fault. The Act requires the State Geologist to delineate "Earthquake Fault Zones" along faults that are "sufficiently active" and "well defined." The boundary of an "Earthquake Fault Zone" is generally 500 feet from major active faults and from 200 to 300 feet from well-defined minor faults. While the Project site does not lie within or near a State of California Alquist-Priolo Earthquake Special Studies Zone (A-P Zone), substantial adverse effects could occur from rupture of another fault, if present. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

ii. *Strong seismic ground shaking?*

Potentially Significant Impact

Please see response to i, above.

iii. *Seismic-related ground failure, including liquefaction?*

Potentially Significant Impact

Liquefaction occurs when loose, unconsolidated, water-laden soils are subject to shaking, causing the soils to lose cohesion. Subsurface conditions underlying the Project site mainly consist of dense to very dense silty sands over slightly weathered, hard bedrock, combined with very deep groundwater levels in an area where water bearing soils are not present. The Project site is outside of Liquefaction Hazard Zones identified on the Glendale General Plan Hazards Map Plate P-1. However, the City will collect and evaluate additional information to further assess site specific conditions applicable to the Project. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

iv. Landslides?

Potentially Significant Impact

Landslides are not listed in the Safety Element of the Glendale General Plan as an overlay constraint within Scholl Canyon (identified as “Low landslide incidence”). A cut native slope is proposed at the northeast end of the Project site which may lead to the potential for landslides. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

b) Result in substantial soil erosion or the loss of topsoil?

Potentially Significant Impact

Construction of the Project will involve soil disturbing activities that may have the potential to result in soil erosion and loss of topsoil due to wind and/or water erosion. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction of collapse?

Potentially Significant Impact

The Project has the potential to be located on a geologic unit that could be geologically unstable and potentially result in lateral spreading, subsidence, liquefaction or collapse. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building code (1997), creating substantial risks to life or property?

Potentially Significant Impact

The City will collect and evaluate additional information on expansive soil to further assess site specific

conditions applicable to the Project. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact

The Project does not include the construction of new septic tanks or alternative wastewater disposal systems. Therefore, there would be no impact. This factor will not be further analyzed in the EIR.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact

Similar in respect to historical resources and archaeological resources, above, the potential to encounter unique paleontological resources is low because the majority of the Project area has been previously disturbed by landfill and other urban activities. The Project will not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; therefore, there would be no impact. This factor will not be further analyzed in the EIR.

3.8 GREENHOUSE GAS EMISSIONS

3.8.1 Setting

Environmental Setting

Global warming is the observed increase in the average temperature of the Earth's surface. The effects of increasing greenhouse concentration in the atmosphere may contribute to global warming. The major greenhouse gases (GHG)s are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

GHGs in the atmosphere absorb solar radiation reflected by the earth, which leads to warming of the atmosphere. GHGs also radiate energy both upwards toward space and downward to the surface of the earth. The downward direction of GHGs radiation is commonly called the "greenhouse effect."

Most GHGs can be produced through biogenic (natural) and anthropogenic (human-caused) processes. Biogenic sources include the combustion of biological material in forest fires, fermentation, decomposition or processing of biologically based materials. Some of the main sources of greenhouse gases due to human activity are the burning of fossil fuels, agricultural activities, and the use of chlorofluorocarbons (CFCs) in refrigeration and fire suppression systems.

Global Warming Potential is a measure of how much a greenhouse gas contributes to global warming relative to the heat contributed by a similar mass of carbon dioxide. CH4 and N2O have GWP of 21 and 310 times that of CO2, respectively. For this analysis, greenhouse gases other than CO2 will be scaled to a single factor to determine the equivalent amount of CO2 (CO2e) for each gas. For CO2, the scaling factor is 1.0. The scaling factors for CH4 and N2O are 21 and 310, respectively. USEPA develops emission factor tables to estimate the greenhouse gas emissions from various equipment and activity.

3.8.2 Impact Analysis

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
VIII. GREENHOUSE GAS EMISSIONS — Would the Project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐
b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☐	☐	☐

Discussion of Impacts

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Potentially Significant Impact

Construction and operation of the Project could increase GHG emissions which have the potential to either individually or cumulatively result in a potentially significant impact on the environment. The Project may have a potentially significant impact and this factor will be further evaluated in the EIR.

b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

Potentially Significant Impact

While landfill gas is permitted to be flared under existing air permits, it is a cleaner and more beneficial option to use LFG as fuel for power generation. Utilizing the RPS eligible LFG for electricity generation assists the City in increasing its RPS and meeting the state's RPS requirements. The Project is therefore not expected to conflict with or obstruct the state's RPS Program, AB 32, or the City's ability to meet those requirements. However, the Project could conflict with the Greener Glendale Plan if it were not consistent with the objectives and strategies in the plan. Therefore, the Project may have a potentially significant impact and this factor will be further evaluated in the EIR.

3.9 HAZARDS AND HAZARDOUS MATERIALS

3.9.1 Setting

Hazardous material can be defined as any material that, because of its quantity, concentration, or physical or chemical characteristics, may pose a hazard to human health or the environment. Hazardous materials can be categorized as flammable and combustible material, toxic material, corrosive material, oxidizers, aerosols, and compressed gases. They can be highly reactive and cause irritation to skin and eyes. The term "hazardous substances" encompasses chemicals regulated by both the United States Department of Transportation (DOT) hazardous materials regulations and the EPA hazardous waste regulations. Hazardous wastes require special handling and disposal because of their potential to damage to public health and the environment. The SCLF is classified as a Class III nonhazardous landfill facility that accepts municipal solid waste and is not a generator of, or repository for, hazardous wastes.

Hazardous Waste Cleanup Sites

No Cortese List cleanup sites are located within an approximately two-mile radius of the Project site.

Wildland Fires

Wildland fires (wildfires) can occur in open spaces containing a mixture of flammable and nonflammable vegetation cover. The native areas surrounding the active landfill operation area are vulnerable to wildfires due to the steep topography, highly flammable scrub vegetation and limited access for firefighting. The County Fire Department has published Fire Hazard Severity Zone Maps for the City and has listed the Project site, as shown on Tile 4 of these maps, in the Very High Fire Hazard Zone. The Fire Department has also published a map identifying Proposed High Fire Hazard Areas. The SCLF and the surrounding area are within the current High Fire Hazard Area.

Surrounding Land Uses

Surrounding land uses within one mile of the Project, including natural gas and water pipeline alignments, consist exclusively of residential and recreational land uses within the Cities of Glendale, Pasadena, and Los Angeles. The nearest residence is located approximately one-half mile to the east. The Hollywood Burbank Airport is located approximately ten miles to the west. The Project is approximately 9.75 miles outside the airport's area of influence boundary at the nearest point. The closest wastewater treatment plant is the Los Angeles- Glendale Water Reclamation Plant, approximately 5 miles to west. The nearest school, Dahila Heights Elementary School, is located approximately 1 mile to the southwest of the Project site. Hospital/medical facilities and elderly care facilities are located within the City, approximately five to eight miles to the west from the Project site. The Glendale Fire Department (GFD) would be the first responder to a fire at the Project site. The closest fire station, Station 23, located at 3303 E. Chevy Chase Drive, is approximately five miles from the Project.

3.9.2 Impact Analysis

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
IX. HAZARDS AND HAZARDOUS MATERIALS — Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☒	☐	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☒	☐	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use compatibility plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☒	☐	☐	☐

Discussion of Impacts

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Potentially Significant Impact

The Project may involve the routine transport, use, or disposal of hazardous materials during demolition, construction, and operation. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Potentially Significant Impact

Accidents involving hazardous materials during construction could occur from small-scale releases during refueling or routine maintenance of equipment could create a hazard to the environment. An accidental release of hazardous materials such as aqueous ammonia used in the engine emissions control system during Project operation could also create a significant hazard to the public. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact

No schools are located or proposed to be located within 0.25 mile of any of the Project components. The nearest school, Dahila Heights Elementary, is located approximately 1 mile to the southwest of the Project site. Therefore, no impacts would occur. This factor will not be further analyzed in the EIR.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact

As described above, no Cortese List (Government Code Section 65962.5) cleanup sites are located within an approximately two-mile radius of the Project site. Therefore, there would be no impact. This factor will not be further analyzed in the EIR.

e) For a project located within an airport land use compatibility plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact

The Project is located approximately 10 miles from the nearest airport, Hollywood Burbank, in Burbank. The project location would not result in a safety hazard for people residing or working in the Project area. Therefore, there would be no impact. This factor will not be further analyzed in the EIR.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact

The Project would comply with all applicable emergency response plans and emergency evacuation plans adopted in accordance with Area Plan and Business Plan regulations (Health and Safety Code, §25500-25520 and *Cal. Code Reg., tit. 19, § 2720 et seq.*). In addition, the Project does not include construction of residences or facilities that would require significant evacuation. As such, the Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, no impacts are anticipated. This factor will not be further analyzed in the EIR.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Potentially Significant Impact

The Project and the surrounding area are within the current City's designated High Fire Hazard Area. Project activities would include the use of flammable/combustible materials and potential sources of ignition including but not limited to equipment engines, welding, and LFG flares. Construction, maintenance, and operation of the Project may expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

3.10 HYDROLOGY AND WATER QUALITY

3.10.1 Setting

Regional Hydrogeology

According to the California Department of Water Resources (CDWR) Bulletin 118 Report, the Project site is not located within a mapped groundwater basin. The closest groundwater basin is the San Fernando Valley Groundwater Basin of the South Coast Hydrologic Region (Number 4-12), located to the west of the Project site. The basin is approximately 226 square miles and is bounded on the north and northwest by the Santa Susana Mountains, on the north and northeast by the San Gabriel Mountains, on the east by the San Rafael Hills, on the south by the Santa Monica Mountains and Chalk Hills, and on the west by the Simi Hills (CDWR, 2004).

The surface and ground waters of this basin are used extensively for domestic, agricultural, and industrial purposes. The water-bearing sediments consist of the lower Pleistocene Saugus Formation, Pleistocene and Holocene age alluvium. The ground-water in this basin is mainly unconfined with some confinement within the Saugus Formation in the western part of the basin and in the Sylmar and Eagle Rock areas. Regional groundwater flow direction is generally reported toward the south southwest (CDWR Bulletin 118, 2004).

Third Quarter 2015 quarterly groundwater monitoring results at the adjacent site (Inactive Scholl Canyon Landfill) reported the depth to water to be approximately 50 feet below ground surface (bgs) (SCS Engineers, 2015).

The SCLF and Project site are part of the Los Angeles River Watershed, which receives drainage from an 834 square-mile area of Los Angeles County, with headwaters in the Santa Monica Mountains, Simi Hills, Santa Susana Mountains and San Gabriel Mountains. The upper watershed contains a network of flood control dams and debris basins that flow to the Los Angeles River. The lower part of the river flows in a concrete-lined channel through a heavily urbanized portion of the county before becoming a soft bottom channel as it discharges into the San Pedro Bay. The Los Angeles River passes the SCLF and project site approximately four miles to the west. Stormwater from the SCLF enters the Los Angeles River south of the Glendale Narrows via a storm drain system with a tributary in Glenoaks Boulevard just west of the SCLF (Sanitation Districts of Los Angeles County & AECOM, 2014).

Flood Zones

The Project site is located in a Federal Emergency Management Agency (FEMA) National Flood Insurance Program Category Zone D on the Flood Insurance Rate Map, indicating the absence of any flood hazard.

The SCLF is at the headwaters of the Scholl Canyon sub-watershed. The majority of the annual rainfall in the region occurs from November through April. The Los Angeles Department of Public Works (LADPW) estimates the average seasonal rainfall of Los Angeles County to be 15.65 inches. Typical rainfall at

SCLF averages approximately 18.32 inches per year (based on actual rainfall measurements recorded by an on-site precipitation gauge between 1982 and 2010).

Local Stormwater Infrastructure

In accordance with State requirements, the current permanent stormwater diversion and control facilities at the SCLF have been designed to accommodate a calculated 100-year, 24-hour storm. The system of down drains and drainage structures transport stormwater via a concrete box culvert under Scholl Canyon Park to the Scholl Debris Basin. The debris basin has a design debris capacity of 8,400 cubic yards and an 80-feet wide concrete spillway that discharges to a concrete box culvert at the upstream end of a branch of the LADPW's stormwater collection and conveyance system (Sanitation Districts of Los Angeles County & AECOM, 2014).

3.10.2 Impact Analysis

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY — Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☒	☐	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would	☒	☐	☐	☐
i) result in substantial erosion or siltation on- or off-site;	☒	☐	☐	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☒	☐	☐	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☒	☐	☐	☐
iv) impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☒	☐	☐	☐

Discussion of Impacts

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Potentially Significant Impact

Construction, maintenance, and operation activities could result in the degradation of water quality, releasing sediment, oil and greases, and other chemicals into the existing storm drain system. Construction materials such as fuels, solvents, and paints may present a risk to surface water quality. Refueling and parking of construction vehicles and other equipment on-site during construction may result in oil, grease, or related pollutant leaks and spills that may discharge into the storm drain system. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

No impact

The Project site is not located within a mapped groundwater basin. The closest groundwater basin is the San Fernando Valley Groundwater Basin of the South Coast Hydrologic Region (Number 4-12), located to the west of the site. Considering the fact that no groundwater recharge potential exists at the existing site and expansion of the existing facility would have no bearing on groundwater recharge capabilities, there would be no impact. This factor will not be further analyzed in the EIR.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would

i. result in substantial erosion or siltation on- or off-site;

Potentially Significant Impact

Some grading would be required in order to expand the footprint of the existing facility that may result in substantial erosion or siltation on- or off-site. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

Potentially Significant Impact

The Project includes grading and an increase in impervious surfaces compared to existing site conditions that may alter later drainage patterns and substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

Potentially Significant Impact

Refer to c) i. and ii. for impact discussion. The Project may create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

iv. impede or redirect flood flows?

No Impact

The Project site is located in a FEMA National Flood Insurance Program Category Zone D on the Flood Insurance Rate Map, indicating the absence of any flood hazard. There would be no impact related to flooding. This factor will not be further analyzed in the EIR.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

No impact

The Project area is located over 20 miles from the Pacific Ocean, at an elevation of 1,410 feet AMSL. Tsunamis typically affect coastlines and areas up to ¼-mile inland. Due to the Project's distance from the coast, potential impacts related to a tsunami are non-existent. Additionally, the Project site is not susceptible to impacts resulting from a seiche because of its distance from any enclosed bodies of water. The Project site is located in a FEMA National Flood Insurance Program Category Zone D on the Flood Insurance Rate Map, indicating the absence of any flood hazard. There would be no potential impact. This factor will not be further analyzed in the EIR.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Potentially Significant Impact

The Project site is not located within a mapped groundwater basin. However, as discussed above and because the Project has the potential to result in discharges of pollutants that could adversely affect water quality, the Project could obstruct implementation of a water quality control plan. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

3.11 LAND USE AND PLANNING

3.11.1 Setting

Existing Site Land Use and Zoning

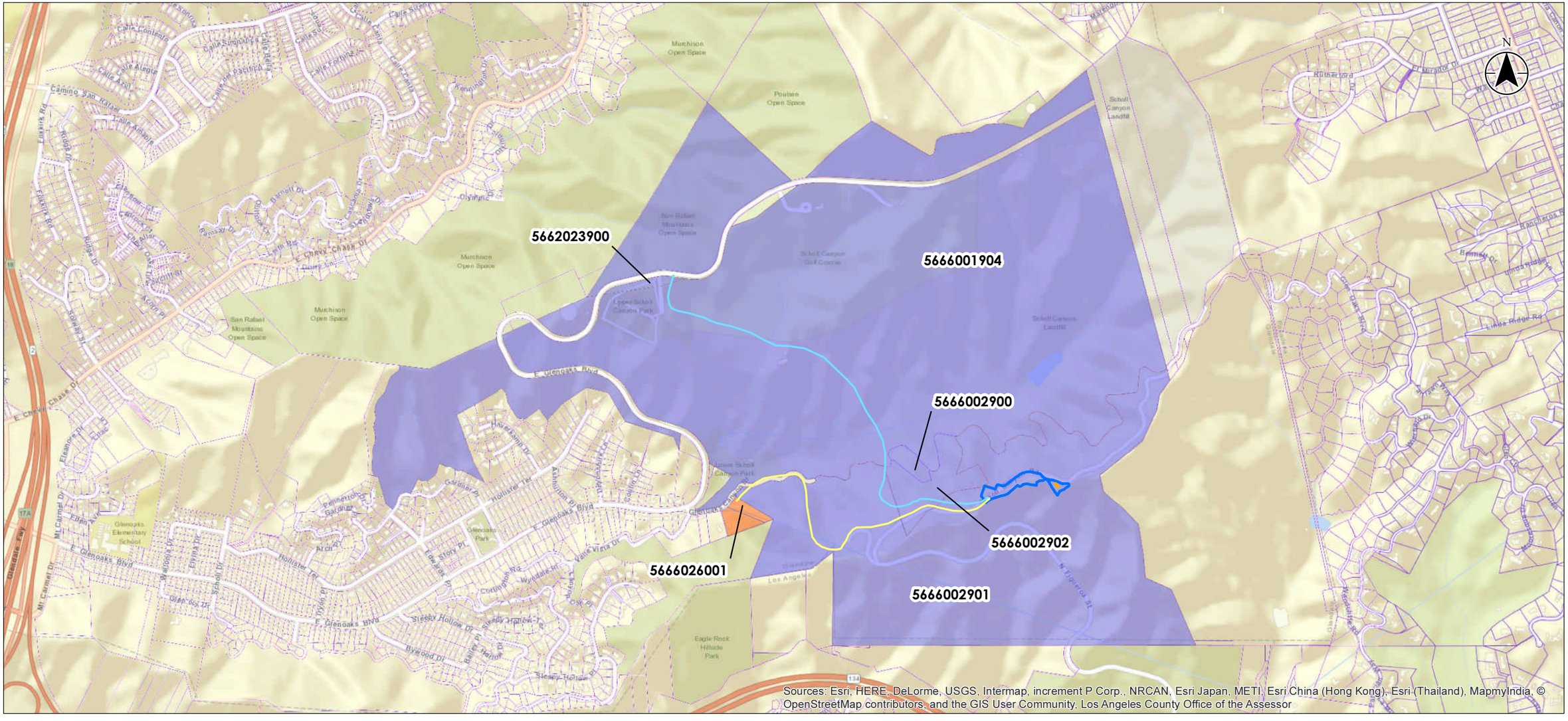
The SCLF is a cooperative effort of the City, the County of Los Angeles and the Los Angeles County Sanitation Districts. The landfill site occupies approximately 535 acres and is operated by the Sanitation Districts pursuant to a Joint Powers Agreement (JPA) between the City, County, and Sanitation Districts on lands owned by the City, County, and Southern California Edison Company. The SCLF is classified as a Class III nonhazardous landfill facility that accepts municipal solid waste and is not a generator of, or repository for, hazardous wastes. The active landfill site is 314 acres, within which refuse has been landfilled on 239 acres.

GWP either combusts LFG from the SCLF at the City's Grayson Power Plant or it is combusted in flares at the SCLF. Gathering and combustion of the LFG is a mitigation measure for SCAQMD to prevent its release into the environment. The LFG, when combusted at Grayson is transported to Grayson from the SCLF via a pipeline that is approximately five miles long.

The Project area is located within the SCLF facility boundary and directly north between E. Glenoaks Boulevard. and the northwest corner of the SCLF and traverses six parcels, located within the City of Glendale, Los Angeles County, California, as shown in Table 3 and Figure 5.

Table 3 Project Site Parcels, Zoning, and Land Use Designation

Project Component	Assessor's Parcel Number	Zoning	Land Use Designation
Proposed Main project area, Gas Line, Water Line	5666002901	SR- Special Recreation	Recreation/Open Space
Proposed Main project area, Gas Line, Water Line	5666002902	SR- Special Recreation	Recreation/Open Space
Proposed Main project area, Gas Line, Water Line	5666001904	SR- Special Recreation	Recreation/Open Space
Proposed Main project area	5666002900	SR- Special Recreation	Recreation/Open Space
Proposed Gas Line	5666026001	R1R- Restricted Residential	Very Low Density/Open Space
Proposed Water Line	5662023900	SR- Special Recreation	Recreation/Open Space



Legend

- Proposed Gas Pipeline
- Proposed Water Pipeline
- Proposed Power Plant Facility Boundary
- New Water Tank

Parcel Zoning & Land Use

- R1R - Restricted Residential, Very Low Density/Open Space
- SR - Special Recreation, Recreation/Open Space
- Parcels

0 1,000 2,000 Feet

1:12,000 (At original document size of 11x17)

Stantec

Project Location
Glendale, CA

Project No.: 2057123300
Prepared by JT on 2017-07-18
Technical Review by CH on 2017-07-18

Client/Project
City of Glendale
Biogas Renewable Generation Project
Initial Study

Figure No.
5

Title
Project Area Parcels, Zoning, and Land Use Designations

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The Project and water pipeline components of the Project are designated as Recreation/Open Space. The proposed gas pipeline component would be located on lands designated as Recreation/Open Space and Low Density Residential. The Project and water pipeline components of the Project are zoned as Special Recreation (SR). The proposed gas pipeline component is zoned as SR and Restricted Residential (R1R).

Surrounding Land Use

Surrounding land use is comprised of residential properties and E. Glenoaks Boulevard. to the west; a golf course, open space and E. Glenoaks Boulevard. to the north; open space and Scholl Canyon Road to the south; and open-space and disturbed land to the east.

3.11.2 Impact Analysis

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
XI. LAND USE AND PLANNING — Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☒	☐	☐	☐

Discussion of Impacts

a) Physically divide an established community?

No Impact

The Project would not physically divide an established community because there are no existing residential uses or communities within the landfill property. In addition, the Project would not involve the displacement of any residential uses of any land designated for residential uses within any of the parcels on which any components of the Project traverses. Therefore, there would be no impact. This factor will not be further analyzed in the EIR.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Potentially Significant Impact

The Project will occur on lands that are designated Recreational/Open Space and Low Density/Residential in the City of Glendale General Plan Land Use Element. These lands have zoning

designations of SR and R1R. A Conditional Use Permit (CUP) is required for a new utility/transmission facility development from the City and the Project would be subject to conformance with a number of plans, policies or regulations adopted for the purpose of avoiding or mitigating an environmental effect. The Project may also interfere with post-landfill closure plans to utilize landfill property for development of recreation land uses. Conflicts with these plans, policies or regulations may have a potentially significant impact. This factor will be further evaluated in the EIR.

3.12 MINERAL RESOURCES

3.12.1 Setting

In accordance with the Open Space and Conservation Element, the City is required to provide for the conservation, development, and utilization of mineral resources. In order to comply with the requirements, the States' Surface Mining and Reclamation Act of 1975 (SMARA) was enacted for the purpose of establishing mineral resource management policies within the general plan by local agencies.

Primary Mineral Resources

The State Geologist mapped the Glendale area for aggregate resources which includes rock, sand, and gravel. There are currently three Regionally Significant Mineral Resource Zone (MRZ) categories designated by the State Geologist of varying significance. These categories are MRZ-1, MRZ-2 and MRZ-3, defined as follows:

MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.

MRZ-2: Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood of their presence exists.

MRZ-3: Areas containing mineral deposits the significance of which cannot be evaluated from available data.

The Project area is designated as MRZ-3 where inferred occurrences of resources are of undetermined significance or has not been studied for the presence of aggregate material resources (City of Glendale, 1993). There are no mineral resource zones in the City that are of statewide or regional significance.

3.12.2 Impact Analysis

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
XII. MINERAL RESOURCES — Would the project:				
a) Result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Discussion of Impacts

a) Result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the state?

No Impact

The Project area is designated as MRZ-3 where there are areas containing mineral deposits the significance of which cannot be evaluated from available data. Although data on mineral deposits is unavailable, the Project is located within the boundaries of a landfill and therefore does not have the potential to adversely impact known mineral resources through loss of availability, nor is it located in an area designated as MRZ-2. Therefore, no impact is anticipated. This factor will not be further analyzed in the EIR.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No Impact

No locally important mineral resources are delineated within the Project area or any other specific plan or land use plans. Therefore, implementation of the Project would have no impact on the loss of availability of locally important mineral resources. Therefore, no impact is anticipated. This factor will not be further analyzed in the EIR.

3.13 NOISE

3.13.1 Setting

The Project site is located in the City of Glendale. The potentially impacted noise sensitive receptors are located in the City of Glendale, Pasadena, and Los Angeles. Residences to the west and north of the Project site are primarily located in the City of Glendale, while most residences to the east and south are located in the City of Pasadena. Additionally, residential areas to the southeast along SR-134 are located in the City of Los Angeles. The closest residence is over 2,000 feet from the proposed power generation facility site.

3.13.2 Impact Analysis

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
XIII. NOISE — Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☒	☐	☐	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion of Impacts

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Potentially Significant Impact

Noise increases from the Project could be generated on a short-term and long-term basis. Short-term noise levels are associated with demolition, excavation, grading, and construction. Short-term noise levels would be higher than existing ambient noise levels in the Project area but would cease upon completion of construction. Long-term noise levels would be associated with the power generation facility operation and maintenance which may generate a substantial temporary or permanent increase in

ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Potentially Significant Impact

Vibration refers to groundborne noise and perceptible motion. Typical sources of groundborne vibration are construction activities (e.g., blasting, pile driving, and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may be discernable but without the accompanying effects (e.g., shaking of a building). Construction activities for the Project could create perceptible groundborne vibration. The Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact

The Project is not located within an airport land use plan or within two miles of a public or public use airport. The closest public airport is the Hollywood Burbank Airport located approximately ten miles west of the Project. No impact would occur. This factor will not be further analyzed in the EIR.

3.14 POPULATION AND HOUSING

3.14.1 Setting

The City of Glendale's population as of 2010 was estimated at 191,719, placing it as the fourth largest city in Los Angeles County. Approximately 77 percent of zoned land use in Glendale is residential land. Glendale contains 778.8 acres of commercially zoned land, with only 535.4 acres used. Less than three percent of Glendale's total area is industrially zoned land. The Project site is located within the boundaries of an active municipal landfill at the uppermost portion of Scholl Canyon. The closest housing units are located in the residential community of Glenoaks Canyon, along the Glenoaks Boulevard corridor, approximately 0.5 acres directly west of the SCLF (City of Glendale, 2014). The uppermost portion of the Linda Vista neighborhood in the City of Pasadena abuts the ridgeline to the east of the SCLF, approximately one-half mile from the Project site. A small portion of the community of Chevy Chase within Glendale is on the other side of the ridgeline near the northeast corner of the SCLF property boundary, approximately 0.85 miles from the Project site.

3.14.2 Impact Analysis

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
XIV. POPULATION AND HOUSING — Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion of Impacts

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact

The Project will convert methane-rich renewable LFG generated at the SCLF to fuel and produce electricity from a power generation facility. It will be operated by a total of four full-time personnel and two on call technicians from existing local resources. The Project does not include the construction of new homes or businesses or expand the capacity of any roads or existing infrastructure for residential uses, however, the Project will require construction of new infrastructure to support the Project. This

infrastructure will not induce substantial population growth because all the infrastructure is associated with the LFG capture, generation and operating facilities. The Project will not change or conflict with the existing population, employment, housing policies, projections or distributions established by government agencies with jurisdiction over the Project; therefore, there would be no impact. This factor will not be further analyzed in the EIR.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact

The Project is located within the footprint of an existing landfill and would not include any activities that would affect or displace existing housing; therefore, there would be no impact. This factor will not be further analyzed in the EIR.

3.15 PUBLIC SERVICES

3.15.1 Setting

Fire Protection

Glendale Fire Department (GFD)

GFD provides fire protection services, emergency medical services, technical rescue, hazardous material mitigation, domestic preparedness planning and response, and public fire/EMS safety education for the 30.59 square mile incorporated area of Glendale. GFD is comprised of nine Fire Stations, Fire Mechanical Maintenance, Verdugo Fire Communications, Fire Prevention Center, Fire Training Center, and Emergency Medical Services. As of 2016, 240 sworn and non-sworn personnel serve in the GFD.

In 2014, GFD responded to over 18,239 incidents within the City and nearby jurisdictions (City of Glendale Fire Department, 2016)

Police Protection

Glendale Police Department

The Glendale Police Department (GPD) is responsible for providing law enforcement services to the 30.59 square mile incorporated area of Glendale.

The Glendale Police Department is located at 131 N. Isabel Street, approximately 3 miles to the west of the Project. GPD is comprised of a crime prevention program including crime stoppers and neighborhood watch. Units within the GPD include the Parking Enforcement Unit, K-9 Unit, SWAT Team, and AB 109 Task Force. The Parking Enforcement Unit is the primary unit that provides traffic law enforcement, safety, and management services to the City (City of Glendale Police Department, 2016).

Parks

The nearest recreational area to the Project site is the Lower Scholl Canyon Park which is located approximately 0.5 miles west of the Project. It is comprised of picnic pavilions, a playground, and walking paths. Also, a golf course, tennis courts and baseball facilities are all within close proximity to the Project site.

Schools

Glendale Unified School District

The Glendale Unified School District (GUSD) is comprised of 31 schools that serve 27,000 students in grades Kindergarten through 12th grade with over 2,620 employees. There are 20 elementary, four

middle, five High Schools, and the Verdugo Academy Home Independent Study which make up the GUSD.

The nearest school within the GUSD to the Project site is Glenoaks Elementary School which is located at 2015 E. Glenoaks Boulevard. and is approximately two miles west of the Project.

Los Angeles Unified School District

The Los Angeles Unified School (LAUSD) district is comprised of over 900 schools that serve over 640,000 students in grades kindergarten through 12th grade, making it the second largest school district in the nation. The district boundaries extend to over 720 square miles which encompass the City of Los Angeles, 31 other municipalities, and unincorporated sections of Southern California (Los Angeles Unified School District, 2015).

The nearest school, Dahila Heights Elementary, is located approximately 1 mile to the southwest of the Project site.

3.15.2 Impact Analysis

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
XV. PUBLIC SERVICES — Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Discussion of Impacts

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impact, in order to maintain acceptable

service ratios for any of the public services:

i. Fire protection?

No Impact

The Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts. Therefore, no impact is anticipated. This factor will not be further analyzed in the EIR.

ii. Police protection?

No Impact

The Project does not include any residential development or other component that will substantially increase population growth or an increase in the demand for public services. Any anticipated calls for police protection would not likely require the need for additional police protective services. Construction impacts associated with the Project would not result in substantial adverse physical impacts with the provision of newly constructed or physically altered governmental facilities. Police protection would continue to be provided and acceptable service ratios, response times and other performance objectives for the City would be maintained. Therefore, no impacts are anticipated. This factor will not be further analyzed in the EIR.

iii. Schools?

No Impact

There will be no population increase that would require additional schools. The Project does not include any residential development or other component that will substantially increase population growth and demand for public services. The Project would not require the provision of new or physically altered school facilities. No impacts are anticipated. This factor will not be further analyzed in the EIR.

iv. Parks?

No Impact

There will be no population increase that would require additional park facilities. The Project does not include any residential development or other component that will substantially increase population growth and demand for public services. Therefore, no impacts are anticipated. This factor will not be further analyzed in the EIR.

v. Other public facilities?

No Impact

The Project would create no demand on other public facilities which can be reasonably foreseen. Therefore, no impacts are anticipated. This factor will not be further analyzed in the EIR.

3.16 RECREATION

3.16.1 Setting

Glendale's Community Service and Parks Department manages 285.5 acres of developed park land and over 5,000 acres of open space. This includes 50 parks and facilities, which include 35 parks, the Civic Auditorium, four community centers, six sports facilities, and four historic buildings (City of Glendale Community Services & Parks, 2019).

The nearest public recreation facilities to the Project site are the 6.2 acre Lower Scholl Canyon Park (approximately 0.5 miles west of the Project), which includes barbeque and picnic pavilions, playgrounds, and walking paths; Glenoaks Park (approximately one mile west of the Project), a 2.2 acre park which includes barbeque and picnic pavilions, basketball courts, baseball fields, children's play areas, tennis courts, volleyball courts, a wading pool, meeting rooms and community building; and the approximately 60 acre Scholl Canyon Golf Course (approximately 0.5 miles north of the Project), located within the SCLF property, constructed over the western portion of the landfill. The nearest National Forest to the project area is the Angeles National Forest, which is approximately 12 miles to the North. The landfill is expected to be developed for recreational use after closure (potential Project conflicts with that plan are discussed in Section 3.11).

3.16.2 Impact Analysis

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
XVI. RECREATION — Would the project:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion of Impacts

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact

The Project would not entail the construction of residential or commercial uses that would result in an increased use of area parks or recreational facilities. The Project will not increase the number of people

utilizing local recreational areas. Therefore, no impacts are anticipated. This factor will not be further analyzed in the EIR.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact

The Project does not include a recreational facility component or require the construction or expansion of recreational facilities. Therefore, there would be no impact. This factor will not be further analyzed in the EIR.

3.17 TRANSPORTATION AND TRAFFIC

3.17.1 Setting

For the purposes of this section, the network of freeways and roadways surrounding the Project site is referred to as the existing roadway system. Although the Project site is located within the City of Glendale, California, the roadway system used to access the site is primarily located within the City of Los Angeles, California. Therefore, this section focuses on those roadways relevant to the Project within the City of Los Angeles.

Existing Roadway System

The existing roadway network with the potential to be impacted by the Project includes:

State Route 134

State Route 134 (SR-134) is an east-west state route through Los Angeles County that provides interregional access to the Project site via the interchange with N. Figueroa Street. Part of the Congestion Management Program (CMP), SR-134 originates at the Route 134/170/101 interchange and runs a distance of 13.34 miles, terminating at the Route 134/210 interchange. SR-134 is classified as an urban principal arterial and contains four travel lanes and a high occupancy vehicle lane in each direction in the study area.

North Figueroa Street

Figueroa Street is a two- to four-lane north-south Secondary Highway that extends north from John S Gibson Boulevard. in Los Angeles and terminates at SR-134 near Eagle Rock. The roadway provides access to the urbanized areas south of SR-134 and Scholl Canyon Road north of SR-134. The SR-134 Eastbound Ramps/N. Figueroa Street intersection is controlled by a traffic signal and the SR-134 Westbound Ramps/N. Figueroa Street intersection is controlled by an all-way stop.

Project Site Primary Access

The Project location is accessed exclusively by Scholl Canyon Road. North Figueroa Street turns into Scholl Canyon Road at the SR-134 Westbound Ramps/North Figueroa Street intersection. Scholl Canyon Road is a two-lane road that terminates at the Scholl Canyon Landfill.

3.17.2 Impact Analysis

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
XVII. TRANSPORTATION — Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☒	☐	☐	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☒	☐	☐	☐
c) Substantially increase hazards to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☒	☐	☐	☐

Discussion of Impacts

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Potentially Significant Impact

Project construction could potentially significantly increase vehicular traffic that could affect the performance of the surrounding street system as a result of construction worker trips. The Project could potentially significantly impact on applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of a circulation system during construction and operation. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Potentially Significant Impact

The Project would include the use of on-road vehicles during construction and operation. While there would be a temporary increase in vehicle miles travelled during construction, the vehicle miles travelled during Project operation are not expected to substantially differ from those that already occur from existing facility operation and maintenance. As a result, construction of the Project could conflict with CEQA Guidelines section 15064.3, subdivision (b) related to vehicle miles travelled. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

c) Substantially increase hazards to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact

Only on-road vehicles will be accessing the site via the existing roadway network. The Project does not include or require design improvements or alterations to the public roadway network that could increase design or incompatible use hazards. There would be no impact. This factor will not be further analyzed in the EIR.

d) Result in inadequate emergency access?

Potentially Significant Impact

The Project would be subject to meeting the emergency access requirements established by the Glendale Fire Department. Should the design, construction, operation, and maintenance of the Project not conform to those requirements, implementation of the Project could result in inadequate emergency access to the proposed facilities. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

3.18 TRIBAL CULTURAL RESOURCES

3.18.1 Setting

Information on the cultural resources setting of the region and Project site, including known information on tribal cultural resources are in the Cultural Resources Assessment Report provided as Appendix A. The legislature added new requirements regarding tribal cultural resources for CEQA in Assembly Bill 52 (AB 52) that took effect July 1, 2015. AB 52 requires consultation with California Native American tribes and consideration of tribal cultural resources in the CEQA process. By including tribal cultural resources early in the CEQA process, the legislature intended to ensure that local and Tribal governments, public agencies, and project proponents would have information available, early in the project planning process, to identify and address potential adverse impacts to tribal cultural resources. By taking this proactive approach, the legislature also intended to reduce the potential for delay and conflicts in the environmental review process. To help determine whether a project may have such an effect, the Public Resources Code requires a lead agency to consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a Project.

3.18.2 Impact Analysis

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES — Would the project: cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☒	☐	☐	☐

Discussion of Impacts

a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

No Impact

Based on the results of the Cultural Resources Assessment Report (Appendix A), the Project would not cause an adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources. The Project would have no impact to historical resources and no mitigation is required. This factor will not be further analyzed in the EIR.

ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Potentially Significant Impact

The City has notified the Fernandeno Tataviam Band of Mission Indians and Soboba Band of Luiseno Indians of the Project and opportunity to provide consultation on the Project's potential to impact tribal cultural resources for purposes of this IS. At the time this IS was noticed, the 30-day opportunity for both tribes to request consultation remained open. Therefore, it is conservatively assumed that the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

3.19 UTILITIES AND SERVICE SYSTEMS

3.19.1 Setting

Wastewater Disposal

The Sanitation Districts of Los Angeles County operate ten water reclamation plants (WRPs) and one ocean discharge facility. The facilities treat approximately 510 million gallons of wastewater per day. The Sanitation Districts currently maintain three industrial wastewater discharge permits for the SCLF. Permit No. W-2762 enables the discharge of LFG condensate, extracted seep water, and water removed from the radiator filling area to the City's sanitary sewer system. Permit No. W- 3835 enables the discharge of extracted groundwater to the sanitary sewer. Permit No. FIW-1229142 enables the discharge of stormwater from the active disposal area to the sanitary sewer. The Sanitation Districts conduct quarterly monitoring to ensure the discharges meet the conditions specified in the permits (Sanitation Districts of Los Angeles County & AECOM, 2014).

In addition, Glendale Water and Power was issued Industrial Waste Water Permit W-4339 that allows the City to discharge liquid condensate from existing LFG recovery operations of up to 4,500 gallons per day in summer and 1,500 gallons per day in winter. The condensate is treated to allow compliance with W-4339 and is disposed of in the existing sewer system located at the LFG recovery facility.

It is anticipated that the new facility constructed will be in compliance with conditions mandated in this W-4339 industrial Waste Permit and the condensate will be disposed of in the existing sewer system.

The City has an agreement with the City of Los Angeles for an Amalgamated System Sewage Facilities Charge (ASSFC) which allows use of the City of Los Angeles wastewater treatment system in return for sewer facilities charges. As part of the agreement, wastewater is transported from the City to the Hyperion Treatment Plant. Fees are adjusted on a yearly basis depending on the anticipated increase of daily discharge (City of Glendale, 2005).

Stormwater Management

Stormwater quality and quantity at municipal landfills is subject to comprehensive federal, state, and local regulations. The surface water drainage system at the SCLF directly adjacent to the Project site has been optimized to comply with these regulatory requirements by implementing measures such as preventing run-on into the active landfill area, minimizing surface water contact with refuse, diverting stormwater from the active disposal area away from the local storm drain, and minimizing the erosion potential of surface water drainage. The Project, which will be located within an inactive portion of the active landfill property boundaries, will be subject to many of these same regulations.

In 1972, the Federal Clean Water Act was amended to prohibit the discharge of pollutants in waters of the United States from any point source unless the discharge is in compliance with the NPDES. The 1987 amendments to the CWA added Section 402 (p) that established a framework for regulating municipal and industrial stormwater discharges under the NPDES program. In 1990, the Environmental Protection

Agency (EPA) published final regulations (Title 40, Code of Federal Regulations, Parts 122-124) that established application requirements for stormwater permits. The regulations require that stormwater associated with industrial activities, if discharged to surface waters directly or indirectly through municipal storm sewers, must be regulated by an NPDES permit. Relevant industrial activities include municipal solid waste disposal operations and LFG processing for energy generation. Therefore, an NPDES permit is required for the Project site. The existing facility currently carries NPDES permit No. CAS000001.

The State of California is authorized by Federal EPA regulations to issue general NPDES permits to regulate stormwater discharges. The Sanitation Districts of Los Angeles County filed a Notice of Intent with the SWRCB on March 27, 1992 to obtain coverage under the General Permit for continued and future stormwater discharges from SCLF.

Water

The City's potable water system receives its water from two basic sources: local groundwater from the San Fernando and Verdugo Basins and imported surface water from Metropolitan Water District (MWD). Currently, the City's local groundwater system contributes approximately 35 percent of potable water used in the City. The MWD provides approximately 59 percent. The additional 6 percent of potable water supply is recycled water from the Glendale Water Treatment Plant (GWTP). As a requirement in the Urban Water Management Plan (UWMP) Act, water utilities are required to determine if sufficient water supply is available to meet projected water demands per various weather scenarios: normal, single dry year and multi dry year. Projections in the UWMP estimate supply totals from all sources will exceed demand even through multiple dry year periods up through the year 2035 (City of Glendale, 2011).

An existing eight-inch water line, that includes an existing water pump, conveys domestic (potable) water from a water meter located on Glenoaks Canyon Road up to a water tank located adjacent to the existing facility. This water is being used for domestic purposes and fire protection at the existing facility.

A new 60,000-gallon fire water tank would be constructed to provide water for fire protection. In addition, a new approximately 10,000-gallon water storage tank would be provided for domestic purposes. A new 12-inch water line will be constructed from an existing 16-inch water line located on Glenoaks Blvd. next to the golf course to provide water for fire hydrants required for fire protection.

Solid Waste

Los Angeles County operates two active solid waste facilities, the Calabasas Landfill and the SCLF. Closed landfills within the County include Puente Hills, Spadra, Palos Verdes, and Mission Canyon Landfills. Recycling facilities are operated out of Puente Hills Landfill and the Downey Area Recycling and Transfer Facility. The SCLF is operated by the County Sanitation District No. 2 of Los Angeles County serving as the administrative entity for the Sanitation Districts of Los Angeles County pursuant to a JPA between the City, Los Angeles County, and Sanitation Districts (Sanitation Districts of Los Angeles County & AECOM, 2014).

The SCLF is a Class III solid waste facility. All Class III solid waste facilities are required to have a Solid Waste Facility Permit (SWFP) issued by the Local Enforcement Agency (LEA; County of Los Angeles Department of Public Health [LADPH]) with concurrence by the California Department of Resources Recycling and Recovery (CalRecycle), previously the California Integrated Waste Management Board (CIWMB). The SCLF is currently operating under SWFP No. 19- AA-0012 issued by the LEA on May 17, 2002. The SCLF is permitted to accept 3,400 tons of municipal solid waste per day (Sanitation Districts of Los Angeles County & AECOM, 2014). The annual disposal rate is approximately 200,000 tons/year, with a remaining 3.4-million-ton capacity.

Any solid waste generated during construction and operation of the new facility will be disposed of at the adjacent Scholl Canyon Landfill.

3.19.2 Impact Analysis

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS — Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☒	☐	☐	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion of Impacts

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Potentially Significant Impact

Stormwater flow from the Project area will either be routed to the existing storm drains within the existing project footprint, the new catch basin, or into temporary energy dissipating structures or silt traps, all of which ultimately drain in to the active landfill's permanent drainage system. The Project footprint would represent an approximately 2.2-acre expansion over the existing facility, which would increase the amount of impervious surface and an increase in stormwater runoff compared to existing conditions. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

No Impact

The Project does not include the development of water intensive land uses. Water use would be limited to that needed for dust control and soil compaction during construction, domestic/sanitary purposes for the four operators and two technicians would be responsible for operations and routine maintenance of the facility, and emergency fire protection. The Project would use limited volumes of water for these purposes that are well within GWP's water supply availability to service. Therefore, there would be no impact. This factor will not be further analyzed in the EIR.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact

Sewage from the Project site goes to the Hyperion Treatment Plant, which the City has access to through the Amalgamated Agreement. The Hyperion Treatment Plant has a dry-weather design capacity of 450 million gallons per day (gpd) and is currently operating below its design capacity at 275 million gpd. As a result, adequate capacity exists to treat the incremental Project-generated effluent of 135 gpd (360 gpd total). The Project would not require the expansion or construction of wastewater treatment facilities. Therefore, there would be no impact. This factor will not be further analyzed in the EIR.

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

No Impact

The adjacent SCLF operates with all necessary state and local permits and authorities, as described above. The Project would generate negligible quantities of solid waste but would still be subject to helping the City meet its waste diversion goal of 50 percent as mandated by State law (AB 939). The Project would comply with AB 939, known as the California Integrated Waste Management Act which requires 50 percent diversion of cities and counties solid waste from landfills by 2000, and AB 341, which establishes a State policy goal that no less than 75 percent of solid waste generated be source reduced,

recycled, or composted by 2020, and the City's Construction and Demolition Debris Diversion Program; a GMC Code which states that demolition, construction and remodeling shall divert 50 percent of waste tonnage from area landfills.

Demolition debris generated during construction will be sent to licensed recycling facilities as appropriate. Asphalt will be used by the Sanitation District for landfill road base and concrete will be used on the Project site for road base. Approximately 75,000 cubic yards of clean soil will also be transferred to the adjacent landfill for daily cover. The Project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. The Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste and no impact would occur. No impact would occur and this factor will not be further analyzed in the EIR.

e) *Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

No Impact

Please see response to d), above.

3.20 WILDFIRE

3.20.1 Setting

Wildland fires (wildfires) can occur in open spaces containing a mixture of flammable and nonflammable vegetation cover. The native areas surrounding the active landfill operation area are vulnerable to wildfires due to the steep topography, highly flammable scrub vegetation and limited access for firefighting. The County Fire Department has published Fire Hazard Severity Zone Maps for the City and has listed the Project site, as shown on Tile 4 of these maps, in the Very High Fire Hazard Zone. The Fire Department has also published a map identifying Proposed High Fire Hazard Areas. The SCLF and the surrounding area are within the current High Fire Hazard Area.

3.20.2 Impacts

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
XX. WILDFIRE — If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☒	☐	☐	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☒	☐	☐	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☒	☐	☐	☐

Discussion of Impacts

a) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact

The City of Glendale Emergency Plan addresses the City of Glendale's planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and national security emergencies (City of Glendale, 2008). The City of Glendale Emergency Plan does not

identify evacuation routes. While the Project could increase the risk of wildland fires as discussed below, the Project does not include an element that would conflict with the City of Glendale's Emergency Plan.

The Los Angeles County Operational Area Primary Disaster Routes identified for the City of Glendale are State Route 134, State Route 2, and Interstate 5. The Secondary Disaster Routes in the City of Glendale are Verdugo Road/Canada Boulevard, Foothill Boulevard, Colorado Street, and San Fernando Road (Los Angeles County Department of Public Works, 2012). Nearby Figueroa Street is also designated as a Secondary Disaster Route for the City of Los Angeles. It is important to note that according to Los Angeles County, disaster routes are not evacuation routes. Although an emergency may warrant a road be used as both a disaster and evacuation route, they are completely different. An evacuation route is used to move the affected population out of an impacted area. The Project site is located approximately ½ mile from State Route 134 (the nearest Primary Disaster Route) and more than ¾ mile from the Figueroa Street (the nearest Secondary Disaster Route).

The Proposed Project would comply with all applicable emergency response plans and emergency evacuation plans adopted in accordance with Area Plan and Business Plan regulations (Health and Safety Code, §25500-25520 and Cal. Code Reg., tit. 19, § 2720 et seq.). In addition, the Proposed Project does not include construction of residences or facilities that would require significant evacuation. As such, the Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, no impacts are anticipated.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Potentially Significant Impact

The Project and the surrounding area are within the current City's designated High Fire Hazard Area. Project activities would include the use of flammable/combustible materials and potential sources of ignition including but not limited to equipment engines, welding, and LFG flares. Construction, maintenance, and operation of the Project may due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Therefore, the Project may have a potentially significant impact. This factor will be further evaluated in the EIR.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Potentially Significant Impact

The Project includes installation of a water pipeline and a water storage tank for fire protection. The Project would also be subject to Glendale Fire Department fire prevention vegetation clearance requirements. The installation and maintenance of these Project features may have an impact to the environment. Therefore, the Project may have a potentially significant impact and this factor will be further

evaluated in the EIR.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Potentially Significant Impact

The Project site is located in a FEMA National Flood Insurance Program Category Zone D on the Flood Insurance Rate Map, indicating the absence of any flood hazard. Landslides are not listed in the Safety Element of the Glendale General Plan as an overlay constraint within Scholl Canyon (identified as "Low landslide incidence"). However, a cut native slope is proposed at the northeast end of the Project site which may lead to the potential for landslides. Therefore, the Project may have a potentially significant impact and this factor will be further evaluated in the EIR.

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4.0 PROPOSED FINDING

ENVIRONMENTAL DETERMINATION

On the basis of this initial evaluation:
I find that the proposed Biogas Renewable Generation Project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared. ☐

I find that although the proposed Biogas Renewable Generation Project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A **MITIGATED NEGATIVE DECLARATION** will be prepared. *Attached Mitigation Measures and Monitoring Program.* ☐

I find that the proposed Biogas Renewable Generation Project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required. ☒

I find that the proposed Biogas Renewable Generation Project **MAY** have a significant effect on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed. ☐

I find that although the proposed Biogas Renewable Generation Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier **EIR** or **NEGATIVE DECLARATION** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier **EIR** or **NEGATIVE DECLARATION**, nothing further is required. ☐

Signature: _____ Date: 3/19/19

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5.0 LIST OF PREPARERS

The following individuals prepared or participated in this IS.

Lead Agency	Eric Krause	City of Glendale
	Dorine Martirosian	City of Glendale
	Maurice Oillataguerre	City of Glendale
	Gillian van Muyden	City of Glendale
Consultant	Michael Weber	Stantec Consulting Services Inc.
	StephAnnie Roberts	Stantec Consulting Services Inc.
	Jason Trook	Stantec Consulting Services Inc.
	Hubert Switalski	Stantec Consulting Services Inc.
	Michelle Cross, RPA	Stantec Consulting Services Inc.

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Appendix A CULTURAL RESOURCES ASSESSMENT REPORT

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CULTURAL RESOURCES ASSESSMENT REPORT ON BEHALF OF GLENDALE WATER AND POWER FOR THE PROPOSED BIOGAS RENEWABLE GENERATION PROJECT, SAN RAFAEL HILLS, GLENDALE, LOS ANGELES COUNTY, CALIFORNIA



- Phase I cultural resources survey of 20.5 acres in unsectioned portions of Rancho San Rafael, as depicted on the Pasadena, CA (1994) USGS 7.5-minute topographic quadrangle
- Historic period resource SC-1
- Cultural resources survey of locations for the proposed Biogas Renewable Generation Project
- San Rafael Hills, Glendale, Los Angeles County, California

Stantec

Submitted to:
City of Glendale
Water and Power Department

Submitted by:
Hubert Switalski and Michelle Cross
Stantec Consulting Services Inc.
5500 Ming Avenue, Suite 300
Bakersfield, CA 93309-4627

July 2017

This document entitled *CULTURAL RESOURCES ASSESSMENT REPORT ON BEHALF OF GLENDALE WATER AND POWER FOR THE PROPOSED BIOGAS RENEWABLE GENERATION PROJECT, SAN RAFAEL HILLS, GLENDALE, LOS ANGELES COUNTY, CALIFORNIA* was prepared by Stantec Consulting Services Inc. for the account of *City of Glendale Water and Power Department*. The material in it reflects Stantec Consulting Services Inc. best judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Stantec Consulting Services Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Prepared by _____
(signature)

Hubert Switalski, Senior Archaeologist

Reviewed by Michelle C. Cross
(signature)

Michelle Cross, Cultural Resources Program Manager, MA, RPA

Cover page: Overview of the Project Area with Scholl Canyon Landfill in background, view northwest (Stantec IMG_3518).

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1.0 MANAGEMENT SUMMARY

Between October 19, 2015 and February 23, 2017, Stantec Consulting Services Inc. (Stantec) conducted a cultural resource Phase I study on behalf of Glendale Water and Power (GWP) of approximately 20.5 acres of land located within the San Rafael Hills, Glendale, Los Angeles County, California. The study was conducted as part of the Biogas Renewable Energy Project (the Project), which intends to construct a 12 megawatt (MW) power generation facility, and auxiliary water and natural gas pipelines within the Scholl Canyon Landfill (SCLF).

The proposed Project is subject to compliance with the California Environmental Quality Act (CEQA) requirements regarding the project's impacts on cultural resources. CEQA (Public Resources Code Sections 21000 etc.) requires that, before approving most discretionary projects, the Lead Agency must identify and examine any significant adverse environmental effects that may result from activities associated with such projects (Public Resources Code Sections 21083.2 and 21084.1). CEQA explicitly requires that the initial study examine whether the project may result in a significant adverse change to "historical resources" and "unique archaeological resources." Under these requirements, a cultural resources inventory was conducted in order to determine impacts of the proposed Project on any cultural resources potentially eligible for nomination to California Register of Historical Resources (CRHR), as well as locally significant resources potentially eligible to the City of Glendale Register of Historic Resources (Glendale Municipal Code Chapter 15.20).

The cultural resources study reported herein consisted of a cultural resource archival records search conducted at the South Central Coastal Information Center (SCCIC), located at California State University, Fullerton (CSUF), as well as an intensive pedestrian survey of the Project Area, for a total of 20.5-acres. The initial survey took place on October 20, 2015 and included the 3-acre footprint of the proposed power generation facility. Subsequently, as additional project information was added and the proposed alignments of gas and water lines were finalized, additional survey took place on January 15, 2016 to account for those changes and to ensure that the entire Project Area was surveyed for cultural resources. A third field survey occurred on February 23, 2017 to account for project changes incorporating an area planned for removal and replacement of existing water tanks, including an existing access road. Overall, approximately 20.5 acres of land were surveyed between October 20, 2015 and February 23, 2017.

A single, historic period water storage tank (SC-1) was identified and documented during the course of the study. Based on field data and archival research the newly documented resource does not appear to represent unique historical resource, thus, it does not appear eligible to the California Register of Historical Resources (CRHR) or local Registers of Historic Resources. Therefore, based on the results of this study, the proposed Project will not cause a substantial adverse change to the significance of historical and/or archaeological resources as defined in Section 15064.5. No construction constraints or additional cultural resources studies are recommended at this time.

This is a final draft submitted to GWP in July 2017. This version supersedes any previous iterations of this report. This version of the report may include areas that were surveyed for archaeological resources by Stantec between October 2015 and January 2017 that may no longer be part of the current Project due to design and engineering changes.

2.0 REGULATORY FRAMEWORK

This proposed Project is subject to compliance with the CEQA requirements regarding cultural resources on lands proposed for development. CEQA (Public Resources Code Sections 21000 etc.) requires that before approving most discretionary projects, the Lead Agency must identify and examine any significant adverse environmental effects that may result from activities associated with such projects (Public Resources Code Sections 21083.2 and 21084.1). CEQA explicitly requires that the initial study examine whether the project may have a significant effect on "historical resources" and "unique archaeological resources." Under these requirements, a cultural resources inventory was conducted in order to determine impacts of the proposed Project on cultural resources potentially eligible for nomination to the CRHR.

California Environmental Quality Act (California Public Resources Code Section 21000 et seq.) (1970) established that historical and archaeological resources are afforded consideration and protection by the California Environmental Quality Act (CEQA) (14 CCR Section 21083.2, 14 CCR Section 15064). CEQA Guidelines define significant cultural resources under three regulatory designations: historical resources, tribal cultural resources, and unique archaeological resources. These designations permit for a fair amount of overlap.

A historical resource is a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR"; or "a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code"; or "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record" (14 CCR Section 15064.5[a][3]). Historical resources automatically listed in the CRHR include California cultural resources listed in or formally determined eligible for the NRHP and California Registered Historical Landmarks from No. 770 onward (PRC 5024.1[d]). Locally listed resources are entitled to a presumption of significance unless a preponderance of evidence in the record indicates otherwise.

Tribal cultural resources (TCRs) are similar to the traditional cultural property designation within the National Historic Preservation Act guidance. These can be sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a Tribe. To qualify as a TCR, it must either be 1) listed on or eligible for listing on the California Register or a local historic register or, 2) or is a resource that the lead agency, at its discretion and supported by substantial evidence, determines should be treated as a TCR (PRC Section 21074). TCRs can include "non-unique archaeological resources" (see "unique archaeological resource" below) that, rather than being important for "scientific" value as a resource, can also be significant because of the sacred and/or cultural tribal value of the resource. Tribal representatives are considered experts appropriate for providing substantial evidence regarding the locations, types, and significance of tribal cultural resources within their traditionally and cultural affiliated geographic area (PRC Section 21080.3.1(a)).

Under CEQA, a resource is generally considered historically significant if it meets the criteria for listing in the CRHR. A resource must meet at least one of the following criteria (PRC 5024.1; 14 CCR Section 15064.5[a][3]):

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage. Title 14, CCR Section 4852(b)(1) adds, "is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States."

2. Is associated with the lives of persons important in our past. Title 14, CCR Section 4852(b)(2) adds, "is associated with the lives of persons important to local, California, or national history."
3. Embodies the distinctive characteristics of a type, period, region, or method of construction; or represents the work of an important creative individual; or possesses high artistic values. Title 14, CCR 4852(b)(3) allows a resource to be CRHR eligible if it represents the work of a master.
4. Has yielded, or may be likely to yield, information important in prehistory or history. Title 14, CCR 4852(b)(4) specifies that importance in prehistory or history can be defined at the scale of "the local area, California, or the nation."

Historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association (14 CCR 4852[c]).

An archaeological artifact, object, or site can meet CEQA's definition of a unique archaeological resource even if it does not qualify as a historical resource (PRC 21083.2[g]; 14 CCR 15064.5[c][3]). An archaeological artifact, object, or site is considered a unique archaeological resource if "it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria (PRC 21083.2[g]):

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person."

Public Resources Code 5097.98. This section discusses the procedures that need to be followed upon the discovery of Native American human remains. The NAHC, upon notification of the discovery of human remains is required to contact the County Coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code and shall immediately notify those persons it believes to be most likely descended from the deceased Native American.

Health and Safety Code 7050.5. This code establishes that any person, who knowingly mutilates, disinters, wantonly disturbs, or willfully removes any human remains in or from any location without authority of law is guilty of a misdemeanor. It further defines procedures for the discovery and treatment of Native American human remains.

Additionally, the City of Glendale has the Glendale Register of Historic Resources for resources considered eligible, which is similar criteria and actually matches the California Register of Historical Resources (CRHR) (City of Glendale 2014). Although the CRHR criteria consider local and regional significance for historic resource, the Glendale Register criteria includes additional criterion (Criterion 5) that specifically addresses potentially significant local resources that exemplify the early heritage of the city (Glendale Municipal Code Chapter 15.20).

The Project Area for the above referenced project is defined as the three acre footprint for the proposed power plant, including a 30-meter wide buffer to account for any project/design changes, and 30-meter wide buffer on centerline of the proposed water and natural gas pipelines, and areas scheduled for tank removal and replacement, for a total of 20.5 acres. It is expected that any potential adverse impacts to cultural resources will be contained within this acreage. The Study Area for the project is defined as a one-half mile buffer surrounding the Project Area.

3.0 PROJECT LOCATION

The Project Area is located in San Rafael Hills in the south-central portion of Los Angeles County, California (Fig. 1). The Project Area is located within and immediately adjacent to the SCLF and is located within the southeastern portion of City of Glendale, which is bound to the south and east by the political boundary of City of Los Angeles and Pasadena, respectively. Specifically, the Project Area is situated within an unsectioned portion of San Rafael Spanish Land Grant, as depicted on the Pasadena, CA (1994) USGS 7.5-minute series topographic quadrangle (Fig. 2).

4.0 PROJECT DESCRIPTION

The SCLF is an existing Class III nonhazardous landfill facility that accepts municipal solid waste and is not a generator of, or repository for, hazardous wastes. The landfill site occupies approximately 535 acres with portions owned by the City of Glendale, Los Angeles County and by Southern California Edison Company (SCE). The 95 acre area owned by Los Angeles County is not certified for landfill operations and consists of soil stockpiles, a scale and site operations facility, undisturbed areas, and a debris basin. The northern inactive portion of the site is approximately 126 acres. The active site is 314 acres, within which refuse has been landfilled on 239 acres. The proposed power plant will be located on an approximately three acre segment of land within the inactive portion of the landfill. At the current fill rate, the closing date of the landfill is estimated to be in the mid 2020's. However the current operator of the landfill, County of Los Angeles Sanitation District, is in the process of preparing documentation to increase the life of the landfill an additional 22 to 32 years. The landfill permitted capacity is based on volume; therefore, the closing date of the landfill, including the request for increased life, could be sooner or later depending on disposal rates.

South Coast Air Quality Management District (SCAQMD) requires the installation of a Landfill Gas (LFG) collection system to minimize the emissions of LFG from the surface of the landfill. There are two options available for disposing the collected LFG. At most landfills, the LFG is simply combusted in flares and not utilized for beneficial use. The second option is to remove moisture and some of the undesirable constituents from the LFG and utilize the LFG in power generation equipment as fuel.

The current LFG collection system at SCLF conveys the collected LFG to a central location within the landfill property where the LFG is compressed, liquids are removed and the raw LFG is piped to Glendale Water and Power's (GWP) Grayson Power Plant via an underground dedicated pipeline. At Grayson, the LFG is mixed with natural gas and is combusted in old and inefficient boilers to make steam for electricity generation. The proposed SCLFP will utilize the LFG to produce electricity at the landfill where the LFG is generated and collected.

4.1 Power Generation Facility

The Proposed Project would involve new construction activity on approximately 2.2 acres of land. This would include the proposed power plant facility, natural gas pipeline, water pipeline and two water tanks. The Proposed Project includes construction and operation of an approximately 12 megawatt (MW) power generation facility that would utilize landfill gas as fuel to generate renewable energy. The majority of the existing equipment owned and operated by GWP required to treat the LFG prior to sending it to the Grayson Power Plant would be demolished; only the existing blowers and LFG flaring station would remain.

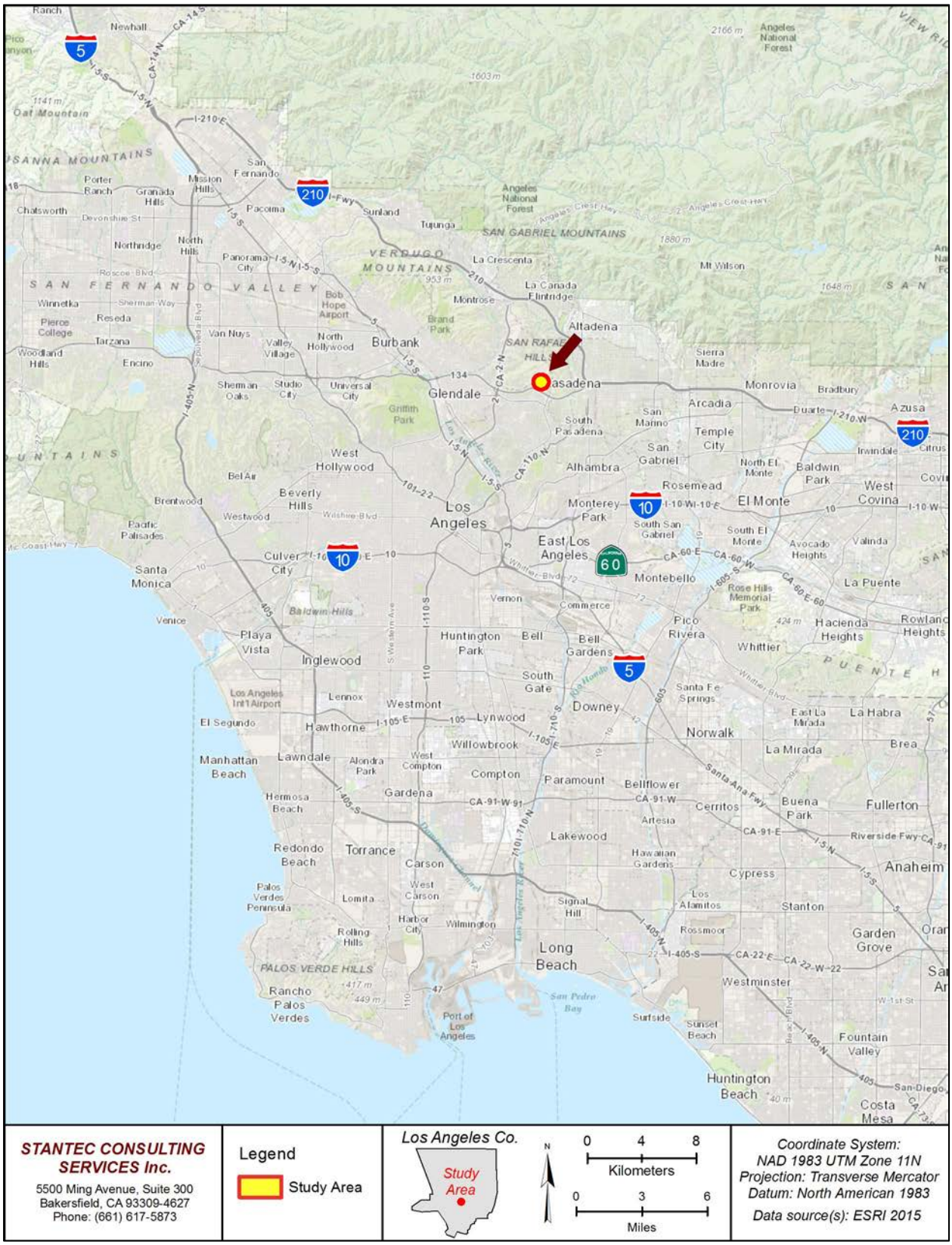


Figure 1. Project location and vicinity map.

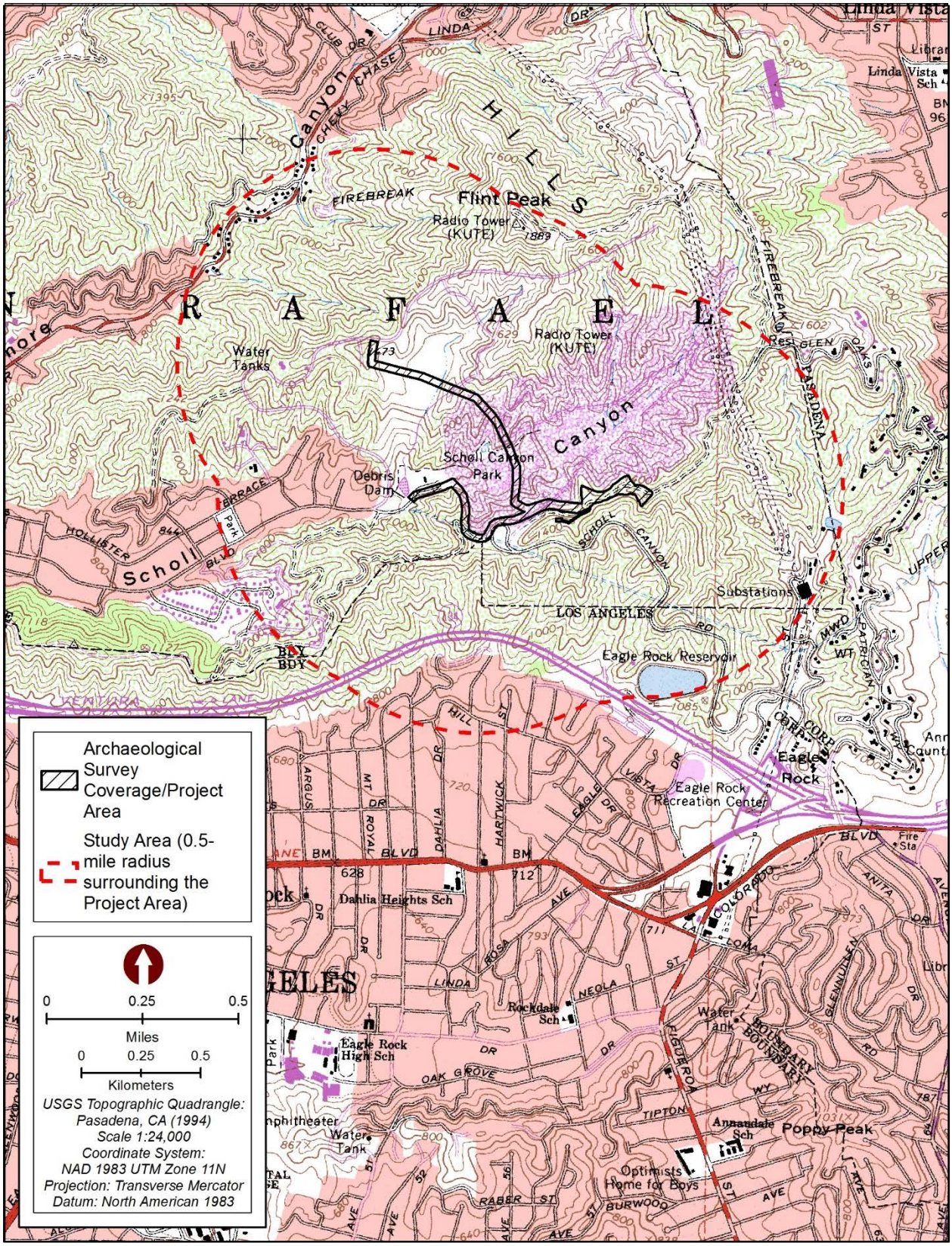


Figure 2. Archaeological survey coverage with the Project Area depicted on the Pasadena, CA (1994), USGS 7.5-minute series topographic quadrangle.

The Project would be located adjacent to the existing LFG flare station and would include the following equipment and systems:

- LFG compressors to increase the LFG pressure so that the LFG can be treated and conveyed to the electrical generation equipment.

- LFG treatment system to prevent damage to the electrical generation equipment and would consist of vessels, coolers, heat exchangers and control systems designed to remove moisture and impurities from the LFG. The treatment system would also include a regeneration ground flare to assure that the LFG treatment system is performing efficiently and continuously.

- Condensate treatment system to allow collected condensate to comply with the City's existing Industrial Waste Discharge requirements prior to disposing the condensate into the existing sewer system.

- Electrical generating equipment consisting of reciprocating engine generators to produce electricity using the LFG as fuel. Each of the electrical generating equipment would be self-contained and located in individual enclosures.

- Combustion exhaust gas cleanup system to comply with SCAQMD regulations, consisting of reactive catalyst using 19 percent Aqueous Ammonia as reactant to minimize the emissions of nitrogen oxides (NOx) and a Carbon Monoxide (CO) catalyst to minimize the emissions of CO.

- Continuous emission monitoring systems installed on the engines to assure that the exhaust gas emissions comply with SCAQMD regulations.

- Electric switchgear to allow connection of the produced electricity to the existing GWP electrical system. No electric transmission system modification is anticipated.

- Small office and small storage building, less than 1,000 square feet each, required for operating and maintaining the Project.

- Fire protection and safety system to comply with National Fire Protection Association and Glendale Fire Department requirements.

- A new 60,000-gallon fire water tank would be constructed to provide water for fire protection. In addition, a new approximately 10,000-gallon water storage tank would be provided for domestic purposes.

- The entire facility would be enclosed in fencing, and area lighting for safety and security would be provided.

4.2 Natural Gas and Water Pipeline

Approximately two-thirds of a mile (3,500 feet) of natural gas pipeline would be constructed to connect the facility to the existing Southern California Gas Company pipeline system located at the eastern end of Scholl Canyon Drive. This three-inch, schedule 40 steel gas pipeline would be located within the boundary of the landfill, aboveground except for at road crossings. The natural gas would be utilized to assure continuous operations of the internal combustion engines on the naturally occurring landfill gas. SCAQMD regulations allow the LFG to be augmented by up to a maximum of ten percent of the total fuel consumed by the engines to be natural gas.

A new 60,000-gallon water storage tank for fire protection and a new approximately 10,000-gallon domestic water storage tank would also be installed.

During construction, water would be used for dust control, soil compaction, concrete curing, and other construction activities. All cooling systems would be closed circulating glycol type with no open cooling towers required. Besides using water for domestic purposes, fire protection and construction, no other water consumption is contemplated.

To provide water to the Project an approximately one-mile-long, 12-inch steel pipeline would be connected to an existing 16-inch pipeline located north of the landfill on Glen Oaks Blvd. This water line would also be aboveground except for road crossings. The water line would be connected to fire hydrants as required by the City of Glendale Fire Department. Additional water pipelines would be installed belowground to connect the power plant facility with the new fire protection and domestic water tanks, which would be located just east of the facility. A water fill-line would be installed belowground extending across the Project facility from a water tie-in at the southwest portion of the Project site to facilitate the new water tanks (Fig. 3).

The unprocessed LFG as it comes from the landfill is saturated with liquids. The liquids would be separated from the LFG, collected, and piped to a condensate treatment system where impurities of the condensate would be removed, collected, and disposed of in accordance with required rules and regulations. The remaining liquids would be piped to the existing sewer system located nearby.

4.3 Existing Pipeline Decommissioning

The existing approximately five-mile-long six-inch diameter underground pipeline currently used to carry LFG to the Grayson Power Plant would be abandoned in place. As part of the abandonment process, the line would be purged with an inert gas such as nitrogen, and capped with cement plugs or similar items on each end. The existing line follows surface streets within an existing utility corridor.

5.0 ENVIRONMENTAL BACKGROUND

The Study Area is located at the eastern terminus of San Rafael Hills, which are bound to the west by San Fernando Valley, San Gabriel Valley to the east and Los Angeles Basin to the south. San Rafael Hills are part of the lower Transverse Ranges, which unlike most mountain ranges in North America, lie on east-west axis. The Transverse Ranges form the northern border of the Los Angeles Basin and include Santa Monica, San Gabriel and San Bernardino Mountains, which are located to the west and north of the Project Area (Schoenherr 1992:8-9).

The Study Area is associated with a Mediterranean climate, which is characterized by long, hot summers (Schoenherr 1992:9). Temperatures in the basin range from a mean of about 40°F in the winter to a mean of about 76°F in the summer, depending on elevation (Miles and Goudey 1997). Mean annual precipitation of the basin and the surrounding mountain ranges varies from 8 to 30 inches. This range of precipitation from 8 inches at the coast, to 30 inches in the mountains is a clear example of the effects of elevation on precipitation.

Slope effect is superimposed upon the effects of temperature and precipitation. Mediterranean climate with its long, hot summer, accentuates slope effect. South facing slope, with their great degree of drought stress are cloaked with drought tolerant vegetation. The plants associated with the foothills of the San Gabriel Mountains consist primarily of chaparral plant community with areas of riparian communities from the numerous streams and drainages. Dominant species include Chamise (*Adenostoma fasciculatum),* Manzanita (*Arctostaphylos spp.),* Ceanothus spp.,



Figure 3. Map of the proposed facilities to be constructed as part of the Biogas Renewable Generation Project.

Mountain mahogany (*Cercocarpus betuloides*), and Yucca (*Yucca whipplei*). Common animals in the area include the California jay, plain titmouse, canyon wren, brush rabbit, gray fox, and spotted skunk, with frequent Bobcat and deer sightings.

6.0 CULTURAL BACKGROUND

While no cultural sequence has been developed specifically for the Study Area, regional chronologies for other parts of southern California and the Southwest have been employed for this locality (Elsasser 1978; Jones and Klar 2007; Moratto 1980; Warren and Crabtree 1986). Such sequences are generally based on the presence of temporally diagnostic artifacts, such as projectile points, pottery, or beads. The most recent chronological clarification of the prehistory of the southern California area has been presented by Sutton (2010) and Sutton and Gardner (2010). The more recent chronology is presented below.

6.1 Archaeological Background

The earliest period of human occupation in southern California is referred to by various terms, including Clovis, Paleoindian, and Early Systems Period. This is a time believed to have commenced about 12,000 years ago Before Present (BP), lasting until about 10,000 years BP. While some scholars have championed the idea of a Pre-Projectile Point Tradition predating this time, it is not considered here, as there are no documented sites of this age near the current Study Area. The following cultural periods reflect human adaptations that occurred among prehistoric societies in inland California. While these are broad generalizations, there appear to be similarities among various populations in southern California, particularly in the inland areas.

Prehistoric chronological sequences for the area can be represented by the Encinitas Tradition and the Del Rey Tradition. The Encinitas Tradition is characterized by an abundance of grinding implements (manos and metates), rough core and flaked stone and bone tools, and shell ornaments but few projectile points and hunting implements (Sutton and Gardner 2010). Subsistence focused on collecting rather than hunting with faunal remains, varying by site, including marine mammals, fish, shell fish, and land animals (Sutton and Gardner 2010:7). The Encinitas Tradition has four regional expressions: The Topanga in coastal Los Angeles and Orange county areas, the La Jolla in the coastal San Diego area, Pauma in inland San Diego areas, and the Greven Knoll in inland Los Angeles, Orange, San Bernardino, and Riverside County areas (Sutton and Gardner 2010:8-25).

6.1.1 Greven Knoll Phases

Greven Knoll Phase I (9,400 to 4,000 BP) is characterized by manos and metates (though no mortars and pestles), large projectile points, hammerstones, flexed inhumations and few cremations (Sutton and Gardner 2010:25, 8). Greven Knoll I groups seem to have been influenced by Mojave Desert groups based on similarities in material culture (Sutton and Gardner 2010). The "Cogstone Point" Site located further southeast in the Prado Basin contained manos, metates, discoidals, cogstones, Pinto-style points but no scrapers, as is common in Greven Knoll I sites. Shell artifacts are also rare at sites dating to this phase of Greven Knoll.

Greven Knoll Phase II (4,000 to 3,000 BP) shared many similarities with Greven Knoll I but is differentiated by an increase in percentages of manos and a decrease in percentages of flaked stone points and bone tools (Sutton and Gardner 2010:8,29). Pinto-style points are still found but Elko-style points become more common. Many Greven Knoll II sites also contain Greven Knoll I components, indicating little change in settlement patterns (Sutton and Gardner 2010:30).

Greven Knoll III (3,000 to 1,000 BP), formerly known as Sayles Complex, is characterized by abundant manos and metates, Elko-style points, scraper planes and choppers, hammerstones, late discoidals, few mortars and pestles and an absence of shell artifacts (Sutton and Gardner 2010:8, 32). Flexed inhumations under rock cairns and yucca and other seeds are also noted during this phase (Sutton and Gardener 2010:8, 32).

The Greven Knoll Phases were replaced in the Study Area at about 1,000 BP by new cultural traditions with Takic influences moving east from the coastal areas (Sutton and Gardner 2010:34). Known as the Del Rey Tradition this period represents the development of the Gabrielino culture in southern California (Sutton 2010). The Del Rey Tradition is divided into three phases for this area and is referred to as the Angeles Phase.

6.1.2 Angeles Phase

Angeles Phase IV (1,000 to 800 BP) is characterized by Cottonwood-style arrow points, *Olivella* cupped beads and *Mytillus* shell disk beads, imported pottery and possibly ceramic pipes. Population increases lead to fewer but larger permanent settlements as well (Sutton 2010).

Angeles Phase V (800 to 450 BP) is characterized by an increase in both size and number of steatite ornaments and vessels, and more elaborate effigies (Sutton 2010). This phase also saw the development of the mainland Gabrielino dialect and a decline in exploitation of marine resources with an increase in use of small seeds (Sutton 2010). Settlement shifted from woodlands to open grasslands (Sutton 2010).

Angeles Phase VI (450 to 150 BP) reflects cultural patterns into the post-contact period (roughly AD 1542). One of the most noticeable changes would likely have been the extreme population loss due to disease and missionization of the native populations. *Olivella* shell beads drilled with metal needles, glass beads, and metal tools as well as locally made ceramics and the use of domesticated animals were noted in Angles VI (Sutton 2010).

6.2 Ethnography

Early Native American peoples of this area are poorly understood, though the cultural traditions represented in archaeological data are presented above. The presence of occupation in this area by the ethnohistoric Gabrielino (*Tongva*) people began to be demonstrated about 1,000 years ago. The term Gabrielino most likely came from the group's association with Mission San Gabriel Arcangel, established in 1771. However, today the group prefers to be known by their ancestral name Tongva. The current Study Area appears to be located within the core territory of the Tongva. Ethnohistorically, the *Tongva* were semi-sedentary hunters and gatherers whose language is one of the Cupan languages in the Takic family, part of the Uto-Aztecan linguistic stock (Bean and Smith 1978).

The *Tongva* territory encompassed a vast area that stretched from Topanga Canyon in the northwest, to the base of Mount Wilson in the north, to San Bernardino in the east, Aliso Creek in the southeast and the Southern Channel Islands, in all an area of more than 2,500 square miles (Bean and Smith 1978; McCawley 1996). At European contact, the tribe consisted of more than 5,000 people living in various settlements throughout the area (McCawley 1996). Some of the villages could be quite large, housing up to 150 people. The *Tongva* are considered to have been one of the wealthiest tribes and they appear to have greatly influenced tribes they traded with (Kroeber 1976:621).

The *Tongva* practiced hunting and gathering economy, and subsistence zones exploited were marine, woodland and grassland (Bean and Smith 1978). At the time of contact plant foods

were the more significant part of the *Tongva* diet with acorns being the most important food source exploited. Therefore, it was necessary that villages be located near water sources to allow for the leaching or removal of tannic acids from the acorns. Grass seeds and chia were also heavily utilized. Seeds were parched then ground and cooked as mush in various combinations according to taste and availability. Other fruit and plant foods would be eaten raw or cooked and they could be dried for storage. Bulbs, roots, and tubers were dug in the spring and summer and usually eaten fresh. Mushrooms and tree fungus were prized as delicacies. Various teas were made from flowers, fruits, stems, and roots for medicinal cures as well as beverages (Bean and Smith 1978:538-540).

The principal game animals were deer, rabbit, jackrabbit, woodrat, mice, ground squirrels, antelope, quail, dove, ducks, and other birds (Bean and Smith 1978). Predators were largely avoided as food, as were tree squirrels and most reptiles (Bean and Smith 1978). Fresh water fish were caught in the streams and rivers, while salmon were available when they ran in the larger creeks (Bean and Smith 1978). Sea mammals, fish, and crustaceans were hunted and gathered from both the shoreline and the open ocean, using reed and dugout canoes by coastal *Tongva* groups. Shellfish were the most common resource, including abalone, turbans, mussels, clams, scallops, bubble shells, and others (Bean and Smith 1978:538-540).

Houses were domed, circular structures thatched with tule or similar materials (Bean and Smith 1978:542). The *Tongva* are renowned for their workmanship of steatite and these artifacts were highly prized (Bean and Smith 1978). Common everyday items were often decorated with inlaid shell or carvings reflecting the intricately developed skill (Bean and Smith 1978:542).

6.3 History

The first known historical account of travel to the Los Angeles Basin was Juan Rodriguez Cabrillo in 1542. This was followed by Gaspar de Portola and missionary Juan Crespi in 1769. This was followed by the first significant European settlement of California which began during the Spanish Period when 21 missions and four presidios were established between San Diego to the south and Sonoma to the north. The purpose of the missions was primarily Indian control and forced assimilation into Spanish society and Catholicism, along with economics support of the newly established presidios (Castillo 1978). Between then and secularization in 1834, many of the native peoples were forcibly removed to the missions (Beattie and Beattie 1939:366), after which too few remained to reestablish their native ways of life.

The Mexican Period (1821-1848) began with the success of the Mexican Revolution in 1821. When secularization of the missions occurred in the 1830s, the vast land holdings of the missions in California were divided into large land grants called ranchos. The Mexican government granted ranchos throughout California to Spanish and Hispanic soldiers and settlers (Castillo 1978).

In 1848, the Treaty of Guadalupe Hidalgo ended the Mexican-American War and marked the beginning of the American Period. In 1850, California was accepted into the Union of the United States primarily due to the population increase created by the Gold Rush of 1849. From that point on, the Gold Rush ushered a massive deluge of white settlers, prospectors, and gold seekers. Subsequently, fortune seekers bound for gold mines pushed aside any natives in their path. Soon, the inland territory was dotted with mines and mining claims, which eventually led to occasional clashes between the natives and the newcomers. This process of disposition proved relatively easy as the settlers, sometimes forcibly, removed Indian families and communities (Wallace 1978:469). As a result, the remaining Native Americans were restricted to small reservations and many more were scattered throughout the state (Grant 1978:507).

6.3.1 Rancho San Rafael

The current Study Area is located within portions of Rancho San Rafael which was a 36,403-acre Spanish land grant given in 1784 to Jose Maria Verdugo (Baker 1914:242; Cowan 1956:87). Corporal Jose Maria Verdugo was a Spanish soldier who had served within the 1769 Portola-Serra Expedition, and received provisional eight square leagues from his army commander Pedro Fages. Following the Treaty of Guadalupe Hidalgo and cession of California to the United States, a claim was filed with the Public Lands Commission in 1852 and the grant was patented to Julio and Catalina Verdugo in 1882. This was the second of the great Spanish land concession, preceded only by Rancho San Pedro (Cowan 1956:87).

6.3.2 City of Glendale

The general area that is currently known as the City of Glendale was previously occupied by the Tongva, who were later referred to as the Gabrielinos by the Spanish missionaries after the nearby Mission San Gabriel Arcangel. Subsequently, much of the surrounding land comprised the 36,403-acre Rancho San Rafael, which was claimed by Jose Maria Verdugo and later patented by Julio and Catalina Verdugo. By the early 1880s Verdugo's descendants sold the ranch in various parcels and by 1884 new residents gathered to form a townsite and called it Glendale.

Glendale was incorporated in 1906 and annexed the nearby community of Tropico in 1918. By 1920, Glendale was booming, and began annexing neighboring communities into their city limits in extending their limits to 7,000 acres, boasting a population of over 13,536 residents (City of Glendale 2012; Los Angeles Almanac 2015). During this time, Glendale experienced a construction boom on the main streets of town, particularly Brand Boulevard, which was lined with modern commercial buildings, entertainment and nearby orchards and vineyards which became residential neighborhoods. By the early 1930s population of Glendale reached 62,000 residents, who lived on approximately 13, 000 acres. In 2010, the United Census Bureau reported that Glendale had a population of 191,719 residents. Today, Glendale remains a hub of business, tourist, and recreational activities.

6.4 Current Land Use

The Project Area is located within an active landfill which is operated in part by Sanitation Districts of Los Angeles County. The landfill is situated in the San Rafael Hills and accepts solids waste from nearby communities. Most of the area occupied by the SCLF is characterized by paved access roads, facility structures, gas and water pipelines, and overhead distribution lines. The SCLF is surrounded by residential areas to the west, a recently developed golf course to the north and Highway 134 to the south. As the SCLF is located in the San Rafael Hills, it is surrounded by steep hills intersected with intermittent drainages and washes. The western portion of the SCLF is comprised of terraced slopes with access roads and gas pipelines and irrigation pipes.

7.0 METHODOLOGY

Cultural resources investigations reported herein consisted of a records search conducted at the SCCIC at CSUF, as well as an intensive pedestrian survey of approximately 20.5 acres of land.

7.1 Native American Notification and AB52

California Public Resources Code Sections 5097.94(a) and 5097.96 authorize the Native American Heritage Commission (NAHC) in Sacramento to hold records of Native American sacred sites and burial sites in the Sacred Lands File. The NAHC also holds records of individuals that have particular expertise and knowledge of Native American resources.

On November 15, 2015 Stantec on behalf of GWP, contacted the NAHC and requested a Sacred Lands File search for the entire Project Area. A response from the NAHC was received on December 7, 2015 indicating that they have no knowledge of Native American resources within or immediately adjacent to the Project Area. They provided a list of eight individuals/organizations for Los Angeles County that may have knowledge of Native American and tribal cultural resources that could potentially present within or immediately adjacent to the Project Area. Stantec on behalf of GWP submitted notification/consultation letters to these individuals/organizations on January 27, 2016. Results of the Native American notification with the NAHC and NA contacts for Los Angeles County are provided in Appendix A.

As of the date of this report, no Native American groups or tribes have contacted the City of Glendale (lead state agency for AB-52 for the Project) in regard to AB-52 consultation and listing. Please note that Native American outreach was initiated per contact with the NAHC and as of the date of this report, only two responses were received. In an email dated February 2, 2016, Mr. Salas of the Gabrieleno Band of Mission Indians-Kizh Nation requested that a Tribal monitor to be present during all ground disturbing activities, including but not limited to pot-holing, pavement removal, augering, boring, grading, trenching and excavations. In a letter dated February 29, 2016, Mr. Ontiveros of the Soboba Band of Luiseno Indians indicated that the tribe had not concerns regarding any cultural resources near the Project Area, however, he requested that a qualified Native American monitor should be present during any ground disturbing activities. Responses to the NAHC request and any further outreach will be included and appended to this report in Appendix A.

7.2 Records Search

A records search of the entire Project Area was conducted by Stantec personnel at the SCCIC on October 15, 2015. The search entailed a review of all previously recorded prehistoric and historic archaeological sites located within a ½-mile radius of the Project Area, as well as a review of all known cultural resource survey reports, excavation reports and regional cultural overviews.

Results of the records search indicated that no cultural resources studies were previously conducted within the current Project Area; however, five negative cultural resource surveys (Bonner 2004a, 2004b; Brunell 2014; Singer 1987; Wlodarski 1981) were conducted within a ½ mile radius of the current Project Area (Table 1).

Additionally, the records search results indicated that no cultural resources were previously documented within the current Project Area; however, one historic period resource was previously documented within a ½-mile radius of the current Project Area (Table 2). The resource is a historic period steel lattice Eagle Rock-Laguna Bell 220kV transmission line, which is currently in use and is maintained and operated by SCE. No other cultural resources were previously documented within the Project Area or within a ½-mile radius of the Project Area.

As part of the archival research at the SCCIC, the following sources were consulted: the *California Archaeological Inventory Records, NRHP*, *California Historic Landmark Registry, California Points of Historical Interest, Inventory of Historic Structures,* and *Historical Landmarks for Los Angeles County*. Additionally, the following historic period maps were consulted: Pasadena, CA (1894; 1900 edition, reprinted in 1940; 1953; 1966 and 1995) 15-minute topographic quadrangles.

TABLE 1
SUMMARY OF CULTURAL RESOURCE PROJECTS PREVIOUSLY CONDUCTED WITHIN A ½-MILE RADIUS OF THE PROJECT AREA.

Author	Year	Level of Investigation	Results	Report Reference No.
Bonner, W.	2004a	Survey	Negative	LA12657
Bonner, W.	2004b	Survey	Negative	LA07446
Brunell, D.	2014	Survey	Negative	LA07453
Singer, C.	1987	Survey	Negative	LA01662
Wlodarski, R.	1981	Survey	Negative	LA00943

TABLE 2
SUMMARY OF KNOWN CULTURAL RESOURCES LOCATED WITHIN A ½-MILE RADIUS OF THE PROJECT AREA.

Quad	Trinomial	Primary No.	Component	Description
Various	-	19-186870	Historic	SCE Eagle Rock-Laguna Bell 220kV transmission line

7.3 Field Methods

A pedestrian survey of the Project Area was conducted on October 20, 2015 and January 15, 2016. The initial survey took place in October, 2015 and included the 3-acre footprint of the proposed power generation facility. Subsequently, as additional project information was added and the proposed alignments of gas and water lines were finalized, additional survey took place on January 15, 2016 to account for those changes and to ensure that the entire Project Area was surveyed for cultural resources. A third field survey occurred on February 23, 2017 to account for project changes incorporating an area planned for removal and replacement of existing water tanks, including an existing access road. Overall, approximately 20.5 acres of land were surveyed between October 20, 2015 and February 23, 2017.

Per the California Office of Historic Preservation (1995) guidelines, Stantec examined surface and subsurface exposures such as rodent burrows and cut banks for physical manifestations of human activity greater than 45 years in age. Documentation included field notes and photographs. The extent of the survey coverage was recorded with a Trimble Juno 5 hand-held GPS unit, with between 2 to 4 meter horizontal accuracy, with the Universal Transverse Mercator (UTM), North American Datum of 1983 (NAD 83), Zone 11, meters, as the spatial reference. Photographs were taken with a Canon PowerShot A530 digital camera to document the built environment within the Project Area. The extent of the survey coverage was drawn on the Pasadena, CA (1994) USGS 7.5-minute series topographic quadrangle (see Fig. 2).

8.0 SURVEY RESULTS

The entire survey was conducted by walking east-west transects within the footprint of the proposed generation facility and transects parallel to the proposed gas and water lines, which were spaced at approximately 10 meters apart. Survey of the proposed power generation facility was conducted on a sunny and bright day, with ground visibility between 80-100 percent, albeit in mostly disturbed context. The area designated for the proposed power generation facility comprises an existing paved roadway, an above-ground gas pipeline installed on 2 ft. sleepers, and portions of which appear to have been graded to accommodate buried facilities,

such as water line, irrigation, gas, and communication. Southern and southeastern portion of this area appear to be located on steep hillside, with slope between 10-15° overlooking the paved access road (Scholl Canyon Road) to SCLF (Figs. 4 and 5).



Figure 4. Overview of the Project Area with an existing power plant and active landfill in background, view west. Photo taken on October 19, 2015 (Stantec IMG_3516).



Figure 5. Overview of the Project Area, view south towards the Los Angeles Basin. Note Scholl Canyon Road in foreground and the steep topography immediately south of the Project Area. Photo taken on October 19, 2015 (Stantec IMG_3517).

Once this area was inventoried for cultural resources, the survey followed the proposed water line in westerly direction for approximately 300 meters at which point the survey continued north and northwest on east side of an existing paved access road (Fig. 6). The survey continued northwest on a south side of an existing golf course and continued further north along a terraced slope (bench 11) towards East Glen Oaks Blvd. Once this portion of the survey was complete, the survey followed the proposed alignment of the gas line, which started at the proposed power generation facility and continued west, near the entrance to the SCLF and

north down the terraced slope towards Lower Scholl Canyon Park. This portion of the survey was characterized by relatively dense vegetation and terraced slope with irrigation pipes and a paved access road which followed the terraced slope (Fig. 7).



Figure 6. Overview of the Project Area along the proposed waterline alignment, view southeast. Photo taken on January 15, 2016 (Stantec IMG_3826).



Figure 7. Overview of the Project Area along the proposed gas line alignment, view northwest. Note the terraced slope with dense vegetation and existing aboveground pipelines. Photo taken on January 15, 2016 (Stantec IMG_3834).

Survey conducted on February 23, 2017, commenced near an existing and active LFG facility and proceeded southwest along an existing access road (Fig. 8). Survey transects were conducted parallel to an existing road and were spaced approximately 10 meters apart. The survey was conducted on bright and sunny day with excellent visibility. Ground visibility within this portion of the Project Area varied from open ground to moderately overgrown with ground visibility between 60 and 100%, with slope less than 15°. This portion of the survey concluded near

an existing water tank facility, comprised of two water tanks located on top of a ridge overlooking the SCLF.



Figure 8. Overview of the Project Area along an existing access road with water tanks visible in background, view west. Photo taken on February 23, 2017 (Stantec IMG_3901).

9.0 CULTURAL RESOURCES

As a result of cultural resources study presented herein, a single, historic period resource was identified and documented during the survey conducted on February 23, 2017 (Table 3). The new resource was recorded on the on California Department of Parks and Recreation Historical Resource Record forms (series DPR 523 1/95), including Primary and/or Archaeological Site Record forms appropriate for all such resources. Recordation adhered to the *Instructions for Recording Historical Resources* (Office of Historic Preservation 1995).

TABLE 3
SUMMARY OF NEW RESOURCES DOCUMENTED DURING THE CURRENT STUDY.

Quad	Temporary Field. No.	Primary No.	Trinomial	Description
Pasadena	SC-1	-	-	Water storage tank

9.1 Resource SC-1

Resource SC-1 is a historic period water tank constructed in the 1960s. This abandoned water storage tank appears to have been constructed of 4-foot panels of corrugated metal and covered with a domed top (Fig. 9). The tank is 14 feet in diameter and approximately 18 feet in height. The tank sits on top of a round gravel pad measuring approximately 16 feet in diameter. The tank has been retrofitted with a new water valve manufactured in 1990. A newer water tank, mounted on a concrete pad and constructed in 1990, is located immediately east of resource SC-1. While the exact construction date is unknown, the tank with its access road appears on aerial imagery of the Pasadena and Glendale area taken in the 1960s (USGS 2017).



Figure 9. Overview of Resource SC-1, view east. Photo taken on February 23, 2017 (Stantec IMG_3904).

10.0 MANAGEMENT RECOMMENDATIONS

As part of the current cultural resources study, 20.5 acres of land were inventoried to determine whether cultural resources would be affected by the proposed Project. A single historic period resource SC-1 was identified and documented during the course of the study. Based on field documentation and archival research it appears that the resource does not appear to be eligible for nomination to the CRHR as it does not appear to be directly associated with significant known historical events or specific persons significant to California's history (Criteria 1 and 2), nor is the resource distinctive nor does it possess high artistic value in a fashion that would qualify under Criterion 3; nor does the resource appear to contain potential that could yield information to California's history (Criterion 4). Furthermore, the resource does not appear to be a significant resource important to local history under Criterion 5. Additionally, the resource does not appear to be eligible as a contributing element to a larger, significant, and potentially CRHR eligible and/or listed district. Based on the findings in this study the proposed Project will not cause a substantial adverse change to the significance of cultural resources as defined in Section 15064.5, nor will the proposed Project have impacts on significant local resources as defined in Chapter 15.20 of the City of Glendale Municipal Code. Therefore, no additional cultural resources studies or additional construction constraints are recommended at this time.

The methods and techniques used by Stantec are considered sufficient for the identification and evaluation of cultural resources visible at the ground surface. However, there is always a possibility that buried archaeological deposits could be found during construction and earth disturbing activities. In the event that cultural resources are encountered during construction activities, all work must stop and a qualified archaeologist should be contacted immediately. Further, if human remains are encountered during construction, State Health and Safety Code Section 7050.5 requires that no further work shall continue at the location of the find until the County Coroner has made all the necessary findings as to the origin and distribution of such remains pursuant to Public Code Resources Code Section 5097.98.

11.0 REFERENCES

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APPENDIX A – NATIVE AMERICAN NOTIFICATION/SACRED FILE SEARCH CORRESPONDENCE



NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 FAX

December 7, 2015

Hubert Switalski
Stantec Consulting Services, Inc.

Sent by Email: Hubert.switalski@stantec.com
Number of Pages: 3

RE: Scholl Canyon Power Plant Project, Glendale, Los Angeles County

Dear Mr. Switalski:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced project. Government Code §65352.3 requires local governments to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of protecting, and/or mitigating impacts to tribal cultural resources in creating or amending general plans, including specific plans. As of July 1, 2015, Public Resources Code Sections 21080.1, 21080.3.1 and 21080.3.2 require public agencies to consult with California Native American tribes identified by the NAHC for the purpose mitigating impacts to tribal cultural resources under the California Environmental Quality Act (CEQA). In accordance with Public Resources Code Section 21080.1(d):

> Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The law does not preclude agencies from initiating consultation with the tribes that are culturally and traditionally affiliated with their jurisdictions. The NAHC believes that in fact that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

In accordance with Public Resources Code Section 21080.1(d), formal notification must include a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation. The NAHC believes that agencies should also include with their notification letters information regarding any cultural resources assessment that has been completed on the APE, such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

   - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE;
   - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
   - If the probability is low, moderate, or high that cultural resources are located in the APE.
   - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the potential APE; and
   - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measurers.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure in accordance with Government Code Section 6254.10.

3. The results of any Sacred Lands File (SLF) check conducted through Native American Heritage Commission. A SLF search was completed with negative results.

4. Any ethnographic studies conducted for any area including all or part of the potential APE; and

5. Any geotechnical reports regarding all or part of the potential APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of a cultural place. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the case that they do, having the information beforehand well help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance we are able to assure that our consultation list contains current information.

If you have any questions, please contact me at my email address: rw_nahc@pacbell.net.

Sincerely,

Rob Wood
Associate Environmental Planner

Native American Heritage Commission
Tribal Consultation List
Los Angeles County
December 7, 2015

Soboba Band of Mission Indians
Rosemary Morillo, Chairperson; Attn: Carrie Garcia
P.O. Box 487
San Jacinto , CA 92581
carrieg@soboba-nsn.gov
(951) 654-2765
Luiseno
Cahuilla

Gabrielino Tongva Indians of California Tribal Council
Robert F. Dorame, Tribal Chair/Cultural Resources
P.O. Box 490
Bellflower , CA 90707
gtongva@verizon.net
(562) 761-6417 Voice/Fax
Gabrielino Tongva

Fernandeno Tataviam Band of Mission Indians
Rudy Ortega Jr., President
1019 2nd Street
San Fernando , CA 91340
(818) 837-0794 Office
Fernandeno
Tataviam

Gabrielino-Tongva Tribe
Linda Candelaria, Co-Chairperson
1999 Avenue of the Stars, Suite 1100
Los Angeles , CA 90067
(626) 676-1184 Cell
Gabrielino

San Fernando Band of Mission Indians
John Valenzuela, Chairperson
P.O. Box 221838
Newhall , CA 91322
tsen2u@hotmail.com
(760) 885-0955 Cell
Fernandeño
Tataviam
Serrano
Vanyume
Kitanemuk

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393
Covina , CA 91723
gabrielenoindians@yahoo.com
(626) 926-4131
Gabrielino

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693
San Gabriel , CA 91778
GTTribalcouncil@aol.com
(626) 483-3564 Cell
Gabrielino Tongva

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231
Los Angeles , CA 90012
sgoad@gabrielino-tongva.com
(951) 807-0479
Gabrielino Tongva

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.
This list applicable only for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Scholl Canyon Power Plant Project, Glendale, Los Angeles County.

Contact Name, Affiliation, and Address	Date and Method of First Contact	Date and Method of Second Contact	Date and Method of Third Contact	Response
Soboba Band of Mission Indians Rosemary Morillo, Chairperson ATTN: Carrie Garcia P.O. Box 487 San Jacinto, CA 92581	Letter via Registered USPS Mail, dated January 27, 2016	-	-	Response via mail received on February 29, 2016. The tribe responded by stating that the Soboba Band does not have any specific concerns regarding known cultural resources in the area that the project encompasses, but requests that the appropriate consultation should continue. Additionally, the tribe requests for an approved Native American Monitor to be present during ground distrubing activities.
Fernandeno Tataviam Band of Mission Indians Rudy Ortega Jr., President 1019 2nd Street San Fernando, CA 91340	Letter via Registered USPS Mail, dated January 27, 2016	-	-	-
San Fernando Band of Mission Indians John Valenzuela, Chairperson P.O. Box 221838 Newhall, CA 91322	Letter via Registered USPS Mail, dated January 27, 2016	-	-	-
Gabrieleno/Tongva San Gabriel Band of Mission Indians Anthony Morales, Chairperson P.O. Box 693 San Gabriel, CA 91778	Letter via Registered USPS Mail, dated January 27, 2016	-	-	-
Gabrielino/Tongva Nation Sandonne Goad, Chairperson 106 1/2 Judge John Aiso St. #231 Los Angeles, CA 90012	Letter via Registered USPS Mail, dated January 27, 2016	-	-	-
Gabrielino/Tongva Indians of California Tribal Council Robert Dorame, Tribal Chair/Cultural Resources P.O. Box 490 Bellflower, CA 90707	Letter via Registered USPS Mail, dated January 27, 2016	-	-	Response via email received on February 2, 2016. The tribe requests for a Tribal monitor to be present during all ground disturbing activities, including but not limited to pavement removal, pot-holing or augering, boring, grading, excavation and trenching.
Gabrielino-Tongva Tribe Linda Candelaria, Co-Chairperson 1999 Avenue of the Stars, Suite 1100 Los Angeles, CA 90067	Letter via Registered USPS Mail, dated January 27, 2016	-	-	-
Gabrieleno Band of Mission Indians - Kihz Nation Andrew Salas, Chairperson P.O. Box 393 Covina, CA 91723	Letter via Registered USPS Mail, dated January 27, 2016	-	-	-

Stantec Consulting Services Inc.
5500 Ming Avenue, Suite 300
Bakersfield, CA 93309-4627
Tel: (661) 617-5873
Fax: (661) 396-3771

January 27, 2016

Gabrieleno Band of Mission Indians – Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393
Covina, CA 91723

Subject: *Scholl Canyon Landfill Power Project, Glendale, Los Angeles County, California.*

Dear Mr. Salas,

Glendale Water and Power (GWP) is proposing to construct a power generation facility with auxiliary water and natural gas pipelines within the Scholl Canyon Landfill, Glendale, Los Angeles County, California. The proposed project will entail construction of a new 13 megawatt (MW) facility which be constructed adjacent to an existing and active facility. An approximately two thirds of a mile of natural gas pipeline will be constructed to connect the facility to the existing pipeline system. This three inch steel gas pipeline will be located above ground except for road crossings. For fire protection and domestic water use, a one mile long, 14 inch steel pipeline will be connected to an existing 16 inch pipeline located north of the landfill on East Glen Oaks Blvd. This water line will also be above ground except for road crossings (Fig. 1). Additionally, the existing approximately seven mile long 6-inch diameter underground pipeline currently used to carry landfill gas (LFG) to the existing power plant would be decommissioned in place. Ground disturbance will be limited to areas within and adjacent to an existing Scholl Canyon Landfill. As stated above, in some cases existing underground utilities will be decommissioned in place.

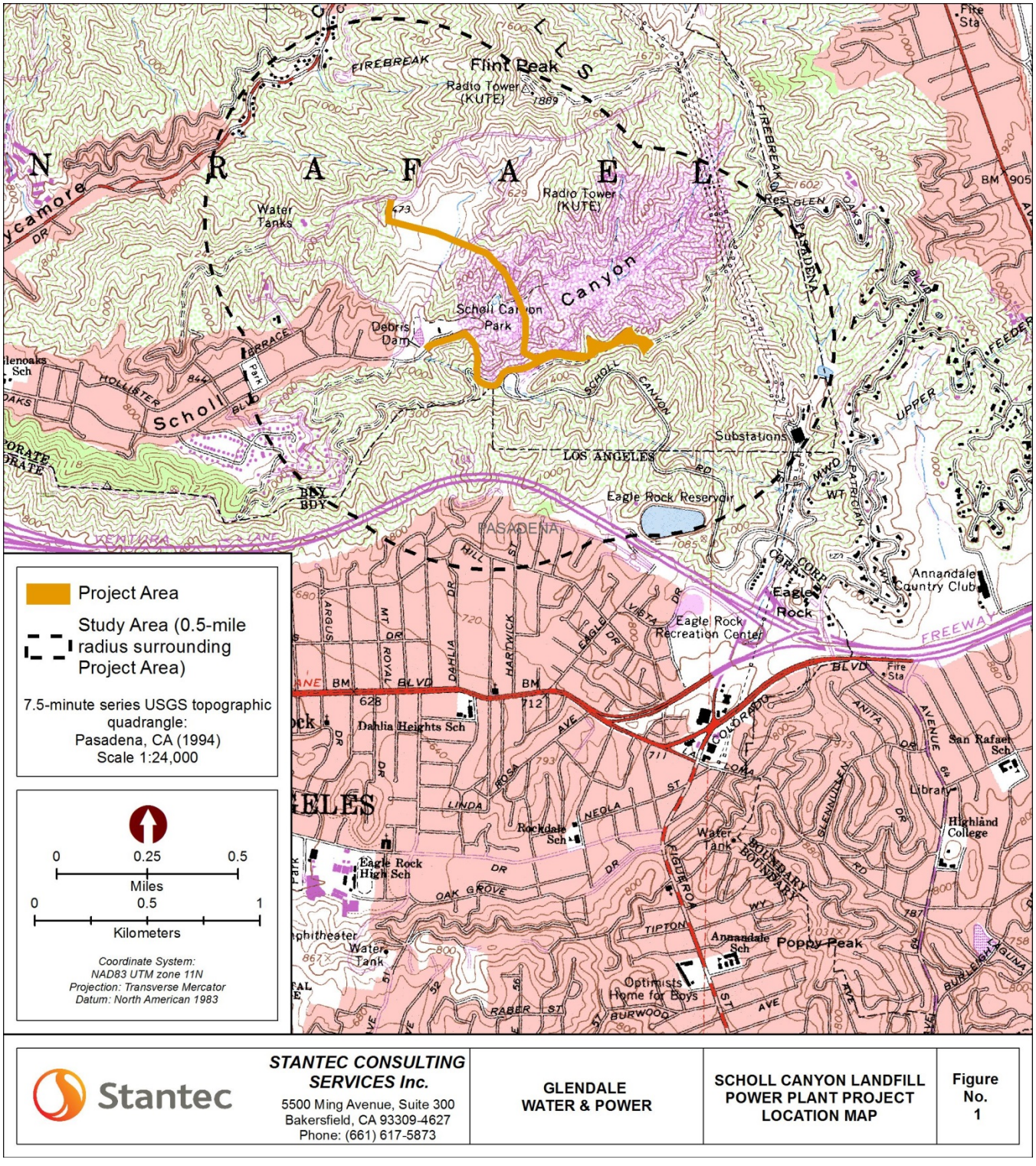
Stantec is in the process of conducting an archaeological study, under the guidelines of the California Environmental Quality Act (CEQA), and documenting any impacts that could potentially adversely affects known archaeological sites and historic properties. On behalf of the GWP, we have submitted a request to the Native American Heritage Commission (NAHC) in Sacramento to determine whether any Sacred Lands or sites could potentially be affected by the above referenced project. While the search failed to indicate the presence of Native American traditional cultural places within the Project Area, there could be a potential for Native American sites to be located in close proximity to the Project Area.

We would greatly appreciate your review of our project area (e.g. Project and Study Areas are marked on the enclosed copy of USGS 7.5' topographic quadrangle) for any information you may have in reference to known Native American sacred sites/lands and Traditional Cultural Properties, or any cultural resources that could be affected by the proposed project. The project is on a fast time schedule and your prompt assistance either via fax or electronic mail regarding this matter would be enormously appreciated. Please do not hesitate to contact us if you have any questions or concerns about this project, as we would be happy to discuss them with you over the telephone.

Respectfully,

Hubert Switalski
Archaeologist
Stantec Consulting Services, Inc.
5500 Ming Avenue, Suite 300
Bakersfield, CA 93309-4627
Office: 661.617.5873
hubert.switalski@stantec.com

Stantec Consulting Services Inc.
5500 Ming Avenue, Suite 300
Bakersfield, CA 93309-4627
Tel: (661) 617-5873
Fax: (661) 396-3771



Map 1. Project Area and the ½ mile buffer surrounding the Project Area depicted on the Pasadena, CA (1994) USGS 7.5-minute series topographic quadrangle. Extent of the proposed project is shown in orange.

Stantec Consulting Services Inc.
5500 Ming Avenue, Suite 300
Bakersfield, CA 93309-4627
Tel: (661) 617-5873
Fax: (661) 396-3771

January 27, 2016

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693
San Gabriel, CA 91778

Subject: *Scholl Canyon Landfill Power Project, Glendale, Los Angeles County, California.*

Dear Mr. Morales,

Glendale Water and Power (GWP) is proposing to construct a power generation facility with auxiliary water and natural gas pipelines within the Scholl Canyon Landfill, Glendale, Los Angeles County, California. The proposed project will entail construction of a new 13 megawatt (MW) facility which be constructed adjacent to an existing and active facility. An approximately two thirds of a mile of natural gas pipeline will be constructed to connect the facility to the existing pipeline system. This three inch steel gas pipeline will be located above ground except for road crossings. For fire protection and domestic water use, a one mile long, 14 inch steel pipeline will be connected to an existing 16 inch pipeline located north of the landfill on East Glen Oaks Blvd. This water line will also be above ground except for road crossings (Fig. 1). Additionally, the existing approximately seven mile long 6-inch diameter underground pipeline currently used to carry landfill gas (LFG) to the existing power plant would be decommissioned in place. Ground disturbance will be limited to areas within and adjacent to an existing Scholl Canyon Landfill. As stated above, in some cases existing underground utilities will be decommissioned in place.

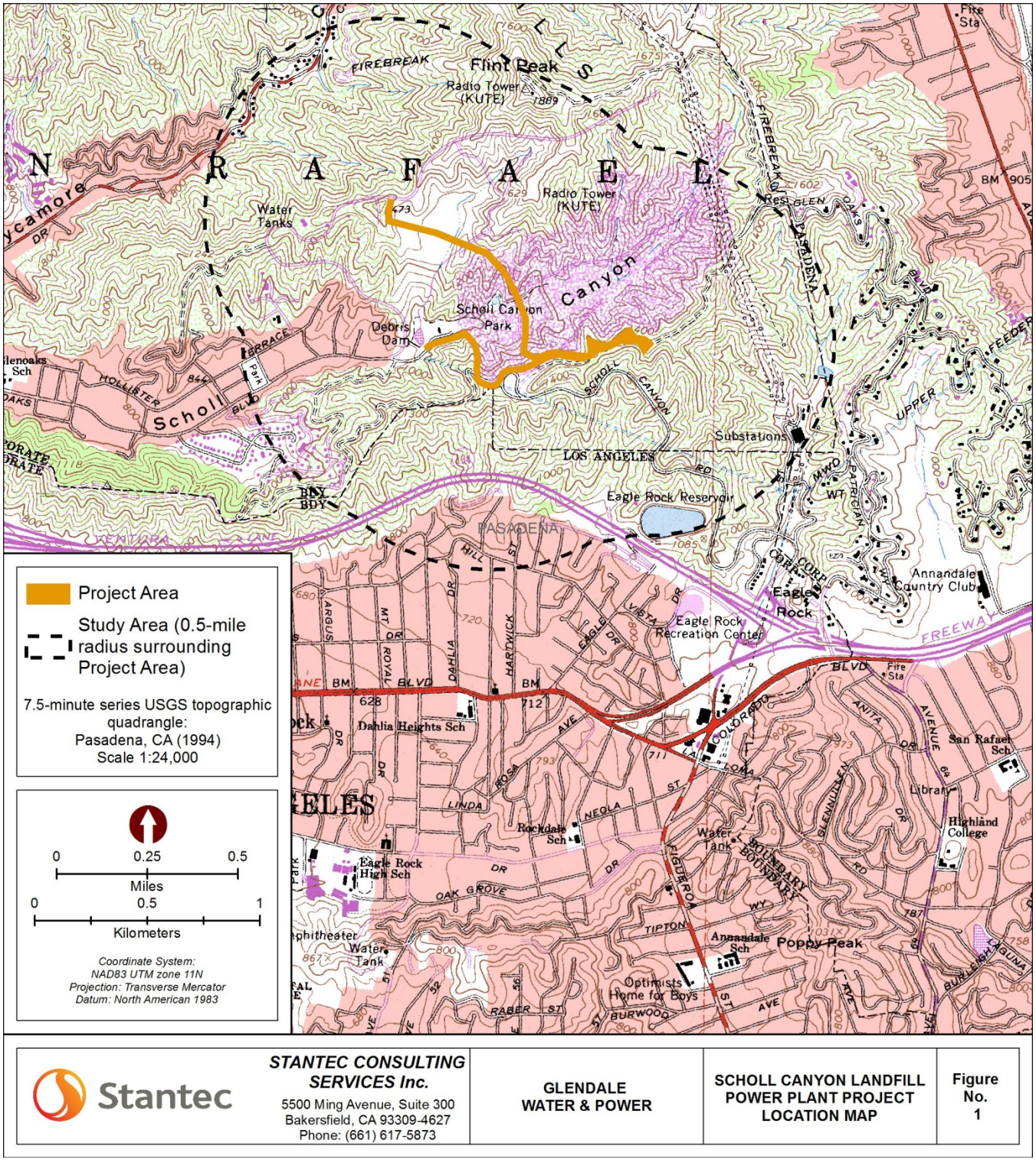
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Respectfully,

Hubert Switalski
Archaeologist
Stantec Consulting Services, Inc.
5500 Ming Avenue, Suite 300
Bakersfield, CA 93309-4627
Office: 661.617.5873
hubert.switalski@stantec.com

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Stantec Consulting Services Inc.
5500 Ming Avenue, Suite 300
Bakersfield, CA 93309-4627
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January 27, 2016

Soboba Band of Mission Indians
Attn: Carrie Garcia
P.O. Box 487
San Jacinto, CA 92581

Subject: *Scholl Canyon Landfill Power Project, Glendale, Los Angeles County, California.*

Dear Ms. Garcia,

Glendale Water and Power (GWP) is proposing to construct a power generation facility with auxiliary water and natural gas pipelines within the Scholl Canyon Landfill, Glendale, Los Angeles County, California. The proposed project will entail construction of a new 13 megawatt (MW) facility which be constructed adjacent to an existing and active facility. An approximately two thirds of a mile of natural gas pipeline will be constructed to connect the facility to the existing pipeline system. This three inch steel gas pipeline will be located above ground except for road crossings. For fire protection and domestic water use, a one mile long, 14 inch steel pipeline will be connected to an existing 16 inch pipeline located north of the landfill on East Glen Oaks Blvd. This water line will also be above ground except for road crossings (Fig. 1). Additionally, the existing approximately seven mile long 6-inch diameter underground pipeline currently used to carry landfill gas (LFG) to the existing power plant would be decommissioned in place. Ground disturbance will be limited to areas within and adjacent to an existing Scholl Canyon Landfill. As stated above, in some cases existing underground utilities will be decommissioned in place.

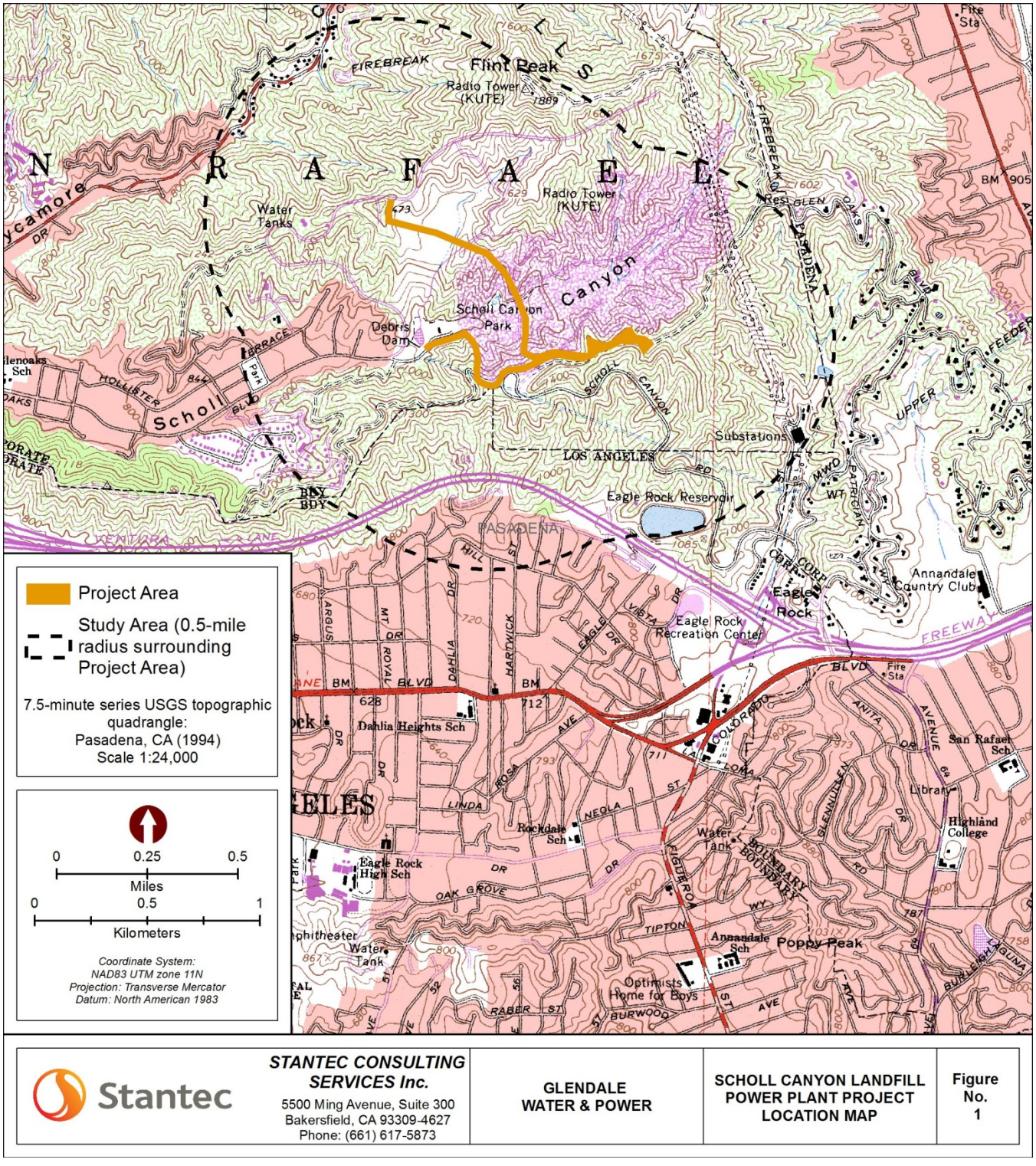
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January 27, 2016

San Fernando Band of Mission Indians
John Valenzuela, Chairperson
P.O. Box 221838
Newhall, CA 91322

Subject: *Scholl Canyon Landfill Power Project, Glendale, Los Angeles County, California.*

Dear Mr. Valenzuela,

Glendale Water and Power (GWP) is proposing to construct a power generation facility with auxiliary water and natural gas pipelines within the Scholl Canyon Landfill, Glendale, Los Angeles County, California. The proposed project will entail construction of a new 13 megawatt (MW) facility which be constructed adjacent to an existing and active facility. An approximately two thirds of a mile of natural gas pipeline will be constructed to connect the facility to the existing pipeline system. This three inch steel gas pipeline will be located above ground except for road crossings. For fire protection and domestic water use, a one mile long, 14 inch steel pipeline will be connected to an existing 16 inch pipeline located north of the landfill on East Glen Oaks Blvd. This water line will also be above ground except for road crossings (Fig. 1). Additionally, the existing approximately seven mile long 6-inch diameter underground pipeline currently used to carry landfill gas (LFG) to the existing power plant would be decommissioned in place. Ground disturbance will be limited to areas within and adjacent to an existing Scholl Canyon Landfill. As stated above, in some cases existing underground utilities will be decommissioned in place.

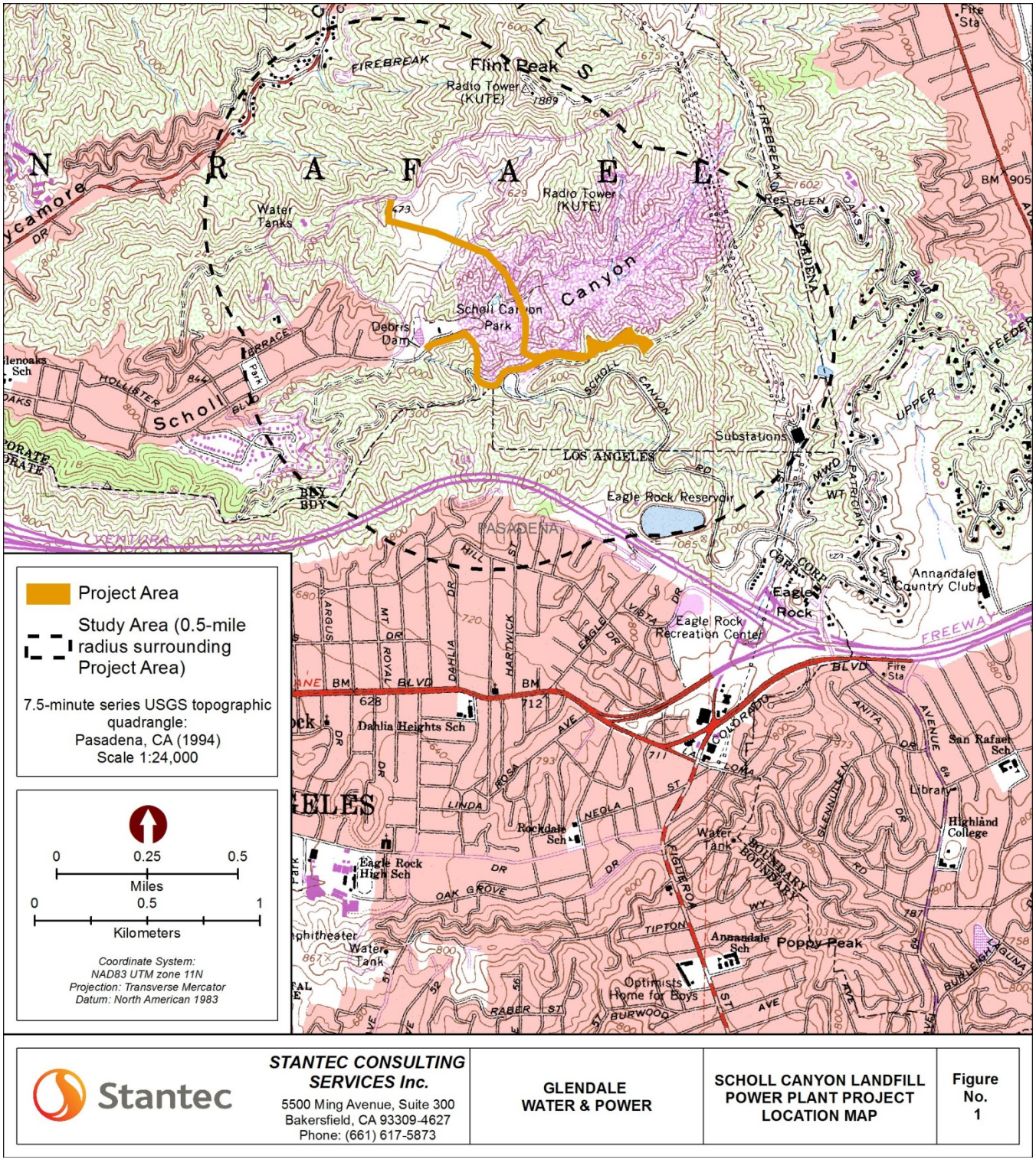
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January 27, 2016

Gabrielino-Tongva Tribe
Linda Candelaria. Co-Chairperson
1999 Avenue of the Stars, Suite 1100
Los Angeles, CA 90067

Subject: *Scholl Canyon Landfill Power Project, Glendale, Los Angeles County, California.*

Dear Ms. Candelaria,

Glendale Water and Power (GWP) is proposing to construct a power generation facility with auxiliary water and natural gas pipelines within the Scholl Canyon Landfill, Glendale, Los Angeles County, California. The proposed project will entail construction of a new 13 megawatt (MW) facility which be constructed adjacent to an existing and active facility. An approximately two thirds of a mile of natural gas pipeline will be constructed to connect the facility to the existing pipeline system. This three inch steel gas pipeline will be located above ground except for road crossings. For fire protection and domestic water use, a one mile long, 14 inch steel pipeline will be connected to an existing 16 inch pipeline located north of the landfill on East Glen Oaks Blvd. This water line will also be above ground except for road crossings (Fig. 1). Additionally, the existing approximately seven mile long 6-inch diameter underground pipeline currently used to carry landfill gas (LFG) to the existing power plant would be decommissioned in place. Ground disturbance will be limited to areas within and adjacent to an existing Scholl Canyon Landfill. As stated above, in some cases existing underground utilities will be decommissioned in place.

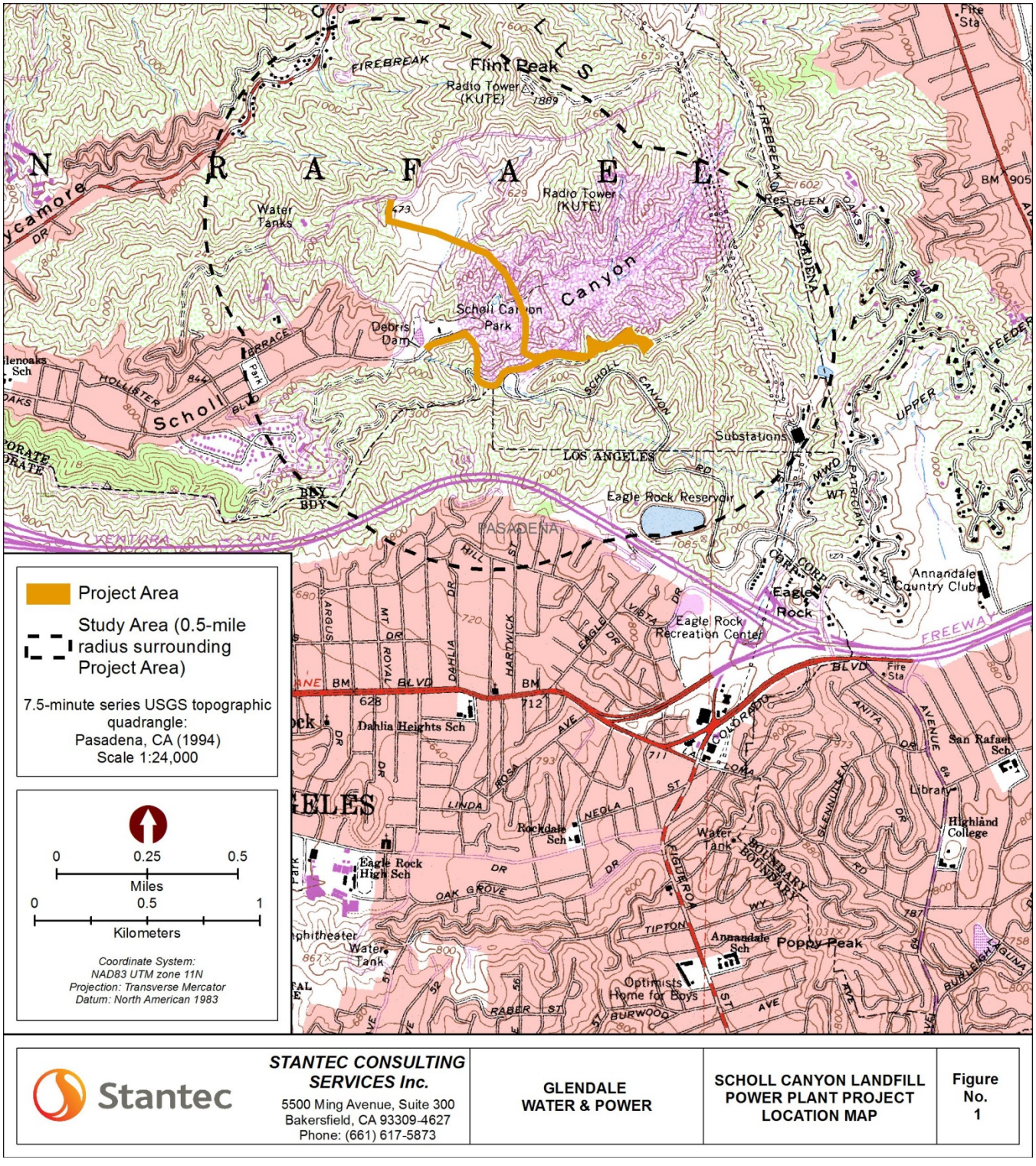
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January 27, 2016

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Tribal Chair/Cultural Resources
P.O. Box 490
Bellflower, CA 90707

Subject: *Scholl Canyon Landfill Power Project, Glendale, Los Angeles County, California.*

Dear Mr. Dorame,

Glendale Water and Power (GWP) is proposing to construct a power generation facility with auxiliary water and natural gas pipelines within the Scholl Canyon Landfill, Glendale, Los Angeles County, California. The proposed project will entail construction of a new 13 megawatt (MW) facility which be constructed adjacent to an existing and active facility. An approximately two thirds of a mile of natural gas pipeline will be constructed to connect the facility to the existing pipeline system. This three inch steel gas pipeline will be located above ground except for road crossings. For fire protection and domestic water use, a one mile long, 14 inch steel pipeline will be connected to an existing 16 inch pipeline located north of the landfill on East Glen Oaks Blvd. This water line will also be above ground except for road crossings (Fig. 1). Additionally, the existing approximately seven mile long 6-inch diameter underground pipeline currently used to carry landfill gas (LFG) to the existing power plant would be decommissioned in place. Ground disturbance will be limited to areas within and adjacent to an existing Scholl Canyon Landfill. As stated above, in some cases existing underground utilities will be decommissioned in place.

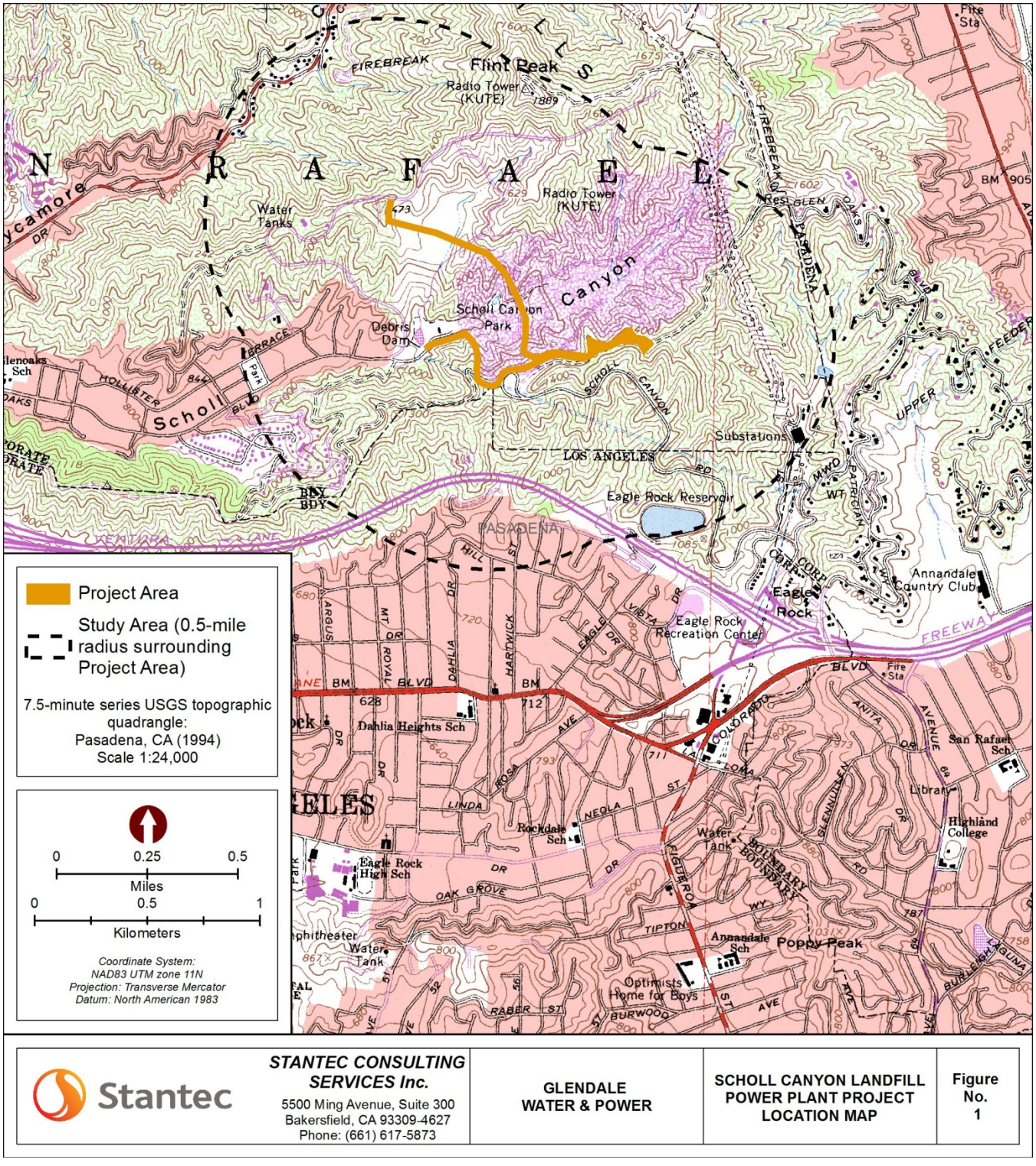
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January 27, 2016

Fernandeno Tataviam Band of Mission Indians
Rudy Ortega Jr., President
1019 2nd Street
San Fernando, CA 91340

Subject: *Scholl Canyon Landfill Power Project, Glendale, Los Angeles County, California.*

Dear Mr. Ortega,

Glendale Water and Power (GWP) is proposing to construct a power generation facility with auxiliary water and natural gas pipelines within the Scholl Canyon Landfill, Glendale, Los Angeles County, California. The proposed project will entail construction of a new 13 megawatt (MW) facility which be constructed adjacent to an existing and active facility. An approximately two thirds of a mile of natural gas pipeline will be constructed to connect the facility to the existing pipeline system. This three inch steel gas pipeline will be located above ground except for road crossings. For fire protection and domestic water use, a one mile long, 14 inch steel pipeline will be connected to an existing 16 inch pipeline located north of the landfill on East Glen Oaks Blvd. This water line will also be above ground except for road crossings (Fig. 1). Additionally, the existing approximately seven mile long 6-inch diameter underground pipeline currently used to carry landfill gas (LFG) to the existing power plant would be decommissioned in place. Ground disturbance will be limited to areas within and adjacent to an existing Scholl Canyon Landfill. As stated above, in some cases existing underground utilities will be decommissioned in place.

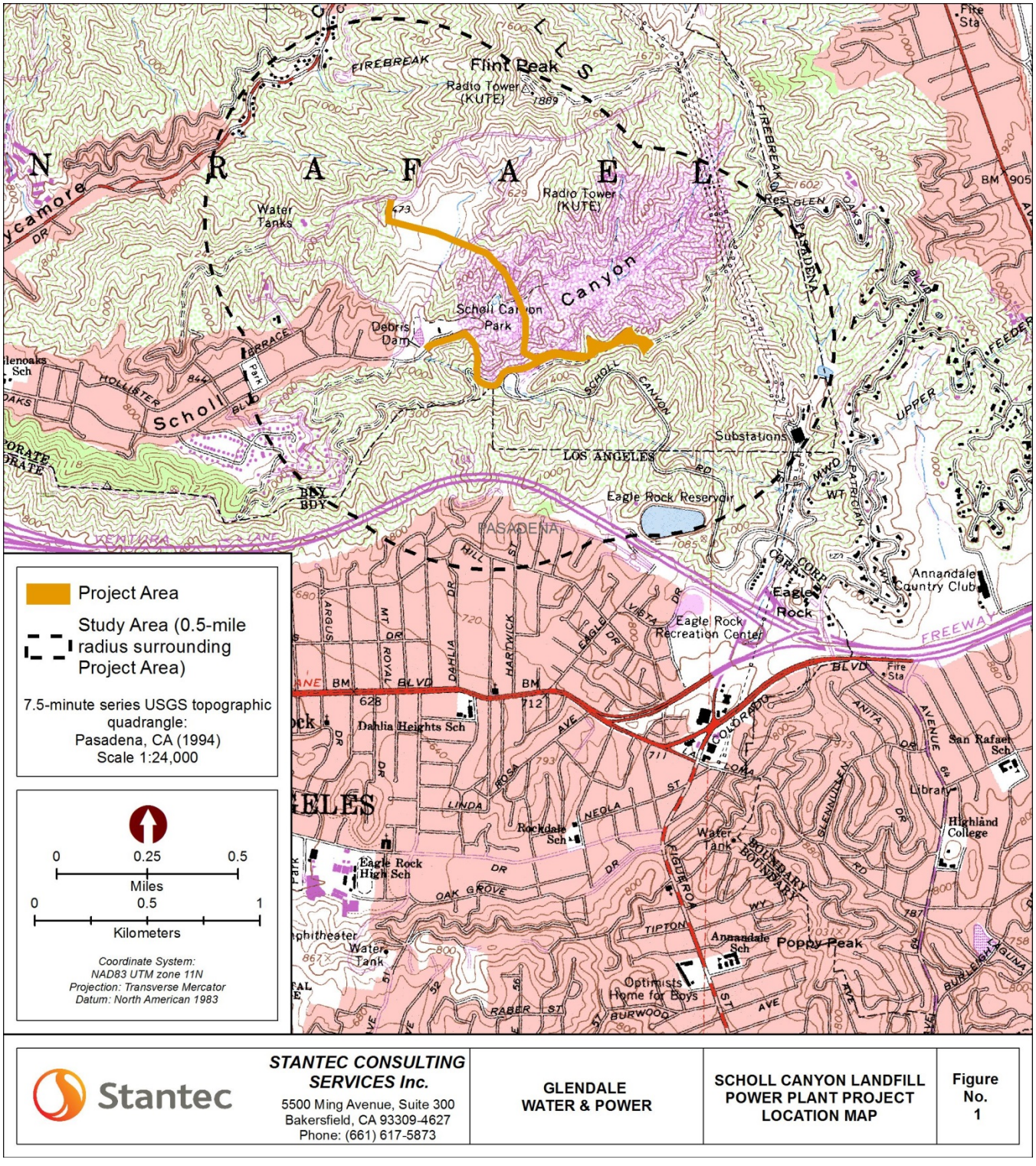
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January 27, 2016

Gabrielino/Tongva Nation
Sandonne Goad, Chairperson
106 ½ Judge John Aiso St., #231
Los Angeles, CA 90012

Subject: *Scholl Canyon Landfill Power Project, Glendale, Los Angeles County, California.*

To Whom It May Concern,

Glendale Water and Power (GWP) is proposing to construct a power generation facility with auxiliary water and natural gas pipelines within the Scholl Canyon Landfill, Glendale, Los Angeles County, California. The proposed project will entail construction of a new 13 megawatt (MW) facility which be constructed adjacent to an existing and active facility. An approximately two thirds of a mile of natural gas pipeline will be constructed to connect the facility to the existing pipeline system. This three inch steel gas pipeline will be located above ground except for road crossings. For fire protection and domestic water use, a one mile long, 14 inch steel pipeline will be connected to an existing 16 inch pipeline located north of the landfill on East Glen Oaks Blvd. This water line will also be above ground except for road crossings (Fig. 1). Additionally, the existing approximately seven mile long 6-inch diameter underground pipeline currently used to carry landfill gas (LFG) to the existing power plant would be decommissioned in place. Ground disturbance will be limited to areas within and adjacent to an existing Scholl Canyon Landfill. As stated above, in some cases existing underground utilities will be decommissioned in place.

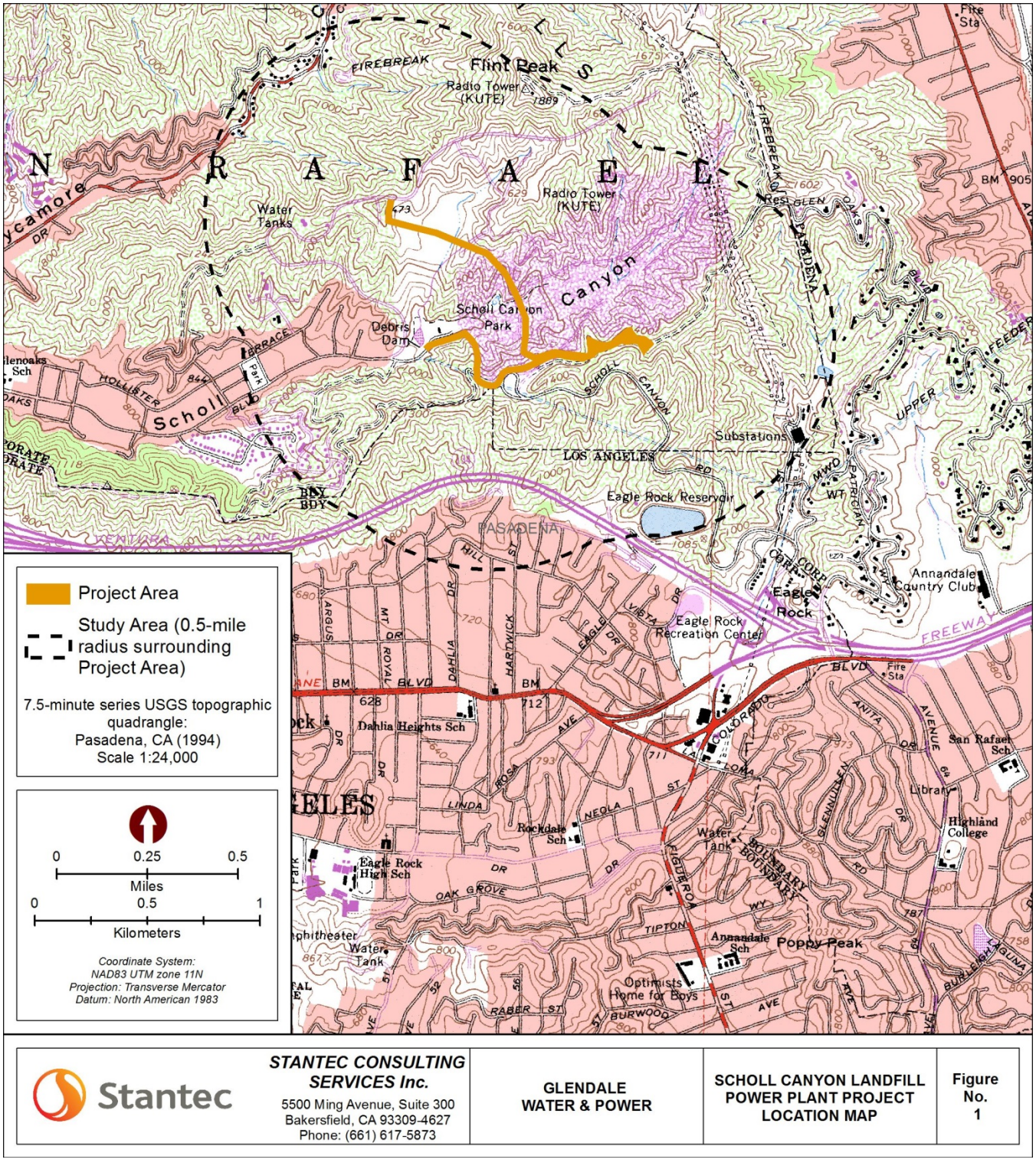
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GABRIELENO BAND OF MISSION INDIANS - KIZH NATION
Historically known as The San Gabriel Band of Mission Indians
Recognized by the State of California as the aboriginal tribe of the Los Angeles basin

Hubert Switalski
Archaeologist
Stantec Cosulting Services,Inc
5500 Ming Ave, Suite 300
Bakersfield CA 93309-4627

Subject: Scholl Canyon Landfill Power Project, Glendale, Los Angeles County, California.

Dear Hubert
Thank you for your letter regarding your proposed project for the Scholl canyon Landfill Power Project, Glendale, Los Angeles County Prominent village of ***HAHAMONGNA*** , however there were many more Gabrieleño settlements with in this location. ***HAHAMONGNA*** covered a Mass area of what was historically known as Rancho San Rafael then Rancho de Los Verdugos . These areas later became known to be Glendale, Eagle rock and also parts of Pasadena. We would like to request one of our Tribal monitors to be on site at this project location during all ground disturbance (this includes but is not limited to pavement removal, pot-holing or auguring, boring, grading, excavation and trenching). Our priority is to avoid and protect cultural resources without delay or conflicts to the lead agency or property owner. Our monitor will provide daily written reports (as well as photographic proof) of all activities including construction along with any cultural materials identified. Liability insurance, consultation with our Tribal archaeologists and Tribal biologists can also be provided and utilized if necessary.

Often, we are told that an archaeological monitor will be present and there's no need for a Native American monitor. It is well known that archaeologists do not recognize sites that Native Americans do. Archaeologists are trained to recognize man made items even though they often misinterpret what the item is used for. This is what Tribal Monitors do – what we are trained to do. The purpose of SHPO, Section 106, ACHP and now AB52 is to provide Tribes with the laws necessary to protect potential cultural resources.

In addition, we are also often told that an area has been previously developed or disturbed and thus there are no concerns for cultural resources and thus minimal impacts would be expected. I have two major recent examples of how similar statements on other projects were proven very inadequate. An archaeological study claimed there would be no impacts to an area adjacent to the Plaza Church at Olvera Street, the original Spanish settlement of Los Angeles, now in downtown Los Angeles. In fact, this site was the Gabrieleno village of Yangna long before it became what it is now today. The new development wrongfully began their construction and they, in the process, dug up and desecrated 118 burials. The area that was dismissed as culturally sensitive was in fact the First Cemetery of Los Angeles where it had been well documented at the Huntington Library that 400 of our Tribe's ancestors were buried there along with the founding families of Los Angeles (Picos, Sepulvedas, and Alvardos to name a few). In addition, there was another inappropriate study for the development of a new sports complex at Fedde Middle School in the City of Hawaiian Gardens could commence. Again, a village and burial site were desecrated despite their mitigation measures. Thankfully, we were able to work alongside the school district to quickly and respectfully mitigate a mutually beneficial resolution.

Given all the above, the proper thing to do for your project would be for our Tribe to monitor ground disturbing construction work. Because we are the lineal descendants of the vast area of Los Angeles and Orange Counties, we hold sacred the ability to protect what little of our culture remains. We thank you for taking seriously your role and responsibility in assisting us in preserving our culture.

With respect,

Andrew Salas, Chairman

Andrew Salas, Chairman | Nadine Salas, Vice-Chairman | Christina Swindall Martinez, secretary
Albert Perez, treasurer I | Martha Gonzalez Lemos, treasurer II | Richard Gradias, Chairman of the council of Elders

cell (626)926-4131

Addendum: clarification regarding some confusions regarding consultation under AB52:

AB52 clearly states that consultation must occur with tribes that claim traditional and cultural affiliation with a project site. Unfortunately, this statement has been left open to interpretation so much that neighboring tribes are claiming affiliation with projects well outside their traditional tribal territory. The territories of our surrounding Native American tribes such as the Luiseno, Chumash, and Cahuilla tribal entities. Each of our tribal territories has been well defined by historians, ethnographers, archaeologists, and ethnographers – a list of resources we can provide upon request. Often, each Tribe as well educates the public on their very own website as to the definition of their tribal boundaries. You may have received a consultation request from another Tribe. We are responding because your project site lies within our ***Traditional and Cultural Affiliated tribal territory,*** tribal territory, which, again, has been well documented. If you have questions regarding the validity of the "traditional and cultural affiliation" of another Tribe, we urge you to contact the Native American Heritage Commission directly. Section 5 section 21080.3.1 (c) states "…the Native American Heritage Commission shall assist the lead agency in identifying the California Native American tribes that are traditionally and culturally affiliated with the project area." In addition, please see the map below.

APPENDIX 1: Map 1-2; Bean and Smith 1978 map.

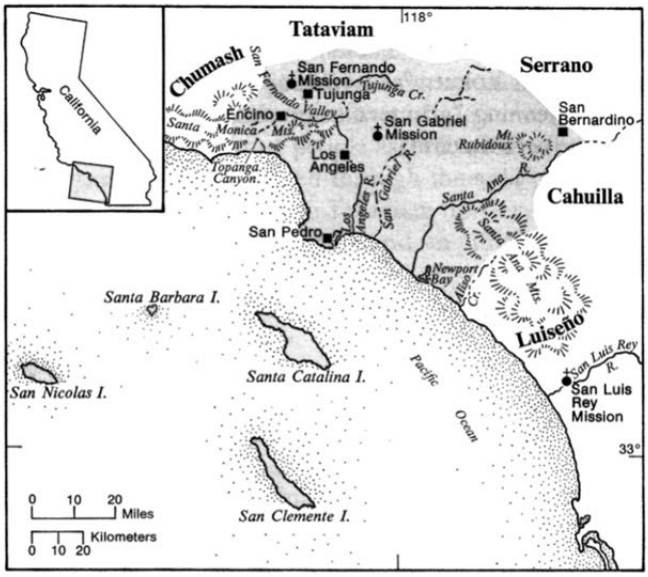


Fig. 1. Tribal territory.

The United States National Museum's Map of Gabrielino Territory:

Bean, Lowell John and Charles R. Smith
1978 Gabrielino IN *Handbook of North American Indians, California*, Vol. 8, edited by R.F. Heizer, Smithsonian Institution Press, Washington, D.C., pp. 538-549

Andrew Salas, Chairman
Nadine Salas, Vice-Chairman
Christina Swindall Martinez, secretary
Albert Perez, treasurer I
Martha Gonzalez Lemos, treasurer II
Richard Gradias, Chairman of the council of Elders

PO Box 393 Covina, CA 91723 www.gabrielenoindians@yahoo.com gabrielenoindians@yahoo.com

SOBOBA BAND OF LUISEÑO INDIANS
EST. JUNE 19, 1883

February 25, 2016

Attn: Hubert Switalski, Archaeologist
Stantec Consulting Services, Inc.
5500 Ming Avenue, Suite 300
Bakersfield, CA 93309-4627

RE: Scholl Canyon Landfill Power Project, Glendale, Los Angeles County, CA

The Soboba Band of Luiseño Indians appreciates your observance of Tribal Cultural Resources and their preservation in your project. The information provided to us on said project(s) has been assessed through our Cultural Resource Department, where it was concluded that although it is outside the existing reservation, the project area does fall within the bounds of our Tribal Traditional Use Areas. At this time the Soboba Band does not have any specific concerns regarding known cultural resources in the specified areas that the project encompasses, but does request that the appropriate consultation continue to take place between the tribes, project proponents, and government agencies.

Also, working in and around traditional use areas intensifies the possibility of encountering cultural resources during any future construction/excavation phases that may take place. For this reason the Soboba Band of Luiseño Indians requests that approved Native American Monitor(s) be present during any future ground disturbing proceedings, including surveys and archaeological testing, associated with this project. The Soboba Band recommends that you contact Gabrieleño Tribal Consultants, who are closer to the project area. Please feel free to contact me with any additional questions or concerns.

Sincerely,

Joseph Ontiveros
Cultural Resource Director
Soboba Band of Luiseño Indians
P.O. Box 487
San Jacinto, CA 92581
Phone (951) 654-5544 ext. 4137
Cell (951) 663-5279
jontiveros@soboba-nsn.gov

Confidentiality: The entirety of the contents of this letter shall remain confidential between Soboba and Stantec Consulting Services, Inc. No part of the contents of this letter may be shared, copied, or utilized in any way with any other individual, entity, municipality, or tribe, whatsoever, without the expressed written permission of the Soboba Band of Luiseño Indians.

APPENDIX B – SITE RECORDS

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code
Other Listings
Review Code Reviewer Date

 *Resource Name or #: SC-1

P1. Other Identifier:
***P2. Location:** ■**Not for Publication** ☐ **Unrestricted** ***a. County:** Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Pasadena, CA **Date:** 1994 unsectioned portion of San Rafael Land Grant
c. Address: City: Zip:
d. UTM: NAD83 CONUS, Zone: 11S; 389861mE/ 3779695mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) From junction of Scholl Canyon Road and Figueroa Road, take Scholl Canyon Road to the Scholl Canyon Sanitary Landfill for approximately 0.75 miles. Proceed thorugh the gate and continue right for approximately 0.25 miles. The resource is located 150 meters at the end of an existing access road.

***P3a. Description:** This resource is a historic period water tank constructed sometime in the 1960s. This inactive water tank appears to have been constructed of 4-foot panels of corrugated metal and covered with a domed top. The tank is 14 feet in diameter and approximately 18 feet in height. The tank sits on top of a round gravel pad measuring approximately 16 feet in diameter. The tank has been retrofitted with a new water valve manufactured in 1990. A newer water tank, mounted on a concrete pad and constructed in 1990, is located immediately east. While the exact construction date is unknown, the tank with its access road appears on aerial imagery of the Pasadena and Glendale area which were taken in the 1960s.

***P3b. Resource Attributes:** AH-6 Water conveyance/storage system

***P4. Resources Present:** ☐Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ■Other (Isolates, etc.)



P5b. Description of Photo: Overview of resource SC-1, view east (Stantec IMG_3901).

***P6. Date Constructed/Age and Sources:** ■Historic ☐Prehistoric ☐Both

***P7. Owner and Address:**
City of Glendale
Water and Power Department

***P8. Recorded by:**
Hubert Switalski,
Stantec Consulting Services, Inc.
5500 Ming Ave., Suite 300
Bakersfield, CA 93309-4627

***P9. Date Recorded:**
02/23/2017

***P10. Survey Type:** Intensive pedestrian survey.

***P11. Report Citation:** H. Switalski, and M. Cross. 2017. *Cultural Resources Assessment Report on Behalf of Glendale Water and Power for the Proposed Scholl Canyon Landfill Power Project, San Rafael Hills, Glendale, Los Angeles County, California.*

***Attachments:** ☐NONE ■Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

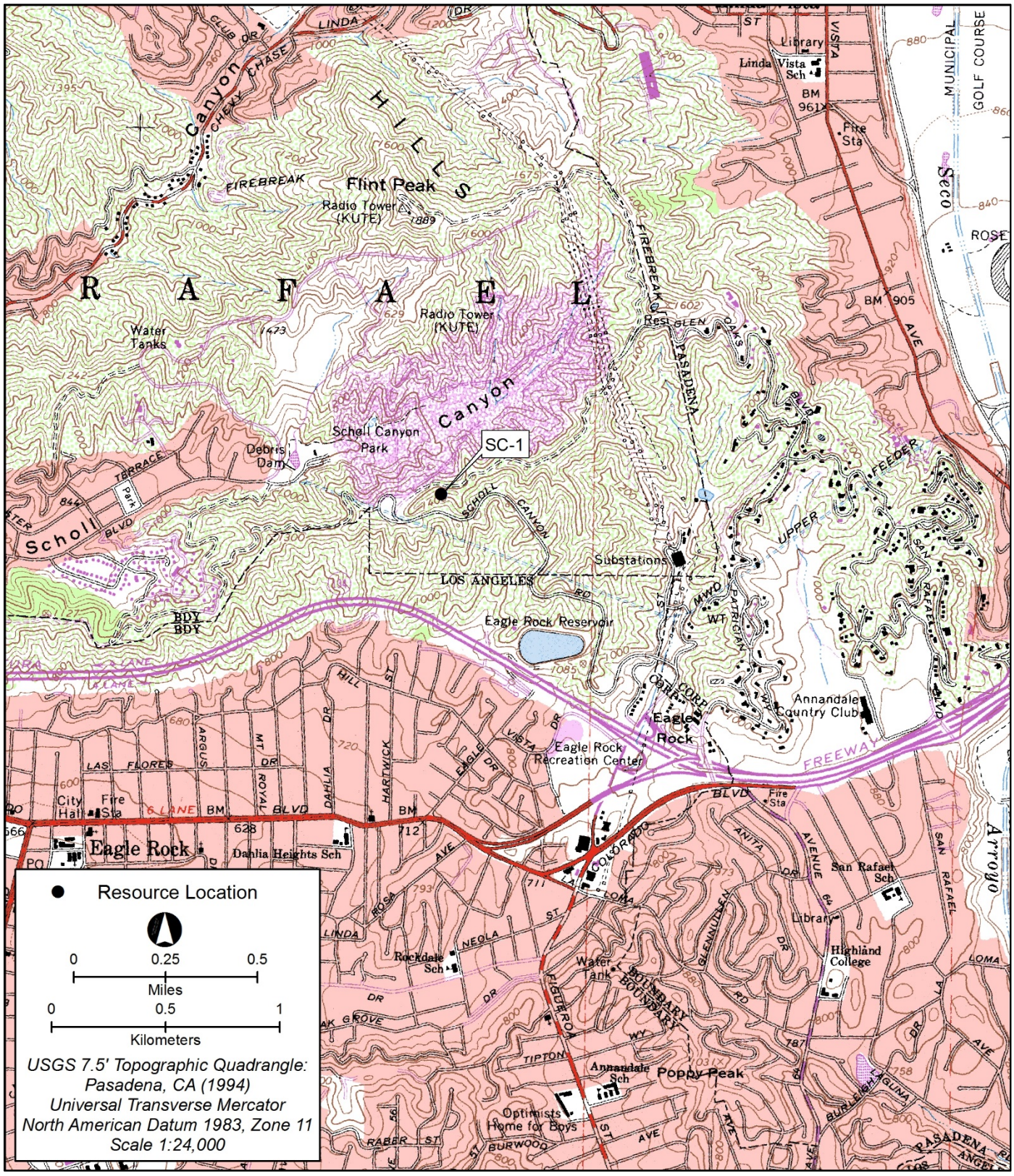
State Of California—The Resources Agency **Primary #**
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Trinomial

 ***Resource Name or #:** SC-1

***Map Name:** Pasadena, CA ***Scale:** 1:24,000 ***Date of Map:** 1994



Appendix B AIR QUALITY

B.1 CALEEMOD OUTPUT ANNUAL REPORT, DAILY REPORT (SUMMER), AND DAILY REPORT (WINTER)

APPENDIX B.1

CALEEMOD OUTPUT ANNUAL REPORT

CALEEMOD DAILY REPORT (SUMMER)

CALEEMOD DAILY REPORT (WINTER)

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Biogas Renewable Generation Project

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	5.50	1000sqft	3.00	5,500.00	6

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	12			**Operational Year**	2020
Utility Company	Glendale Water & Power				
CO2 Intensity (lb/MWhr)	1115.33	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot Acreage and population were estimated.

Construction Phase - Construction schedule was estimated and provided by Stantec.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - This data was estimated and provided by Stantec.

Demolition -

Grading - This data was estimated and provided by Stantec.

Vehicle Trips - This data was estimated and provided by Stantec.

Construction Off-road Equipment Mitigation - Tier 2 or higher off-road equipment will be utilized for this construction project.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
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tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	10.00	12.00
tblConstructionPhase	NumDays	220.00	195.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	6.00	45.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	3.00	20.00
tblConstructionPhase	PhaseEndDate	1/14/2020	9/17/2019

Biogas Renewable Generation Project - South Coast AQMD Air District, Annual

tblConstructionPhase	PhaseEndDate	11/29/2019	8/30/2019
tblConstructionPhase	PhaseEndDate	3/1/2019	11/30/2018
tblConstructionPhase	PhaseEndDate	12/27/2019	8/28/2019
tblConstructionPhase	PhaseEndDate	11/30/2018	9/28/2018
tblConstructionPhase	PhaseStartDate	12/28/2019	9/1/2019
tblConstructionPhase	PhaseStartDate	3/2/2019	12/1/2018
tblConstructionPhase	PhaseStartDate	12/1/2018	10/1/2018
tblConstructionPhase	PhaseStartDate	11/30/2019	8/1/2019
tblGrading	AcresOfGrading	22.50	3.00
tblGrading	AcresOfGrading	0.00	2.00
tblGrading	MaterialExported	0.00	14,000.00
tblLandUse	LotAcreage	0.13	3.00
tblLandUse	Population	0.00	6.00
tblProjectCharacteristics	OperationalYear	2018	2020
tblTripsAndVMT	HaulingTripLength	20.00	0.27
tblTripsAndVMT	HaulingTripNumber	0.00	875.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	1.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	WorkerTripNumber	15.00	10.00
tblTripsAndVMT	WorkerTripNumber	18.00	10.00
tblTripsAndVMT	WorkerTripNumber	15.00	10.00
tblTripsAndVMT	WorkerTripNumber	2.00	10.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00
tblTripsAndVMT	WorkerTripNumber	0.00	20.00

tblVehicleTrips	ST_TR	1.32	0.06
tblVehicleTrips	SU_TR	0.68	0.06
tblVehicleTrips	WD_TR	6.97	0.24

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.1854	1.9851	1.0900	2.0600e-003	0.3419	0.0993	0.4412	0.1788	0.0919	0.2708	0.0000	188.2741	188.2741	0.0493	0.0000	189.5074
2019	0.2543	2.0805	1.7022	2.9100e-003	0.0184	0.1210	0.1394	5.0200e-003	0.1137	0.1187	0.0000	256.7049	256.7049	0.0570	0.0000	258.1298
Maximum	**0.2543**	**2.0805**	**1.7022**	**2.9100e-003**	**0.3419**	**0.1210**	**0.4412**	**0.1788**	**0.1137**	**0.2708**	**0.0000**	**256.7049**	**256.7049**	**0.0570**	**0.0000**	**258.1298**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.0672	1.6781	1.1795	2.0600e-003	0.1395	0.0474	0.1869	0.0714	0.0474	0.1188	0.0000	188.2739	188.2739	0.0493	0.0000	189.5072
2019	0.1369	2.3322	1.7761	2.9100e-003	0.0184	0.0856	0.1040	5.0200e-003	0.0855	0.0906	0.0000	256.7047	256.7047	0.0570	0.0000	258.1296
Maximum	**0.1369**	**2.3322**	**1.7761**	**2.9100e-003**	**0.1395**	**0.0856**	**0.1869**	**0.0714**	**0.0855**	**0.1188**	**0.0000**	**256.7047**	**256.7047**	**0.0570**	**0.0000**	**258.1296**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**53.61**	**1.36**	**-5.85**	**0.00**	**56.16**	**39.63**	**49.89**	**58.42**	**35.35**	**46.24**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	8-1-2018	10-31-2018	1.4396	1.1033
2	11-1-2018	1-31-2019	0.9722	0.9036
3	2-1-2019	4-30-2019	0.7855	0.8235
4	5-1-2019	7-31-2019	0.8118	0.8510
5	8-1-2019	9-30-2019	0.4482	0.4913
		Highest	1.4396	1.1033

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0224	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Energy	5.4000e-004	4.9000e-003	4.1100e-003	3.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	36.7998	36.7998	9.2000e-004	2.7000e-004	36.9024
Mobile	4.0000e-004	2.3800e-003	6.0900e-003	2.0000e-005	1.7500e-003	2.0000e-005	1.7700e-003	4.7000e-004	2.0000e-005	4.9000e-004	0.0000	1.9951	1.9951	1.0000e-004	0.0000	1.9975
Waste						0.0000	0.0000		0.0000	0.0000	1.3844	0.0000	1.3844	0.0818	0.0000	3.4298
Water						0.0000	0.0000		0.0000	0.0000	0.4035	8.3783	8.7819	0.0417	1.0200e-003	10.1284
Total	**0.0234**	**7.2800e-003**	**0.0103**	**5.0000e-005**	**1.7500e-003**	**3.9000e-004**	**2.1400e-003**	**4.7000e-004**	**3.9000e-004**	**8.6000e-004**	**1.7879**	**47.1734**	**48.9613**	**0.1245**	**1.2900e-003**	**52.4583**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0224	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Energy	5.4000e-004	4.9000e-003	4.1100e-003	3.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	36.7998	36.7998	9.2000e-004	2.7000e-004	36.9024
Mobile	4.0000e-004	2.3800e-003	6.0900e-003	2.0000e-005	1.7500e-003	2.0000e-005	1.7700e-003	4.7000e-004	2.0000e-005	4.9000e-004	0.0000	1.9951	1.9951	1.0000e-004	0.0000	1.9975
Waste						0.0000	0.0000		0.0000	0.0000	1.3844	0.0000	1.3844	0.0818	0.0000	3.4298
Water						0.0000	0.0000		0.0000	0.0000	0.4035	8.3783	8.7819	0.0417	1.0200e-003	10.1284
Total	**0.0234**	**7.2800e-003**	**0.0103**	**5.0000e-005**	**1.7500e-003**	**3.9000e-004**	**2.1400e-003**	**4.7000e-004**	**3.9000e-004**	**8.6000e-004**	**1.7879**	**47.1734**	**48.9613**	**0.1245**	**1.2900e-003**	**52.4583**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Biogas Renewable Generation Project - South Coast AQMD Air District, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2018	8/31/2018	5	23	
2	Site Preparation	Site Preparation	9/1/2018	9/28/2018	5	20	
3	Grading	Grading	10/1/2018	11/30/2018	5	45	
4	Building Construction	Building Construction	12/1/2018	8/30/2019	5	195	
5	Paving	Paving	8/1/2019	8/28/2019	5	20	
6	Architectural Coating	Architectural Coating	9/1/2019	9/17/2019	5	12	

Acres of Grading (Site Preparation Phase): 2

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 8,250; Non-Residential Outdoor: 2,750; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Biogas Renewable Generation Project - South Coast AQMD Air District, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	20.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	10.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	10.00	5.00	112.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	10.00	10.00	875.00	14.70	6.90	0.27	LD_Mix	HDT_Mix	HHDT
Paving	8	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	10.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0121	0.0000	0.0121	1.8400e-003	0.0000	1.8400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0428	0.4407	0.2565	4.5000e-004		0.0223	0.0223		0.0208	0.0208	0.0000	40.3927	40.3927	0.0111	0.0000	40.6709
Total	**0.0428**	**0.4407**	**0.2565**	**4.5000e-004**	**0.0121**	**0.0223**	**0.0344**	**1.8400e-003**	**0.0208**	**0.0226**	**0.0000**	**40.3927**	**40.3927**	**0.0111**	**0.0000**	**40.6709**

3.2 Demolition - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.9000e-004	0.0178	3.3100e-003	4.0000e-005	9.6000e-004	7.0000e-005	1.0300e-003	2.6000e-004	6.0000e-005	3.3000e-004	0.0000	4.3199	4.3199	3.0000e-004	0.0000	4.3275
Vendor	2.5000e-004	7.1100e-003	1.8300e-003	1.0000e-005	3.6000e-004	5.0000e-005	4.1000e-004	1.0000e-004	5.0000e-005	1.5000e-004	0.0000	1.4363	1.4363	1.0000e-004	0.0000	1.4388
Worker	6.1000e-004	5.0000e-004	5.3700e-003	1.0000e-005	1.2600e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.4000e-004	0.0000	1.2104	1.2104	4.0000e-005	0.0000	1.2114
Total	**1.3500e-003**	**0.0254**	**0.0105**	**6.0000e-005**	**2.5800e-003**	**1.3000e-004**	**2.7100e-003**	**7.0000e-004**	**1.2000e-004**	**8.2000e-004**	**0.0000**	**6.9665**	**6.9665**	**4.4000e-004**	**0.0000**	**6.9777**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.7300e-003	0.0000	4.7300e-003	7.2000e-004	0.0000	7.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0145	0.3756	0.2838	4.5000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	40.3926	40.3926	0.0111	0.0000	40.6709
Total	**0.0145**	**0.3756**	**0.2838**	**4.5000e-004**	**4.7300e-003**	**0.0105**	**0.0152**	**7.2000e-004**	**0.0105**	**0.0112**	**0.0000**	**40.3926**	**40.3926**	**0.0111**	**0.0000**	**40.6709**

3.2 Demolition - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.9000e-004	0.0178	3.3100e-003	4.0000e-005	9.6000e-004	7.0000e-005	1.0300e-003	2.6000e-004	6.0000e-005	3.3000e-004	0.0000	4.3199	4.3199	3.0000e-004	0.0000	4.3275
Vendor	2.5000e-004	7.1100e-003	1.8300e-003	1.0000e-005	3.6000e-004	5.0000e-005	4.1000e-004	1.0000e-004	5.0000e-005	1.5000e-004	0.0000	1.4363	1.4363	1.0000e-004	0.0000	1.4388
Worker	6.1000e-004	5.0000e-004	5.3700e-003	1.0000e-005	1.2600e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.4000e-004	0.0000	1.2104	1.2104	4.0000e-005	0.0000	1.2114
Total	**1.3500e-003**	**0.0254**	**0.0105**	**6.0000e-005**	**2.5800e-003**	**1.3000e-004**	**2.7100e-003**	**7.0000e-004**	**1.2000e-004**	**8.2000e-004**	**0.0000**	**6.9665**	**6.9665**	**4.4000e-004**	**0.0000**	**6.9777**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1817	0.0000	0.1817	0.0994	0.0000	0.0994	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0456	0.4820	0.2248	3.8000e-004		0.0258	0.0258		0.0237	0.0237	0.0000	34.7599	34.7599	0.0108	0.0000	35.0304
Total	**0.0456**	**0.4820**	**0.2248**	**3.8000e-004**	**0.1817**	**0.0258**	**0.2075**	**0.0994**	**0.0237**	**0.1231**	**0.0000**	**34.7599**	**34.7599**	**0.0108**	**0.0000**	**35.0304**

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.3000e-004	0.0124	3.1900e-003	3.0000e-005	6.3000e-004	9.0000e-005	7.2000e-004	1.8000e-004	9.0000e-005	2.7000e-004	0.0000	2.4978	2.4978	1.8000e-004	0.0000	2.5023
Worker	5.3000e-004	4.3000e-004	4.6700e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0525	1.0525	4.0000e-005	0.0000	1.0534
Total	**9.6000e-004**	**0.0128**	**7.8600e-003**	**4.0000e-005**	**1.7300e-003**	**1.0000e-004**	**1.8300e-003**	**4.7000e-004**	**1.0000e-004**	**5.7000e-004**	**0.0000**	**3.5503**	**3.5503**	**2.2000e-004**	**0.0000**	**3.5557**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0709	0.0000	0.0709	0.0388	0.0000	0.0388	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0121	0.3372	0.2296	3.8000e-004		9.4600e-003	9.4600e-003		9.4600e-003	9.4600e-003	0.0000	34.7599	34.7599	0.0108	0.0000	35.0304
Total	**0.0121**	**0.3372**	**0.2296**	**3.8000e-004**	**0.0709**	**9.4600e-003**	**0.0803**	**0.0388**	**9.4600e-003**	**0.0482**	**0.0000**	**34.7599**	**34.7599**	**0.0108**	**0.0000**	**35.0304**

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.3000e-004	0.0124	3.1900e-003	3.0000e-005	6.3000e-004	9.0000e-005	7.2000e-004	1.8000e-004	9.0000e-005	2.7000e-004	0.0000	2.4978	2.4978	1.8000e-004	0.0000	2.5023
Worker	5.3000e-004	4.3000e-004	4.6700e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0525	1.0525	4.0000e-005	0.0000	1.0534
Total	**9.6000e-004**	**0.0128**	**7.8600e-003**	**4.0000e-005**	**1.7300e-003**	**1.0000e-004**	**1.8300e-003**	**4.7000e-004**	**1.0000e-004**	**5.7000e-004**	**0.0000**	**3.5503**	**3.5503**	**2.2000e-004**	**0.0000**	**3.5557**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1379	0.0000	0.1379	0.0748	0.0000	0.0748	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0624	0.6901	0.3730	6.7000e-004		0.0349	0.0349		0.0321	0.0321	0.0000	60.9905	60.9905	0.0190	0.0000	61.4652
Total	**0.0624**	**0.6901**	**0.3730**	**6.7000e-004**	**0.1379**	**0.0349**	**0.1728**	**0.0748**	**0.0321**	**0.1069**	**0.0000**	**60.9905**	**60.9905**	**0.0190**	**0.0000**	**61.4652**

3.4 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.9000e-004	0.0462	6.8600e-003	5.0000e-005	1.1000e-004	4.0000e-005	1.5000e-004	3.0000e-005	4.0000e-005	7.0000e-005	0.0000	4.9325	4.9325	9.1000e-004	0.0000	4.9553
Vendor	9.8000e-004	0.0278	7.1700e-003	6.0000e-005	1.4200e-003	2.0000e-004	1.6200e-003	4.1000e-004	1.9000e-004	6.0000e-004	0.0000	5.6201	5.6201	4.0000e-004	0.0000	5.6301
Worker	1.2000e-003	9.8000e-004	0.0105	3.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.6000e-004	2.0000e-005	6.7000e-004	0.0000	2.3681	2.3681	8.0000e-005	0.0000	2.3702
Total	**3.1700e-003**	**0.0750**	**0.0245**	**1.4000e-004**	**4.0000e-003**	**2.6000e-004**	**4.2600e-003**	**1.1000e-003**	**2.5000e-004**	**1.3400e-003**	**0.0000**	**12.9208**	**12.9208**	**1.3900e-003**	**0.0000**	**12.9556**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0538	0.0000	0.0538	0.0292	0.0000	0.0292	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0227	0.5913	0.4273	6.7000e-004		0.0174	0.0174		0.0174	0.0174	0.0000	60.9904	60.9904	0.0190	0.0000	61.4651
Total	**0.0227**	**0.5913**	**0.4273**	**6.7000e-004**	**0.0538**	**0.0174**	**0.0712**	**0.0292**	**0.0174**	**0.0465**	**0.0000**	**60.9904**	**60.9904**	**0.0190**	**0.0000**	**61.4651**

3.4 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.9000e-004	0.0462	6.8600e-003	5.0000e-005	1.1000e-004	4.0000e-005	1.5000e-004	3.0000e-005	4.0000e-005	7.0000e-005	0.0000	4.9325	4.9325	9.1000e-004	0.0000	4.9553
Vendor	9.8000e-004	0.0278	7.1700e-003	6.0000e-005	1.4200e-003	2.0000e-004	1.6200e-003	4.1000e-004	1.9000e-004	6.0000e-004	0.0000	5.6201	5.6201	4.0000e-004	0.0000	5.6301
Worker	1.2000e-003	9.8000e-004	0.0105	3.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.6000e-004	2.0000e-005	6.7000e-004	0.0000	2.3681	2.3681	8.0000e-005	0.0000	2.3702
Total	**3.1700e-003**	**0.0750**	**0.0245**	**1.4000e-004**	**4.0000e-003**	**2.6000e-004**	**4.2600e-003**	**1.1000e-003**	**2.5000e-004**	**1.3400e-003**	**0.0000**	**12.9208**	**12.9208**	**1.3900e-003**	**0.0000**	**12.9556**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0281	0.2456	0.1846	2.8000e-004		0.0158	0.0158		0.0148	0.0148	0.0000	24.9656	24.9656	6.1200e-003	0.0000	25.1185
Total	**0.0281**	**0.2456**	**0.1846**	**2.8000e-004**		**0.0158**	**0.0158**		**0.0148**	**0.0148**	**0.0000**	**24.9656**	**24.9656**	**6.1200e-003**	**0.0000**	**25.1185**

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6000e-004	0.0130	3.3400e-003	3.0000e-005	6.6000e-004	9.0000e-005	7.6000e-004	1.9000e-004	9.0000e-005	2.8000e-004	0.0000	2.6227	2.6227	1.9000e-004	0.0000	2.6274
Worker	5.6000e-004	4.6000e-004	4.9000e-003	1.0000e-005	1.1500e-003	1.0000e-005	1.1600e-003	3.1000e-004	1.0000e-005	3.1000e-004	0.0000	1.1051	1.1051	4.0000e-005	0.0000	1.1061
Total	**1.0200e-003**	**0.0134**	**8.2400e-003**	**4.0000e-005**	**1.8100e-003**	**1.0000e-004**	**1.9200e-003**	**5.0000e-004**	**1.0000e-004**	**5.9000e-004**	**0.0000**	**3.7279**	**3.7279**	**2.3000e-004**	**0.0000**	**3.7335**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0114	0.2473	0.1877	2.8000e-004		9.4900e-003	9.4900e-003		9.4900e-003	9.4900e-003	0.0000	24.9655	24.9655	6.1200e-003	0.0000	25.1184
Total	**0.0114**	**0.2473**	**0.1877**	**2.8000e-004**		**9.4900e-003**	**9.4900e-003**		**9.4900e-003**	**9.4900e-003**	**0.0000**	**24.9655**	**24.9655**	**6.1200e-003**	**0.0000**	**25.1184**

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6000e-004	0.0130	3.3400e-003	3.0000e-005	6.6000e-004	9.0000e-005	7.6000e-004	1.9000e-004	9.0000e-005	2.8000e-004	0.0000	2.6227	2.6227	1.9000e-004	0.0000	2.6274
Worker	5.6000e-004	4.6000e-004	4.9000e-003	1.0000e-005	1.1500e-003	1.0000e-005	1.1600e-003	3.1000e-004	1.0000e-005	3.1000e-004	0.0000	1.1051	1.1051	4.0000e-005	0.0000	1.1061
Total	**1.0200e-003**	**0.0134**	**8.2400e-003**	**4.0000e-005**	**1.8100e-003**	**1.0000e-004**	**1.9200e-003**	**5.0000e-004**	**1.0000e-004**	**5.9000e-004**	**0.0000**	**3.7279**	**3.7279**	**2.3000e-004**	**0.0000**	**3.7335**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2054	1.8339	1.4933	2.3400e-003		0.1122	0.1122		0.1055	0.1055	0.0000	204.5407	204.5407	0.0498	0.0000	205.7864
Total	**0.2054**	**1.8339**	**1.4933**	**2.3400e-003**		**0.1122**	**0.1122**		**0.1055**	**0.1055**	**0.0000**	**204.5407**	**204.5407**	**0.0498**	**0.0000**	**205.7864**

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4200e-003	0.1014	0.0254	2.2000e-004	5.4800e-003	6.6000e-004	6.1500e-003	1.5800e-003	6.3000e-004	2.2200e-003	0.0000	21.5387	21.5387	1.4900e-003	0.0000	21.5759
Worker	4.2000e-003	3.3400e-003	0.0363	1.0000e-004	9.5500e-003	8.0000e-005	9.6200e-003	2.5300e-003	7.0000e-005	2.6000e-003	0.0000	8.8678	8.8678	2.8000e-004	0.0000	8.8748
Total	**7.6200e-003**	**0.1048**	**0.0617**	**3.2000e-004**	**0.0150**	**7.4000e-004**	**0.0158**	**4.1100e-003**	**7.0000e-004**	**4.8200e-003**	**0.0000**	**30.4065**	**30.4065**	**1.7700e-003**	**0.0000**	**30.4507**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0940	2.0492	1.5550	2.3400e-003		0.0786	0.0786		0.0786	0.0786	0.0000	204.5404	204.5404	0.0498	0.0000	205.7861
Total	**0.0940**	**2.0492**	**1.5550**	**2.3400e-003**		**0.0786**	**0.0786**		**0.0786**	**0.0786**	**0.0000**	**204.5404**	**204.5404**	**0.0498**	**0.0000**	**205.7861**

3.5 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4200e-003	0.1014	0.0254	2.2000e-004	5.4800e-003	6.6000e-004	6.1500e-003	1.5800e-003	6.3000e-004	2.2200e-003	0.0000	21.5387	21.5387	1.4900e-003	0.0000	21.5759
Worker	4.2000e-003	3.3400e-003	0.0363	1.0000e-004	9.5500e-003	8.0000e-005	9.6200e-003	2.5300e-003	7.0000e-005	2.6000e-003	0.0000	8.8678	8.8678	2.8000e-004	0.0000	8.8748
Total	**7.6200e-003**	**0.1048**	**0.0617**	**3.2000e-004**	**0.0150**	**7.4000e-004**	**0.0158**	**4.1100e-003**	**7.0000e-004**	**4.8200e-003**	**0.0000**	**30.4065**	**30.4065**	**1.7700e-003**	**0.0000**	**30.4507**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0127	0.1276	0.1231	1.9000e-004		7.2000e-003	7.2000e-003		6.6400e-003	6.6400e-003	0.0000	16.7223	16.7223	5.1400e-003	0.0000	16.8509
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0127**	**0.1276**	**0.1231**	**1.9000e-004**		**7.2000e-003**	**7.2000e-003**		**6.6400e-003**	**6.6400e-003**	**0.0000**	**16.7223**	**16.7223**	**5.1400e-003**	**0.0000**	**16.8509**

3.6 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.7000e-004	6.9000e-004	7.5000e-003	2.0000e-005	1.9700e-003	2.0000e-005	1.9900e-003	5.2000e-004	1.0000e-005	5.4000e-004	0.0000	1.8347	1.8347	6.0000e-005	0.0000	1.8362
Total	**8.7000e-004**	**6.9000e-004**	**7.5000e-003**	**2.0000e-005**	**1.9700e-003**	**2.0000e-005**	**1.9900e-003**	**5.2000e-004**	**1.0000e-005**	**5.4000e-004**	**0.0000**	**1.8347**	**1.8347**	**6.0000e-005**	**0.0000**	**1.8362**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.5200e-003	0.1609	0.1353	1.9000e-004		5.6000e-003	5.6000e-003		5.6000e-003	5.6000e-003	0.0000	16.7223	16.7223	5.1400e-003	0.0000	16.8509
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.5200e-003**	**0.1609**	**0.1353**	**1.9000e-004**		**5.6000e-003**	**5.6000e-003**		**5.6000e-003**	**5.6000e-003**	**0.0000**	**16.7223**	**16.7223**	**5.1400e-003**	**0.0000**	**16.8509**

3.6 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.7000e-004	6.9000e-004	7.5000e-003	2.0000e-005	1.9700e-003	2.0000e-005	1.9900e-003	5.2000e-004	1.0000e-005	5.4000e-004	0.0000	1.8347	1.8347	6.0000e-005	0.0000	1.8362
Total	**8.7000e-004**	**6.9000e-004**	**7.5000e-003**	**2.0000e-005**	**1.9700e-003**	**2.0000e-005**	**1.9900e-003**	**5.2000e-004**	**1.0000e-005**	**5.4000e-004**	**0.0000**	**1.8347**	**1.8347**	**6.0000e-005**	**0.0000**	**1.8362**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0255					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6000e-003	0.0110	0.0111	2.0000e-005		7.7000e-004	7.7000e-004		7.7000e-004	7.7000e-004	0.0000	1.5320	1.5320	1.3000e-004	0.0000	1.5352
Total	**0.0271**	**0.0110**	**0.0111**	**2.0000e-005**		**7.7000e-004**	**7.7000e-004**		**7.7000e-004**	**7.7000e-004**	**0.0000**	**1.5320**	**1.5320**	**1.3000e-004**	**0.0000**	**1.5352**

3.7 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-005	2.1000e-003	5.3000e-004	0.0000	1.1000e-004	1.0000e-005	1.3000e-004	3.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4456	0.4456	3.0000e-005	0.0000	0.4464
Worker	5.8000e-004	4.6000e-004	5.0000e-003	1.0000e-005	1.3200e-003	1.0000e-005	1.3300e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.2232	1.2232	4.0000e-005	0.0000	1.2241
Total	**6.5000e-004**	**2.5600e-003**	**5.5300e-003**	**1.0000e-005**	**1.4300e-003**	**2.0000e-005**	**1.4600e-003**	**3.8000e-004**	**2.0000e-005**	**4.1000e-004**	**0.0000**	**1.6688**	**1.6688**	**7.0000e-005**	**0.0000**	**1.6705**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0255					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.8000e-004	0.0141	0.0110	2.0000e-005		5.7000e-004	5.7000e-004		5.7000e-004	5.7000e-004	0.0000	1.5320	1.5320	1.3000e-004	0.0000	1.5352
Total	**0.0262**	**0.0141**	**0.0110**	**2.0000e-005**		**5.7000e-004**	**5.7000e-004**		**5.7000e-004**	**5.7000e-004**	**0.0000**	**1.5320**	**1.5320**	**1.3000e-004**	**0.0000**	**1.5352**

3.7 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-005	2.1000e-003	5.3000e-004	0.0000	1.1000e-004	1.0000e-005	1.3000e-004	3.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4456	0.4456	3.0000e-005	0.0000	0.4464
Worker	5.8000e-004	4.6000e-004	5.0000e-003	1.0000e-005	1.3200e-003	1.0000e-005	1.3300e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.2232	1.2232	4.0000e-005	0.0000	1.2241
Total	**6.5000e-004**	**2.5600e-003**	**5.5300e-003**	**1.0000e-005**	**1.4300e-003**	**2.0000e-005**	**1.4600e-003**	**3.8000e-004**	**2.0000e-005**	**4.1000e-004**	**0.0000**	**1.6688**	**1.6688**	**7.0000e-005**	**0.0000**	**1.6705**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.0000e-004	2.3800e-003	6.0900e-003	2.0000e-005	1.7500e-003	2.0000e-005	1.7700e-003	4.7000e-004	2.0000e-005	4.9000e-004	0.0000	1.9951	1.9951	1.0000e-004	0.0000	1.9975
Unmitigated	4.0000e-004	2.3800e-003	6.0900e-003	2.0000e-005	1.7500e-003	2.0000e-005	1.7700e-003	4.7000e-004	2.0000e-005	4.9000e-004	0.0000	1.9951	1.9951	1.0000e-004	0.0000	1.9975

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	1.32	0.33	0.33	4,593	4,593
Total	1.32	0.33	0.33	4,593	4,593

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	31.4698	31.4698	8.2000e-004	1.7000e-004	31.5407
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	31.4698	31.4698	8.2000e-004	1.7000e-004	31.5407
NaturalGas Mitigated	5.4000e-004	4.9000e-003	4.1100e-003	3.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	5.3300	5.3300	1.0000e-004	1.0000e-004	5.3617
NaturalGas Unmitigated	5.4000e-004	4.9000e-003	4.1100e-003	3.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	5.3300	5.3300	1.0000e-004	1.0000e-004	5.3617

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	99880	5.4000e-004	4.9000e-003	4.1100e-003	3.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	5.3300	5.3300	1.0000e-004	1.0000e-004	5.3617
Total		**5.4000e-004**	**4.9000e-003**	**4.1100e-003**	**3.0000e-005**		**3.7000e-004**	**3.7000e-004**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**5.3300**	**5.3300**	**1.0000e-004**	**1.0000e-004**	**5.3617**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	99880	5.4000e-004	4.9000e-003	4.1100e-003	3.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	5.3300	5.3300	1.0000e-004	1.0000e-004	5.3617
Total		**5.4000e-004**	**4.9000e-003**	**4.1100e-003**	**3.0000e-005**		**3.7000e-004**	**3.7000e-004**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**5.3300**	**5.3300**	**1.0000e-004**	**1.0000e-004**	**5.3617**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	62205	31.4698	8.2000e-004	1.7000e-004	31.5407
Total		**31.4698**	**8.2000e-004**	**1.7000e-004**	**31.5407**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	62205	31.4698	8.2000e-004	1.7000e-004	31.5407
Total		**31.4698**	**8.2000e-004**	**1.7000e-004**	**31.5407**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0224	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Unmitigated	0.0224	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.5500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0199					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Total	**0.0224**	**0.0000**	**7.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.0000**	**1.5000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.5500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0199					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Total	**0.0224**	**0.0000**	**7.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.0000**	**1.5000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.7819	0.0417	1.0200e-003	10.1284
Unmitigated	8.7819	0.0417	1.0200e-003	10.1284

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	1.27188 / 0	8.7819	0.0417	1.0200e-003	10.1284
Total		**8.7819**	**0.0417**	**1.0200e-003**	**10.1284**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	1.27188 / 0	8.7819	0.0417	1.0200e-003	10.1284
Total		**8.7819**	**0.0417**	**1.0200e-003**	**10.1284**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.3844	0.0818	0.0000	3.4298
Unmitigated	1.3844	0.0818	0.0000	3.4298

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	6.82	1.3844	0.0818	0.0000	3.4298
Total		**1.3844**	**0.0818**	**0.0000**	**3.4298**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	6.82	1.3844	0.0818	0.0000	3.4298
Total		**1.3844**	**0.0818**	**0.0000**	**3.4298**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Biogas Renewable Generation Project

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	5.50	1000sqft	3.00	5,500.00	6

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	12			**Operational Year**	2020
Utility Company	Glendale Water & Power				
CO2 Intensity (lb/MWhr)	1115.33	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Biogas Renewable Generation Project - South Coast AQMD Air District, Summer

Project Characteristics -

Land Use - Lot Acreage and population were estimated.

Construction Phase - Construction schedule was estimated and provided by Stantec.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - This data was estimated and provided by Stantec.

Demolition -

Grading - This data was estimated and provided by Stantec.

Vehicle Trips - This data was estimated and provided by Stantec.

Construction Off-road Equipment Mitigation - Tier 2 or higher off-road equipment will be utilized for this construction project.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	10.00	12.00
tblConstructionPhase	NumDays	220.00	195.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	6.00	45.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	3.00	20.00
tblConstructionPhase	PhaseEndDate	1/14/2020	9/17/2019

Biogas Renewable Generation Project - South Coast AQMD Air District, Summer

tblConstructionPhase	PhaseEndDate	11/29/2019	8/30/2019
tblConstructionPhase	PhaseEndDate	3/1/2019	11/30/2018
tblConstructionPhase	PhaseEndDate	12/27/2019	8/28/2019
tblConstructionPhase	PhaseEndDate	11/30/2018	9/28/2018
tblConstructionPhase	PhaseStartDate	12/28/2019	9/1/2019
tblConstructionPhase	PhaseStartDate	3/2/2019	12/1/2018
tblConstructionPhase	PhaseStartDate	12/1/2018	10/1/2018
tblConstructionPhase	PhaseStartDate	11/30/2019	8/1/2019
tblGrading	AcresOfGrading	22.50	3.00
tblGrading	AcresOfGrading	0.00	2.00
tblGrading	MaterialExported	0.00	14,000.00
tblLandUse	LotAcreage	0.13	3.00
tblLandUse	Population	0.00	6.00
tblProjectCharacteristics	OperationalYear	2018	2020
tblTripsAndVMT	HaulingTripLength	20.00	0.27
tblTripsAndVMT	HaulingTripNumber	0.00	875.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	1.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	WorkerTripNumber	15.00	10.00
tblTripsAndVMT	WorkerTripNumber	18.00	10.00
tblTripsAndVMT	WorkerTripNumber	15.00	10.00
tblTripsAndVMT	WorkerTripNumber	2.00	10.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00
tblTripsAndVMT	WorkerTripNumber	0.00	20.00

tblVehicleTrips	ST_TR	1.32	0.06
tblVehicleTrips	SU_TR	0.68	0.06
tblVehicleTrips	WD_TR	6.97	0.24

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	4.6591	49.4492	23.2799	0.0452	18.3481	2.5867	20.9348	9.9902	2.3801	12.3703	0.0000	4,550.2483	4,550.2483	1.2160	0.0000	4,577.9706
2019	4.6247	35.0788	31.0116	0.0518	0.3770	2.0195	2.3964	0.1014	1.8859	1.9874	0.0000	5,041.7959	5,041.7959	1.2271	0.0000	5,072.4722
Maximum	**4.6591**	**49.4492**	**31.0116**	**0.0518**	**18.3481**	**2.5867**	**20.9348**	**9.9902**	**2.3801**	**12.3703**	**0.0000**	**5,041.7959**	**5,041.7959**	**1.2271**	**0.0000**	**5,072.4722**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	1.3790	34.9719	25.6042	0.0452	7.2630	0.9559	8.2189	3.9255	0.9555	4.8810	0.0000	4,550.2483	4,550.2483	1.2160	0.0000	4,577.9706
2019	4.4722	40.8789	32.9408	0.0518	0.3770	1.4737	1.8507	0.1014	1.4732	1.5746	0.0000	5,041.7959	5,041.7959	1.2271	0.0000	5,072.4722
Maximum	**4.4722**	**40.8789**	**32.9408**	**0.0518**	**7.2630**	**1.4737**	**8.2189**	**3.9255**	**1.4732**	**4.8810**	**0.0000**	**5,041.7959**	**5,041.7959**	**1.2271**	**0.0000**	**5,072.4722**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**36.97**	**10.27**	**-7.83**	**0.00**	**59.20**	**47.25**	**56.84**	**60.10**	**43.07**	**55.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1229	1.0000e-005	5.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-003	1.2000e-003	0.0000		1.2800e-003
Energy	2.9500e-003	0.0268	0.0225	1.6000e-004		2.0400e-003	2.0400e-003		2.0400e-003	2.0400e-003		32.1934	32.1934	6.2000e-004	5.9000e-004	32.3847
Mobile	3.0100e-003	0.0159	0.0451	1.6000e-004	0.0124	1.5000e-004	0.0126	3.3300e-003	1.4000e-004	3.4700e-003		16.0106	16.0106	7.7000e-004		16.0298
Total	**0.1289**	**0.0428**	**0.0682**	**3.2000e-004**	**0.0124**	**2.1900e-003**	**0.0146**	**3.3300e-003**	**2.1800e-003**	**5.5100e-003**		**48.2052**	**48.2052**	**1.3900e-003**	**5.9000e-004**	**48.4158**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1229	1.0000e-005	5.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-003	1.2000e-003	0.0000		1.2800e-003
Energy	2.9500e-003	0.0268	0.0225	1.6000e-004		2.0400e-003	2.0400e-003		2.0400e-003	2.0400e-003		32.1934	32.1934	6.2000e-004	5.9000e-004	32.3847
Mobile	3.0100e-003	0.0159	0.0451	1.6000e-004	0.0124	1.5000e-004	0.0126	3.3300e-003	1.4000e-004	3.4700e-003		16.0106	16.0106	7.7000e-004		16.0298
Total	**0.1289**	**0.0428**	**0.0682**	**3.2000e-004**	**0.0124**	**2.1900e-003**	**0.0146**	**3.3300e-003**	**2.1800e-003**	**5.5100e-003**		**48.2052**	**48.2052**	**1.3900e-003**	**5.9000e-004**	**48.4158**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2018	8/31/2018	5	23	
2	Site Preparation	Site Preparation	9/1/2018	9/28/2018	5	20	
3	Grading	Grading	10/1/2018	11/30/2018	5	45	
4	Building Construction	Building Construction	12/1/2018	8/30/2019	5	195	
5	Paving	Paving	8/1/2019	8/28/2019	5	20	
6	Architectural Coating	Architectural Coating	9/1/2019	9/17/2019	5	12	

Acres of Grading (Site Preparation Phase): 2

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 8,250; Non-Residential Outdoor: 2,750; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Biogas Renewable Generation Project - South Coast AQMD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	20.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	10.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	10.00	5.00	112.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	10.00	10.00	875.00	14.70	6.90	0.27	LD_Mix	HDT_Mix	HHDT
Paving	8	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	10.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.0556	0.0000	1.0556	0.1598	0.0000	0.1598			0.0000			0.0000
Off-Road	3.7190	38.3225	22.3040	0.0388		1.9386	1.9386		1.8048	1.8048		3,871.7665	3,871.7665	1.0667		3,898.4344
Total	**3.7190**	**38.3225**	**22.3040**	**0.0388**	**1.0556**	**1.9386**	**2.9941**	**0.1598**	**1.8048**	**1.9647**		**3,871.7665**	**3,871.7665**	**1.0667**		**3,898.4344**

3.2 Demolition - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0422	1.4993	0.2777	3.8700e-003	0.0851	5.7600e-003	0.0909	0.0233	5.5200e-003	0.0288		417.2176	417.2176	0.0285		417.9310
Vendor	0.0213	0.6059	0.1509	1.3100e-003	0.0320	4.4300e-003	0.0364	9.2100e-003	4.2400e-003	0.0135		139.3290	139.3290	9.4800e-003		139.5661
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.1174**	**2.1439**	**0.9303**	**6.4100e-003**	**0.2289**	**0.0111**	**0.2400**	**0.0622**	**0.0106**	**0.0728**		**678.4818**	**678.4818**	**0.0422**		**679.5362**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4117	0.0000	0.4117	0.0623	0.0000	0.0623			0.0000			0.0000
Off-Road	1.2617	32.6638	24.6739	0.0388		0.9135	0.9135		0.9135	0.9135	0.0000	3,871.7665	3,871.7665	1.0667		3,898.4344
Total	**1.2617**	**32.6638**	**24.6739**	**0.0388**	**0.4117**	**0.9135**	**1.3252**	**0.0623**	**0.9135**	**0.9759**	**0.0000**	**3,871.7665**	**3,871.7665**	**1.0667**		**3,898.4344**

3.2 Demolition - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0422	1.4993	0.2777	3.8700e-003	0.0851	5.7600e-003	0.0909	0.0233	5.5200e-003	0.0288		417.2176	417.2176	0.0285		417.9310
Vendor	0.0213	0.6059	0.1509	1.3100e-003	0.0320	4.4300e-003	0.0364	9.2100e-003	4.2400e-003	0.0135		139.3290	139.3290	9.4800e-003		139.5661
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.1174**	**2.1439**	**0.9303**	**6.4100e-003**	**0.2289**	**0.0111**	**0.2400**	**0.0622**	**0.0106**	**0.0728**		**678.4818**	**678.4818**	**0.0422**		**679.5362**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.1723	0.0000	18.1723	9.9421	0.0000	9.9421			0.0000			0.0000
Off-Road	4.5627	48.1988	22.4763	0.0380		2.5769	2.5769		2.3708	2.3708		3,831.6239	3,831.6239	1.1928		3,861.4448
Total	**4.5627**	**48.1988**	**22.4763**	**0.0380**	**18.1723**	**2.5769**	**20.7492**	**9.9421**	**2.3708**	**12.3129**		**3,831.6239**	**3,831.6239**	**1.1928**		**3,861.4448**

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0426	1.2118	0.3018	2.6200e-003	0.0640	8.8500e-003	0.0729	0.0184	8.4700e-003	0.0269		278.6580	278.6580	0.0190		279.1322
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.0964**	**1.2505**	**0.8036**	**3.8500e-003**	**0.1758**	**9.7400e-003**	**0.1855**	**0.0481**	**9.2900e-003**	**0.0574**		**400.5932**	**400.5932**	**0.0231**		**401.1713**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0872	0.0000	7.0872	3.8774	0.0000	3.8774			0.0000			0.0000
Off-Road	1.2097	33.7214	22.9600	0.0380		0.9462	0.9462		0.9462	0.9462	0.0000	3,831.6239	3,831.6239	1.1928		3,861.4448
Total	**1.2097**	**33.7214**	**22.9600**	**0.0380**	**7.0872**	**0.9462**	**8.0334**	**3.8774**	**0.9462**	**4.8236**	**0.0000**	**3,831.6239**	**3,831.6239**	**1.1928**		**3,861.4448**

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0426	1.2118	0.3018	2.6200e-003	0.0640	8.8500e-003	0.0729	0.0184	8.4700e-003	0.0269		278.6580	278.6580	0.0190		279.1322
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.0964**	**1.2505**	**0.8036**	**3.8500e-003**	**0.1758**	**9.7400e-003**	**0.1855**	**0.0481**	**9.2900e-003**	**0.0574**		**400.5932**	**400.5932**	**0.0231**		**401.1713**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1280	0.0000	6.1280	3.3232	0.0000	3.3232			0.0000			0.0000
Off-Road	2.7733	30.6725	16.5770	0.0297		1.5513	1.5513		1.4272	1.4272		2,988.0216	2,988.0216	0.9302		3,011.2769
Total	**2.7733**	**30.6725**	**16.5770**	**0.0297**	**6.1280**	**1.5513**	**7.6793**	**3.3232**	**1.4272**	**4.7504**		**2,988.0216**	**2,988.0216**	**0.9302**		**3,011.2769**

3.4 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0417	2.0858	0.2597	2.3700e-003	4.9900e-003	1.6900e-003	6.6800e-003	1.4000e-003	1.6100e-003	3.0200e-003		254.2018	254.2018	0.0423		255.2590
Vendor	0.0426	1.2118	0.3018	2.6200e-003	0.0640	8.8500e-003	0.0729	0.0184	8.4700e-003	0.0269		278.6580	278.6580	0.0190		279.1322
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.1382**	**3.3363**	**1.0633**	**6.2200e-003**	**0.1808**	**0.0114**	**0.1922**	**0.0495**	**0.0109**	**0.0604**		**654.7950**	**654.7950**	**0.0654**		**656.4303**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.3899	0.0000	2.3899	1.2960	0.0000	1.2960			0.0000			0.0000
Off-Road	1.0093	26.2791	18.9906	0.0297		0.7725	0.7725		0.7725	0.7725	0.0000	2,988.0216	2,988.0216	0.9302		3,011.2769
Total	**1.0093**	**26.2791**	**18.9906**	**0.0297**	**2.3899**	**0.7725**	**3.1624**	**1.2960**	**0.7725**	**2.0685**	**0.0000**	**2,988.0216**	**2,988.0216**	**0.9302**		**3,011.2769**

3.4 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0417	2.0858	0.2597	2.3700e-003	4.9900e-003	1.6900e-003	6.6800e-003	1.4000e-003	1.6100e-003	3.0200e-003		254.2018	254.2018	0.0423		255.2590
Vendor	0.0426	1.2118	0.3018	2.6200e-003	0.0640	8.8500e-003	0.0729	0.0184	8.4700e-003	0.0269		278.6580	278.6580	0.0190		279.1322
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.1382**	**3.3363**	**1.0633**	**6.2200e-003**	**0.1808**	**0.0114**	**0.1922**	**0.0495**	**0.0109**	**0.0604**		**654.7950**	**654.7950**	**0.0654**		**656.4303**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099		2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**2.6795**	**23.3900**	**17.5804**	**0.0269**		**1.4999**	**1.4999**		**1.4099**	**1.4099**		**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0426	1.2118	0.3018	2.6200e-003	0.0640	8.8500e-003	0.0729	0.0184	8.4700e-003	0.0269		278.6580	278.6580	0.0190		279.1322
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.0964**	**1.2505**	**0.8036**	**3.8500e-003**	**0.1758**	**9.7400e-003**	**0.1855**	**0.0481**	**9.2900e-003**	**0.0574**		**400.5932**	**400.5932**	**0.0231**		**401.1713**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0809	23.5544	17.8738	0.0269		0.9036	0.9036		0.9036	0.9036	0.0000	2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**1.0809**	**23.5544**	**17.8738**	**0.0269**		**0.9036**	**0.9036**		**0.9036**	**0.9036**	**0.0000**	**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0426	1.2118	0.3018	2.6200e-003	0.0640	8.8500e-003	0.0729	0.0184	8.4700e-003	0.0269		278.6580	278.6580	0.0190		279.1322
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.0964**	**1.2505**	**0.8036**	**3.8500e-003**	**0.1758**	**9.7400e-003**	**0.1855**	**0.0481**	**9.2900e-003**	**0.0574**		**400.5932**	**400.5932**	**0.0231**		**401.1713**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0386	1.1442	0.2766	2.5900e-003	0.0640	7.5800e-003	0.0716	0.0184	7.2500e-003	0.0257		276.2197	276.2197	0.0183		276.6766
Worker	0.0490	0.0341	0.4493	1.1900e-003	0.1118	8.7000e-004	0.1127	0.0296	8.0000e-004	0.0305		118.0989	118.0989	3.6900e-003		118.1912
Total	**0.0875**	**1.1783**	**0.7260**	**3.7800e-003**	**0.1758**	**8.4500e-003**	**0.1842**	**0.0481**	**8.0500e-003**	**0.0561**		**394.3186**	**394.3186**	**0.0220**		**394.8679**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0809	23.5544	17.8738	0.0269		0.9036	0.9036		0.9036	0.9036	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**1.0809**	**23.5544**	**17.8738**	**0.0269**		**0.9036**	**0.9036**		**0.9036**	**0.9036**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0386	1.1442	0.2766	2.5900e-003	0.0640	7.5800e-003	0.0716	0.0184	7.2500e-003	0.0257		276.2197	276.2197	0.0183		276.6766
Worker	0.0490	0.0341	0.4493	1.1900e-003	0.1118	8.7000e-004	0.1127	0.0296	8.0000e-004	0.0305		118.0989	118.0989	3.6900e-003		118.1912
Total	**0.0875**	**1.1783**	**0.7260**	**3.7800e-003**	**0.1758**	**8.4500e-003**	**0.1842**	**0.0481**	**8.0500e-003**	**0.0561**		**394.3186**	**394.3186**	**0.0220**		**394.8679**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2679	12.7604	12.3130	0.0189		0.7196	0.7196		0.6637	0.6637		1,843.3191	1,843.3191	0.5671		1,857.4966
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2679**	**12.7604**	**12.3130**	**0.0189**		**0.7196**	**0.7196**		**0.6637**	**0.6637**		**1,843.3191**	**1,843.3191**	**0.5671**		**1,857.4966**

3.6 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0882	0.0613	0.8088	2.1400e-003	0.2012	1.5700e-003	0.2028	0.0534	1.4400e-003	0.0548		212.5780	212.5780	6.6500e-003		212.7442
Total	**0.0882**	**0.0613**	**0.8088**	**2.1400e-003**	**0.2012**	**1.5700e-003**	**0.2028**	**0.0534**	**1.4400e-003**	**0.0548**		**212.5780**	**212.5780**	**6.6500e-003**		**212.7442**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7524	16.0849	13.5323	0.0189		0.5601	0.5601		0.5601	0.5601	0.0000	1,843.3191	1,843.3191	0.5671		1,857.4966
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7524**	**16.0849**	**13.5323**	**0.0189**		**0.5601**	**0.5601**		**0.5601**	**0.5601**	**0.0000**	**1,843.3191**	**1,843.3191**	**0.5671**		**1,857.4966**

3.6 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0882	0.0613	0.8088	2.1400e-003	0.2012	1.5700e-003	0.2028	0.0534	1.4400e-003	0.0548		212.5780	212.5780	6.6500e-003		212.7442
Total	**0.0882**	**0.0613**	**0.8088**	**2.1400e-003**	**0.2012**	**1.5700e-003**	**0.2028**	**0.0534**	**1.4400e-003**	**0.0548**		**212.5780**	**212.5780**	**6.6500e-003**		**212.7442**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.2488					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**4.5152**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.7 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0116	0.3433	0.0830	7.8000e-004	0.0192	2.2700e-003	0.0215	5.5300e-003	2.1800e-003	7.7000e-003		82.8659	82.8659	5.4800e-003		83.0030
Worker	0.0980	0.0682	0.8987	2.3700e-003	0.2236	1.7400e-003	0.2253	0.0593	1.6000e-003	0.0609		236.1978	236.1978	7.3900e-003		236.3825
Total	**0.1095**	**0.4114**	**0.9817**	**3.1500e-003**	**0.2428**	**4.0100e-003**	**0.2468**	**0.0648**	**3.7800e-003**	**0.0686**		**319.0637**	**319.0637**	**0.0129**		**319.3855**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.2488					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**4.3627**	**2.3524**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.7 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0116	0.3433	0.0830	7.8000e-004	0.0192	2.2700e-003	0.0215	5.5300e-003	2.1800e-003	7.7000e-003		82.8659	82.8659	5.4800e-003		83.0030
Worker	0.0980	0.0682	0.8987	2.3700e-003	0.2236	1.7400e-003	0.2253	0.0593	1.6000e-003	0.0609		236.1978	236.1978	7.3900e-003		236.3825
Total	**0.1095**	**0.4114**	**0.9817**	**3.1500e-003**	**0.2428**	**4.0100e-003**	**0.2468**	**0.0648**	**3.7800e-003**	**0.0686**		**319.0637**	**319.0637**	**0.0129**		**319.3855**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.0100e-003	0.0159	0.0451	1.6000e-004	0.0124	1.5000e-004	0.0126	3.3300e-003	1.4000e-004	3.4700e-003		16.0106	16.0106	7.7000e-004		16.0298
Unmitigated	3.0100e-003	0.0159	0.0451	1.6000e-004	0.0124	1.5000e-004	0.0126	3.3300e-003	1.4000e-004	3.4700e-003		16.0106	16.0106	7.7000e-004		16.0298

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	1.32	0.33	0.33	4,593	4,593
Total	1.32	0.33	0.33	4,593	4,593

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.9500e-003	0.0268	0.0225	1.6000e-004		2.0400e-003	2.0400e-003		2.0400e-003	2.0400e-003		32.1934	32.1934	6.2000e-004	5.9000e-004	32.3847
NaturalGas Unmitigated	2.9500e-003	0.0268	0.0225	1.6000e-004		2.0400e-003	2.0400e-003		2.0400e-003	2.0400e-003		32.1934	32.1934	6.2000e-004	5.9000e-004	32.3847

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	273.644	2.9500e-003	0.0268	0.0225	1.6000e-004		2.0400e-003	2.0400e-003		2.0400e-003	2.0400e-003		32.1934	32.1934	6.2000e-004	5.9000e-004	32.3847
Total		**2.9500e-003**	**0.0268**	**0.0225**	**1.6000e-004**		**2.0400e-003**	**2.0400e-003**		**2.0400e-003**	**2.0400e-003**		**32.1934**	**32.1934**	**6.2000e-004**	**5.9000e-004**	**32.3847**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.273644	2.9500e-003	0.0268	0.0225	1.6000e-004		2.0400e-003	2.0400e-003		2.0400e-003	2.0400e-003		32.1934	32.1934	6.2000e-004	5.9000e-004	32.3847
Total		**2.9500e-003**	**0.0268**	**0.0225**	**1.6000e-004**		**2.0400e-003**	**2.0400e-003**		**2.0400e-003**	**2.0400e-003**		**32.1934**	**32.1934**	**6.2000e-004**	**5.9000e-004**	**32.3847**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1229	1.0000e-005	5.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-003	1.2000e-003	0.0000		1.2800e-003
Unmitigated	0.1229	1.0000e-005	5.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-003	1.2000e-003	0.0000		1.2800e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0140					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1089					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	1.0000e-005	5.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-003	1.2000e-003	0.0000		1.2800e-003
Total	**0.1229**	**1.0000e-005**	**5.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.2000e-003**	**1.2000e-003**	**0.0000**		**1.2800e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0140					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1089					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	1.0000e-005	5.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-003	1.2000e-003	0.0000		1.2800e-003
Total	**0.1229**	**1.0000e-005**	**5.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.2000e-003**	**1.2000e-003**	**0.0000**		**1.2800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Biogas Renewable Generation Project

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	5.50	1000sqft	3.00	5,500.00	6

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	12			**Operational Year**	2020
Utility Company	Glendale Water & Power				
CO2 Intensity (lb/MWhr)	1115.33	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot Acreage and population were estimated.

Construction Phase - Construction schedule was estimated and provided by Stantec.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - This data was estimated and provided by Stantec.

Demolition -

Grading - This data was estimated and provided by Stantec.

Vehicle Trips - This data was estimated and provided by Stantec.

Construction Off-road Equipment Mitigation - Tier 2 or higher off-road equipment will be utilized for this construction project.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	10.00	12.00
tblConstructionPhase	NumDays	220.00	195.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	6.00	45.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	3.00	20.00
tblConstructionPhase	PhaseEndDate	1/14/2020	9/17/2019

tblConstructionPhase	PhaseEndDate	11/29/2019	8/30/2019
tblConstructionPhase	PhaseEndDate	3/1/2019	11/30/2018
tblConstructionPhase	PhaseEndDate	12/27/2019	8/28/2019
tblConstructionPhase	PhaseEndDate	11/30/2018	9/28/2018
tblConstructionPhase	PhaseStartDate	12/28/2019	9/1/2019
tblConstructionPhase	PhaseStartDate	3/2/2019	12/1/2018
tblConstructionPhase	PhaseStartDate	12/1/2018	10/1/2018
tblConstructionPhase	PhaseStartDate	11/30/2019	8/1/2019
tblGrading	AcresOfGrading	22.50	3.00
tblGrading	AcresOfGrading	0.00	2.00
tblGrading	MaterialExported	0.00	14,000.00
tblLandUse	LotAcreage	0.13	3.00
tblLandUse	Population	0.00	6.00
tblProjectCharacteristics	OperationalYear	2018	2020
tblTripsAndVMT	HaulingTripLength	20.00	0.27
tblTripsAndVMT	HaulingTripNumber	0.00	875.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	1.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	WorkerTripNumber	15.00	10.00
tblTripsAndVMT	WorkerTripNumber	18.00	10.00
tblTripsAndVMT	WorkerTripNumber	15.00	10.00
tblTripsAndVMT	WorkerTripNumber	2.00	10.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00
tblTripsAndVMT	WorkerTripNumber	0.00	20.00

tblVehicleTrips	ST_TR	1.32	0.06
tblVehicleTrips	SU_TR	0.68	0.06
tblVehicleTrips	WD_TR	6.97	0.24

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	4.6657	49.4549	23.2654	0.0450	18.3481	2.5868	20.9349	9.9902	2.3802	12.3704	0.0000	4,530.9463	4,530.9463	1.2171	0.0000	4,558.7125
2019	4.6339	35.0887	30.9199	0.0515	0.3770	2.0196	2.3966	0.1014	1.8861	1.9875	0.0000	5,012.5191	5,012.5191	1.2277	0.0000	5,043.2125
Maximum	**4.6657**	**49.4549**	**30.9199**	**0.0515**	**18.3481**	**2.5868**	**20.9349**	**9.9902**	**2.3802**	**12.3704**	**0.0000**	**5,012.5191**	**5,012.5191**	**1.2277**	**0.0000**	**5,043.2125**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	1.3859	34.9776	25.5966	0.0450	7.2630	0.9561	8.2190	3.9255	0.9556	4.8811	0.0000	4,530.9463	4,530.9463	1.2171	0.0000	4,558.7125
2019	4.4814	40.8889	32.8492	0.0515	0.3770	1.4738	1.8508	0.1014	1.4733	1.5747	0.0000	5,012.5191	5,012.5191	1.2277	0.0000	5,043.2125
Maximum	**4.4814**	**40.8889**	**32.8492**	**0.0515**	**7.2630**	**1.4738**	**8.2190**	**3.9255**	**1.4733**	**4.8811**	**0.0000**	**5,012.5191**	**5,012.5191**	**1.2277**	**0.0000**	**5,043.2125**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**36.91**	**10.26**	**-7.86**	**0.00**	**59.20**	**47.25**	**56.84**	**60.10**	**43.07**	**55.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1229	1.0000e-005	5.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-003	1.2000e-003	0.0000		1.2800e-003
Energy	2.9500e-003	0.0268	0.0225	1.6000e-004		2.0400e-003	2.0400e-003		2.0400e-003	2.0400e-003		32.1934	32.1934	6.2000e-004	5.9000e-004	32.3847
Mobile	2.8800e-003	0.0164	0.0418	1.5000e-004	0.0124	1.5000e-004	0.0126	3.3300e-003	1.4000e-004	3.4700e-003		15.1661	15.1661	7.6000e-004		15.1851
Total	**0.1288**	**0.0432**	**0.0649**	**3.1000e-004**	**0.0124**	**2.1900e-003**	**0.0146**	**3.3300e-003**	**2.1800e-003**	**5.5100e-003**		**47.3607**	**47.3607**	**1.3800e-003**	**5.9000e-004**	**47.5711**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1229	1.0000e-005	5.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-003	1.2000e-003	0.0000		1.2800e-003
Energy	2.9500e-003	0.0268	0.0225	1.6000e-004		2.0400e-003	2.0400e-003		2.0400e-003	2.0400e-003		32.1934	32.1934	6.2000e-004	5.9000e-004	32.3847
Mobile	2.8800e-003	0.0164	0.0418	1.5000e-004	0.0124	1.5000e-004	0.0126	3.3300e-003	1.4000e-004	3.4700e-003		15.1661	15.1661	7.6000e-004		15.1851
Total	**0.1288**	**0.0432**	**0.0649**	**3.1000e-004**	**0.0124**	**2.1900e-003**	**0.0146**	**3.3300e-003**	**2.1800e-003**	**5.5100e-003**		**47.3607**	**47.3607**	**1.3800e-003**	**5.9000e-004**	**47.5711**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2018	8/31/2018	5	23	
2	Site Preparation	Site Preparation	9/1/2018	9/28/2018	5	20	
3	Grading	Grading	10/1/2018	11/30/2018	5	45	
4	Building Construction	Building Construction	12/1/2018	8/30/2019	5	195	
5	Paving	Paving	8/1/2019	8/28/2019	5	20	
6	Architectural Coating	Architectural Coating	9/1/2019	9/17/2019	5	12	

Acres of Grading (Site Preparation Phase): 2

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 8,250; Non-Residential Outdoor: 2,750; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Biogas Renewable Generation Project - South Coast AQMD Air District, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	20.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	10.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	10.00	5.00	112.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	10.00	10.00	875.00	14.70	6.90	0.27	LD_Mix	HDT_Mix	HHDT
Paving	8	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	10.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.0556	0.0000	1.0556	0.1598	0.0000	0.1598			0.0000			0.0000
Off-Road	3.7190	38.3225	22.3040	0.0388		1.9386	1.9386		1.8048	1.8048		3,871.7665	3,871.7665	1.0667		3,898.4344
Total	**3.7190**	**38.3225**	**22.3040**	**0.0388**	**1.0556**	**1.9386**	**2.9941**	**0.1598**	**1.8048**	**1.9647**		**3,871.7665**	**3,871.7665**	**1.0667**		**3,898.4344**

3.2 Demolition - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0435	1.5203	0.3011	3.8000e-003	0.0851	5.8800e-003	0.0910	0.0233	5.6200e-003	0.0289		409.7336	409.7336	0.0299		410.4799
Vendor	0.0222	0.6069	0.1675	1.2700e-003	0.0320	4.5000e-003	0.0365	9.2100e-003	4.3000e-003	0.0135		135.3782	135.3782	0.0102		135.6329
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1243**	**2.1695**	**0.9227**	**6.2200e-003**	**0.2289**	**0.0113**	**0.2401**	**0.0622**	**0.0107**	**0.0729**		**659.1798**	**659.1798**	**0.0439**		**660.2781**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4117	0.0000	0.4117	0.0623	0.0000	0.0623			0.0000			0.0000
Off-Road	1.2617	32.6638	24.6739	0.0388		0.9135	0.9135		0.9135	0.9135	0.0000	3,871.7665	3,871.7665	1.0667		3,898.4344
Total	**1.2617**	**32.6638**	**24.6739**	**0.0388**	**0.4117**	**0.9135**	**1.3252**	**0.0623**	**0.9135**	**0.9759**	**0.0000**	**3,871.7665**	**3,871.7665**	**1.0667**		**3,898.4344**

3.2 Demolition - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0435	1.5203	0.3011	3.8000e-003	0.0851	5.8800e-003	0.0910	0.0233	5.6200e-003	0.0289		409.7336	409.7336	0.0299		410.4799
Vendor	0.0222	0.6069	0.1675	1.2700e-003	0.0320	4.5000e-003	0.0365	9.2100e-003	4.3000e-003	0.0135		135.3782	135.3782	0.0102		135.6329
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1243**	**2.1695**	**0.9227**	**6.2200e-003**	**0.2289**	**0.0113**	**0.2401**	**0.0622**	**0.0107**	**0.0729**		**659.1798**	**659.1798**	**0.0439**		**660.2781**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.1723	0.0000	18.1723	9.9421	0.0000	9.9421			0.0000			0.0000
Off-Road	4.5627	48.1988	22.4763	0.0380		2.5769	2.5769		2.3708	2.3708		3,831.6239	3,831.6239	1.1928		3,861.4448
Total	**4.5627**	**48.1988**	**22.4763**	**0.0380**	**18.1723**	**2.5769**	**20.7492**	**9.9421**	**2.3708**	**12.3129**		**3,831.6239**	**3,831.6239**	**1.1928**		**3,861.4448**

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0444	1.2139	0.3350	2.5400e-003	0.0640	8.9900e-003	0.0730	0.0184	8.6000e-003	0.0270		270.7564	270.7564	0.0204		271.2658
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1030**	**1.2562**	**0.7891**	**3.6900e-003**	**0.1758**	**9.8800e-003**	**0.1857**	**0.0481**	**9.4200e-003**	**0.0575**		**384.8244**	**384.8244**	**0.0243**		**385.4310**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0872	0.0000	7.0872	3.8774	0.0000	3.8774			0.0000			0.0000
Off-Road	1.2097	33.7214	22.9600	0.0380		0.9462	0.9462		0.9462	0.9462	0.0000	3,831.6239	3,831.6239	1.1928		3,861.4448
Total	**1.2097**	**33.7214**	**22.9600**	**0.0380**	**7.0872**	**0.9462**	**8.0334**	**3.8774**	**0.9462**	**4.8236**	**0.0000**	**3,831.6239**	**3,831.6239**	**1.1928**		**3,861.4448**

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0444	1.2139	0.3350	2.5400e-003	0.0640	8.9900e-003	0.0730	0.0184	8.6000e-003	0.0270		270.7564	270.7564	0.0204		271.2658
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1030**	**1.2562**	**0.7891**	**3.6900e-003**	**0.1758**	**9.8800e-003**	**0.1857**	**0.0481**	**9.4200e-003**	**0.0575**		**384.8244**	**384.8244**	**0.0243**		**385.4310**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1280	0.0000	6.1280	3.3232	0.0000	3.3232			0.0000			0.0000
Off-Road	2.7733	30.6725	16.5770	0.0297		1.5513	1.5513		1.4272	1.4272		2,988.0216	2,988.0216	0.9302		3,011.2769
Total	**2.7733**	**30.6725**	**16.5770**	**0.0297**	**6.1280**	**1.5513**	**7.6793**	**3.3232**	**1.4272**	**4.7504**		**2,988.0216**	**2,988.0216**	**0.9302**		**3,011.2769**

3.4 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0468	2.0044	0.3586	2.0900e-003	4.9900e-003	2.1400e-003	7.1300e-003	1.4000e-003	2.0400e-003	3.4500e-003		224.3178	224.3178	0.0476		225.5075
Vendor	0.0444	1.2139	0.3350	2.5400e-003	0.0640	8.9900e-003	0.0730	0.0184	8.6000e-003	0.0270		270.7564	270.7564	0.0204		271.2658
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1498**	**3.2606**	**1.1477**	**5.7800e-003**	**0.1808**	**0.0120**	**0.1928**	**0.0495**	**0.0115**	**0.0609**		**609.1422**	**609.1422**	**0.0719**		**610.9386**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.3899	0.0000	2.3899	1.2960	0.0000	1.2960			0.0000			0.0000
Off-Road	1.0093	26.2791	18.9906	0.0297		0.7725	0.7725		0.7725	0.7725	0.0000	2,988.0216	2,988.0216	0.9302		3,011.2769
Total	**1.0093**	**26.2791**	**18.9906**	**0.0297**	**2.3899**	**0.7725**	**3.1624**	**1.2960**	**0.7725**	**2.0685**	**0.0000**	**2,988.0216**	**2,988.0216**	**0.9302**		**3,011.2769**

3.4 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0468	2.0044	0.3586	2.0900e-003	4.9900e-003	2.1400e-003	7.1300e-003	1.4000e-003	2.0400e-003	3.4500e-003		224.3178	224.3178	0.0476		225.5075
Vendor	0.0444	1.2139	0.3350	2.5400e-003	0.0640	8.9900e-003	0.0730	0.0184	8.6000e-003	0.0270		270.7564	270.7564	0.0204		271.2658
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1498**	**3.2606**	**1.1477**	**5.7800e-003**	**0.1808**	**0.0120**	**0.1928**	**0.0495**	**0.0115**	**0.0609**		**609.1422**	**609.1422**	**0.0719**		**610.9386**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099		2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**2.6795**	**23.3900**	**17.5804**	**0.0269**		**1.4999**	**1.4999**		**1.4099**	**1.4099**		**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0444	1.2139	0.3350	2.5400e-003	0.0640	8.9900e-003	0.0730	0.0184	8.6000e-003	0.0270		270.7564	270.7564	0.0204		271.2658
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1030**	**1.2562**	**0.7891**	**3.6900e-003**	**0.1758**	**9.8800e-003**	**0.1857**	**0.0481**	**9.4200e-003**	**0.0575**		**384.8244**	**384.8244**	**0.0243**		**385.4310**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0809	23.5544	17.8738	0.0269		0.9036	0.9036		0.9036	0.9036	0.0000	2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**1.0809**	**23.5544**	**17.8738**	**0.0269**		**0.9036**	**0.9036**		**0.9036**	**0.9036**	**0.0000**	**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0444	1.2139	0.3350	2.5400e-003	0.0640	8.9900e-003	0.0730	0.0184	8.6000e-003	0.0270		270.7564	270.7564	0.0204		271.2658
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.1030**	**1.2562**	**0.7891**	**3.6900e-003**	**0.1758**	**9.8800e-003**	**0.1857**	**0.0481**	**9.4200e-003**	**0.0575**		**384.8244**	**384.8244**	**0.0243**		**385.4310**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0403	1.1451	0.3081	2.5200e-003	0.0640	7.7000e-003	0.0717	0.0184	7.3600e-003	0.0258		268.3163	268.3163	0.0196		268.8073
Worker	0.0533	0.0373	0.4054	1.1100e-003	0.1118	8.7000e-004	0.1127	0.0296	8.0000e-004	0.0305		110.4656	110.4656	3.4500e-003		110.5519
Total	**0.0936**	**1.1824**	**0.7134**	**3.6300e-003**	**0.1758**	**8.5700e-003**	**0.1844**	**0.0481**	**8.1600e-003**	**0.0562**		**378.7818**	**378.7818**	**0.0231**		**379.3591**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0809	23.5544	17.8738	0.0269		0.9036	0.9036		0.9036	0.9036	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**1.0809**	**23.5544**	**17.8738**	**0.0269**		**0.9036**	**0.9036**		**0.9036**	**0.9036**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0403	1.1451	0.3081	2.5200e-003	0.0640	7.7000e-003	0.0717	0.0184	7.3600e-003	0.0258		268.3163	268.3163	0.0196		268.8073
Worker	0.0533	0.0373	0.4054	1.1100e-003	0.1118	8.7000e-004	0.1127	0.0296	8.0000e-004	0.0305		110.4656	110.4656	3.4500e-003		110.5519
Total	**0.0936**	**1.1824**	**0.7134**	**3.6300e-003**	**0.1758**	**8.5700e-003**	**0.1844**	**0.0481**	**8.1600e-003**	**0.0562**		**378.7818**	**378.7818**	**0.0231**		**379.3591**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2679	12.7604	12.3130	0.0189		0.7196	0.7196		0.6637	0.6637		1,843.3191	1,843.3191	0.5671		1,857.4966
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2679**	**12.7604**	**12.3130**	**0.0189**		**0.7196**	**0.7196**		**0.6637**	**0.6637**		**1,843.3191**	**1,843.3191**	**0.5671**		**1,857.4966**

3.6 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0960	0.0672	0.7297	2.0000e-003	0.2012	1.5700e-003	0.2028	0.0534	1.4400e-003	0.0548		198.8380	198.8380	6.2100e-003		198.9933
Total	**0.0960**	**0.0672**	**0.7297**	**2.0000e-003**	**0.2012**	**1.5700e-003**	**0.2028**	**0.0534**	**1.4400e-003**	**0.0548**		**198.8380**	**198.8380**	**6.2100e-003**		**198.9933**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7524	16.0849	13.5323	0.0189		0.5601	0.5601		0.5601	0.5601	0.0000	1,843.3191	1,843.3191	0.5671		1,857.4966
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7524**	**16.0849**	**13.5323**	**0.0189**		**0.5601**	**0.5601**		**0.5601**	**0.5601**	**0.0000**	**1,843.3191**	**1,843.3191**	**0.5671**		**1,857.4966**

3.6 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0960	0.0672	0.7297	2.0000e-003	0.2012	1.5700e-003	0.2028	0.0534	1.4400e-003	0.0548		198.8380	198.8380	6.2100e-003		198.9933
Total	**0.0960**	**0.0672**	**0.7297**	**2.0000e-003**	**0.2012**	**1.5700e-003**	**0.2028**	**0.0534**	**1.4400e-003**	**0.0548**		**198.8380**	**198.8380**	**6.2100e-003**		**198.9933**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.2488					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**4.5152**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.7 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0121	0.3435	0.0924	7.6000e-004	0.0192	2.3100e-003	0.0215	5.5300e-003	2.2100e-003	7.7400e-003		80.4949	80.4949	5.8900e-003		80.6422
Worker	0.1067	0.0747	0.8108	2.2200e-003	0.2236	1.7400e-003	0.2253	0.0593	1.6000e-003	0.0609		220.9312	220.9312	6.9000e-003		221.1037
Total	**0.1187**	**0.4182**	**0.9032**	**2.9800e-003**	**0.2428**	**4.0500e-003**	**0.2468**	**0.0648**	**3.8100e-003**	**0.0686**		**301.4260**	**301.4260**	**0.0128**		**301.7459**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.2488					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**4.3627**	**2.3524**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.7 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0121	0.3435	0.0924	7.6000e-004	0.0192	2.3100e-003	0.0215	5.5300e-003	2.2100e-003	7.7400e-003		80.4949	80.4949	5.8900e-003		80.6422
Worker	0.1067	0.0747	0.8108	2.2200e-003	0.2236	1.7400e-003	0.2253	0.0593	1.6000e-003	0.0609		220.9312	220.9312	6.9000e-003		221.1037
Total	**0.1187**	**0.4182**	**0.9032**	**2.9800e-003**	**0.2428**	**4.0500e-003**	**0.2468**	**0.0648**	**3.8100e-003**	**0.0686**		**301.4260**	**301.4260**	**0.0128**		**301.7459**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.8800e-003	0.0164	0.0418	1.5000e-004	0.0124	1.5000e-004	0.0126	3.3300e-003	1.4000e-004	3.4700e-003		15.1661	15.1661	7.6000e-004		15.1851
Unmitigated	2.8800e-003	0.0164	0.0418	1.5000e-004	0.0124	1.5000e-004	0.0126	3.3300e-003	1.4000e-004	3.4700e-003		15.1661	15.1661	7.6000e-004		15.1851

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	1.32	0.33	0.33	4,593	4,593
Total	1.32	0.33	0.33	4,593	4,593

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.9500e-003	0.0268	0.0225	1.6000e-004		2.0400e-003	2.0400e-003		2.0400e-003	2.0400e-003		32.1934	32.1934	6.2000e-004	5.9000e-004	32.3847
NaturalGas Unmitigated	2.9500e-003	0.0268	0.0225	1.6000e-004		2.0400e-003	2.0400e-003		2.0400e-003	2.0400e-003		32.1934	32.1934	6.2000e-004	5.9000e-004	32.3847

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	273.644	2.9500e-003	0.0268	0.0225	1.6000e-004		2.0400e-003	2.0400e-003		2.0400e-003	2.0400e-003		32.1934	32.1934	6.2000e-004	5.9000e-004	32.3847
Total		**2.9500e-003**	**0.0268**	**0.0225**	**1.6000e-004**		**2.0400e-003**	**2.0400e-003**		**2.0400e-003**	**2.0400e-003**		**32.1934**	**32.1934**	**6.2000e-004**	**5.9000e-004**	**32.3847**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.273644	2.9500e-003	0.0268	0.0225	1.6000e-004		2.0400e-003	2.0400e-003		2.0400e-003	2.0400e-003		32.1934	32.1934	6.2000e-004	5.9000e-004	32.3847
Total		**2.9500e-003**	**0.0268**	**0.0225**	**1.6000e-004**		**2.0400e-003**	**2.0400e-003**		**2.0400e-003**	**2.0400e-003**		**32.1934**	**32.1934**	**6.2000e-004**	**5.9000e-004**	**32.3847**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1229	1.0000e-005	5.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-003	1.2000e-003	0.0000		1.2800e-003
Unmitigated	0.1229	1.0000e-005	5.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-003	1.2000e-003	0.0000		1.2800e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0140					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1089					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	1.0000e-005	5.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-003	1.2000e-003	0.0000		1.2800e-003
Total	**0.1229**	**1.0000e-005**	**5.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.2000e-003**	**1.2000e-003**	**0.0000**		**1.2800e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0140					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1089					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	1.0000e-005	5.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2000e-003	1.2000e-003	0.0000		1.2800e-003
Total	**0.1229**	**1.0000e-005**	**5.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.2000e-003**	**1.2000e-003**	**0.0000**		**1.2800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

B.2 CRITERIA POLLUTANT EMISSION INVENTORY



APPENDIX B.2

CRITERIA POLLUTANT EMISSION INVENTORY

APPENDIX B.2.1
CRITERIA POLLUTANT EMISSION INVENTORY FOR RECIPROCATING IC ENGINE
(PROJECT OPERATION IMPACT)

APPENDIX B.2.2
CRITERIA POLLUTANT EMISSION INVENTORY FOR FLARE SYSTEM
CRITERIA POLLUTANT EMISSION INVENTORY FOR EXISTING BOILERS
(PROJECT CONSTRUCTION IMPACT)

APPENDIX B.2.3
EMISSION FACTORS AND ITS SUPPORTING DOCUMENTATION:

- **GE J 620 GS-F21 MANUFACTURER EMISSIONS GUARANTEE AND OTHER ENGINE PARAMETERS**
- **GE J 620 GS-F21 EQUIPMENT SPECIFICATION**
- **SCAQMD ANNUAL REPORTING REPORT FOR 2010 THROUGH 2014**
- **SOURCE TEST REPORT OF THE EXISTING FLARE SYSTEM CONDUCTED ON MAY 2015**
- **LANDFILL GAS LAB RESULT COLLECTED ON 01/06/2016**

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APPENDIX B.2.1

CRITERIA POLLUTANT EMISSION INVENTORY FOR RECIPROCATING IC ENGINE (PROJECT OPERATION IMPACT)

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APPENDIX A.2.1
EMISSION INVENTORY FOR THE PROPOSED ENGINES
BIOGAS RENEWABLE GENERATION PROJECT

GE J 620 GS-F21 **30 MINUTES STARTUP, 8 MINUTES SHUTDOWN**

Pollutant	No. of Normal Operating Hours per Day	Normal Operating Hour Emission Rate	No. of Startups Per Day	Uncontrolled Emission lb / Startup	No. of Shutdowns Per Day	Uncontrolled Emission lb / Shutdown	No. of Maintenance Operating Hours per Day	Maintenance Operating Hour Emission Rate	Number of Startups/ Shutdowns per Month	Number of Normal Operating Hours Per Month	Number of Startups/ Shutdowns per Year	Number of Normal Operating Hours Per Year
NO_X	12.73	1.22	2	23.50	2.00	7.40	10	7.34	10	704	120	8674
CO	12.73	8.80	2	24.00	2.00	29.20	10	16.92	10	704	120	8674
VOC	12.73	1.16	2	1.20	2.00	0.46	10	2.17	10	704	120	8674
PM10	12.73	0.61	2	0.30	2.00	0.08	10	0.61	10	704	120	8674
SO_X	12.73	0.84	2	0.42	2.00	0.11	10	0.84	10	704	120	8674
	Starts/stops =	1.27	hours/day per engine		6.33	hours/month per engine		76.00	Hours / year per engine			
	Maintenance =	10	hours/day per engine		10	hours/month per engine		10	Hours / year per engine			

Daily = 24 hours with 2 startS Monthly = 720 hours with 10 starts

GE J 620 GS-F21 **EMISSIONS OF 1 ENGINE** **EMISSIONS OF 4 ENGINES**

Pollutant	Daily Maximum Emissions (Lbs)	Monthly Maximum Emissions (Lbs)	30-Day Average Emissions (lbs)	Annual PTE (Lbs)	Annual PTE (Tons)	Daily Maximum Emissions (Lbs)	Monthly Maximum Emissions (Lbs)	30-Day Average Emissions (lbs)	Annual PTE (Lbs)	Annual PTE (Tons)
NO_X	150.73	1,241	41	14,364	7.18	419.34	4,963	165	57,455	28.73
CO	387.65	6,893	230	82,884	41.44	1131.81	27,574	919	331,538	165.77
VOC	39.79	855	28	10,283	5.14	126.10	3,418	114	41,131	20.57
PM10	14.61	438	15	5,332	2.67	57.94	1,753	58	21,327	10.66
SO_X	20.16	605	20	7,358	3.68	79.97	2,419	81	29,434	14.72

*Maximum 1 Engine per day in the maintenance operation

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APPENDIX B.2.2

CRITERIA POLLUTANT EMISSION INVENTORY FOR FLARE SYSTEM AND BOILERS (PROJECT CONSTRUCTION IMPACT)

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APPENDIX A.2.2
EMISSION INVENTORY DURING CONSTRUCTION ACTIVITIES (FLARES)
BIOGAS RENEWABLE GENERATION PROJECT

DURING CONSTRUCTION, ALL LFG ARE COMBUSTED IN THE EXISTING FLARES
LFG COMBUSTED: 0.3 MMSCF/HR 5000 SCF/MIN
ANNUAL OPERATING HOURS: 8760

FLARE SYSTEM

Pollutant	No. of Normal Operating Hours per Day	Emission Factor, lbs/mmscf	Number of Normal Operating Hours Per Month	Number of Normal Operating Hours Per Year
NO_X	24.00	13.27	720	8760
CO	24.00	1.19	720	8760
VOC	24.00	1.30	720	8760
PM10	24.00	6.40	720	8760
SO_X	24.00	5.21	720	8760

FLARE SYSTEM

Pollutant	Daily Maximum Emissions (Lbs)	Monthly Maximum Emissions (Lbs)	30-Day Average Emissions (lbs)	Annual PTE (Lbs)	Annual PTE (tons)
NO_X	95.54	2,866	96	34,874	17.44
CO	8.57	257	9	3,127	1.56
VOC	9.36	281	9	3,416	1.71
PM10	46.08	1,382	46	16,819	8.41
SO_X	37.51	1,125	38	13,692	6.85

APPENDIX A.2.2
EMISSION INVENTORY DURING CONSTRUCTION ACTIVITIES (BOILERS)
BIOGAS RENEWABLE GENERATION PROJECT

			SCAQMD AER EMISSIONS ,LBS/YEAR					SCAQMD AER EMISSIONS ,LBS/DAYS				
Year	Unit	LFG usage, MMCF	NOX	CO	VOC	PM10/2.5	SOX	NOX	CO	VOC	PM10/2.5	SOX
2011	Boiler #3	0.89	556	6	4	7	1	1.52	0.02	0.01	0.02	0.00
	Boiler #4	515.24	8,141	3,658	2,061	4,122	747	22.30	10.02	5.65	11.29	2.05
	Boiler #5	2753.91	26,465	19,553	11,016	22,031	3,993	72.51	53.57	30.18	60.36	10.94
2012	Boiler #3	285.65	3,208	2,028	1,143	2,285	414	8.79	5.56	3.13	6.26	1.13
	Boiler #4	1856.66	16,784	13,182	7,427	14,853	2,692	45.98	36.12	20.35	40.69	7.38
	Boiler #5	1268.04	13,314	9,003	5,072	10,144	1,839	36.48	24.67	13.90	27.79	5.04
2013	Boiler #3	242.8	3,433	1,724	971	1,942	352	9.41	4.72	2.66	5.32	0.96
	Boiler #4	1510.66	12,478	10,726	6,043	12,085	2,190	34.19	29.39	16.56	33.11	6.00
	Boiler #5	1409.84	15,311	10,010	5,639	11,279	2,044	41.95	27.42	15.45	30.90	5.60
2014	Boiler #3	433.59	4,175	3,078	1,734	3,469	629	11.44	8.43	4.75	9.50	1.72
	Boiler #4	1153.06	9,916	8,187	4,612	9,224	1,672	27.17	22.43	12.64	25.27	4.58
	Boiler #5	1535.7	15,971	10,903	6,143	12,286	2,227	43.76	29.87	16.83	33.66	6.10
2015	Boiler #3	322.427	3,211	2,289	1,290	2,579	468	8.80	6.27	3.53	7.07	1.28
	Boiler #4	649.937	3,854	4,615	2,600	5,200	942	10.56	12.64	7.12	14.25	2.58
	Boiler #5	1564.606	16,898	11,109	6,258	12,517	2,269	46.30	30.43	17.15	34.29	6.22
5-YR AVG	Boiler #3		3,693	2,684	1,512	3,024	548	7.99	5.00	2.82	5.63	1.02
	Boiler #4		6,885	6,401	3,606	7,212	1,307	28.04	22.12	12.46	24.92	4.52
	Boiler #5		16,435	11,006	6,201	12,401	2,248	48.20	33.19	18.70	37.40	6.78
							TOTAL:	84.23	60.31	33.98	67.96	12.32

Note:
The daily average emissions were calculated by assuming 365 operating days.

APPENDIX B.2.3

EMISSION FACTORS AND ITS SUPPORTING DOCUMENTATION:

- **GE J 620 GS-F21 MANUFACTURER EMISSIONS GUARANTEE AND OTHER ENGINE PARAMETERS**

- **GE J 620 GS-F21 EQUIPMENT SPECIFICATION**

- **SCAQMD ANNUAL REPORTING REPORT FOR 2010 THROUGH 2014**

- **SOURCE TEST REPORT OF THE EXISTING FLARE SYSTEM CONDUCTED ON MAY 2015**

- **LANDFILL GAS LAB RESULT COLLECTED ON 01/06/2016**

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APPENDIX A.2.3
EMISSION FACTORS OF THE PROPOSED ENGINES
BIOGAS RENEWABLE GENERATION PROJECT

	CONTROLLED EMISSION RATES														
Equipment Type	NO_X		CO		VOC		PM10/2.5		SO_X		NO_X, LBS/HR	CO, LBS/HR	VOC, LBS/HR	PM10/2.5, LBS/HR	SO_X, LBS/HR
GE J 620 GS-F21 (Engine)	11	PPMV	130.1	PPMV	30	PPMV	0.066	g/bhp-hr	10.13	LBS/MMCF	1.22	8.8	1.16	0.61	0.84
Existing Flare System	13.27	LBS/MMCF	1.19	LBS/MMCF	1.3	LBS/MMCF	6.4	LBS/MMCF	5.21	LBS/MMCF					
	UNCONTROLLED EMISSION RATES														
GE J 620 GS-F21 (Engine)	66	PPMV	250	PPMV	56	PPMV	0.066	g/bhp-hr	10.13	LBS/MMCF	7.34	16.92	2.17	0.61	0.84

Equipment Type	Electric Output, $KW_{(GROSS)}$	Fuel Type	Fuel LHV, Btu/SCF	Fuel HHV, Btu/SCF	Dry Fuel Factor (Fd), dscf/mmbtu	Fuel Consumption MMBtu/hr	Fuel Flow MMCF/hr	Fuel Flow SCFM
GE J 620 GS-F21 (Engine)	3,018	Landfill Gas		317.14	9835	26.34	0.083	1383

NOTES:

GE J 620 GS-F21 Engine:
- NO_X and VOC emission concentration based on Rule 1110.2 Emission Limits (SCAQMD BACT/LAER).
- CO emission based on manufacturer emission guarantee.
- PM10 emission factor is based on SCAQMD BACT/LAER emission limit.
- SO_X emission factor based on 60 ppmv of sulfur content measured in H2S for Landfill gas (SCAQMD BACT/LAER).
- Enigne parameter is based provided by the manufacturer.
- Landfill gas HHV is estimated based on the landfill gas sampling on 01/06/2016.

Existing Flare System:
- Emission factors is the average of calculated emission factors reported in SCAQMD Annual Emission Report (AER) for the reporting year 2010 through 2014 and Source test concducted on May, 2015.

Landfill gas property:
-Landfill gas HHV is estimated based on the landfill gas sampling on 01/06/2016.
-Dry Fuel Factor is estimated based on the average heating values from the lab results sampled from 2010 through May, 2015.

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Scholl Canyon Landfill Power Project
Power Island and Major Equipment Request for Proposals
Attachment 2.11.2 – Recip. Engine Generator Air Emissions Data

REG AIR EMISSIONS DATA – PROPOSAL FORM

A. Instructions

This section is for information requested if you are proposing Reciprocating Engine Generators only. All engine generators shall be identical.

Please provide the information and data requested below.

Number of identical Engine Generators Proposed: 4

Each engine's exhaust stack diameter and height: 24"

Maximum total heat input per engine (MMBTUH- HHV): 26.34

Maximum gross electrical output of each generator (MW): 3018 @ 0.85pf

Maximum brake horsepower rating of the engine (bhp): 4183

B. Catalyst Information Request

Describe SCR Proposed, (Make, model, catalyst type and material, module size, total volume, other pertinent information): **Johnson Matthey SCR10x10, two (2) layers of extruded SW55. Each layer consists of 25 modules and each module's dimensions are 12" x 12" x 12". The total volume is 47 ft3.**

Describe Oxidation Catalyst Proposed, (Make, model, catalyst type and material, module size, total volume, other pertinent information): **Johnson Matthey Oxidation Catalyst, one layer of coated metallic SC09 Oxidation Catalyst. Layer consists 25 modules and each module's dimensions are 12" x 12" x 3.5". The total volume is 7.3 ft3.**

Guaranteed Ammonia Concentration at the outlet of the SCR Unit (Ammonia Slip) (PPMV, @ 15% O2): **Johnson Matthey SCR system ammonia slip will be less than 10 ppmvd corrected to 15% oxygen**

Performance Guarantee (% Reduction) on NO_X, CO, and VOC: **Johnson Matthey SCR system will meet SCAQMD Rule 1110.2, NOx = 11 ppmvd, CO = 250 ppmvd. VOC = 30 ppmvd, all corrected to 15% oxygen**

Ammonia Storage Information (Dimension, capacity, pressure): By Others

Stantec

City of Glendale Water & Power GWP Your Trusted Community Utility

Scholl Canyon Landfill Power Project
Power Island and Major Equipment Request for Proposals
Attachment 2.11.2 – Recip. Engine Generator Air Emissions Data

C. Exhaust Parameters Guarantees for Full Load Operation (each engine)

Maximum Exit Exhaust Flow (ACFM): 479,000 *Per engine specs, exhaust gas volume (wet) is 481,020 scfh
Maximum Exit Exhaust Flow (SCFM): 481,020
Exit Exhaust Temp (°F): 797
Exit Pressure (inc. H_2O): not to exceed 20.068 (0.725psi)

D. Emissions Rates Guarantees for each Engine

For engines operating at all loads, minimum to maximum, please provide the following guarantee information for all design conditions listed in Attachment 3 Site Design Condition.

Contaminants	PPMV and Fuel Use MMBTUH HHV	Standard PPMV
CO (PPMV, @ 15% O2, dry) :	≤ 250 @ 23,842 MBTU/hr	250
NOx (PPMV, @ 15% O2, dry):	≤ 11 @ 23,842 MBTU/hr	11
NMNEHC (PPMV,@ 15% O2, dry):	≤ 30 @ 23,842 MBTU/hr	30
Formaldehyde (PPMV,@ 15% O2):	≤ 59 @ 23,842 MBTU/hr	n/a
SOx (PPMV, @ 15% O2, dry):	Per GEJ Emissions Data Attached	n/a

Landfill Gas CH4 Destruction Efficiency (%,): **Not Applicable**
Landfill Gas NMOC Destruction Efficiency (%,): **98**

	Lbs/MMBTU-HHV
PM 10 (Lbs/MMBTU - HHV):	0.061 lbs/Mwe/Hr = 7.76×10^{-6} lbs/MBTU

E. Emissions Guarantees for Start Up & Shut down for each Engine

Cold Start Event

Define Cold Start: Catalyst at ambient temperature
Duration (Minutes): 30 minutes -

Stantec

City of Glendale Water & Power
Your Trusted Community Utility

Scholl Canyon Landfill Power Project
Power Island and Major Equipment Request for Proposals
Attachment 2.11.2 – Recip. Engine Generator Air Emissions Data

Contaminants	Lbm /Event & Lbm/MMBtu HHV During Event	
CO (@ 15% O2, dry) :	24 lbm/event	0.0013 lbm/MBTU
NOx (@ 15% O2, dry):	23.5 lbm/event	0.00127 lbm/MBTU
NMNEHC (as hexane @ 3% O2, dry):	1.2 lbm/event	$6.3x10^{-5}$ lbm/MBTU
Formaldehyde (@ 15% O2):	2.1 lbm/event	$1.2x10^{-4}$ lbm/MBTU
SOx (@ 15% O2, dry):	Per Jenbacher Engine Emissions Data Attached	
PM 10	0.12 lbm/event	$6.6x10^{-6}$ lbm/MBTU

Warm Start Event

Define Warm Start: Catalyst at 325 Deg F
Duration (Minutes): 15 Minutes

Contaminants	Lbm /Event & Lbm/MMBtu HHV During Event	
CO (@ 15% O2, dry):	19.6 lbm/event	0.0011 lbm/MBTU
NOx (@ 15% O2, dry):	18.1 lbm/event	0.001 lbm/MBTU
NMNEHC (as Hexane @ 3% O2, dry):	0.68 lbm/event	$3.7x10^{-5}$ lbm/MBTU
Formaldehyde (@ 15% O2):	1.65 lbm/event	$9.0x10^{-5}$ lbm/MBTU
SOx (@ 15% O2, dry):	Per Jenbacher Engine Emissions Data Attached	
PM 10	0.07 lbm/event	$3.3x10^{-6}$ lbm/MBTU

Hot Start Event

Define Hot Start: Catalyst at 650 Deg F
Duration (Minutes): 0 minutes

Contaminants	Lbm /Event & Lbm/MMBtu HHV During Event	
CO (@ 15% O2, dry):	5.8 lbm/event	$3.2x10^{-4}$ lbm/MBTU
NOx (@ 15% O2, dry):	5.1 lbm/event	$2.8x10^{-4}$ lbm/MBTU
NMNEHC (@ 3% O2, dry):	0.63 lbm/event	$3.5x10^{-5}$ lbm/MBTU
Formaldehyde (@ 15% O2):	1.5 lbm/event	$8.2x10^{-5}$ lbm/MBTU
SOx (@ 15% O2, dry):	Per Jenbacher Engine Emissions Data Attached	
PM 10	0.06 lbm/event	$3.3x10^{-6}$ lbm/MBTU

Stantec

City of Glendale Water & Power
Your Trusted Community Utility

Scholl Canyon Landfill Power Project
Power Island and Major Equipment Request for Proposals
Attachment 2.11.2 – Recip. Engine Generator Air Emissions Data

Shut Down Event

Define shut down: Not Applicable
Duration (Minutes): 8 min

Contaminants	Lbm /Event & Lbm/MMBtu HHV During Event	
CO (@ 15% O2, dry):	29.2 lbm/event	0.0045 lbm/MBTU
NOx (@ 15% O2, dry):	7.4 lbm/event	0.0012 lbm/MBTU
NMNEHC (@ 15% O2, dry):	0.46 lbm/event	7.0×10^{-5} lbm/MBTU
Formaldehyde (@ 15% O2):	0.57 lbm/event	8.8×10^{-5} lbm/MBTU
SOx (@ 15% O2, dry):	Per Jenbacher Engine Emissions Data Attached	
PM 10	0.06 lbm/event	9.3×10^{-6} lbm/MBTU

30 November 2016

GE Distributed Power– GE Gas Engines confirms that the pollutants, in the amounts listed below, are confirmed as valid "NOT TO EXCEED" values, for stationary applications per engine, and based on site gas composition that meets TI 1000-0300 standards for the:

Scholl Canyon: J620 F21/F01

Pollutant	Emission Limit per Engine (Untreated Raw Exhaust)
• NOx	1.1 g/bhp-hr (NO_2) 66 ppm (@ 15% O_2) Evaluated using EPA method 7E
• CO	2.5 g/bhp-hr 250 ppm (@ 15% O_2) Evaluated using EPA method 10
• NMHC	0.35 g/bhp-hr 93 ppm (@ 15% O_2) Evaluated using EPA method 18 (non-aldehydes, non-methane hydrocarbons, all CxHy with x>1)
• NMNEHC	0.25 g/bhp-hr 56 ppm (@ 15% O_2) Evaluated using EPA method 18 (non-aldehydes, non-methane, non-ethane hydrocarbons, all CxHy with x>1)
• PM10	0.02 g/bhp-hr 10 mg/Nm³ (5% O_2)
• SO_2	No Guarantee, (See Note 4)

The following criteria apply for demonstration purposes:

(1) Operation will be on **Natural Gas** and/or in combination with **Landfill**, both of which must meet the GE Gas Engines gas quality requirements stated in the Technical Instruction 1000-0300.

(2) A minimum content of 80% CH4 (air free) is required to ensure a stable combustion in our engines when run in Natural gas. A minimum content of 40% CH4 (air free) is required to ensure a stable combustion in our engines when run on Landfill gas.

(3) **Formaldehyde** – GE Gas Engines has done a significant amount of research studying formaldehyde (CH_2O) concentrations in our engine exhaust streams. The results of this research find that formaldehyde is in itself a difficult quantity to measure accurately and consistently, however, what can be stated from our studies is that typically, the range of formaldehyde in raw exhaust can go from 50 to 150 mg/Nm3 at 5% O2 (0.14 TO 0.45 g/bhp-hr).

If a unit is running on Biogas or Landfill Gas (LFG), formaldehyde (CH_2O) is then even more difficult to maintain and measure since Biogas/LFG are high in moisture and sulfur concentrations, which make the use of catalysts very difficult due to the potential of catalyst poisoning.

GE Gas Engines can only guarantee formaldehyde values with an Oxidation Catalyst when we run a GE Gas Engines Standard Natural Gas. In this case, we could achieve levels of 60~70 mg/Nm³ @ 5% O2 (0.18 to 0.22 g/bhp-hr) on the measurement method VDI 3862.

(4) SO2 and other Sulfur based exhaust elements found in the exhaust stream are introduced to the combustion process through both fuel and combustion air and are not generated by the engine itself. The engine has therefore no control over the amount of Sulfur introduced, thus a guaranteed "Not to Exceed" value cannot be made by GE Gas Engines. Through GE Gas Engines experience however, an exhaust SO_2 value of < 20 ppm @ 15% O_2 can be expected provided fuel and combustion air sulfur compound content (H_2S, COS, CS_2, etc.) is held at < 150 ppm @ 15% O_2.

(5) Based on nominal mass flow as provided by the project specific data sheets or mass flow calculations according EPA method 19.

(6) For emissions shown in units of **g/bhp-hr**, values are valid between 80% and 100% rated stable load (not for island mode).

(7) For emissions shown in units of **mg/Nm³**, values are valid between 50% and 100% rated stable load (not for island mode).

(8) Please note that the CO and NMHC levels are for start-up only and are expected to drift slowly upwards as deposits build up in the engine and as the engine experiences normal wear. CO drift can be decreased by following GE Gas Engines specific maintenance and repair schedules along with the use of genuine GE Gas Engines parts and components.

(9) Please note that the NOx level is expected to drift slowly upwards as deposits caused by contaminations in the gas build up in the engine and as the engine experiences normal wear. NOx drift can be compensated up to a certain extent, by calibrations to engine operating parameters in the Diane XT controls system. Excessive deposits resulting from gas contamination may require the cleaning of the combustion chamber and turbochargers depending on gas quality and the severity of gas contaminations.

(10) Maintenance and component repairs for the GE Gas Engines equipment is carried out by qualified personnel strictly according to the schedules and repair requirements set by GE Gas Engines along with the use of genuine GE Gas Engines parts and components.

(11) Testing to determine compliance with this commitment will be at the expense of the customer and accomplished by a certified laboratory chosen by the customer. The engine/installation is to be in good working order consistent with GE Gas Engines recommended maintenance practices prior to any testing. GE Gas Engines reserves the right to participate and/or challenge the results of any testing.

If the engine fails to meet the emissions representations the customer must provide the following supporting documentation to GE Gas Engines:

(1) Fuel gas samples

(2) Complete maintenance records

(3) A full report including the calculations and results of any emissions testing.

GE Gas Engines will be given a reasonable amount of time to take any or all of the following actions:

- Perform additional testing in an effort demonstrate the emissions representations. If this testing demonstrates compliance with no adjustments required to the engine, customer will pay for added testing. If testing fails to demonstrate compliance with the emissions representations, the testing will be paid for by GE Gas Engines.

- Make such adjustments to the engine so as to bring the engine into compliance with the emissions limits provided in this letter.

Conformity Declaration (acc. ISO/IEC 17050-1:2004)

We hereby confirm that stationary Jenbacher Gas Engines comply with 40 CFR Part 60, subpart JJJJ and be labelled as follows:

"THIS ENGINE IS EXCLUDED FROM THE REQUIREMENT OF 40 CFR PART 1048 AS A "STATIONARY ENGINE". INSTALLING OR USING THIS ENGINE IN ANY OTHER APPLICATION MAY BE A VIOLATION OF FEDERAL LAW SUBJECTED TO CIVIL PENALTY AND THE OWNER/OPERATOR MUST COMPLY WITH THE REQUIREMENT OF CFR PART 60. THIS ENGINE IS NOT PART OF A REQUIRED OR VOLUNTARY CERTIFICATION PROGRAM AND IS CLASSIFIED AS NON-CERTIFIED PER 40 CFR PART 60, SUBPART JJJJ".

GE Distributed Power
GE Gas Engines
11330 Clay Road
Houston, TX 77041

Johnson Matthey Catalysts
Stationary Source Emission Control
900 Forge Avenue; Audubon, PA 19403
T:484-320-2116; F:484-320-2152

Johnson Matthey
Catalysts

C O N F I D E N T I A L

To: 2G Energy, Inc. June 27, 2017
205 Commercial Drive, St. Augustine, FL 32092

Re: Confirmation of Scholl Canyon Emission Discharge Levels on Proposal 400-16-238

The Johnson Matthey proposal 400-16-238 written on 11/04/2016 for the Scholl Canyon Project stated that the proposed emission system being offered would guarantee a CO discharge level of 250 ppmvd @ 15%, and an ammonia slip discharge guarantee of 10 ppmvd @ 15 %. We did not show the actual design values that could be guaranteed because, at the time, we thought the values mentioned above would be sufficient and did not want to overstate or guarantee more than what was needed.

The emission system offered in proposal 400-16-238 is however much more capable in regards to a lower CO and a lower ammonia slip guarantee. The system recommended in the 400-16-238 proposal can and will meet a 5 ppmvd@15% ammonia slip limit and will guarantee a CO discharge of less than 130 ppmvd @15%. I have revised this original proposal to reflect these changes.

Please let me know if you need anything further in regards to these guaranteed discharge levels.

Sincerely,

Robert Bono

Robert Bono
Western Sales Manager
Johnson Matthey Stationary Engine Emissions, LLC,
949-307-1265 mobile

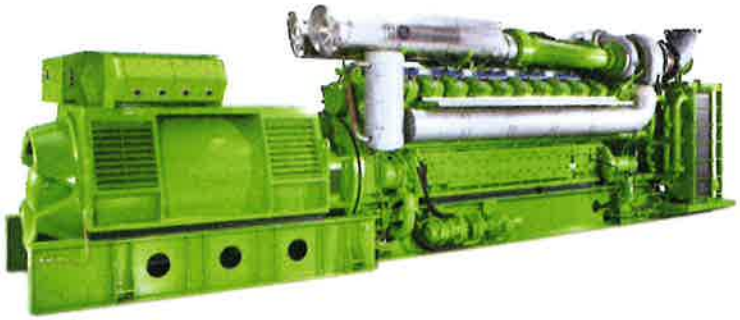
Technical Description

Genset

JGS 620 GS-L.L

Scholl Canyon
JGS 620 F21/F01, 12470V Dual Fuel

The ratings in the specification are valid for full load operation at a site installation of 1640 ft (500 m) and an air intake temperature of T1 < 86F (30C). At T1 > 86F (30C), an output deration of 0.55%/F (1.0%/C) will occur to an intake temperature of T1 < 95 F (35 C). At T1 > 95F (35 C), and output deration of 1.11%/F (2.0%/C) will occur.



Electrical output (PF = 1.0 / 0.85) 3026 / 3018 kWe

Emission values

NOx < 1.1 g/bhp.hr (NO2)

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0.01a Technical Data on Landfill Gas (at genset)

Data at:				Full load	Part Load	
Fuel gas LHV		BTU/scft		300		
				100%	75%	50%
Energy input		MBTU/hr	[2]	23,948	18,506	13,063
Gas volume		scfhr	*)	79,827	61,687	43,543
Mechanical output		bhp	[1]	4,183	3,137	2,091
Electrical output		kW el.	[4]	3,026	2,256	1,483
Heat to be dissipated			[5]			
~ Intercooler 1st stage (Engine jacket water cooling circuit)		MBTU/hr	[9]	2,549	1,383	491
~ Intercooler 2nd stage (Low Temperature circuit)		MBTU/hr		454	321	201
~ Lube oil (with gearbox) (Engine jacket water cooling circuit)		MBTU/hr		1,147	988	875
~ Jacket water		MBTU/hr		1,614	1,317	1,085
~ Surface heat	ca.	MBTU/hr	[7]	591	~	~
Spec. fuel consumption of engine electric		BTU/kWel.hr	[2]	7,914	8,202	8,808
Spec. fuel consumption of engine		BTU/bhp.hr	[2]	5,726	5,900	6,248
Lube oil consumption	ca.	gal/hr	[3]	0.29	~	~
Electrical efficiency		%		43.1%	41.6%	38.7%

*) approximate value for pipework dimensioning
[_] Explanations: see 0.10 - Technical parameters

All heat data is based on standard conditions according to attachment 0.10. Deviations from the standard conditions can result in a change of values within the heat balance, and must be taken into consideration in the layout of the cooling circuit/equipment (intercooler; emergency cooling; ...). In the specifications in addition to the general tolerance of ±8 % on the thermal output a further reserve of +5 % is recommended for the dimensioning of the cooling requirements.

0.01b Technical Data on Natural Gas (at genset)

Data at:				Full load	Part Load	
Fuel gas LHV		BTU/scft		917		
				100%	75%	50%
Energy input		MBTU/hr	[2]	23,118	17,766	12,417
Gas volume		scfhr	*)	25,210	19,374	13,541
Mechanical output		bhp	[1]	4,183	3,137	2,091
Electrical output		kW el.	[4]	3,026	2,256	1,483
Heat to be dissipated			[5]			
~ Intercooler 1st stage (Engine jacket water cooling circuit)		MBTU/hr	[9]	2,522	1,407	497
~ Intercooler 2nd stage (Low Temperature circuit)		MBTU/hr		584	346	204
~ Lube oil (with gearbox) (Engine jacket water cooling circuit)		MBTU/hr		1,053	970	830
~ Jacket water		MBTU/hr		1,684	1,468	1,238
~ Surface heat	ca.	MBTU/hr	[7]	719	~	~
Spec. fuel consumption of engine electric		BTU/kWel.hr	[2]	7,639	7,874	8,372
Spec. fuel consumption of engine		BTU/bhp.hr	[2]	5,527	5,664	5,939
Lube oil consumption	ca.	gal/hr	[3]	0.29	~	~
Electrical efficiency		%		44.7%	43.3%	40.8%

*) approximate value for pipework dimensioning
[_] Explanations: see 0.10 - Technical parameters

All heat data is based on standard conditions according to attachment 0.10. Deviations from the standard conditions can result in a change of values within the heat balance, and must be taken into consideration in the layout of the cooling circuit/equipment (intercooler; emergency cooling; ...). In the specifications in addition to the general tolerance of ±8 % on the thermal output a further reserve of +5 % is recommended for the dimensioning of the cooling requirements.

Main dimensions and weights (at genset)(with gearbox)

Length	in	~ 420
Width	in	~ 90
Height	in	~ 110
Weight empty	lbs	~ 84,110
Weight filled	lbs	~ 86,430

Connections

Jacket water inlet and outlet	in/lbs	4"/145
Exhaust gas outlet	in/lbs	25"/145
Fuel Gas (at genset)	in/lbs	4"/145
Water drain ISO 228	G	½"
Condensate drain	in	0.7
Safety valve - jacket water ISO 228	in/lbs	2x1½"/2.5
Lube oil replenishing (pipe)	in	1.1
Lube oil drain (pipe)	in	1.1
Jacket water - filling (flex pipe)	in	0.5
Intercooler water-Inlet/Outlet 1st stage	in/lbs	4"/145
Intercooler water-Inlet/Outlet 2nd stage	in/lbs	2½"/145

Output / fuel consumption

ISO standard fuel stop power ICFN	bhp	4,183 | 4.183
Mean effe. press. at stand. power and nom. speed	psi	290 | 290
Fuel gas type		Landfill gas | Natural gas
Based on methane number | Min. methane number	MN d)	135 | 100 | 94 | 80
Compression ratio	Epsilon	12.5
Min. fuel gas pressure for the pre chamber	psi	48.73268064
Min./Max. fuel gas pressure at inlet to gas train	psi	1.74 - 2.9 c)
Allowed Fluctuation of fuel gas pressure	%	± 10
Max. rate of gas pressure fluctuation	psi/sec	0.145
Maximum Intercooler 2nd stage inlet water temperature	°F	122
Spec. fuel consumption of engine	BTU/bhp.hr	5,726 | 5,527
Specific lube oil consumption	g/bhp.hr	0.22
Max. Oil temperature	°F	176
Jacket-water temperature max.	°F	203
Filling capacity lube oil (refill)	gal	~ 202

c) Lower gas pressures upon inquiry
d) based on methane number calculation software AVL 3.2

0.02 Technical data of engine

Manufacturer		GE Jenbacher
Engine type		J 620 GS-F21
Working principle		4-Stroke
Configuration		V 60°
No. of cylinders		20
Bore	in	7.48
Stroke	in	8.66
Piston displacement	cu.in	7,613
Nominal speed	rpm	1,500
Mean piston speed	in/s	433
Length	in	218
Width	in	75
Height	in	100
Weight dry	lbs	33,069
Weight filled	lbs	35,274
Moment of inertia	lbs-ft²	1642.63
Direction of rotation (from flywheel view)		left
Radio interference level to VDE 0875		N
Starter motor output	kW	20
Starter motor voltage	V	24

Thermal energy balance

Energy input	MBTU/hr	23,948 | 23,118
Intercooler	MBTU/hr	3,003 | 3,106
Lube oil (with gearbox)	MBTU/hr	1,147 | 1,053
Jacket water	MBTU/hr	1,614 | 1,684
Exhaust gas cooled to 356 °F	MBTU/hr	4,555 | 3,604
Exhaust gas cooled to 212 °F	MBTU/hr	5,985 | 4,982
Surface heat	MBTU/hr	305 | 433

Exhaust gas data

Exhaust gas temperature at full load	°F [8]	797 | 721
Exhaust gas mass flow rate, wet	lbs/hr	38,838 | 37,286
Exhaust gas mass flow rate, dry	lbs/hr	36,410 | 34,946
Exhaust gas volume, wet	scfhr	481,020 | 472,560
Exhaust gas volume, dry	scfhr	432,660 | 425,940
Max.admissible exhaust back pressure after engine	psi	0.725

Combustion air data

Combustion air mass flow rate	lbs/hr	33,929 | 36,244
Combustion air volume	SCFM	7,009 | 7,488
Max. admissible pressure drop at air-intake filter	psi	0.145

Sound pressure level

Aggregate a)	dB(A) re 20µPa	101
31,5 Hz	dB	88
63 Hz	dB	95
125 Hz	dB	101
250 Hz	dB	99
500 Hz	dB	94
1000 Hz	dB	93
2000 Hz	dB	92
4000 Hz	dB	94
8000 Hz	dB	95
Exhaust gas b)	dB(A) re 20µPa	123
31,5 Hz	dB	112
63 Hz	dB	121
125 Hz	dB	131
250 Hz	dB	119
500 Hz	dB	117
1000 Hz	dB	118
2000 Hz	dB	117
4000 Hz	dB	112
8000 Hz	dB	98

Sound power level

Aggregate	dB(A) re 1pW	122
Measurement surface	ft²	1,345
Exhaust gas	dB(A) re 1pW	131
Measurement surface	ft²	67.60

a) average sound pressure level on measurement surface in a distance of 3.28ft (converted to free field) according to DIN 45635, precision class 3.
b) average sound pressure level on measurement surface in a distance of 3.28ft according to DIN 45635, precision class 2.
The spectra are valid for aggregates up to bmep=319.083028 psi. (for higher bmep add safety margin of 1dB to all values per increase of 15 PSI pressure).
Engine tolerance ± 3 dB

0.02.01 Technical data of gearbox

Manufacturer		EISENBEISS
Type		~
Gearbox ratio		1:1.2
Efficiency	%	99.51
Mass	lbs	3,748

0.03 Technical data of generator (Special Rating)

Manufacturer		AVK e)
Type		DIG 142 g/4 e)
Type rating	kVA	4,264
Driving power	bhp	4,162
Ratings at p.f.= 1.0	kW	3,026
Ratings at p.f. = 0.85	kW	3,018
Rated output at p.f. = 0.85	kVA	3,551
Rated reactive power at p.f. = 0.85	kVAr	1,871
Rated current at p.f. = 0.85	A	164.4
Frequency	Hz	60
Voltage	kV	12.47
Speed	rpm	1,800
Permissible overspeed	rpm	2,250
Power factor (lagging - leading)		0,8 - 1,0
Efficiency at p.f.= 1.0	%	97.5%
Efficiency at p.f.= 0.85	%	97.2%
Efficiency at p.f. = 0.8	%	97.3%
Moment of inertia	lbs-ft²	4936.67
Mass	lbs	26,345
Radio interference level to EN 55011 Class A (EN 61000-6-4)		N
Ik" Initial symmetrical short-circuit current	kA	1.44
Is Peak current	kA	3.67
Insulation class		F
Temperature rise (at driving power)		B
Maximum ambient temperature	°F	110.

Reactance and time constants (saturated)

xd direct axis synchronous reactance	p.u.	1.82
xd' direct axis transient reactance	p.u.	0.17
xd" direct axis sub transient reactance	p.u.	0.12
x2 negative sequence reactance	p.u.	0.13
Td" sub transient reactance time constant	ms	20
Ta Time constant direct-current	ms	120
Tdo' open circuit field time constant	s	4.00

e) GE Jenbacher reserves the right to change the generator supplier and the generator type. The contractual data of the generator may thereby change slightly. The contractual produced electrical power will not change.

100% Natural Gas Connection Variant 1K

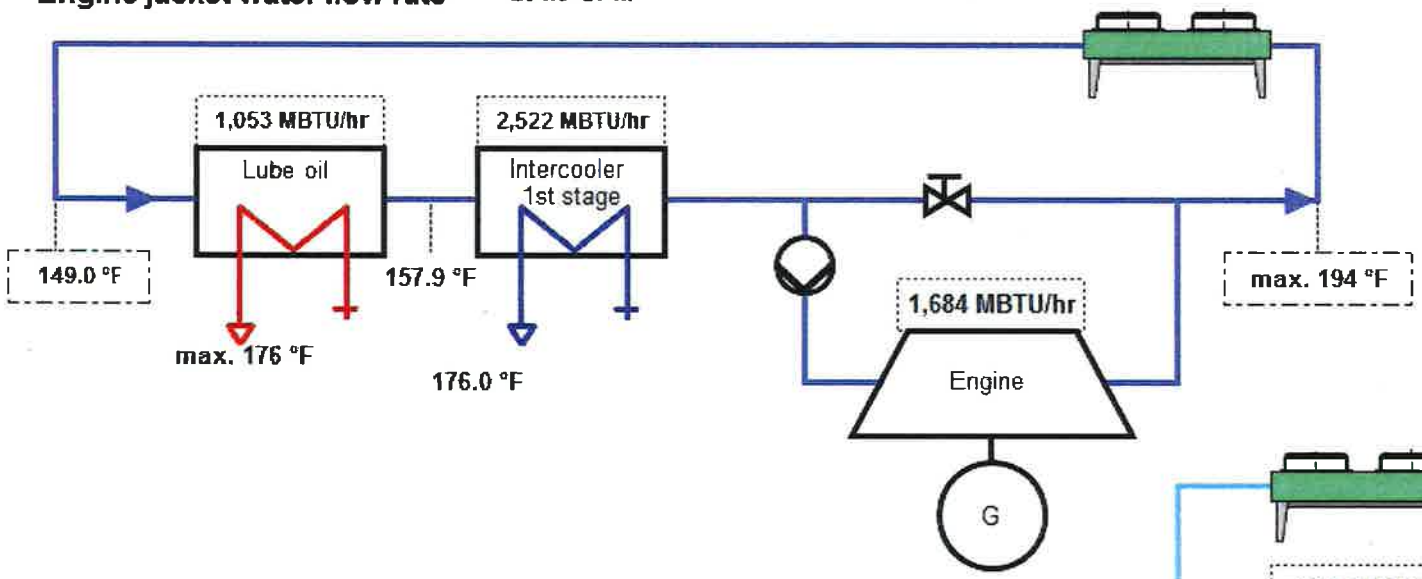
Scholl Canyon J 620 GS-F21

* Engine jacket water cooling circuit (calculated with Glykol 37%)

Heat to be dissipated = 5,259 MBTU/hr

(±8 % tolerance +5 % reserve for cooling requirements)

Engine jacket water flow rate = 264.3 GPM

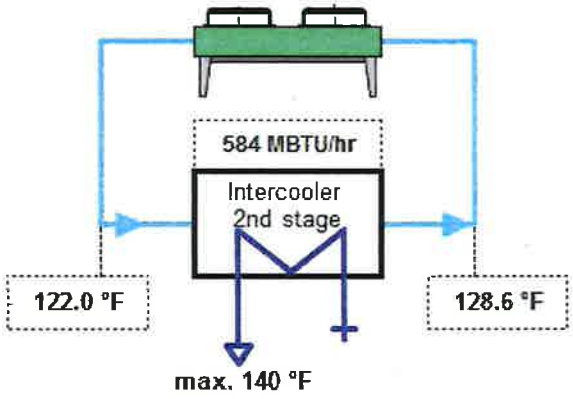


* Low Temperature circuit (calculated with Glykol 37%)

Heat to be dissipated = 584 MBTU/hr

(±8 % tolerance +5 % reserve for cooling requirements)

Cooling water flow rate = 198.1 GPM



100% Landfill Gas Connection Variant 1K

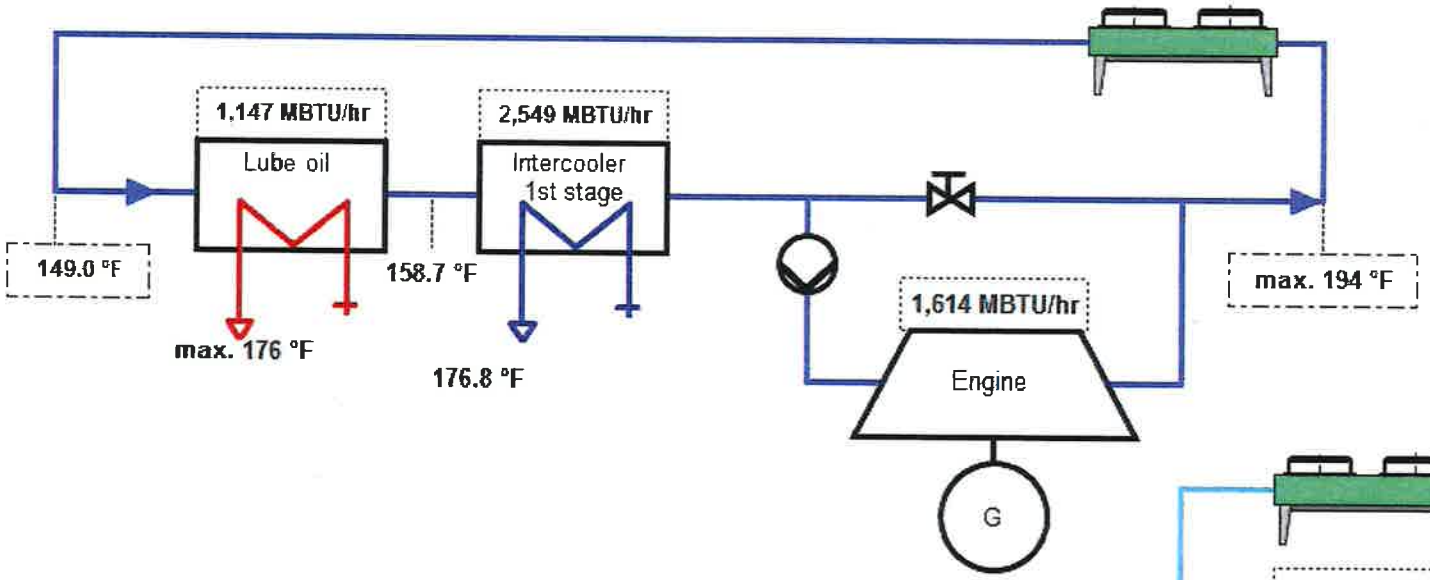
Scholl Canyon J 620 GS-F21

Engine jacket water cooling circuit (calculated with Glykol 37%)

Heat to be dissipated = 5,310 MBTU/hr

(±8 % tolerance +5 % reserve for cooling requirements)

Engine jacket water flow rate = 264.5 GPM

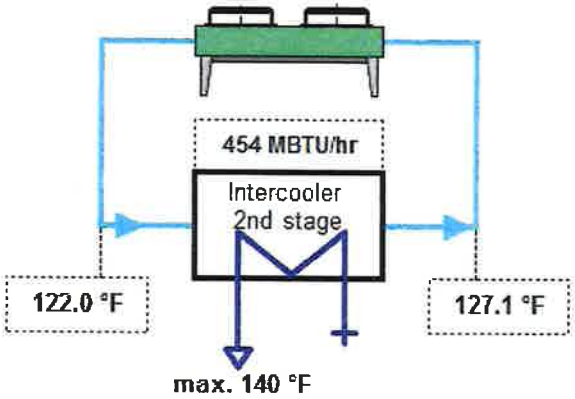


Low Temperature circuit (calculated with Glykol 37%)

Heat to be dissipated = 454 MBTU/hr

(±8 % tolerance +5 % reserve for cooling requirements)

Cooling water flow rate = 198.1 GPM



0.05 Cooling water circuit

Oil - heat (Engine jacket water cooling circuit)

Nominal output	MBTU/hr	1,147 | 1,053
Max. Oil temperature	°F	176
Loss of nominal pressure of engine jacket water	psi	5.80
Safety valve - max press. set point	psi	50.76

Engine jacket water - heat (Engine jacket water cooling circuit)

Nominal output	MBTU/hr	1,614 | 1,684
Max. engine jacket water temperature (outlet engine)	°F	194
Engine jacket water flow rate	GPM	264.5
Safety valve - max press. set point	psi	50.76

Mixture Intercooler (1st stage) (Engine jacket water cooling circuit)

Nominal output	MBTU/hr	2,549 | 2,522
Max. inlet cooling water temp. (intercooler)	°F	158.7
Design pressure of cooling water / (max. operating pressure)	lbs	145
Loss of nominal pressure of engine jacket water	psi	7.25
Safety valve - max press. set point	psi	50.76

Mixture Intercooler (2nd stage) (Low Temperature circuit)

Nominal output	MBTU/hr	454 | 584
Max. inlet cooling water temp. (intercooler)	°F	122
Aftercooler water flow rate	GPM	198.1
Design pressure of cooling water / (max. operating pressure)	lbs	145
Intercooler water pressure drop	psi	8.70
Safety valve - max press. set point	psi	50.76

The final pressure drop will be given after final order clarification and must be taken from the P&ID order documentation.

0.10 Technical parameters

The following "Technical Instruction (TI) of GE JENBACHER" form an integral part of the contract and must be strictly observed:

TI 1100-0110 – Boundary Conditions for GE Jenbacher Gas Engines
TI 1100-0111 – General Conditions – Operation and Maintenance
TI 1100-0112 – Installation of GE Jenbacher Units

These Technical Instructions reference other guides and instructions which can be provided upon request. These should be reviewed carefully by all personnel involved with the application, installation, and maintenance of any GE Jenbacher gas engine.

All data in the technical specification are based on engine full load (unless stated otherwise) at specified temperatures as well as the methane number and subject to technical development and modifications. For isolated operation an output reduction may apply according to the block load diagram. Before being able to provide exact output numbers, a detailed site load profile needs to be provided (motor starting curves, etc.).

All pressure indications are to be measured and read with pressure gauges (psig).

(1) At nominal speed and standard reference conditions ICFN according to DIN-ISO 3046 and DIN 6271, respectively
(2) According to DIN-ISO 3046 and DIN 6271, respectively, with a tolerance of + 5 %.
Efficiency performance is based on a new unit (immediately upon commissioning).Effects of degradation during normal operation can be mitigated through regular service and maintenance work.
(3) Average value between oil change intervals according to maintenance schedule, without oil change amount
(4) At p. f. = 1.0 according to VDE 0530 REM / IEC 34.1 with relative tolerances
(5) Total output with a tolerance of +/- 8 %
(6) According to above parameters (1) through (5)
(7) Only valid for engine and generator; module and peripheral equipment not considered (at p. f. = 0.8)
(8) Exhaust temperature with a tolerance of +/- 8 %
(9) Intercooler heat on:
*** standard conditions (Vxx)** - If the turbocharger design is done for air intake temperature > 86°F w/o de-rating, the intercooler heat of the 1st stage need to be increased by 2%/K starting from 77°F. Deviations between 77 – 86°F will be covered with the standard tolerance.
*** Hot Country application (Vxxx)** - If the turbocharger design is done for air intake temperature > 104°F w/o de-rating, the intercooler heat of the 1st stage need to be increased by 2%/K starting from 95°F. Deviations between 95 – 104°F will be covered with the standard tolerance.

Definition of output

- ISO-ICFN continuous rated power:
Net break power that the engine manufacturer declares an engine is capable of delivering continuously, at stated speed, between the normal maintenance intervals and overhauls as required by the manufacturer.

Power determined under the operating conditions of the manufacturer's test bench and adjusted to the standard reference conditions.

- Standard reference conditions:

Barometric pressure:	14.5 psi (1000 mbar) or 328 ft (100 m) above sea level
Air temperature:	77°F (25°C) or 298 K
Relative humidity:	30 %

- Volume values at standard conditions (fuel gas, combustion air, exhaust gas)

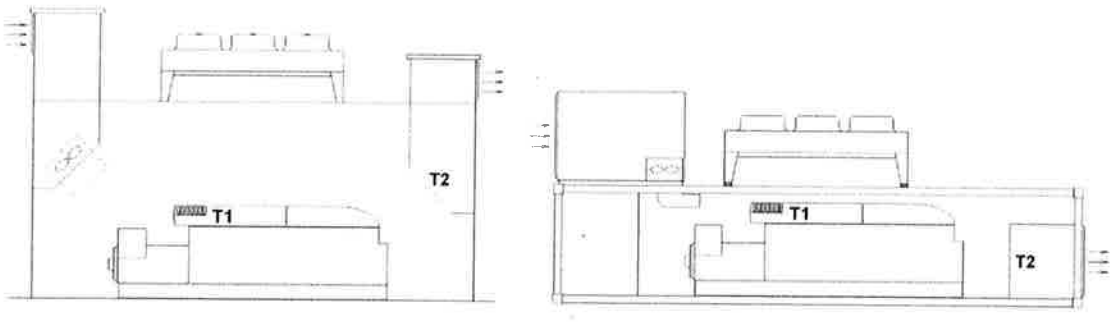
Pressure:	1 atmosphere (1013.25 mbar)
Temperature:	32°F (0°C)

Output adjustment for turbo charged engines
The ratings in the specification are valid for full load operation at a site installation of 1640 ft (500 m) and an air intake temperature of T1 < 86F (30C). At T1 > 86F (30C), an output deration of 0.55%/F (1.0%/C) will occur to an air intake temperature of T1 < 95 F (35C). At T1 > 95 F (35 C), an output deration of 1.11%/F (2.0%/C) will occur.

Radio interference level
The ignition system of the gas engines complies the radio interference levels of CISPR 12 and EN 55011 class B, (30-75 MHz, 75-400 MHz, 400-1000 MHz) and (30-230 MHz, 230-1000 MHz), respectively.

Parameters for the operation of GE Jenbacher gas engines

Maximum room temperature: **122°F** (T2) -> engine stop



If the actual methane number is lower than the specified, the knock control responds. First the ignition timing is changed at full rated power. Secondly the rated power is reduced. These functions are carried out by the engine management.

Operation of Voltage and frequency outside of stated limits for the generator as per IEC 60034-1 Zone A will result in a power de-rate up to and including tripping of the equipment.

The generator set fulfills the limits for mechanical vibrations according to ISO 8528-9.

If possible, railway trucks must not be used for transport (**TI 1000-0046**).

Parameters for the operation of control unit and the electrical equipment

Relative humidity: 50%
Maximum temperature: 104°F.
Altitude: <2000m above the sea level.

The gas quantity indicated under the technical data refers to standard conditions with the given calorific value. The actual volume flow (under operating conditions) has to be considered for dimensioning the gas compressor and each gas feeding component – it will be affected by:

- Actual gas temperature (limiting temperature according to **TI 1000-0300**)
- Gas humidity (limiting value according to **TI 1000-0300**)
- Gas Pressure
- Landfill Gas is assumed to be 32% CH4, 27% CO2

1.00 Scope of supply - Genset

Design:
The genset is built as a compact package.
Engine and generator are connected through coupling and gearbox and are mounted to the base frame. To provide the best possible isolation from the transmission of vibrations the engine is mounted to the frame by means of anti-vibrational mounts. The remaining vibrations are eliminated by mounting the module on isolating pads (e.g. Sylomer). This, in principle, allows for placing of the genset to be directly on any floor capable of carrying the static load. No special foundation is required. Prevention of sound conducted through solids has to be provided locally. Prevention of sound conducted through solids has to be provided locally.

1.01 Spark ignited gas engine

Four-stroke, air/gas mixture turbocharged, after-cooled, with high performance ignition system and electronically controlled air/gas mixture system.
The engine is equipped with the most advanced

LEANOX® LEAN-BURN COMBUSTION SYSTEM

developed by GE JENBACHER.

1.01.01 Engine design

Engine block
Single-piece crankcase and cylinder block made of special casting; crank case covers for engine inspection, welded steel oil pan.

Crankshaft and main bearings
Drop-forged, precision ground, surface hardened, statically and dynamically balanced; main bearings (upper bearing shell: grooved bearing / lower bearing shell: sputter bearing) arranged between crank pins, drilled oil passages for forced-feed lubrication of connecting rods.

Vibration damper
Maintenance free viscous damper

Flywheel
With ring gear for starter motor and additionally screwed on.

Pistons
Single-piece made of steel, with piston ring carrier and oil passages for cooling; piston rings made of high quality material, main combustion chamber specially designed for lean burn operation.

Connecting rods
Drop-forged, heat-treated, big end diagonally split and toothed. Big end bearings (upper bearing shell: sputter bearing / lower bearing shell: sputter bearing) and connecting rod bushing for piston pin.

Cylinder liner
Chromium alloy gray cast iron, wet, individually replaceable.

Cylinder head
Specially designed and developed for GE JENBACHER-lean burn engines with optimized fuel consumption and emissions; water cooled, made of special casting, individually replaceable; Valve seats and valve guides and spark plug sleeves individually replaceable; exhaust and inlet valve made of high quality material; Pre-chamber with check-valve.

Crankcase breather
Connected to combustion air intake system

Valve train
Camshaft, with replaceable bushings, driven by crankshaft through intermediate gears, valve lubrication by splash oil through rocker arms.

Combustion air/fuel gas system
Motorized carburetor for automatic adjustment according fuel gas characteristic. Exhaust driven turbocharger, mixture manifold with bellows, water-cooled intercooler, throttle valve and distribution manifolds to cylinders.

Ignition system
Most advanced, fully electronic high performance ignition system, external ignition control.
MORIS: Automatically, cylinder selective registration and control of the current needed ignition voltage.

Lubricating system
Gear-type lube oil pump to supply all moving parts with filtered lube oil, pressure control valve, pressure relief valve and full-flow filter cartridges. Cooling of the lube oil is arranged by a heat exchanger.

Engine cooling system
Jacket water pump complete with distribution pipework and manifolds.

Exhaust system
Turbocharger and exhaust manifold

Exhaust gas temperature measuring
Thermocouple for each cylinder

Electric actuator
For electronic speed and output control

Electronic speed monitoring for speed and output control
By magnetic inductive pick up over ring gear on flywheel

Starter motor
Engine mounted electric starter motor

1.01.02 Additional equipment for the engine (spares for commissioning)

The initial set of equipment with the essential spare parts for operation after commissioning is included in the scope of supply.

1.01.03 Engine accessories

Insulation of exhaust manifold:
Insulation of exhaust manifold is easily installed and removed

Sensors at the engine:
- Jacket water temperature sensor
- Jacket water pressure sensor
- Lube oil temperature sensor
- Lube oil pressure sensor
- Mixture temperature sensor
- Charge pressure sensor
- Minimum and maximum lube oil level switch
- Exhaust gas thermocouple for each cylinder
- Knock sensors
- Gas mixer / gas dosing valve position reporting.

Actuator at the engine:
- Actuator - throttle valve
- Bypass-valve for turbocharger
- Control of the gas mixer / gas dosing valve

1.01.04 Standard tools (per installation)

The tools required for carrying out the most important maintenance work are included in the scope of supply and delivered in a toolbox.

1.02 Generator-medium voltage (Special)

The 2 bearing generator consists of the main generator (built as rotating field machine), the exciter machine (built as rotating armature machine) and the digital excitation system.
The digital regulator is powered by an auxiliary winding at the main stator or a PMG system

Main components:

- Enclosure of welded steel construction
- Stator core consist of thin insulated electrical sheet metal with integrated cooling channels.
- Stator winding with 5/6 Pitch
- Rotor consist of shaft with shrunken laminated poles, Exciter rotor, PMG (depending on Type) and fan.
- Damper cage
- Excitation unit with rotating rectifier diodes and overvoltage protection
- Dynamically balanced as per ISO 1940, Balance quality G2,5
- Drive end bracket with re greaseable antifriction bearing
- Non-drive end bracket with re grease antifriction bearing
- Cooling IC01 - open ventilated, air entry at non-drive end , air outlet at the drive end side
- Main terminal box includes main terminals for power cables
- Regulator terminal box with auxiliary terminals for thermistor connection and regulator.
- Anti-condensation heater
- 3 PT100 for winding temperature monitoring+3 PT100 Spare
- 2 PT100 for bearing temperature monitoring
- Current transformer for protection and measuring in the star point
  xx/1A, 10P10 15VA , xx/1A, 1FS5, 15VA

Electrical data and features:

- Standards: IEC 60034, EN 60034, VDE 0530, ISO 8528-3, ISO 8528-9
- Voltage adjustment range: +/- 10 % of rated voltage (continuous)
- Frequency: -6/+4% of rated frequency
- Overload capacity: 10% for one hour within 6 hours, 50% for 30 seconds
- Asymmetric load: max. 8% I2 continuous, in case of fault I2 x t=20
- Altitude: < 1000m
- Max permitted generator intake air temperature: 5°C - 43°C
- Max. relative air humidity: 90%
- Voltage curve THD Ph-Ph: <3% at idle operation and <3% at full load operation with linear symmetrical load
- Generator suitable for parallel operating with the grid and other generators
- Sustained short circuit current at 3-pole terminal short circuit: minimum 3 times rated current for 5 seconds.
- Over speed test with 1.2 times of rated speed for 2 minutes according to IEC 60034

Digital Excitation system ABB Unitrol 1010 mounted within the AVR Terminal box with following features:

- Compact and robust Digital Excitation system for Continuous output current up to 10 A (20A Overload current 10s)
- Fast AVR response combined with high excitation voltage improves the transient stability during LVRT events.
- The system has free configurable measurement and analog or digital I/Os. The configuration is done via the local human machine interface or CMT1000
- Power Terminals
  3 phase excitation power input from PMG or auxiliary windings
  Auxiliary power input 24VDC
- Excitation output
- Measurement terminals: 3 phase machine voltage, 1 phase network voltage, 1 phase machine current
- Analog I/Os: 2 outputs / 3 inputs (configurable), +10 V / -10 V
- Digital I/O: 4 inputs only (configurable), 8 inputs / outputs (configurable)
- Serial fieldbus: RS485 for Modbus RTU or VDC (Reactive power load sharing for up to 31 GEJ engines in island operation), CAN-Bus for dual channel communication
- Regulator Control modes: Bump less transfer between all modes
  Automatic Voltage Regulator (AVR) accuracy 0,1% at 25°C ambient temperature
  Field Current Regulator (FCR)
  Power Factor Regulator (PF)
  Reactive Power Regulator (VAR)
- Limiters: Keeping synchronous machines in a safe and stable operation area
  Excitation current limiter (UEL min / OEL max)
  PQ minimum limiter
  Machine current limiter
  V / Hz limiter
  Machine voltage limiter
- Voltage matching during synchronization
- Rotating diode monitoring
- Dual channel / monitoring: Enables the dual channel operation based on self-diagnostics and setpoint follow up over CAN communication. As Option available
- Power System Stabilizer (PSS) is available as option. Compliant with the standard IEEE 421.5-2005 2A / 2B, the PSS improves the stability of the generator over the highest possible operation range.
- Computer representation for power system stability studies: ABB 3BHS354059 E01
- Certifications: CE, cUL certification according UL 508c (compliant with CSA), DNV Class B,

- **Commissioning and maintenance Tool CMT1000** (for trained commissioning/ maintenance personal)
- With this tool the technician can setup all parameters and tune the PID to guarantee stable operation. The CMT1000 software allows an extensive supervision of the system, which helps the user to identify and locate problems during commissioning on site. The CMT1000 is connected to the target over USB or Ethernet port, where Ethernet connection allows remote access over 100 m.
- Main window
  - Indication of access mode and device information.
  - Change of parameter is only possible in CONTROL access mode.
  - LED symbol indicates that all parameter are stored on none volatile memory.
- Setpoint adjust window
  - Overview of all control modes, generator status, active limiters status and alarms.
  - Adjust set point and apply steps for tuning of the PID.
- Oscilloscope
- 4 signals can be selected out of 20 recorded channels. The time resolution is 50 ms. Save files to your PC for further investigation.
- Measurement
  - All measurements on one screen.

Routine Test

Following routine tests will be carried out by the generator manufacturer

- Measuring of the DC-resistance of stator and rotor windings
- Check of the function of the fitted components (e.g. RTDs, space heater etc.)
- Insulation resistance of the following components
  Stator winding, rotor winding
  Stator winding RTDs
  Bearing RTDs
  Space heater
- No Load saturation characteristic (residual voltage)
- Stator voltage unbalance
- Direction of rotation, phase sequence
- High voltage test of the stator windings (2 x Unom. + 1000 V) and the rotor windings (min. 1500 V)

1.03 Module Accessories

Base frame
Split Base Frame fabricated with welded structural steel. First frame to mount the engine, jacket water heat exchangers, pumps and engine auxiliaries, the second to mount the gearbox and generator.

Coupling #1
Engine to Gearbox coupling is provided. The coupling isolates the major sub-harmonics of engine alternating torque from gear box.

Coupling #2
Gearbox to Generator Coupling is provided. This coupling is designed with a torque limiter to couple gear box with alternator.

Coupling housings
Provided for both Couplings

Anti-vibration mounts
2 sets of isolation, one is arranged between engine block assembly and base frame. The second is via insulating pads (SYLOMER) for placement between base frame and foundation, delivered loose.

Gear box:
A Single-stage spur gear with overhead shaft and closed loop lube oil system, completely mounted on the gearbox/generator base frame. The lube oil heat exchanger is integrated with the warm/cooling water circuit. The gear transmission ratio is 1:1.2. Oil volume is approximately 52 gals (196 liters).

Exhaust gas connection
A flanged connection is provided that collects the exhaust gas turbocharger output flows, includes flexible pipe connections (compensators) to compensate for heat expansions and vibrations.

Combustion air filter
A Dry type air filter with replaceable filter cartridges is fitted. The assembly includes flexible connections to the fuel mixer/carburetor and service indicator.

Interface panel (M1 cabinet)
Totally enclosed sheet steel cubicle with hinged doors, pre-wired to terminals, ready to operate. All Cable entry will be via bottom mounted cable gland plates.

Painting: RAL 7035

Protection: External NEMA 3 (IP 54), Internal IP 20 (protection against direct contact with live parts)

Cabinet design is according to IEC 439-1 (EN 60 439-1/1990) and DIN VDE 0660 part 500, respectively. Ambient temperature 41 - 104 °F (5 - 40 °C), Relative humidity 70%

Dimensions:

- Height: 51 in - 82 in (1300 mm-2100 mm)
- Width: 40 in - 47 in (1000 mm -1200 mm)
- Depth: 16 in - 24 in (400 mm-600 mm)

Control Power Source: The starter batteries and the cabinet mounted battery chargers will provide the power source for this enclosure.

Interface Panel contents and control functions:

- The cabinet houses the unit Battery Charger and primary 24VDC Control Power Distribution (breakers, fuses, and terminals) from the unit Batteries
- Distributed PLC Input and Output cards, located in the cabinet, gather all Engine, Gearbox and Generator Control I/O. These cards transmit data via data bus interface to the central engine control of the module control panel located in the A1 cabinet. Data bus is via CAN and B&R Proprietary Data Highway (Data Cables provided by GE)
- Speed monitoring relays for protection are provided.
- Gas Train I/O Collection, including interface relays and terminals for gas train shutoff valves.
- Transducer for generator functions, such as excitation voltage.
- Door Mounted Emergency Stop Switch with associated Emergency Stop Loop interface relays.
- Miscellaneous control relays, contacts, fuses, etc. for additional control valves, and auxiliaries.
- Interface Terminal Strips

Skid Mounted 3 Phase Devices are Powered by 3 x **480/277** V, **60** Hz, 50 A

AC Power for engine mounted auxiliaries (heater, pumps, etc.) are routed through a separate J-box mounted on the side M1 cabinet (Box E1). This is done to maintain signal segregation (AC from control)

NOTE: Generator Current Transformer wiring is connected directly to the Generator and does NOT pass through the M1 cabinet.

Exhaust gas scavenging blower

An exhaust gas scavenging blower is used to scavenge the remaining exhaust gas out of the exhaust gas pipe work, to prevent the appearance of deflagrations.

Function:

Before each start scavenging by blower is done for app. 1 minute (except at black out – start)

Supervisions:

- Scavenging air fan failure
- Scavenging air flap failure

Consisting of:

- Fan
- Exhaust gas flap
- Temperature switch
- Compensator and pipe work

1.03.01 Engine jacket water system

Engine jacket water system
Closed cooling circuit, consisting of:
- Expansion tank
- Filling device (check and pressure reducing valves, pressure gauge)
- Safety valve(s)
- Thermostatic valve
- Required pipework on module
- Vents and drains
- Electrical jacket water pump, including check valve
- Jacket water preheat device

1.03.02 Automatic lube oil replenishing system incl. extension tank

Automatic lube oil replenishing system:
Includes float valve in lube oil feed line, including inspection glass. Electric monitoring system will be provided for engine shut-down at lube oil levels "MINIMUM" and "MAXIMUM". Solenoid valve in oil feed line is only activated during engine operation. Manual override of the solenoid valve, for filling procedure during oil changes is included.

Oil drain
By set mounted cock

Oil sump extension tank (delivered loose) 79.3 gal
To increase the time between oil changes

Pre-lubrication- and after-cooling oil pump:
Mounted on the module base frame; it is used for pre-lubrication and after-cooling of the turbochargers.
Period of operation: Pre-lubrication: 1 minute both pumps
After-cooling: 15 minutes from engine stop only the **480/277** V pump
Consisting of:
- 1 piece oil pump 1500 W, **480/277** V
- 1 piece oil pump 1500 W, 24 V
- All necessary vents
- Necessary pipework

1.05a Gas train (Landfill)

Pre-assembled, delivered loose, for installation into gas pipework to the engine.

Consisting of:

- Main Biogas gas train:
  - Manual shut off valve
  - Gas filter, filter to <3 µm
  - Adapter with dismount to the pre-chamber gas train
  - Gas admission pressure regulator
  - Pressure gauge with push button valve; 0-7.25 psi (0-500 mbar)
  - Solenoid valves
  - Gas pressure switch (min.)
  - Leakage detector
  - Gas pressure regulator
  - TEC JET (has to be implemented horizontal)

The gas train complies with DIN - DVGW regulations.

Maximum distance from TEC JET outlet to gas entry on engine, including flexible connections, is 39.37 in (1 m). Reference GE Jenbacher Technical Instruction TI 1510-0064 for Tec Jet and Gas Train installation details

1.05b Gas train (Natural Gas)

Pre-assembled, delivered loose, for installation into gas pipework to the engine.

Consisting of:

- Main Natural Gas train:
  - Manual shut off valve
  - Gas filter, filter to <3 µm
  - Adapter with dismount to the pre-chamber gas train
  - Gas admission pressure regulator
  - Pressure gauge with push button valve; 0-7.25 psi (0-500 mbar)
  - Solenoid valves
  - Gas pressure switch (min.)
  - Leakage detector
  - Gas pressure regulator
  - TEC JET (has to be implemented horizontal)

The gas train complies with DIN - DVGW regulations.

Maximum distance from TEC JET outlet to gas entry on engine, including flexible connections, is 39.37 in (1 m). Reference GE Jenbacher Technical Instruction TI 1510-0064 for Tec Jet and Gas Train installation details

1.05c Pre-chamber Gas train (Natural Gas)

Pre-assembled, delivered loose, for installation into gas pipework to the engine.

Consisting of:

- Pre-chamber gas train:
  - Manual shut off valve
  - Gas filter, filter fineness <3 µm
  - Solenoid valves
  - Pressure regulator
  - Calming distance with reducer
  - Pressure gauge with push button valve; 0-72.5 psi (1-5 bar)

Pre chamber gas pressure regulator (incl. stabilization section) assembled at the flexible connection pre chamber gas.

Use of fuel other than Natural Gas in Prechamber to be noted.

1.07 Painting

• Quality:	Oil resistant prime layer Synthetic resin varnish finishing coat	
• Color:	Engine:	RAL 6018 (green)
	Base frame:	RAL 6018 (green)
	Generator:	RAL 6018 (green)
Module interface panel: RAL 7035 (light grey)		
	Control panel:	RAL 7035 (light grey)

1.11 Engine generator control panel per module- Dia.ne XT4 incl. Single synchronization of the generator breaker

Dimensions:

- Height: 87 in (including 8 in pedestal *)
- Width: 32-48 in*)
- Depth: 24 in *)

Protection class:

- external IP42
- Internal IP 20 (protection again direct contact with live parts)

*) Control panels will be dimensioned on a project specific basis. Actual dimensions will be provided in the preliminary documentation for the project.

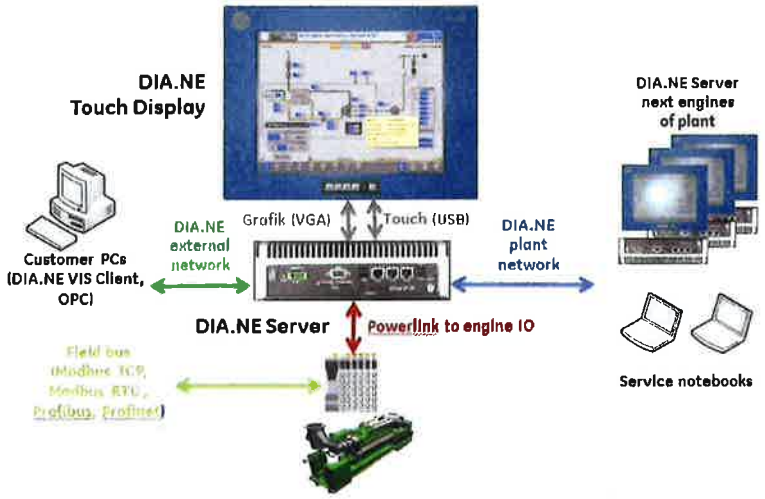
Control supply voltage from starter and control panel batteries: 24V DC

Auxiliaries power supply: (from provider of the auxiliary supply)
3 x **480/277** V, **60** Hz

Consisting of:
Motor - Management - System DIA.NE

Setup:

- a) Touch display visualization
- b) Central engine and unit control



Touch Display Screen:

15" Industrial color graphic display with resistive touch.

Interfaces:

- 24V voltage supply
- VGA display connection
- USB interface for resistive touch

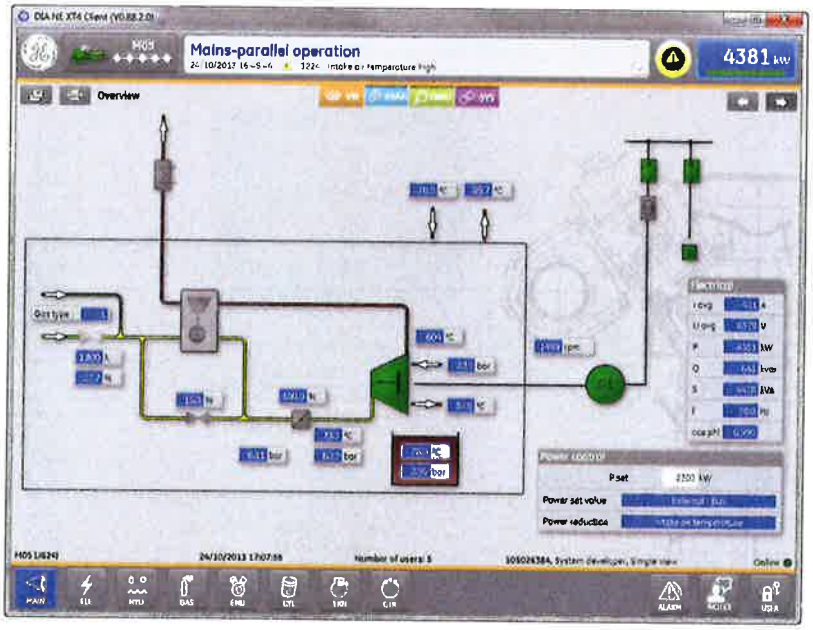
Protection class of DIA.NE XT panel front: IP 65
Dimensions: W x H x D = approx. 16x12x3in

The screen shows a clear and functional summary of the measurement values and simultaneously shows a graphical summary.

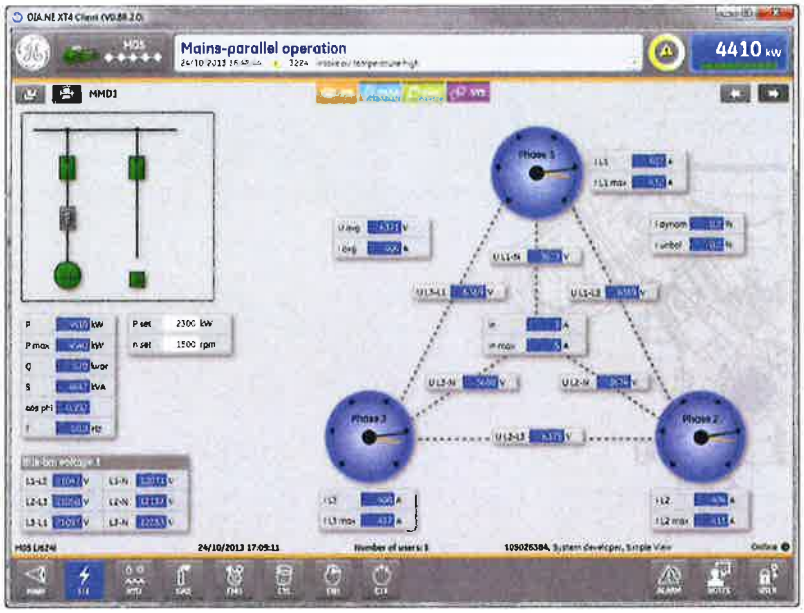
Operation is via the screen buttons on the touch screen
Numeric entries (set point values, parameters...) are entered on the touch numeric pad or via a scroll bar.
Determination of the operation mode and the method of synchronization via a permanently displayed button panel on the touch screen.

Main screens (examples):

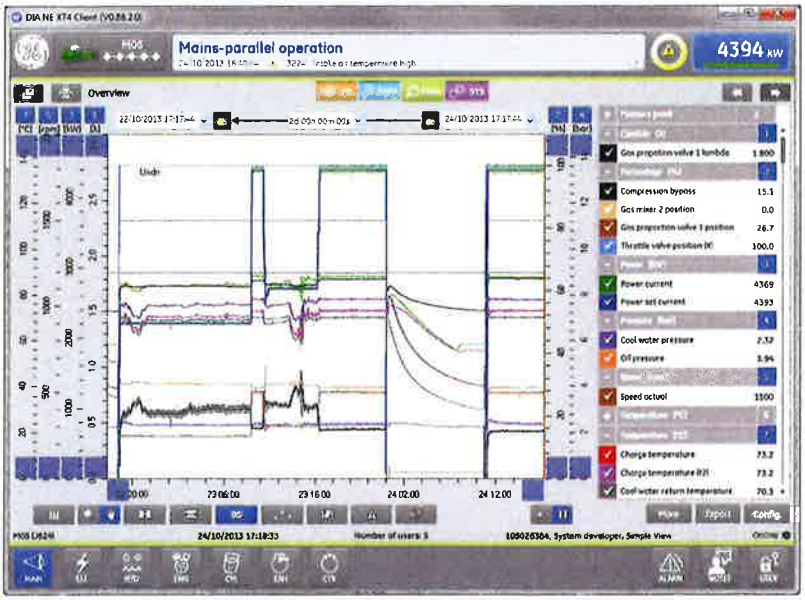
Main: Display of the overview, auxiliaries status, engine start and operating data.



ELE: Display of the generator connection with electrical measurement values and synchronization status



OPTION: Generator winding and bearing temperature
Trending
Trend with 100ms resolution



Measurement values:

- 510 data points are stored
- Measurement interval = 100ms
- Raw data availability with 100ms resolution: 24 hours + max. 5.000.000 changes in value at shut down (60 mins per shut down)
- Compression level 1: min, max, and average values with 1000ms resolution: 3 days
- Compression level 2: min, max, and average values with 30s resolution: 32 days
- Compression level 3: min, max, and average values with 10min resolution: 10 years

Messages:
10.000.000 message events

Actions (operator control actions):
1.000.000 Actions

System messages:
100.000 system messages

Central engine and module control:

An industrial PC- based modular industrial control system for module and engine sequencing control (start preparation, start, stop, after-cooling and control of auxiliaries) as well as all control functions.

Interfaces:

- Ethernet (twisted pair) for remote monitoring access
- Ethernet (twisted pair) for connection between engines
- Ethernet (twisted pair) for the Powerlink connection to the control input and output modules.
- USB interface for software updates

Connection to the local building management system according to the GE Jenbacher option list (OPTION)

- MODBUS-RTU Slave
- MODBUS-TCP Slave,
- PROFIBUS-DP Slave (160 words),
- PROFIBUS-DP Slave (190 words),
- ProfiNet
- OPC

Control functions:

- Speed control in idle and in island mode
- Power output control in grid parallel operation, or according to an internal or external set point value on a case by case basis
- LEANOX control system which controls boost pressure according to the power at the generator terminals, and controls the mixture temperature according to the engine driven air-gas mixer

- Knocking control: in the event of knocking detection, ignition timing adjustment, power reduction and mixture temperature reduction (if this feature is installed)
- Load sharing between engines in island mode operation (option)
- Linear power reduction in the event of excessive mixture temperature and misfiring
- Linear power reduction according to CH4 signal (if available)
- Linear power reduction according to gas pressure (option)
- Linear power reduction according to air intake temperature (option)

Multi-transducer to record the following alternator electrical values:
- Phase current (with slave pointer))
- Neutral conductor current
- Voltages Ph/Ph and Ph/N
- Active power (with slave pointer)
- Reactive power
- Apparent power
- Power factor
- Frequency
- Active and reactive energy counter

Additional 0 (4) - 20 mA interface for active power as well as a pulse signal for active energy

The following alternator monitoring functions are integrated in the multi-measuring device:
- Overload/short-circuit [51], [50]
- Over voltage [59]
- Under voltage [27]
- Asymmetric voltage [64], [59N]
- Unbalance current [46]
- Excitation failure [40]
- Over frequency [81>]
- Under frequency [81<]

Lockable operation modes selectable via touch screen:
- "OFF" operation is not possible, running units will shut down immediately;
- "MANUAL" manual operation (start, stop) possible, unit is not available for fully automatic operation.
- "AUTOMATIC" fully automatic operation according to external demand signal:

Demand modes selectable via touch screen:
- external demand off („OFF")
- external demand on („REMOTE")
- override external demand („ON")

Malfunction Notice list:

Shut down functions e.g.:

- Low lube oil pressure
- Low lube oil level
- High lube oil level
- High lube oil temperature
- Low jacket water pressure
- High jacket water pressure
- High jacket water temperature
- Overspeed
- Emergency stop/safety loop
- Gas train failure
- Start failure
- Stop failure
- Engine start blocked
- Engine operation blocked
- Misfiring
- High mixture temperature
- Measuring signal failure
- Overload/output signal failure
- Generator overload/short circuit
- Generator over/under voltage
- Generator over/under frequency
- Generator asymmetric voltage
- Generator unbalanced load
- Generator reverse power
- High generator winding temperature
- Synchronizing failure
- Cylinder selective Knocking failure

Warning functions e.g.:

- Cooling water temperature min.
- Cooling water pressure min.
- Generator winding temperature max.

Remote signals:

(volt free contacts)
1NO = 1 normally open
1NC = 1 normally closed
1COC = 1 change over contact

• Ready for automatic start (to Master control)	1NO
• Operation (engine running)	1NO
• Demand auxiliaries	1NO
• Collective signal "shut down"	1NC

- Collective signal "warning" 1NC

External (by others) provided command/status signals:
- Engine demand (from Master control) 1S
- Auxiliaries demanded and released 1S

Single synchronizing Automatic

For automatic synchronizing of the module with the generator circuit breaker to the grid by PLC- technology, integrated within the module control panel.

Consisting of:
- Hardware extension of the programmable control for fully automatic synchronization selection and synchronization of the module and for monitoring of the generator circuit breaker closed signal.
- Lockable synchronization selection via touch screen with the following selection modes:
  - "MANUAL" Manual initiation of synchronization via touch screen button followed by fully automatic synchronization of the module
  - "AUTOMATIC" Automatic module synchronization, after synchronizing release from the module control
  - "OFF" Selection and synchronization disabled
    Control of the generator circuit breaker according to the synchronization mode selected via touch screen.
  - "Generator circuit breaker CLOSED/ Select" Touch-button on DIA.NE XT
  - "Generator circuit breaker OPEN" Touch-button on DIA.NE XT

Status signals:
Generator circuit breaker closed
Generator circuit breaker open

Remote signals:
(volt free contacts)
Generator circuit breaker closed 1 NO

The following reference and status signals must be provided by the switchgear supplier:

- Generator circuit breaker CLOSED 1 NO
- Generator circuit breaker OPEN 1 NO
- Generator circuit breaker READY TO CLOSE 1 NO
- Mains circuit breaker CLOSED 1 NO
- Mains circuit breaker OPEN 1 NO

Mains voltage 3 x 12470V or 3x 110V/v3 other measurement voltages available on request
Bus bar voltage 3 x 12470 V or 3x 110V/v3 – other measurement voltages available on request
Generator voltage 3 x 12470 or 3x 110V/v3 – other measurement voltages available on request

Voltage transformer in the star point with minimum 50VA and Class 0,5

The following volt free interface-signals will be provided by GE Jenbacher to be incorporated in switchgear:

- CLOSING/OPENING command for generator circuit breaker (permanent contact) — 1 NO + 1 NC
- Signal for circuit breaker undervoltage trip — 1 NO

Maximum distance between module control panel and engine/interface panel:	99ft
Maximum distance between module control panel and power panel:	164ft
Maximum distance between module control panel and master control panel:	164ft
Maximum distance between alternator and generator circuit breaker:	99ft

1.11.01 Remote messaging over MODBUS-TCP

Data transfer from the Jenbacher module control system to the customer's on-site central control system via MODBUS TCP using the ETHERNET 10 BASE-T/100BASE-TX protocol TCP/IP.

The Jenbacher module control system operates as a SLAVE unit.
The data transfer via the customer's MASTER must be carried out in cycles.

Data transmitted:
Individual error messages, operational messages, measured values for generator power, oil pressure, oil temperature, cooling water pressure, cooling water temperature, cylinder and collective exhaust gas temperatures.

GE Jenbacher limit of supply:
RJ45 socket at the interface module in the module control cabinet

1.11.06 Remote Data-Transfer with DIA.NE XT4

General
DIA.NE XT4 offers remote connection with Ethernet.

Applications:

1.) DIA.NE XT4 HMI
DIA.NE XT4 HMI is the human-machine-interface of DIA.NE XT4 engine control and visualization system for GE Jenbacher gas engines.
The system offers extensive facilities for commissioning, monitoring, servicing and analysis of the site.
By installation of the DIA.NE XT4 HMI client program it can be used to establish connection to site, if connected to a network and access rights are provided.
The system runs on Microsoft Windows Operating systems (Windows XP, Windows 7, Windows 8)

Function
Functions of the visualization system at the engine control panel can be used remotely. These are among others control and monitoring, trend indications, alarm management, parameter management, and access to long term data recording. By providing access to multiple systems, also with multiple clients in parallel, additional useful functions are available like multi-user system, remote control, print and export functions and data backup.DIA.NE XT4 is available in several languages.

Option - Remote demand/blocking

If the service selectors switch at the module control panel is in pos."Automatic" and the demand-selector switch in pos."Remote", it is possible to enable (demanded) or disable (demand off) the module with a control button at the DIA.NE XT4 HMI
Note:
With this option it makes no sense to have an additional clients demand (via hardware or data bus) or a self-guided operation (via GE Jenbacher master control, grid import /export etc.).

Option - Remote - reset (see TA-No. 1100-0111 chapter 1.7 an d1.9)

Scope of supply
- Software package DIA.NE XT4 HMI Client Setup (Download)
- Number of DIA.NE XT4 HMI - Client user license (Simultaneous right to access of one user to the engine control)

Nr. of license	Access
1	1 Users can be logged in at the same time with a PC (Workplace, control room or at home).
2 - "n" (Optional)	2- "n" Users can be logged in at the same time with a PC (Workplace, control room or at home). If 2- "n" users are locally connected at Computers from office or control room, then it is not possible to log in from home.

Caution! This option includes the DIA.NE XT4 HMI client application and its license only – NO secured, encrypted connection will be provided by GE Jenbacher! A secured, encrypted connection – which is mandatory – has to be provided by the customer (via LAN connection or customer-side VPN), or can be realized by using option myPlant™.

Customer requirements

- Broad band network connection via Ethernet(100/1000BASE-TX) at RJ45 Connector (ETH3) at DIA.NE XT4 server inside module control panel
- Standard PC with keyboard, mouse or touch and monitor (min. resolution 1024*768)
- Operating system Windows XP, Windows 7, Windows 8
- DirectX 9.0 c compatible or newer 3D display adapter with 64 MB or higher memory

2.) myPlant™

myPlant™ is the GE Jenbacher remote monitoring and diagnostic (RM&D) service

	Offering Feature	Connect	Protect
Asset Management	Online data transfer	✓	✓
	Big Data cloud storage	✓	✓
	Engine status visibility	✓	✓
	Control alarms visibility	✓	✓
	Basic data trends	✓	✓
	Remote access to DIA.NE HMI	-	✓
	Unlimited data trending	-	✓
	Advanced diagnostics	-	✓
	WINSERVER Protection Plan	-	✓
Fleet Management	Fleet status on world map	-	✓
	Fleet summaries and reporting	-	✓
Mobility	SMS/Email notifications	-	✓
	Smartphone app	✓	✓

Web application with following features:

- Visualization of the current state of the engine (available, in operation, fault)
- View of various readings of the Gen-set
- Visualization of counts as a trend graph (if plant available online, or by manually entering of the counter readings)
- Trend graph of the performance value (low resolution; only if system available online)

myPlant™ Connect is free of charge for registered customers
myPlant™ Protect is free of charge within the warranty period and is also included as part of any contractual service agreement (CSA).

Scope of supply

- Access to myPlant™ Discovery version for up to 4 users
- Connection between plant server and myPlant™ system

Customer requirements

- Permanent Internet line (wired or mobile, (see option 4))
- See technical instruction TA 2300-0008
- Outbound data connectivity (from plant server to Internet) ONLY – INBOUND connections must NOT be allowed!

CAUTION!
It is in the responsibility of the customer to prevent direct access from the Internet to the plant server using technical equipment like firewalls.
GE Jenbacher does not provide such security devices and services as part of this option!

3.) myPlant™ notification service

Automatic alarm notification system for myPlant™ - enabled DIA.NE XT systems (all versions).

Function

- Automatic transfer of engine messages to the customer via email or SMS in case of engine trip, engine start/stop or connectivity loss.

Scope of supply

- Feature of myPlant™ web portal

Customer requirements

- Engine must be connected to the myPlant™ system via Internet connection

myPlant™ notification is free of charge within the warranty period and is also included as part of any contractual service agreement (CSA).

4.) Mobile Internet (OPTION)
Connection Plant - Customer via secured Internet - connection
See also technical instruction **TA 2300 - 0006**

Scope of delivery

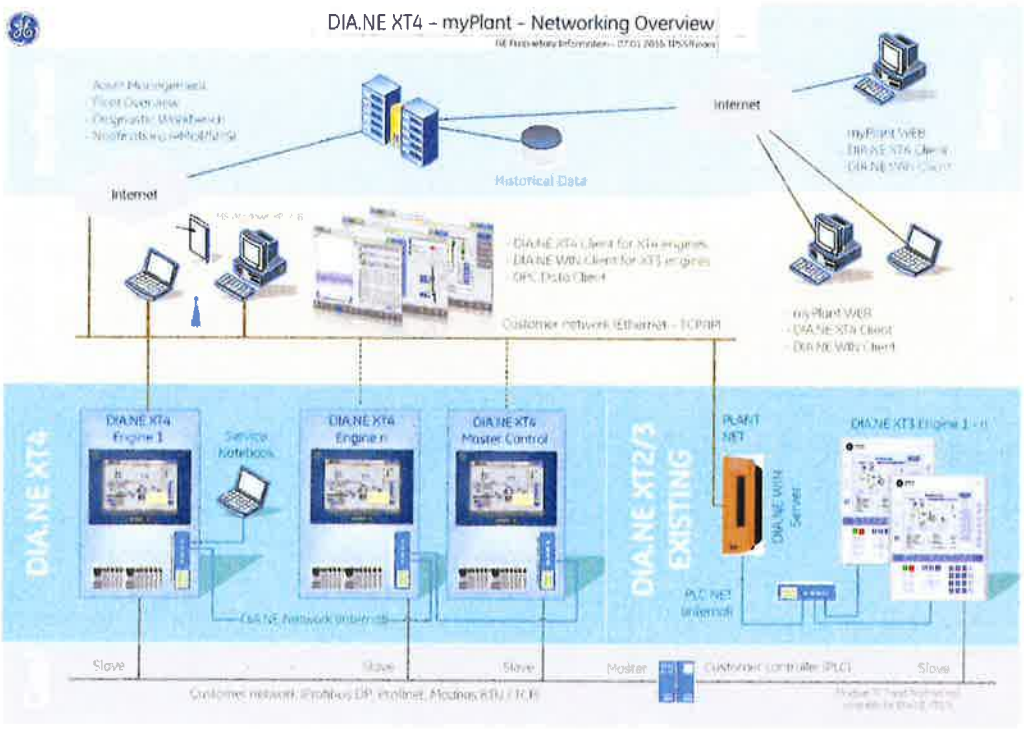
- Mobile Internet router with antenna to connect to the DIA.NE Server XT4

Customer requirements

- SIM card for 3G / 4G

5.) Network overview

For information only!



1.11.14 Generator Overload / Short Circuit Protection

ANSI Function Code 50/51

Digital protection relay, 3-phase, integrated into the module control panel.
Connected to the protective current transformers in the generator star point
Acting on the generator circuit breaker and on the generator de-excitation
Alarm message on the DIA.NE screen

Characteristics / settings:

- Setting for overload: to 1,1 times of the generating set rated current,
- Dependent time characteristic acc. to IEC 60255-151: very inverse, time multiplier setting 0,6.
- Setting for short circuit: to 2,0 times of generating set rated current,
- Independent time characteristic: 300 ms (800 ms when dynamic network support).

1.11.15 Generator Differential Protection

ANSI function code 87

Digital protection relay, 3-phase, integrated into the module control panel.
Connected to the protective current transformers in the generator star point (GEJ scope of supply) and to the protective current transformers in the generator circuit breaker panel (current transformers by client, secondary 1A, optionally: 5A).
Acting on the generator circuit breaker and on the generator de-excitation
Alarm message on the DIA.NE screen

In plants with a unit generator-transformer configuration the protection is realized as generator/transformer differential protection.

1.11.16 Generator Earth Fault Protection (non-directional)

Digital protection relay, integrated into the module control panel.
Acting on the generator circuit breaker and on the generator de-excitation
Alarm message on the DIA.NE screen

Dependent on the generator grounding method one of the following protection functions is applied:

1) ANSI function code 50N/G
   Detection of the earth fault current e.g. by means of a window-type current transformer (Current transformer by client, secondary 1A, optionally: 5A).
2) ANSI function code 59N/G
   Detection of the residual voltage e.g. by means of the voltage measured across the broken-delta secondary windings of grounded voltage transformers (voltage transformers by client)

1.20.03 Starting system

Starter battery (is not included in GE Jenbacher scope):
4 piece 12 V Pb battery, 200 Ah (according to DIN 72311), complete with cover plate, terminals and acid tester.

Battery voltage monitoring:
Monitoring by an under voltage relay.

Battery charging equipment:
Capable for charging the starter battery with I/U characteristic and for the supply of all connected D.C. consumers.
Charging device is mounted inside of the module interface panel or module control panel.

- **General data:**
  - Power supply — **3 x 320 - 550 V, 47 - 63 Hz**
  - max. power consumption — 2120 W
  - Nominal D.C. voltage — 24 V(+/-1%)
  - Voltage setting range — 24V to 28,8V (adjustable)
  - Nominal current (max.) — 2 x 40 A
  - Dimensions — ca. 10 x 5 x 5 inch (240 x 125 x 125 mm)
  - Degree of protection — IP20 to IEC 529
  - Operating temperature — 32 °F – 140 °F (0 °C - 60 °C)
  - Protection class — 1
  - Humidity class — 3K3, no condensation.
  - Natural air convection
  - Standards — EN60950,EN50178
    UL/cUL (UL508/CSA 22.2)

Signalling:

Green Led:	Output voltage > 20,5V
Yellow Led:	Overload, Output Voltage < 20,5V
Red Led:	shutdown

Control accumulator:
- Pb battery 24 VDC/18 Ah

1.20.05 Electric jacket water preheating

Installed in the jacket water cooling circuit, consisting of:
- Heating elements
- Water circulating pump

The jacket water temperature of a stopped engine is maintained between 133 °F (56°C) and 140°F (60°C), to allow for immediate loading after engine start.

1.20.08 Flexible connections

Following flexible connections per module are included in the GE Jenbacher -scope of supply:

No. Connection	Unit	Dimension Material
2 Warm water in-/outlet	**in/lbs**	**4"/145** Stainless steel
1 Exhaust gas outlet	**in/lbs**	**25"/145** Stainless steel
1 Fuel gas inlet	**in/lbs**	**6"/232** Stainless steel
2 Intercooler in-/outlet	**in/lbs**	**4"/145** Stainless steel
2 Lube oil connection	**in**	**1.1** Hose

Seals and flanges for all flexible connections are included.

1.20.45 Fuel Blending

As a prerequisite to any discussions regarding on online fuel blending, both gases must comply with GE Jenbacher TI 1000-0300.

Physically, the engine must be installed with two Tec Jet based gas train systems sized as required. To function properly, each individual gas train should be able to provide the full fuel flow required to maintain rated load of the engine generator set. If 0-100% blending on each fuel is specified, the technician must have the capability to operate the engine on each fuel (from Start to Full Load) independently. Intermediate or partial blending can be done by request.

From a controls perspective, the customer must provide the following Dual Fuel Blending signals (at a minimum)

1) ***Fuel Gas Selection*** - Discrete Contact Input to the Diane Control System that represents the fuel that the unit will start with (1 = High Btu (Gas1), 0 = Low Btu (Gas2)).
2) ***Release for Gas Mixing*** – Discrete contact input to the Diane Control System that represents a release of the fuel delivery system to operate in mixing mode. This signal is used in conjunction with ***Mixing Percentage*** in order to establish the amount of fuel to mix.
3) ***Mixing Percentage*** – An Analog (4-20mA) input to the Diane Control System representing the percentage of Gas 2 fuel to mix.

As prerequisite for blending, the following permissive conditions must be met

1) Breaker is Closed
2) Unit is operating in Leanox control (No Island Mode)
3) No Gas Train 1 Low Pressure
4) Gas Train 1 READY (internal health signal)
5) No Gas Train 2 Low Pressure
6) Gas Train 2 Ready (internal health signal)

7) ***Mixing Percentage*** signal healthy

Fuel Transfers are not permitted as long as the health of each gas train is not clear or if Gas Pressure of the other train is Low. Diane Warning alarm signals 3221 (Gas Train 1 Low Pressure) or 3222 (Gas Train 2 Low Pressure) will be displayed if this is the case.

Provided the above permissive conditions are met, to activate mixing, ***Release for Gas Mixing*** must be enabled. Once enabled, the engine will ramp to the mixing percentage specified by ***Mixing Percentage***. The transfer rate is 1.7% per second, or if the transfer is to 100% of the other fuel, expect a ramp time of 60 seconds to get from one fuel to the other. The mixing percentage can be adjusted at any time during mixing operations (***Release for Gas Mixing*** = 1). Should a fault occur, the fuel system will default to the gas selected at start (based on ***Fuel Gas Selection*** contact status).

This percentage will be maintained throughout the load profile of the engine, provided there is sufficient capacity of the second fuel to maintain the load setpoint. Should there be insufficient fuel to maintain the KW setpoint, a Low Pressure Alarm will occur and the unit will transfer back to the base fuel as dictated by the position of the ***Fuel Gas Selection*** contact.

2.00 Electrical equipment

Totally enclosed floor mounted sheet steel cubicle with front door wired to terminals. Ready to operate, with cable entry at bottom. Naturally ventilated.

Protection:	IP 42 external, NEMA 12 IP 20 internal (protection against direct contact with live parts)

Design according to EN 61439-2 / IEC 61439-2 and ISO 8528-4.
Ambient temperature 41 - 104 °F (5 - 40 °C), 70 % Relative humidity

Standard painting:	Panel:	RAL 7035
	Pedestal:	RAL 7020

2.02 Grid monitoring device

Standard without static Grid - 60Hz alternator

Function:
For immediate disconnection of the generator from the grid in case of grid failures.

Consisting of:
- High/low voltage monitoring
- High/low frequency monitoring
- Specially adjustable independent time for voltage and frequency monitoring

- Vector jump monitoring or df/dt monitoring for immediate disconnection of the generator from the grid for example at short interruptions
- Indication of all reference dimensions for normal operation and at the case of disturbance over LCD and LED
- Adjusting authority through password protection against adjusting of strangers

Scope of supply:
Digital grid protection relay with storage of defect data, indication of reference dimensions as well as monitoring by itself.

Grid protection values:

Parameter	Parameter limit	Max time delay[s]	**Comments**
59-61Hz			Do work normal
f<[ANSI 81U]	59Hz	0,5	Load reduction with 10%/HZ below 59Hz!
f<<[ANSI 81U]	58.5Hz	0,1	
f>[ANSI 81O]	61,5Hz	0,1	Load reduction with 30%/HZ above 61Hz!
U<[ANSI 27]	90%	1	Load reduction with 1%P /%U below 95%
U<<[ANSI 27]	80%	0,2	Load reduction with 1%P /%U below 95%
U>[ANSI 59]	110%	30	Load reduction with 1%P /%U above 105%
U>>[ANSI 59]	115%	0,2	Load reduction with 1% P/%U above 105%
Df/dt [ANSI 81R] **Or** **Vector shift** [ANSI 78]	2Hz/s, 5 Periods Or 8° -3pol		Cos phi range: 0,8ind (overexcited) - 1

3.71 Vibration Sensor

A structural Vibration Sensor will be installed on the package base frame to detect excessive vibrations. A signal we will sent to the control panel to indicate an alarm condition.

3.72 Seismic Protection

The main base will be supplied with pre-drilled holes to accommodate customer furnished bolts to act as retaining elements in the event of an earthquake. These customer foundation mounted bolts cannot come into contact with the unit base frame, as these bolts are for retention only, not mounting.

Details will be provided at first drawing submittal.

3.75 Penn Control Strategy and Options (Type 6)

Control Strategy – The following control modes will be available in the Diane Control

- Grid Parallel with KW Control – Real Power Load Control of the Generator set will be either via a 4-20mA input from the customer representing a unit KW load setpoint or a KW load setpoint entered on the Diane XT4 screen. Upon breaker closure, the unit will ramp to the setpoint at a maximum rate of (Rated Unit KW) / 180 seconds.

- Grid Parallel with PF Control – Reactive Power Load Control of the Generator set will be either via a 4-20mA input from the customer representing a unit Power Factory setpoint or a Power Factor setpoint entered on the Diane XT4 screen. Upon breaker closure, the unit will maintain the setpoint.

- Grid Parallel with Import/Export Control - Load Control via an Import/Export KW level entered on the Diane XT4 screen. Required will be a customer 4-20mA signal representing the Site KW (Imported and/or Exported Power) that is to be controlled. Upon breaker closure, the unit will ramp to a load that will drive the KW value represented by the 4-20mA input signal to the level entered on Customer Import/Export Setpoint entered in the Diane XT4 screen. Once at the setpoint, the unit will raise and lower load to maintain this value. If the generator load required to maintain this setpoint drops below the minimum load level of the generator set, the unit 52G circuit breaker will be opened.

- Island Mode Operations with Blackout Starting – Island Operations with Black start capability will allow the engine to start and run without utility being present. The engine will be able to start the engine on battery power, close the generator breaker against a dead bus, and operate independently of a utility power source. The customer must ensure that there is sufficient fuel gas and pre-chamber gas at pressure in the event of a Type 6 engine so configured. The engine will start without the normal confirmation of engine block temperature or operation of a circulating AC water pump. It will be required of the operators that once the engine is connected to the generator bus, power to the engine auxiliaries be restored. Load Management is expected to be limited by the operators to the limits of the engine, as per GE Jenbacher TI 2108-0031. This system will work in conjunction with a GE Jenbacher Master Synchronizing Control (see appropriate Spec Section) if so equipped. If this is a single unit and synchronization with the utility after assuming operations is required, a *Grid Parallel with Single Unit Island Operations* option will be required.

Per Unit Hot Water Loop Controls - Hot Water Loop Panel Controls and Software to include:

- Hot Water Pump (Panel Control Parts and SW Only) - The option will add specific contact output and feedback input to/from an MCC for the Hot Water Pump. This will include relays and software.

- Hot Water Monitoring (Panel Control Parts and SW Only) - This option will monitor 3 hot water loop switches, flow, pressure and temperature. This option includes hardwired relays added to the trip loop, and internal software

- Hot Water Return Temperature Control (Panel Parts and SW Only) - This feature will provide all necessary controls to operate a 3 Way temperature control valve. The customer will provide a PT100 as a feedback signal and the Diane will provide a 4-20mA Analog Output to a customer provided valve. Control and Display Software are also provided.

- Emergency Hot Water Temperature Control (Panel Parts and SW Only) - This feature will provide all necessary controls to operate a 3 Way temperature control valve. The customer will provide a PT100 as a feedback signal and the Diane will provide a 4-20mA Analog Output to a customer provided valve. Control and Display Software are also provided.

Per Unit Intercooler Loop Controls - Intercooler Loop Panel Controls and Software to include:

- IC Temperature Control (Panel Parts and SW Only) - This feature will provide all necessary controls to operate a 3 Way temperature control valve in the IC Loop if Not Required by Site Conditions. The Diane will provide a 4-20mA Analog Output to a customer provided valve and will utilize mixture temperature as a feedback input. Control and Display Software are also provided.

- Intercooler Pump Control (Panel Control Parts and SW Only) - The option will add specific contact output and feedback input to/from an MCC for the Intercooler Water Pump. This will include relays and software.

- Intercooler Loop Pressure (Panel Parts and SW Only) - This feature will provide an discrete input and associated software for the Intercooler Loop system pressure.

Per Unit Radiator Controls - Radiator Panel Controls and Software to include:

- Single Circuit High Temperature Loop Radiator Fan Control (Panel Parts and SW Only) - This feature will provide controls for a customer provided single circuit High Temperature Loop radiator (4 fan). The MCC control signals (DO/DI) will be provided, along with the necessary software

- Single Circuit Low Temperature Loop Radiator Fan Control (Panel Parts and SW Only) - This feature will provide controls for a customer provided single circuit Low Temperature Loop radiator (4 fan). The MCC control signals (DO/DI) will be provided, along with the necessary software

Per Unit Ventilation Related Controls - Diane XT4 System will be provided with the following additional features to operate a customer enclosure

- Ventilation Fan control Option 1 - Customer Ventilation Fan control based on container internal temperature. Signal is based on a customer provide PT100 inside the container. A 4-20mA signal is provided for use by a customer provided VFD. Discrete IO is provided for starting and feedback signals to the VFD. It is assumed that the customer MCC will provide starter motor protection.

- Ventilation System Louver Control - Electrical and Control features are provided for louver opening and closing based on engine operation and compartment temperature. 4 Louver driver contacts are provided

- Discrete Input for Air Filter Differential Pressure – Additional Discrete Input and associated software for control

Per Unit Miscellaneous Controls - Diane XT4 System will be provided with the following additional features to operate a customer enclosure

- Additional Emergency Stop Signals - Additional Terminals for customer Estop switches

- Audible and Visual Alarm Indications - Hardware and software to drive a customer provided horn and strobe. Power for these devices is provided from the control system and is 24VDC

- SCR Control Signals – 2 additional discrete inputs and 1 analog will be required:
  - Discrete In 1 - Unit Operation/Engine Running (SSL20) to start the unit
  - Discrete In 2 - SCR Alarm (SS69) for display on the alarm Diane XT screen.
  - Analog Out 1 – Generator Power (0-100% = 4-20mA) for control of the SCR spray mechanism.

- Gas Flow Meter Trending - Gas Flowmeter Trending and Display (Flowmeter not included). Option includes a 4-20mA input that will accept the pressure and temperature corrected gas flow from a customer provided flow meter computer and will incorporate the signal into trending and displays in the Diane system.

- Gas Flow Meter Correction - Gas Flowmeter temperature and pressure compensation. Option includes three (3) 4-20mA inputs that will represent actual measured flow, pressure and temperature. Along with a customer provided flow meter calibration sheet, these 3 signals will be input to a calculation that will compensate the flowmeter flow signal to current gas conditions. The results will be incorporated into trending and displays in the Diane system.

4.00 Delivery, installation and commissioning

4.01 Carriage
According to contract.

4.02 Unloading
Unloading, moving of equipment to point of installation, mounting and adjustment of delivered equipment on intended foundations is not included in GE Jenbacher scope of supply.

4.03 Assembly and installation
Assembly and installation of all GE Jenbacher -components is not included in GE Jenbacher scope of supply.

4.04 Storage
The customer is responsible for secure and appropriate storage of all delivered equipment.

4.05 Emission measurement (exhaust gas analyzer)
Emission measurement by GE Jenbacher personnel, to verify that the guaranteed toxic agent emissions have been achieved (costs for measurement by an independent agency will be an extra charge).

5.01 Limits of delivery - Genset

Electrical:
- Genset:
  - At terminals of genset interface panel
  - At terminals of generator terminal box (screwed glands to be provided locally)
- Genset control panel:
  At terminal strips
- Auxiliaries:
  At terminals of equipment which is supplied separately

Cooling water
At inlet and outlet flanges on genset

Exhaust gas
At the exhaust gas exit of the engine

Combustion air
The air filters are set mounted

Fuel gas
- At inlet and outlet flange of gas train
- At inlet flange of gas pipework on genset

- At outlet flange of the pre-chamber gas train
- At inlet flange of pre-chamber gas pipework on genset
- At connection for boost pressure compensation on genset
- At connection for boost pressure compensation on gas pressure regulator of the pre-chamber gas train

Lube oil
At lube oil connections on genset

Draining connections and pressure relief
At genset

Insulation
Insulation of heat exchangers, pipework and exhaust gas silencer is not included in our scope of supply and must be provided locally.

First filling
The first filling of genset, (lube oil, engine jacket water, anti-freeze, anti-corrosive agent, battery acid) is not included in our scope of supply.

The composition and quality of the used consumables are to be strictly monitored in accordance with the "Technical Instructions" of GE JENBACHER.

Suitable bellows and flexible connections **must be provided locally** for all connections.
Cables from the genset must be flexible.

5.02 Factory tests and inspections

The individual module components shall undergo the following tests and inspections:

5.02.01 Engine tests

Carried out as combined Engine- and Module test according to DIN ISO 3046 at GE Jenbacher test bench.
The following tests are made at 100%, 75% and 50% load, and the results are reported in a test certificate:
- Engine output
- Fuel consumption
- Jacket water temperatures
- Lube oil pressure
- Lube oil temperatures
- Boost pressure
- Exhaust gas temperatures, for each cylinder

5.02.02 Generator tests

Carried out on the premises of the generator supplier.

5.02.03 Module tests

The engine will be tested with natural gas (methane number 94). The performance data achieved at the test bench may therefore vary from the data as defined in the technical specification due to differences in fuel gas quality.
Carried out as combined Engine- and Module test commonly with module control panel at GE Jenbacher test bench, according to ISO 8528, DIN 6280. The following tests are made and the results are reported in a test certificate:
Visual inspection of scope of supply per specifications.

- Functional tests per technical specification of control system.
  - Starting in manual and automatic mode of operation
  - Power control in manual and automatic mode of operation
  - Function of all safety systems on module
- Measurements at 100%, 75% and 50% load:
  - Frequency
  - Voltage
  - Current
  - Generator output
  - Power factor
  - Fuel consumption
  - Lube oil pressure
  - Jacket water temperature
  - Boost pressure
  - Mixture temperature
  - Exhaust emission (NOx)

The module test for operating frequenzy 50 Hz and 6,3-6,6kV / 10,5kV-11kV will be carried out with the original generator, except it is not possible because of the delivery date. Then a test generator will be used for the module test.
To prove characteristics of the above components, which are not tested on the test bench by GE JENBACHER, the manufacturers' certificate will be provided.

5.03 Documentation

Preliminary documentation 60 days after receipt of a technically and commercially clarified order:

- Module drawing 1)
- Technical diagram 1)
- Drawing of control panel 3)
- List of electrical interfaces 2)
- Technical specification of control system 2)
- Technical drawing auxiliaries (if included in GE Jenbacher-limit of delivery) 1)

At delivery:

- Wiring diagrams 3)
- Cable list 3)

At start-up and commissioning (or on clients request):

- Operating and maintenance manual 4)
- Spare parts manual 4)
- Operation report log 4)

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South Coast

AQMD

Annual Emission Report

Reporting Year: **2010**

Print Date: **10/24/2014**

Facility ID: **45262**

Facility Name: **LA COUNTY SANITATION DIST SCHOLL CANYON**

Facility Type:

B1 - Permitted Emissions from Fuel Combustion in Boilers, Ovens, Furnaces, and Heaters

Device Description	Application Number	Equipment Code& Description	Fuel Code Description	Annual Usage	Organic Gases		Nitrogen Oxides		Sulfur Oxides		Carbon Monoxide		Particulate Matter	
					Emission Factor	Emissions	Emission Factor	Emissions	Emission Factor	Emissions	Emission Factor	Emissions	Emission Factor	Emissions
Flare (Non-Refinery)	162689	6. Flare (Non-Refinery)	5. Landfill Gas (mmscf).	132.20	1.4800	195.52	14.3800	1,900.90	5.9600	787.91	0.9100	120.04	3.5500	469.84
Heater <10MMBTU/HR	322458	5a. Heater <10 MMBTU/HR	3. Diesel/Distillate Oil (1000 gals).	0.52	1.3200	0.69	20.0000	10.40	7.1000	3.69	5.0000	2.60	2.0000	1.04
Total Emissions in Pounds:						**196.21**		**1,911.30**		**791.60**		**122.64**		**470.88**
Total Emissions in Tons:						**0.10**		**0.96**		**0.40**		**0.06**		**0.24**

South Coast

AQMD

Annual Emission Report

Reporting Year: **2011**

Print Date: **10/24/2014**

Facility ID: **45262**

Facility Name: **LA COUNTY SANITATION DIST SCHOLL CANYON**

Facility Type:

B1 - Permitted Emissions from Fuel Combustion in Boilers, Ovens, Furnaces, and Heaters

Device Description	Application Number	Equipment Code& Description	Fuel Code Description	Annual Usage	Organic Gases		Nitrogen Oxides		Sulfur Oxides		Carbon Monoxide		Particulate Matter	
					Emission Factor	Emissions	Emission Factor	Emissions	Emission Factor	Emissions	Emission Factor	Emissions	Emission Factor	Emissions
Flare (Non-Refinery)	162689	6. Flare (Non-Refinery)	5. Landfill Gas (mmscf).	101.50	1.8400	186.86	13.2600	1,345.59	6.0700	615.75	0.8000	81.61	4.3900	445.99
Heater, <10 MMbtu/hr	322458	5a. Heater <10 MMBTU/HR	3. Diesel/Distillate Oil (1000 gals).	0.52	1.3200	0.69	20.0000	10.40	7.1000	3.69	5.0000	2.60	2.0000	1.04
Total Emissions in Pounds:						**187.55**		**1,355.99**		**619.44**		**84.21**		**447.03**
Total Emissions in Tons:						**0.09**		**0.68**		**0.31**		**0.04**		**0.22**

South Coast

AQMD

Annual Emission Report

Reporting Year: **2012**

Print Date: **10/24/2014**

Facility ID: **45262**

Facility Name: **LA COUNTY SANITATION DIST SCHOLL CANYON**

Facility Type:

B1 - Permitted Emissions from Fuel Combustion in Boilers, Ovens, Furnaces, and Heaters

Device Description	Application Number	Equipment Code& Description	Fuel Code Description	Annual Usage	Organic Gases		Nitrogen Oxides		Sulfur Oxides		Carbon Monoxide		Particulate Matter	
					Emission Factor	Emissions	Emission Factor	Emissions	Emission Factor	Emissions	Emission Factor	Emissions	Emission Factor	Emissions
Flare (Non-Refinery)	162689	6. Flare (Non-Refinery)	5. Landfill Gas (mmscf).	92.90	1.5800	146.41	13.3700	1,242.26	6.0200	559.26	0.8400	78.04	6.0400	561.12
Heater, <10 MMbtu/hr	322458	5a. Heater <10 MMBTU/HR	3. Diesel/Distillate Oil (1000 gals).	0.52	1.3200	0.69	20.0000	10.40	0.2100	0.11	5.0000	2.60	2.0000	1.04
Total Emissions in Pounds:						**147.10**		**1,252.66**		**559.37**		**80.64**		**562.16**
Total Emissions in Tons:						**0.07**		**0.63**		**0.28**		**0.04**		**0.28**

South Coast

AQMD

Annual Emission Report

Reporting Year: **2013**

Print Date: **10/24/2014**

Facility ID: **45262**

Facility Name: **LA COUNTY SANITATION DIST SCHOLL CANYON**

Facility Type:

B1 - Permitted Emissions from Fuel Combustion in Boilers, Ovens, Furnaces, and Heaters

Device Description	Application Number	Equipment Code& Description	Fuel Code Description	Annual Usage	Organic Gases		Nitrogen Oxides		Sulfur Oxides		Carbon Monoxide		Particulate Matter	
					Emission Factor	Emissions	Emission Factor	Emissions	Emission Factor	Emissions	Emission Factor	Emissions	Emission Factor	Emissions
Flare (Non-Refinery)	162689	6. Flare (Non-Refinery)	5. Landfill Gas (mmscf).	188.64	1.5800	297.30	13.3700	2,522.49	2.9600	558.75	0.8400	158.46	6.0400	1,139.01
Heater, <10 MMbtu/hr	322458	5a. Heater <10 MMBTU/HR	3. Diesel/Distillate Oil (1000 gals).	0.52	1.3200	0.69	20.0000	10.40	0.2100	0.11	5.0000	2.60	2.0000	1.04
Total Emissions in Pounds:						**297.98**		**2,532.89**		**558.86**		**161.06**		**1,140.05**
Total Emissions in Tons:						**0.15**		**1.27**		**0.28**		**0.08**		**0.57**

South Coast

AQMD

Annual Emission Report

Reporting Year: **2014**

Print Date: **10/01/2015**

Facility Id: **45262**

Facility Name **LA COUNTY SANITATION DIST SCHOLL CANYON**

Facility Type: **Landfill - Municipal Solid Waste**

Criteria Pollutants Permitted Emissions Summary

	VOC (tons)	SPOG (tons)	NOx (tons)	NOx RECLAIM (tons)	SOx (tons)	SOx RECLAIM (tons)	CO (tons)	PM (tons)
External Combustion	0.07	0.00	1.37	0.00	0.54	0.00	0.28	0.69
Internal Combustion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Spray Coating/ Spray Booth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Use of Organics	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Storage Tanks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fugitive Components	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Process Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Shutdown/Startup/Turnaround and Upsets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Permitted Emissions	**0.07**	**0.00**	**1.37**	**0.00**	**0.54**	**0.00**	**0.28**	**0.69**

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ANNUAL RULE 1150.1 SOURCE TEST
FLARE NO's. 8 AND 10
SCHOLL CANYON LANDFILL
MAY 2015

PREPARED FOR:
County Sanitation Districts of Los Angeles County
1955 Workman Mill Road
Whittier, California 90601

FOR SUBMITTAL TO:
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, California 91765

TEST DATE:
May 20, 2015

ISSUE DATE:
June 23, 2015

TESTED BY:
Mr. Joe Adamiak, QSTI
SCEC
1631 E. Saint Andrew Place
Santa Ana, California 92705

Report No: 2025.5003.rpt1

Prepared By: _____
Joe Adamiak, Senior Project Manager

Reviewed By: _____
Rudy Nunez, District Manager

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1.0 INTRODUCTION

SCEC was contracted by Los Angeles County Sanitation District (LACSD) to perform the 2015 annual source testing on two landfill gas fired flares located at the Scholl Canyon Landfill. The landfill is operated by LACSD. The annual testing was performed to satisfy requirements delineated by the Permit to Operate (PTO) No. G15467 and South Coast Air Quality District (SCAQMD) Rule 1150.1.

Measurements of the flare emissions and operating parameters were conducted at the flares exhaust and at the inlets (raw landfill gas) of each flare. Table 1-1 provides a test matrix of the parameters tested at each sample location. The test methodology, duration, and number of samples are in compliance with the normally requested SCAQMD test protocol.

The tests were conducted on May 20, 2015. Joe Adamiak and Jason DeBerg of SCEC performed the testing. Vikram Reddy of LACSD coordinated the source test program.

The results of the emission tests are summarized in Table 1-2 and 1-3. Detailed test results are presented in Section 4.0. All raw data, laboratory results, calculations and QA/QC data can be found in the Appendices.

Table 1-1
TEST MATRIX
SCHOLL CANYON LANDFILL GAS FLARES 8 AND 10
May 20, 2015

Parameter	Inlet	Exhaust
Oxygen (O_2)	X	X
Carbon Dioxide (CO_2)	X	X
Nitrogen (N_2)	X	X
Carbon Monoxide (CO)		X
Nitrogen Oxides (NO_x)		X
Moisture (H_2O)	X	X
Flow Rate (dscfm)	X	X
Temperature (^oF)	X	X
Total Particulate Matter (PM) as PM_{10}		X
Methane (CH_4)	X	X
Total Gaseous Non-Methane Organics (TGNMO)	X	X
Trace Volatile Organics (VOCs)	X	X
Hydrogen Sulfide (H_2S)	X	
Reduced Sulfur Compounds (TRS)	X	
Calorific Value (Btu/scf)	X	

TABLE 1-2
SUMMARY OF TEST RESULTS
LACSD Scholl Canyon
Flare 8
May 20, 2015

PARAMETER	INLET		EXHAUST		PERMIT LIMIT
			As Found	Defaulted[1]	
O_2, %	6.30		11.48		
CO_2, %	27.08		8.46		
N_2, %	33.56		80.05		
H_20, %	5.3		11.4		
Flow Rate, wscfm	741		5,890		LFG Flow 860
Flow Rate, dscfm	702		5,216		
Temperature, °F (as measured at sampling ports)	145		1,537		
Temperature, °F (as measured at by set thermocouple)			1,438		
Btu/scf	320				
NOx:					
ppm			14.75		
ppm @ 3% O_2			28.03		
lb/hr (as NO_2)			0.56		0.71
lb/MMBtu (as NO_2)			0.039		0.06
CO:					
ppm			4.4	20	2000 (Rule 407)
ppm @ 3% O_2			8.3	38.0	
lb/hr			0.10	0.46	0.67
Hydrocarbons:					
CH_4, ppm	314,000	<	10		
CH_4, lb/hr	558	<	0.13		
Destruction Eff. % CH_4		>	99.98		99
TGNMO, ppm (as CH_4)[2]	3,016		1.7		
TGNMO, lb/hr (as CH_4)	5.4		0.02		0.21
TGNMO, ppm (as hexane)			0.28		
TGNMO, ppm @ 3% O_2 (as hexane)			0.54		20[3]
Destruction Eff. % (DRE)			99.6		98[3]
Particulate (as PM_{10}):					
gr/dscf			0.0076		0.100
lb/hr			0.565		0.60
Total Sulfur Compounds,					
Total Reduced Sulfur Inlet, ppm	27.6				150 (Rule 431.1)
SOx Exhaust, lb/hr (as SO_2)[4]			0.20		0.36

Notes:
The results in this table are the averages of all measurements.
(1) Values presented reflect 20% of the selected analyzer range.
(2) TGNMO value based on the most conservative value from the sample tray. Results did not meet the precision criteria test.
(3) SCAQMD Rule 1150.1 and NSPS require that a flare meet the concentration standard or DRE.
(4) The exhaust SOx lb/hr and lb/day results are calculated from inlet reduced sulfur concentrations.

TABLE 1-3
SUMMARY OF TEST RESULTS
LACSD Scholl Canyon
Flare 10
May 20, 2015

PARAMETER	INLET		EXHAUST		PERMIT LIMIT
			As Found	Defaulted [1]	
O_2, %	5.89		11.16		
CO_2, %	28.46		8.77		
N_2, %	31.71		80.07		
H_20, %	5.6		11.5		
Flow Rate, wscfm	727		5,807		LFG Flow 860
Flow Rate, dscfm	686		5,140		
Temperature, °F (as measured at sampling ports)	145		1,292		
Temperature, °F (as measured at by set thermocouple)			1,427		
Btu/scf	335				
NOx:					
ppm			13.89		
ppm @ 3% O_2			25.54		
lb/hr (as NO_2)			0.52		0.71
lb/MMBtu (as NO_2)			0.036		0.06
CO:					
ppm			0.0	20	2000 (Rule 407)
ppm @ 3% O_2			0.0	36.8	
lb/hr			0.00	0.46	0.67
Hydrocarbons:					
CH_4, ppm	329,000	<	10		
CH_4, lb/hr	572	<	0.13		
Destruction Eff. % CH_4		>	99.98		99
TGNMO, ppm (as CH_4) [2]	3,091		3.1		
TGNMO, lb/hr (as CH_4)	5.4		0.04		0.21
TGNMO, ppm (as hexane)			0.52		
TGNMO, ppm @ 3% O_2 (as hexane)			0.95		20 [3]
Destruction Eff. % (DRE)			99.2		98 [3]
Particulate (as PM_{10}):					
gr/dscf			0.0060		0.100
lb/hr			0.480		0.60
Total Sulfur Compounds,					
Total Reduced Sulfur Inlet, ppm	36.1				150 (Rule 431.1)
SOx Exhaust, lb/hr (as SO_2) [4]			0.25		0.36

Notes:
The results in this table are the averages of all measurements.
(1) Values presented reflect 20% of the selected analyzer range.
(2) TGNMO value based on the most conservative value from the sample tray. Results did not meet the precision criteria test.
(3) SCAQMD Rule 1150.1 and NSPS require that a flare meet the concentration standard or DRE.
(4) The exhaust SOx lb/hr and lb/day results are calculated from inlet reduced sulfur concentrations.

American Analytics Landfill Gas Analysis For Sample Collected On 01/06/16

Analyte	Concentration	Method	Reporting Limit	Results	Sampling Media	Notes
Hydrogen	0-0.5 Mol%	EPA 3C (Mod)	0.1%	<0.1%	Polymer Bag	subcontracted
Carbon Dioxide	25-35 Mol%	EPA 3C (Mod)	0.1%	**28%**	Polymer Bag	
Oxygen/Argon	3-10 Mol%	EPA 3C (Mod)	0.1%	**4.5%**	Polymer Bag	
Nitrogen	20-50 Mol%	EPA 3C (Mod)	0.1%	**36.0%**	Polymer Bag	
Methane	30-60 Mol%	EPA 3C (Mod)	0.1%	**32.0%**	Polymer Bag	
Ethane	0-0.5 Mol%	GC/FID	20 ppmV	<100000 ppmV	Polymer Bag	
Propane	0-0.5 Mol%	GC/FID	20 ppmV	**18 ppmV**	Polymer Bag	
Pentane	0-0.5 Mol%	GC/FID	20 ppmV	<10 ppmV	Polymer Bag	
Hexane	0-0.5 Mol%	GC/FID	20 ppmV	<10 ppmV	Polymer Bag	
Benzene	0-0.01 Mol%	EPA 8260B (Mod)	1 ppmV	**0.97 ppmV**	Polymer Bag	
Toluene	0-0.01 Mol%	EPA 8260B (Mod)	1 ppmV	**3.2 ppmV**	Polymer Bag	
Ethylbenzene	0-0.01 Mol%	EPA 8260B (Mod)	1 ppmV	**1.1 ppmV**	Polymer Bag	
m,p-Xylene	0-0.01 Mol%	EPA 8260B (Mod)	1 ppmV	**1.5 ppmV**	Polymer Bag	
o-Xylene	0-0.01 Mol%	EPA 8260B (Mod)	1 ppmV	0.48 ppmV	Polymer Bag	
Styrene	0-0.01 Mol%	EPA 8260B (Mod)	1 ppmV	<0.23 ppmV	Polymer Bag	
C3 Benzenes	0-0.01 Mol%	EPA 8260B (Mod)	1 ppmV	<0.4 ppmV	Polymer Bag	
Naphthalene	0-0.01 Mol%	EPA 8260B (Mod)	1 ppmV	<0.38 ppmV	Polymer Bag	
C1 Naphthalene	0-0.01 Mol%	EPA 8260B (Mod)	TIC*	not found	Polymer Bag	
C2 Naphthalene	0-0.01 Mol%	EPA 8260B (Mod)	TIC*	not found	Polymer Bag	
Hydrogen Sulfide	0-50 ppmv	ASTM D 5540-12	0.05 ppmV	**39 ppmV**	Polymer Bag	subcontracted
Carbonyl Sulfide	0-5 ppmv	ASTM D 5540-12	0.05 ppmV	**0.053 ppmV**	Polymer Bag	subcontracted
Carbon Disulfide	0-5 ppmv	ASTM D 5540-12	0.05 ppmV	**0.032 ppmV**	Polymer Bag	subcontracted
Methyl Mercaptan	0-5 ppmv	ASTM D 5540-12	0.05 ppmV	**1.0 ppmV**	Polymer Bag	subcontracted
Dimethyl Sulfide	0-5 ppmv	ASTM D 5540-12	0.05 ppmV	**1.5 ppmV**	Polymer Bag	subcontracted
Total Sulfur**	0-50 ppmv	ASTM D 5540-12	0.05 ppmV	**42 ppmV**	Polymer Bag	subcontracted
1,1,3,3-tetramethyldisiloxane	0-10 mg/m3	GC/MS (ALS AQL111)	TIC*	not found	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
pentamethyldisiloxane	0-10 mg/m3	GC/MS (ALS AQL111)	TIC*	not found	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
hexamethyldisilane	0-10 mg/m3	GC/MS (ALS AQL111)	TIC*	not found	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
hexamethyldisiloxane (L2)	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	**580 ug/m3**	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Octamethyltrisiloxane (L3)	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	<0.27 ug/m3	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Decamethyltetrasiloxane (L4)	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	<0.28 ug/m3	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Dodecamethylpentasiloxane (L5)	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	<0.28 ug/m3	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Hexamethylcyclotetrasiloxane (D3)	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	**63 ug/m3**	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Octamethylcyclotetrasiloxane (D4)	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	**120 ug/m3**	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Decamethylcyclopentasiloxane (D5)	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	**52 ug/m3**	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Dodecamethylcyclohexasiloxane (D6)	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	<0.28 ug/m3	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Trimethylsilanol	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	**3500 ug/m3**	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Total Silicon	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	**1400 ug/m3**	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Mercury	0-10 µg/m3	EPA 7471B (Mod)	0.5 ug/m3	<0.5 ug/m3	Filter Cassette; 4 hours @ 2L/min	
Arsenic	0-50 µg/m3	EPA 6020B (Mod)	2 ug/m3	<2 ug/m3	Filter Cassette; 4 hours @ 2L/min	
Beryllium	0-10 µg/m3	EPA 6020B (Mod)	2 ug/m3	<2 ug/m3	Filter Cassette; 4 hours @ 2L/min	
Cadmium	0-10 µg/m3	EPA 6020B (Mod)	2 ug/m3	<2 ug/m3	Filter Cassette; 4 hours @ 2L/min	
Copper	0-500 µg/m3	EPA 6020B (Mod)	2 ug/m3	<2 ug/m3	Filter Cassette; 4 hours @ 2L/min	
Molybdenum	0-10 µg/m3	EPA 6020B (Mod)	2 ug/m3	<2 ug/m3	Filter Cassette; 4 hours @ 2L/min	
Lead	0-10 µg/m3	EPA 6020B (Mod)	2 ug/m3	<2 ug/m3	Filter Cassette; 4 hours @ 2L/min	
Antimony	0-50 µg/m3	EPA 6020B (Mod)	2 ug/m3	<2 ug/m3	Filter Cassette; 4 hours @ 2L/min	
Selenium	0-10 µg/m3	EPA 6020B (Mod)	2 ug/m3	<2 ug/m3	Filter Cassette; 4 hours @ 2L/min	
Zinc	0-500 µg/m3	EPA 6020B (Mod)	2 ug/m3	**7.4 ug/m3**	Filter Cassette; 4 hours @ 2L/min	

*: Tentatively Identified Compound

**: Total Reduced Sulfur as Hydrogen Sulfide

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B.3 AMBIENT AIR QUALITY MODELING RESULTS



APPENDIX B.3.1
AMBIENT AIR QUALITY ANALYSIS

APPENDIX B.3.1
MODELING PROTOCOL

APPENDIX B.3.2
AERMOD INPUT SUMMARY

APPENDIX B.3.3
AERMOD OUTPUT SUMMARY

(COMPLETE MODELING FILES ARE AVAILABLE IN ELECTRONIC FORMATS)

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Air Quality Impact Analysis (AQIA) Report
Glendale Water and Power
Biogas Renewable Generation Project

This report describes the air quality modeling results of estimated ground level concentrations resulting from the proposed emissions profile of Biogas Renewable Generation Project. Maximum modeled concentrations were added to the maximum background concentrations to calculate the total impacts of the proposed Project for comparison to the applicable and most stringent of state and national ambient air quality standards (AAQS). For pollutants that are non-attainment at the South Coast Air Basin, the impact of the proposed Project were compared with the State significance increase threshold.

Potential air quality impacts were evaluated based on air quality dispersion modeling using the Providence BEEST AERMOD software (version 16216r). A modeling protocol, provided in Appendix 3.1, was submitted and approved by the SCAQMD staff. All input and output modeling files are contained on a flash drive provided with this permit application.

The models were run for various criteria pollutants and averaging periods. NO_2, PM_{10} and $PM_{2.5}$ were modeled for comparison to the respective annual average AAQS. Short term air quality impacts were also evaluated, including 1-hour and 8-hour CO; 1-hour NO_2; 1-hour and 24-hour SO_2; and 24-hour PM_{10} and $PM_{2.5}$.

In accordance with SCAQMD AERMOD implementation guide, the models were run with flat terrain option on receptors located at lower elevations than the emission sources base elevation. The models were run with complex terrain options on the receptors located at higher elevations than the emission sources base elevation. The highest values from the models were selected as the overall project impact.

Table 1 presents the applicable AAQS for each of these pollutants, for each averaging period.

Table 1
Applicable Ambient Air Quality Standards
Grayson Power Plant Repowering Project

Pollutants	Averaging Periods	Most Stringent AAQS	Form	National or State Standard?
NO_2	1-Hour	100 ppb	98th Percentile of one-hour daily maximum concentrations, averaged over three years. [A]	National
	1-Hour	0.18 ppm	Not to be exceeded	California
	Annual	0.03 ppm	Annual Arithmetic Mean.	California
CO	1-Hour	20 ppm	Not to be exceeded more than once per year.	California
	8-Hour	9 ppm	Not to be exceeded more than once per year.	National
SO_2	1-Hour	75 ppb	99th Percentile of one-hour daily maximum concentrations, averaged over three years. [B]	National
	1-Hour	0.25 ppm	Not to be exceeded	California
	24-Hour	0.04 ppm	Not to be exceeded.	California
PM_{10}	24-Hour	2.5 μg/m^3	Allowable increase	California
	24-Hour	150 μg/m^3	The 6th highest of daily maximum concentrations, averaged over three years.	National
	Annual	1.0 μg/m^3	Allowable increase	California
$PM_{2.5}$	24-Hour	2.5 μg/m^3	Allowable increase	California
	24-Hour	35 μg/m^3	98th Percentile of daily maximum concentrations, averaged over three years.	National
	Annual	1.0 μg/m^3	Allowable increase	California
	Annual	12.0 μg/m^3	Annual mean, averaged over 3 years	National

A.) 8th highest of 1-hour maximum concentrations (NO_2) or 24-hour maximum concentrations ($PM_{2.5}$), averaged over a 5-year period for modeling.
B.) 4th highest of 1-hour maximum concentrations, averaged over a 5-year period for modeling.

In each modeling run, the regulatory default options were used with the exception of allowing flat terrain mode for the receptors below the emission sources base elevation. Additionally, the urban modeling option was selected to allow the model to incorporate the effects of increased surface

heating from the surrounding urban area on pollutant dispersion under stable atmospheric conditions. The urban area population was updated to reflect current approximate density in Los Angeles County (9,862,049 based on 2016 estimates from the U.S. Census Bureau). The equipment parameters, such as stack height and diameter, exhaust temperature and exit velocity, and elevation, are required for the AERMOD input, which is provided in the Appendix A.3.2.

For NO_2 modeling, the Ambient Ratio Method (ARM) was used in modeling the annual and 1-hour concentrations.

Modeling Scenarios

Table 2 shows the scenarios where the equipment produces the potential highest emissions for a 1-hour, 8-hour, 24-hour, and annual basis.

Table 2 – Air Dispersion Modeling Scenarios

Pollutant	Average Time	The Basis of Emission Rate
NO_2, CO, SO_2	1-hour Average	One engine operates one hour, which consists of startup, controlled, and shutdown emissions. Each of the remaining three engines operate one hour of controlled emissions without any startups or shutdowns.
CO	8-hour Average	One engine operates eight hours, which consists of six hours of uncontrolled emissions and two hours of startups, controlled emissions, and shutdowns. Each of the remaining three engines operate eight hours of controlled emissions without any startups or shutdowns.
PM10, PM2.5, SO_2	24-hour Average	One engine operates twenty four hours, which consists of ten hours of uncontrolled emissions, and fourteen hours of two startup and shutdowns and controlled emissions. Each of the remaining three engines operate twenty four hours of controlled emissions without any startups or shutdowns.
NO_2, PM10, PM2.5	Annual Average	Maximum Annual Emissions[1]

Note:

[1]The maximum annual emission of the engines includes the allowable 10 startups/shutdowns and 10 maintenance hours (uncontrolled emissions) for the whole year.

Modeling Results

Table 3 shows the modeling emission rates used for each pollutant and averaging period for the proposed Project, including air quality impact during commissioning period.

Table 3
Ambient Air Quality Impact Analysis Result
Scholl Canyon Repowering Generation Project

Pollutant	Avg. Period	Project Impact	Background[a]	New Ambient	Limiting Standard	Type of Standard
NO_2[b]	1-HR	0.030 ppm	0.09 ppm	0.12 ppm	0.18 ppm	CAAQS
NO_2[b]	1-HR (98^{th} %)	0.014 ppm	0.073 ppm	0.086 ppm	0.10 ppm	NAAQS
NO_2[c]	Annual	0.00015 ppm	0.022 ppm	0.022 ppm	0.03 ppm	CAAQS
CO	1-HR	0. 145 ppm	3.10 ppm	3.24 ppm	20 ppm	CAAQS
CO	8-HR	0.0344 ppm	2.20 ppm	2.23 ppm	9 ppm	CAAQS
PM10	24-HR	1.07 ug/m^3	88 ug/m^3	89.07 ug/m^3	Allowable increase of 2.5 ug/m^3	CAAQS / SCAQMD Allowable Increase
PM10[d]	24-HR (6^{th} highest over 5 years)	0.65 ug/m^3	88 ug/m^3	88.65 ug/m^3	150 ug/m^3	NAAQS
PM10	Annual	0.118 ug/m^3	35.4 ug/m^3	35.52 ug/m^3	Allowable increase of 1.0 ug/m^3	CAAQS / SCAQMD Allowable Increase
PM2.5	24-HR	1.07 ug/m^3	48.5 ug/m^3	49.57 ug/m3	Allowable increase of 2.5 ug/m^3	CAAQS / SCAQMD Allowable Increase

Pollutant	Avg. Period	Project Impact	Background[a]	New Ambient	Limiting Standard	Type of Standard
PM2.5[e]	24-HR (8^{th} highest)	0.35 ug/m^3	29.80 ug/m^3	30.15 ug/m3	35 ug/m^3 Below SIL of 1.2 ug/m^3	NAAQS EPA Significant Impact Level (SIL)
PM2.5	Annual	0.118 ug/m^3	11.95 ug/m^3	12.07 ug/m^3	Below SIL of 0.3 ug/m^3 Allowable increase of 1.0 ug/m^3	EPA Significant Impact Level (SIL) CAAQS / SCAQMD Allowable Increase
SO_2	1-HR	0.0026 ppm	0.0126 ppm	0.0152 ppm	0.25 ppm	CAAQS
SO_2[f]	1-HR (99^{th} %)	0.0014 ppm	0.0063 ppm	0.0077 ppm	0.075 ppm	NAAQS
SO_2	24-HR	0.0006 ppm	0.0054 ppm	0.0060 ppm	0.04 ppm	CAAQS

Notes:

a) The background values are based on the highest concentrations monitored during 2011 through 2015, except the year 2013, at West San Gabriel Valley (Pasadena) monitoring station. In 2013, the higher readings between Pasadena and Central Los Angeles monitoring station (Station No. 087) were used because the 2013 Pasadena background data were marked incomplete. Additionally, the background values of PM10 and SO_2 were based on the readings from the Central Los Angeles monitoring station since the Pasadena monitoring station did not record any background data for those pollutants.

b) The NO_2 1-hour modeling was refined using the AERMOD Ambient Ratio Method (ARM) option, which assumes an 80% conversion factor of NO_X to NO_2

c) The NO_2 annual modeling was refined using the AERMOD ARM option, which assumed a 75% conversion factor of NO_X to NO_2.

d) The PM10 24-hour modeled values were based on the maximum 6^{th} highest concentration over 5 years period.

e) The PM2.5 24-hour modeled values were based on the 8^{th} highest concentration averaged over 5 years period with the background concentrations of 98^{th} percentile of 24-hour data averaged over 5 years period.

f) The SO_2 1-hour modeled values were based on the 4^{th} highest concentration averaged over 5 years period with the background concentrations of 99^{th} percentile of 1-hour data averaged over 5 years period.

g) There are receptors surrounding the facility at lower and higher elevations than the emission sources. The model was run on non-default option (flat terrain) on all receptors at lower elevations; and a default option (complex terrain) was selected to on receptors above the emission sources base elevation. The project impact values shown in the table above is the highest values from both model runs.

As shown in Table 3, the modeled highest concentration of NO_2, CO, and SO_2 plus the applicable background concentration did not result in any exceedances of the federal and state AAQS. For

PM10 and PM2.5, the modeled maximum concentrations from the Project did not cause any exceedances of the state significant thresholds. Appendix A.3.3 include additional information on the model files.

Additionally, the complete modeling files are provided in electronic copies.

APPENDIX B.3.1

MODELING PROTOCOL

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SCEC

October 2, 2015

Ms. Jillian Wong, Ph.D.
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Subject: Protocol for Air Dispersion Modeling (CEQA, AQIA, and HRA)
City of Glendale – Scholl Canyon Landfill Project

Dear Ms. Wong,

SCEC is submitting this protocol for air dispersion modeling on behalf of the City of Glendale ("Glendale"). The purpose of this document is to propose methodology by which dispersion modeling is set up and executed in support of a project for the Scholl Canyon Landfill ("landfill"). The project will include construction and operation of new power generation equipment that will burn landfill gas generated by the facility. The proposed modeling program will be used to estimate direct project operational impacts only, including a California Environmental Quality Act ("CEQA") analysis, an air quality impact analysis ("AQIA"), and a health risk assessment. SCEC is seeking South Coast Air Quality Management District ("SCAQMD") approval of the proposed modeling methodology to ensure that the model is prepared and executed in accordance with SCAQMD Modeling Guidance and standards. Once approved, SCEC will perform the required dispersion modeling pursuant to the methods outlined in this protocol.

Generally, SCEC proposes to use the latest version of the Trinity Consultants BREEZE AERMOD software to build and execute the required dispersion modeling. The model will be run in accordance with *SCAQMD Modeling Guidance for AERMOD*. This includes use of the regulatory default option (with one exception as explained in the following methodology discussion), AERMAP preprocessor, urban modeling option, BPIP for building downwash, SCAQMD-provided AERMOD meteorological data, appropriate averaging times and receptor grid spacing, and any other required options. The proposed model will not utilize the OLM or PVMRM options. More detailed modeling methodology can be found in following sections of this protocol.

Proposed Modeling Methodology

The landfill is located at 3001 Scholl Canyon Road in Glendale. SCEC will utilize a modeling projection in terms of Universal Transverse Mercator (UTM) with the World Geodetic System 1984 datum. The UTM zone and hemisphere selected for the modeling will reflect the physical location of the facility as follows:

- UTM zone: 11
- Hemisphere: Northern

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Glendale is proposing to construct and operate new power generation equipment at the site and is considering two possible options for the technology. The first option includes the use of two (2) combustion turbines, while the second option will include four (4) reciprocating internal combustion engines. There are twelve (12) existing enclosed flares at the facility today, operated by another entity; however, due to the expectation that excess landfill gas not combusted in the proposed new power generation equipment would be sent to these devices, the flares will be included in the modeling for both scenarios as a matter of completeness. Separate models will be prepared to cover the two possible equipment scenarios, but the same general methodology will be used for both.

Each model will use the current AERMOD executable from EPA, Version 15181. Generally, the models will be executed using the urban model option in accordance with SCAQMD modeling guidelines. All sources will be modeled with urban effects using the population of Los Angeles County. SCAQMD suggests the Los Angeles County population to be 9,862,049, so this value will be used to characterize the urban area surrounding the proposed project.

Since exhaust from the combustion turbines or engines would be vented to dedicated vertical stacks, all of these sources will be categorized and modeled as point sources. Additionally, since the flares will be incorporated into the model and because they are not "candlestick" type flares, these will also be modeled as point sources. Source information such as exhaust exit temperature, flow rate, stack height, and stack diameter will be entered using manufacturer's literature or another reliable source. The emission rate for each source will be included as appropriate for each model to be run, both in terms of the pollutant and averaging period of interest. Each emissions source will be assigned to its own source group and flagged as an urban source. An additional urban source group will be created that includes all emission sources.

Buildings and significant permanent structures that are located within 5*L of a stack ("L" is the building/structure height above the stack base) can cause wake effects and must be incorporated into the model. Each building/structure that meets the criteria will be built into the model using actual dimensions (or reasonable estimates).

The facility boundary will be defined as the footprint of the entire landfill. Although SCAQMD modeling guidelines require that fenceline receptor spacing be based on the acreage of a facility, the proposed modeling will conservatively use the most refined spacing, placing fenceline receptors no more than 20 meters apart.

In addition to fenceline receptors, a uniform Cartesian receptor grid will be created to cover the extent of the modeling domain. The grid will cover an approximate area of 36 square kilometers with 50 meter spacing between receptors. Discrete receptors will be established for nearby sensitive and off-site worker receptor locations. No flagpole receptors will be included in the model.

Because the landfill is situated on a hilltop, most of the surrounding receptors are located below the base elevation of the sources being modeled. EPA's AERMOD Implementation Guide (rev.

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8/3/2015), Section 4.1 suggests that AERMOD may underestimate concentrations in cases of terrain-following plumes and down-sloping terrain. In these cases, EPA suggests that it may be reasonable to assume flat, level terrain. In this case, the model will include some receptors that are lower and some that are higher than the base elevations of the sources. Pursuant to the SCAQMD Guidelines, the proposed modeling will be conducted using two types of model runs – one run will utilize the regulatory default option and complex terrain, and the second will use the non-regulatory default option and flat terrain. In accordance with the SCAQMD Guidelines, the results for both models will be presented.

For the flat terrain model run, AERMAP does not need to be run since no terrain data will be needed to execute the model. However, for the complex terrain model run, terrain data will be used in conjunction with the AERMAP preprocessor.

Terrain files for the area will be pulled down from the California Air Resources Board ("CARB") website at the following address: http://www.arb.ca.gov/toxics/harp/dems.htm. Based on the project location and availability of digital elevation model ("DEM") files, the "Pasadena" terrain file should provide adequate coverage for the proposed modeling domain. With the source, surrounding qualifying structures, and all receptors situated, the terrain file will be used to run AERMAP. In addition to applying terrain elevation information to the model, this process will apply base elevations to each of the sources, buildings, and receptors. AERMAP will be rerun to establish new base elevations if any objects in the model are subsequently moved, or added.

BPIP will be run to create a file of 36 direction-specific building widths, heights, and distances (one for each of the 36 10-degree sectors) that will be automatically imported into BREEZE AERMOD. This will allow the model to properly compute the plume downwash (i.e., adjusted plume center line and turbulent dispersion) downwind of tier influenced stacks. BPIP will be rerun prior to model execution if source and/or building coordinates are changed; source and/or building heights are changed; base elevations are changed; or buildings are added to the model. BPIP is not affected by meteorological data.

Meteorological data files for both surface and upper air characteristics are provided by SCAQMD. The files used for any particular model run should be selected based on the representativeness of the underlying data with respect to meteorological conditions at the proposed facility location. For this project, the SCAQMD Central LA (CELA) and Burbank (BURK) meteorological stations are both situated at approximately the same distance from the facility; however, historical prevailing wind direction is quite a bit different between the two stations. The Central LA station has a prevailing northeasterly wind, while Burbank appears to predominantly experience northwesterly winds. Since the site is between these two station locations and because it is unclear which wind pattern is more representative of actual site conditions, SCEC has elected to use the Burbank files. This is based on the inference that airflow at the proposed facility will be more similar to that experienced at the Burbank monitoring station than the Central LA station. Furthermore, the Burbank meteorological data is provided for the years 2008 through 2012, which is both more current than the data coverage period from Central LA, and includes five consecutive years of data.

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In order to fully address the needs of the CEQA analysis and the AQIA, which both call for a determination of the operational impacts a project will have on ambient air quality, the proposed model will include runs for nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO2), and particulate matter (both PM10 and PM2.5). Proposed operational impacts will be determined by modeling for each applicable pollutant and averaging period and comparing the results to SCAQMD air quality significance thresholds, California ambient air quality standards ("CAAQS") and/or National ambient air quality standards ("NAAQS"). The following pollutants and averaging periods will be evaluated to estimate the potential direct operational impacts on ambient air quality, based on emissions from all modeled sources:

- NO_2 : 1-hour[1,2,3] & annual[1,2,3]
- CO : 1-hour[1,2,3] & 8-hour[1,2,3]
- SO_2 : 1-hour[1,2,3], 3-hour[2], 24-hour[1,3]
- $PM_{2.5}$: 24-hour[2,3] & Annual[1,2]
- PM_{10} : 24-hour[1,2,3] & Annual[1,3]

For comparison to:

1.) CAAQS
2.) NAAQS
3.) SCAQMD ambient air quality standards

The appropriate output tables and plot files will be generated by AERMOD during each model run. The applicable ground level concentration data will be extracted from these files and utilized for comparison with the associated standards.

Ambient background emissions data for each criteria pollutant and averaging period has been provided by SCAQMD and CARB, and is based on monitoring data taken from SCAQMD monitoring stations 88 (West San Gabriel Valley) and 87 (Central LA) for the years of 2010 through 2014. The data from Station No. 88 is considered more appropriate for the proposed project location; however, because data from 2013 was incomplete and not provided by SCAQMD or CARB, the 2013 data from Station No. 87 will be used instead. For the purposes of determining the applicable background concentration to be used in the CEQA analysis and AQIA, SCEC will conservatively select the highest concentration from the 5 years of monitoring data for each pollutant and averaging period.

For the CEQA analysis, SCEC will compare selected ambient background concentrations plus modeled concentrations (or just the modeled concentrations in the case of PM2.5 and PM10) to the respective threshold of significance presented in the table below. In cases where the significance threshold is in-line with either a CAAQS or NAAQS, the expectation is that the resulting combined background plus modeled concentration does not cause a violation of the standard. For PM2.5 and PM10, the CEQA significance thresholds reflect maximum allowable increases, so only the modeled concentration will be compared to the threshold in these cases.

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SCAQMD Air Quality Significance Thresholds for CEQA

Pollutant and Averaging Period	Standard / Threshold
NO2	
- 1-hour average	0.18 ppm (CAAQS)
- Annual arithmetic mean	0.03 ppm (CAAQS) & 0.0534 ppm (NAAQS)
CO	
- 1-hour average	20 ppm (CAAQS) & 35 ppm (NAAQS)
- 8-hour average	9.0 ppm (CAAQS/NAAQS)
SO2	
- 1-hour average	0.25 ppm (CAAQS) & 0.075 ppm (NAAQS – 99th percentile)
- 24-hour average	0.04 ppm (CAAQS)
PM2.5	
- 24-hour	2.5 µg/m^3
PM10	
- 24-hour	2.5 µg/m^3
- Annual average	1.0 µg/m^3

For the AQIA, the methodology for determining compliance will be very similar to that of the CEQA analysis. For any pollutants that ambient background concentrations are below a particular emissions standard, the modeled increase to concentration resulting from the project will be added to the background. As long as the sum of background and modeled concentration does not cause an exceedance of the standard, then the project will be in compliance. If there are cases where the ambient background concentration is already above the applicable standard, the modeled concentration for the project will be compared to the respective significance threshold in Rule 1303, Table A-2.

The HRA for this project will be completed in accordance with the updated Risk Assessment Guidelines from the Office of Environmental Health Hazard Assessment ("OEHHA") that were released in 2015. This includes using the latest version of CARB's Hotspots Analysis and Reporting Program software ("HARP 2") in conjunction with the derived OEHHA methodology for risk assessment and dispersion modeling plot files generated by AERMOD.

More specifically, two additional dispersion model runs will be executed as described in this protocol (i.e., one for flat terrain and a second for complex terrain), except that the "Other" pollutant will be selected in the model options and a "unit emission rate" will be used for each point source (i.e., one gram per second). By normalizing the emission rate for all model sources in this manner, the maximum 1-hour and period ground level concentrations generated by AERMOD will act as scalers with which a program like HARP 2 can estimate ground level concentrations of toxic air contaminants ("TACs"). Two sets of plot files for the modeled "1-hour" and "Period"

concentrations will be loaded into HARP 2. In conjunction with a complete inventory of TACs estimated for the proposed project, HARP 2 will use the AERMOD plot files to predict ground level concentrations of each TAC. HARP 2 will automatically assign health risk values to each TAC, such as cancer potency ("CP") for carcinogens and reference exposure levels ("RELs") for compounds that may cause chronic or acute health conditions. Using the concentration of TACs at each receptor location, the assigned CPs and RELs associated with each TAC, receptor type, exposure pathways, and exposure duration, HARP 2 will calculate potential health risk. This includes an estimate of cancer risk, non-cancer chronic risk, and non-cancer acute risk. If necessary, the Cancer Burden will also be calculated.

SCAQMD Rule 1401 and the Agency's CEQA Guidelines require that a proposed project not exceed the following health risk levels for each risk category:

Risk Category	**Threshold**
Maximum Individual Cancer Risk ("MICR")	1×10^{-5}
Non-Cancer Acute Hazard Index	1.0
Non-Cancer Chronic Hazard Index	1.0
Cancer Burden*	0.5

*Calculation of cancer burden is only required if MICR $\geq 1 \times 10^{-5}$.

The risk assessment model will need to be run twice for each set of dispersion model results – once to evaluate sensitive and residential receptor risk levels and again for off-site worker risk. The following HRA modeling scenarios will be run in HARP 2:

To analyze risk for residential and sensitive receptors the following options will be used:

Analysis Type:	Cancer, Chronic, and Acute Risk
Receptor Type:	Individual Resident
Exposure Duration:	30 years
Intake Rate Percentile:	OEHHA derived method
Pathways to Evaluate (*):	Inhalation; Soil Ingestion; Dermal; and Mother's Milk

(*) The selected pathways reflect "mandatory minimum" pathways for residential/sensitive receptors.

To analyze risk for off-site worker receptors the following options will be used:

Analysis Type:	Cancer, Chronic, and Acute Risk
Receptor Type:	Worker
Exposure Duration:	25 years
Intake Rate Percentile:	OEHHA derived method
Pathways to Evaluate (*):	Inhalation; Soil Ingestion; and Dermal

(*) The selected pathways reflect all required "worker" pathways

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Once both HARP 2 runs are completed, the model outputs will be evaluated to determine whether the project will comply with SCAQMD requirements. For both models, SCEC will determine risk levels for the maximally exposed individual ("MEI"). The MEI represents an actual receptor location where risk levels are the highest for one or more risk categories. The location of the MEI may vary depending on the risk category being analyzed and may not necessarily reflect the point of maximum impact ("PMI") for that risk category. In cases where the PMI is also the MEI, the PMI will be used to compare with the applicable risk threshold. When the PMI for a particular risk category does not reflect an actual receptor location, the MEI will be used with justification as to why it is more representative than the PMI.

Should it be required, cancer burden will be calculated manually in accordance with the instructions outlined in the SCAQMD Risk Assessment Procedures (Version 8.0, 6/5/2015). Since dispersion modeling and a refined HRA are being conducted for the project, SCEC will be able to use output files generated by HARP 2 to visualize risk level isopleths and easily determine the greatest downwind distance at which a potential receptor may be exposed to a MICR of one in one-million. By using this downwind distance as the radius (r), a circular area will be defined (using $\pi * r^2$) that will theoretically reflect the zone of impact for the project. If the actual population within the area is known then that value will be used in conjunction with the MICR to determine cancer burden. If the actual population is not known, then a conservative estimate of 7,000 people per square kilometer will be used.

We appreciate the expedited review of this protocol as SCEC is ready to begin the modeling and other analyses in support of the project immediately upon approval. Should SCAQMD have any questions or concerns regarding the modeling and analysis methodology proposed herein, please contact me directly at (714) 282-8240 (ext. 8609) or bwinchester@montrose-env.com.

Sincerely,
SCEC
An affiliate of Montrose Environmental Group, Inc.

MONTROSE ENVIRONMENTAL

Bill D. Winchester, C.P.P.
Senior Project Manager
Regulatory Compliance Services

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APPENDIX B.3.2

AERMOD INPUT SUMMARY

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Point Sources - 1 Hour Model

Model ID	Source Description	UTME (m)	UTMN (m)	Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Dia. (m)	NOx Emission (g/s)	CO Emission (g/s)	SO2 Emission (g/s)	PM Emission (g/s)
ENGINE1	Generator 1	390140.0	3779830.2	434.04	12.192	698.150	32.712	0.6096	3.94968	7.10960	0.10584	
ENGINE2	Generator 2	390147.2	3779828.8	434.04	12.192	698.150	32.712	0.6096	0.15372	1.10878	0.10584	
ENGINE3	Generator 3	390154.5	3779827.5	434.04	12.192	698.150	32.712	0.6096	0.15372	1.10878	0.10584	
ENGINE4	Generator 4	390161.7	3779827.4	434.04	12.192	698.150	32.712	0.6096	0.15372	1.10878	0.10584	

Point Sources - 8 Hour Model

Model ID	Source Description	UTME (m)	UTMN (m)	Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Dia. (m)	NOx Emission (g/s)	CO Emission (g/s)	SO2 Emission (g/s)	PM Emission (g/s)
ENGINE1	Generator 1	390140.0	3779830.2	434.04	12.192	698.150	32.712	0.6096		3.37631		
ENGINE2	Generator 2	390147.2	3779828.8	434.04	12.192	698.150	32.712	0.6096		1.10878		
ENGINE3	Generator 3	390154.5	3779827.5	434.04	12.192	698.150	32.712	0.6096		1.10878		
ENGINE4	Generator 4	390161.7	3779827.4	434.04	12.192	698.150	32.712	0.6096		1.10878		

Point Sources - 24 Hour Model

Model ID	Source Description	UTME (m)	UTMN (m)	Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Dia. (m)	NOx Emission (g/s)	CO Emission (g/s)	SO2 Emission (g/s)	PM Emission (g/s)
ENGINE1	Generator 1	390140.0	3779830.2	434.04	12.192	698.150	32.712	0.6096			0.10584	0.07669
ENGINE2	Generator 2	390147.2	3779828.8	434.04	12.192	698.150	32.712	0.6096			0.10584	0.07669
ENGINE3	Generator 3	390154.5	3779827.5	434.04	12.192	698.150	32.712	0.6096			0.10584	0.07669
ENGINE4	Generator 4	390161.7	3779827.4	434.04	12.192	698.150	32.712	0.6096			0.10584	0.07669

Point Sources - Annual Model

Model ID	Source Description	UTME (m)	UTMN (m)	Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Dia. (m)	NOx Emission (g/s)	CO Emission (g/s)	SO2 Emission (g/s)	PM Emission (g/s)
ENGINE1	Generator 1	389968.2	3779779.5	434.04	12.192	698.150	32.712	0.6096	0.20660			0.07669
ENGINE2	Generator 2	389967.3	3779788.2	434.04	12.192	698.150	32.712	0.6096	0.20660			0.07669
ENGINE3	Generator 3	389966.6	3779796.9	434.04	12.192	698.150	32.712	0.6096	0.20660			0.07669
ENGINE4	Generator 4	389965.8	3779805.4	434.04	12.192	698.150	32.712	0.6096	0.20660			0.07669

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APPENDIX B.3.3

AERMOD OUTPUT SUMMARY

(COMPLETE MODELING FILES ARE AVAILABLE IN ELECTRONIC FORMATS)

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Description	Pollutant	Averaging Period	Highest	Source Group	Conc (ug/m3)	UTME	UTMN	Conc Date mm/dd/yy/hh	Conc (ppm)	Background	Unit	Total	Unit	NAAQS	Unit	SCAQMD	Unit
CO State Standard/NAAQS																	
Scholl Canyon ICE 1hr COElevation_5yrs_CO	CO	1-HR	1ST	ALL	159.72	390407.0	3779876.0	10/25/12/20	0.14505	3.1	PPM	3.2451	PPM	35	PPM	20	PPM
Scholl Canyon ICE 1hr COElevation_5yrs_CO				ENGINE1	108.18	390407.0	3779876.0	10/25/12/20	0.09825			3.1982	PPM				
Scholl Canyon ICE 1hr COElevation_5yrs_CO				ENGINE2	17.01	390407.0	3779876.0	10/25/12/20	0.01545			3.1155	PPM				
Scholl Canyon ICE 1hr COElevation_5yrs_CO				ENGINE3	17.13	390407.0	3779876.0	10/25/12/20	0.01556			3.1156	PPM				
Scholl Canyon ICE 1hr COElevation_5yrs_CO				ENGINE4	17.39	390407.0	3779876.0	10/25/12/20	0.01580			3.1158	PPM				
Scholl Canyon ICE 8hr_5yrs_CO	CO	8-HR	1ST	ALL	37.86	390444.8	3779750.6	01/07/08/16	0.03438	2.2	PPM	2.2344	PPM	9	PPM	9	PPM
Scholl Canyon ICE 8hr_5yrs_CO				ENGINE1	18.47	390444.8	3779750.6	01/07/08/16	0.01677			2.2168	PPM				
Scholl Canyon ICE 8hr_5yrs_CO				ENGINE2	6.26	390444.8	3779750.6	01/07/08/16	0.00568			2.2057	PPM				
Scholl Canyon ICE 8hr_5yrs_CO				ENGINE3	6.46	390444.8	3779750.6	01/07/08/16	0.00587			2.2059	PPM				
Scholl Canyon ICE 8hr_5yrs_CO				ENGINE4	6.67	390444.8	3779750.6	01/07/08/16	0.00606			2.2061	PPM				
NO_2 State Standard - ARM																	
Scholl Canyon ICE 1hr NO2 SO2StateElevation_5yrs_NO2	NO2	1-HR	1ST	ALL	53.80	390407.0	3779876.0	10/25/12/20	0.02974	0.09	PPM	0.1197	PPM		PPM	0.18	PPM
Scholl Canyon ICE 1hr NO2 SO2StateElevation_5yrs_NO2				ENGINE1	48.08	390407.0	3779876.0	10/25/12/20	0.02658			0.1166	PPM				
Scholl Canyon ICE 1hr NO2 SO2StateElevation_5yrs_NO2				ENGINE2	1.89	390407.0	3779876.0	10/25/12/20	0.00104			0.0910	PPM				
Scholl Canyon ICE 1hr NO2 SO2StateElevation_5yrs_NO2				ENGINE3	1.90	390407.0	3779876.0	10/25/12/20	0.00105			0.0911	PPM				
Scholl Canyon ICE 1hr NO2 SO2StateElevation_5yrs_NO2				ENGINE4	1.93	390407.0	3779876.0	10/25/12/20	0.00107			0.0911	PPM				
NO_2 NAAQS - ARM																	
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_NO2	NO2	8TH-HIGHEST MAX DAILY 1-HR	1ST	ALL	24.56	390407.0	3779876.0	5 YEARS	0.01357	0.0728	PPM	0.0864	PPM	0.10	PPM		PPM
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_NO2				ENGINE1	21.87	390407.0	3779876.0	5 YEARS	0.01209			0.0849	PPM				
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_NO2				ENGINE2	0.87	390407.0	3779876.0	5 YEARS	0.00048			0.0733	PPM				
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_NO2				ENGINE3	0.89	390407.0	3779876.0	5 YEARS	0.00049			0.0733	PPM				
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_NO2				ENGINE4	0.92	390407.0	3779876.0	5 YEARS	0.00051			0.0733	PPM				
PM10/PM2.5 State Standard																	
Scholl Canyon ICE 24hr PM10 SO2_5yrs_PM10	PM10/PM2.5	24-HR	1ST	ALL	1.07	390473.0	3779600.0	12/30/12/24			UG/M3	1.070	UG/M3		UG/M3	Threshold PM10 - 2.5 PM2.5 - 2.5	UG/M3
Scholl Canyon ICE 24hr PM10 SO2_5yrs_PM10				ENGINE1	0.26	390473.0	3779600.0	12/30/12/24				0.256	UG/M3				
Scholl Canyon ICE 24hr PM10 SO2_5yrs_PM10				ENGINE2	0.26	390473.0	3779600.0	12/30/12/24				0.265	UG/M3				
Scholl Canyon ICE 24hr PM10 SO2_5yrs_PM10				ENGINE3	0.27	390473.0	3779600.0	12/30/12/24				0.271	UG/M3				
Scholl Canyon ICE 24hr PM10 SO2_5yrs_PM10				ENGINE4	0.28	390473.0	3779600.0	12/30/12/24				0.278	UG/M3				
PM10 NAAQS Standard																	
Scholl Canyon ICE 24hr PM10 SO2_5yrs_PM10	PM10	24-HR	6TH	ALL	0.65	390457.4	3779708.8	12/27/12/24		88	UG/M3	88.65	UG/M3	150	UG/M3		UG/M3
Scholl Canyon ICE 24hr PM10 SO2_5yrs_PM10				ENGINE1	0.16	390457.4	3779708.8	12/27/12/24				88.16	UG/M3				
Scholl Canyon ICE 24hr PM10 SO2_5yrs_PM10				ENGINE2	0.16	390457.4	3779708.8	12/27/12/24				88.16	UG/M3				
Scholl Canyon ICE 24hr PM10 SO2_5yrs_PM10				ENGINE3	0.17	390457.4	3779708.8	12/27/12/24				88.17	UG/M3				
Scholl Canyon ICE 24hr PM10 SO2_5yrs_PM10				ENGINE4	0.17	390471.5	3779633.5	12/27/12/24				88.17	UG/M3				
PM2.5 NAAQS Standard																	
Scholl Canyon ICE 24hr PM25Elevation_5yrs_PM25	PM2.5	24-HR	8TH	ALL	0.354	389750.0	3780450.0	5 YEARS		32.4		32.75	UG/M3	35	UG/M3		UG/M3
Scholl Canyon ICE 24hr PM25Elevation_5yrs_PM25				ENGINE1	0.088	389750.0	3780450.0	5 YEARS				32.49	UG/M3				
Scholl Canyon ICE 24hr PM25Elevation_5yrs_PM25				ENGINE2	0.088	389750.0	3780450.0	5 YEARS				32.49	UG/M3				
Scholl Canyon ICE 24hr PM25Elevation_5yrs_PM25				ENGINE3	0.089	389750.0	3780450.0	5 YEARS				32.49	UG/M3				
Scholl Canyon ICE 24hr PM25Elevation_5yrs_PM25				ENGINE4	0.089	389750.0	3780450.0	5 YEARS				32.49	UG/M3				
SO_2 State Standard																	
Scholl Canyon ICE 1hr NO2 SO2StateElevation_5yrs_SO2	SO2	1-HR	1ST	ALL	6.52	390407.0	3779876.0	10/25/12/20	0.00259	0.0126	PPM	0.0152	PPM		PPM	0.25	PPM
Scholl Canyon ICE 1hr NO2 SO2StateElevation_5yrs_SO2				ENGINE1	1.61	390407.0	3779876.0	10/25/12/20	0.00064			0.0132	PPM				
Scholl Canyon ICE 1hr NO2 SO2StateElevation_5yrs_SO2				ENGINE2	1.62	390407.0	3779876.0	10/25/12/20	0.00064			0.0132	PPM				
Scholl Canyon ICE 1hr NO2 SO2StateElevation_5yrs_SO2				ENGINE3	1.63	390407.0	3779876.0	10/25/12/20	0.00065			0.0132	PPM				
Scholl Canyon ICE 1hr NO2 SO2StateElevation_5yrs_SO2				ENGINE4	1.66	390407.0	3779876.0	10/25/12/20	0.00066			0.0133	PPM				
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_SO2	SO2	3-HR	1ST	ALL	4.112	390471.5	3779633.5	11/04/08/24	0.00163	0.0054	PPM	0.0214	PPM		PPM	0.04	PPM
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_SO2				ENGINE1	1.000	390471.5	3779633.5	11/04/08/24	0.00040			0.0202	PPM				
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_SO2				ENGINE2	1.019	390471.5	3779633.5	11/04/08/24	0.00040			0.0202	PPM				
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_SO2				ENGINE3	1.037	390471.5	3779633.5	11/04/08/24	0.00041			0.0202	PPM				
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_SO2				ENGINE4	1.056	390471.5	3779633.5	11/04/08/24	0.00042			0.0202	PPM				
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_SO2	SO2	24-HR	1ST	ALL	1.48	390473.0	3779600.0	12/30/10/24	0.00059	0.0198	PPM	0.0204	PPM	0.5	PPM	0.04	PPM
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_SO2				ENGINE1	0.35	390473.0	3779600.0	12/30/10/24	0.00014			0.0199	PPM				
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_SO2				ENGINE2	0.37	390473.0	3779600.0	12/30/10/24	0.00015			0.0199	PPM				
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_SO2				ENGINE3	0.37	390473.0	3779600.0	12/30/10/24	0.00015			0.0199	PPM				
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_SO2				ENGINE4	0.38	390473.0	3779600.0	12/30/10/24	0.00015			0.0200	PPM				

Description	Pollutant	Averaging Period	Highest	Source Group	Conc (ug/m3)	UTME	UTMN	Conc Date mm/dd/yy/hh	Conc (ppm)	Background	Unit	Total	Unit	NAAQS	Unit	SCAQMD	Unit
SO_2 NAAQS																	
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_SO2	SO2	4TH-HIGHEST MAX DAILY 1-HR	4TH	ALL	3.53	390407.0	3779876.0	5 YEARS	0.00140	0.0063	PPM	0.0077	PPM	0.075	PPM		PPM
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_SO2				ENGINE1	0.84	390407.0	3779876.0	5 YEARS	0.00033			0.0066	PPM				
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_SO2				ENGINE2	0.87	390407.0	3779876.0	5 YEARS	0.00035			0.0066	PPM				
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_SO2				ENGINE3	0.90	390407.0	3779876.0	5 YEARS	0.00036			0.0067	PPM				
Scholl Canyon ICE 1hr NO2 SO2NAAQSElevation_5yrs_SO2				ENGINE4	0.92	390407.0	3779876.0	5 YEARS	0.00037			0.0067	PPM				

CO 1 Hour NAAQS = Not to be exceeded more than once per year. Design values based on highest 1 hour model result over 5 years and highest 1 hour monitored background 2011 - 2015.

CO 1 Hour SCAQMD = Not to be exceeded. Design values based on highest 1 hour model result over 5 years and highest 1 hour monitored background 2011 - 2015.

CO 8 Hour NAAQS = Not to be exceeded more than once per year. Design values based on highest 8 hour model result over 5 years and highest 8 hour monitored background 2011 - 2015.

CO 8 Hour SCAQMD = Not to be exceeded. Design values based on highest 8 hour model result over 5 years and highest 8 hour monitored background 2011 - 2015.

NO2 1 Hour NAAQS = 98th percentile of 1-hour daily maximum concentrations, averaged over 3 years (approx 8th highest). Design value based on 98th percentile of 1-hour daily maximum concentrations, averaged over 5 years and the highest 98th percentile monitored concentration for years 2011-2015. ARM Method = 75%.

NO2 1 Hour SCAQMD = Not to be exceeded. Design values based on highest 1 hour model result over 5 years and highest 1 hour monitored background 2011 - 2015. ARM Method = 75%.

PM10/PM2.5 24 Hour SCAQMD = Not to exceeded significant threshold. Design value based on 1st highest max 5 year model result.

PM10 24 Hour NAAQS = Not to be exceeded more than once per year on average over 3 years (2nd Highest). Design value based on 6th highest max 5 year model result and highest monitored background 2011-2015.

PM2.5 24 Hour NAAQS = 98th percentile, averaged over 3 years (8th highest not including secondary). Design value based on 98th percentile, averaged over 5 years, and the highest 98th percentile 24 hour monitored background 2011 - 2015. No secondary emissions included.

SO2 1 Hour NAAQS = 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years (approx 4th highest). Design value based on 99th percentile of 1-hour daily maximum concentrations, averaged over 5 years and the highest 99th percentile 1 hour monitored background 2011 - 2015.

SO2 1 Hour SCAQMD = Not to be exceeded. Design values based on highest 1 hour model result over 5 years and highest 1 hour monitored background 2011 - 2015.

SO2 24 Hour SCAQMD = Not to be exceeded. Design values based on highest 24 hour model result over 5 years and highest 24 hour monitored background 2011 - 2015.

B.4 TOXIC EMISSION INVENTORY



APPENDIX B.4.

TOXIC EMISSION INVENTORY

APPENDIX B.4.1
TOXIC EMISSION INVENTORY FOR
THE PROPOSED ENGINES (OPERATIONAL IMPACT) AND
THE EXISTING FLARE SYSTEM (CONSTRUCTION IMPACT)

APPENDIX B.4.2
TOXIC EMISSION FACTORS AND ITS SUPPORTING DOCUMENTATION:

- **HYDROGEN CHLORIDE EMISSION FACTORS CALCULATION**
- **SCHOLL CANYON LANDFILL GAS LAB ANALYSIS (2013 – 2016)**
- **USEPA AP-42 TABLE 2.4-1: DEFAULT CONCENTRATIONS FOR LFG CONSTITUENTS**
- **FORMALEDHYDE EMISSION FACTORS FROM CATEF CLERAING HOUSE REPORT FOR ENGINE; SCAQMD AB2588 SUPPLEMENTAL INSTRUCATION FOR FLARE SYSTEM**
- **USEPA AP-42 TABLE 2.4-3: CONTROL EFFICIENCIES FOR LFG CONSTITUENTS**

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APPENDIX B.4.1

**TOXIC EMISSION INVENTORY FOR
THE PROPOSED ENGINES (OPERATIONAL IMPACT) AND
THE EXISTING FLARE SYSTEM (CONSTRUCTION IMPACT)**

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APPENDIX A.4.1
TOXIC EMISSION INVENTORY FOR THE ENGINES (OPERATIONAL IMPACT) AND FLARES (CONSTRUCTION IMPACT)
BIOGAS RENEWABLE GENERATION PROJECT

										RECIP ENGINE SCENARIO			FLARES	
										GE JGS620 GS-L.L (4 UNITS)			FLARES SYSTEM	
TAC Code	TAC Compounds	CAS	MW	Concentration, ppmv	Data Source	ICE Total Control Efficiency (% wt)[6]	ICE Controlled Emission Rate (lbs/mmscf)	Flare Destruction Efficiency (% wt)[5]	Flare Controlled Emission Rate (lbs/mmscf)	Hourly Emission (lbs/hr)	Yearly Emission (lbs/yr)		Hourly Emission (lbs/hr)	Yearly Emission (lbs/yr)
M8	1,1,1 - Trichloroethane	71-55-6	133.41	0.021	Note 1	99.8%	1.17E-05	98%	1.45E-04	3.87E-06	0.0339		4.34E-05	0.3805
T1	1,1,2,2 - Tetrachloroethane	79-34-5	167.85	1.11	Note 2	99.8%	7.75E-04	98%	9.63E-03	2.57E-04	2.2542		2.89E-03	25.3040
E5	1,2 - Dibromoethane	106-93-4	187.86	0.041	Note 1	99.8%	3.20E-05	98%	3.98E-04	1.06E-05	0.0932		1.19E-04	1.0461
D6	1,1 - Dichloroethane	75-34-3	98.97	0.039	Note 1	99.8%	1.61E-05	98%	1.99E-04	5.33E-06	0.0467		5.98E-05	0.5242
V5	1,1 - Dichloroethene	75-35-4	96.94	0.019	Note 1	99.8%	7.66E-06	98%	9.52E-05	2.54E-06	0.0223		2.86E-05	0.2502
E6	1,2 - Dichloroethane	107-06-2	98.96	0.102	Note 1	99.8%	4.20E-05	98%	5.22E-04	1.39E-05	0.1221		1.56E-04	1.3709
	1,2 - Dichloropropane	78-87-5	112.99	0.18	Note 2	99.8%	8.46E-05	98%	1.05E-03	2.81E-05	0.2461		3.15E-04	2.7622
I2	2 - Propanol	67-63-0	60.11	50.1	Note 2	99.7%	2.49E-02	98%	1.56E-01	8.26E-03	72.3533		4.67E-02	409.0052
	Acetonitrile	75-05-8	58.08	0.665	Note 1	99.7%	3.19E-04	98%	2.00E-03	1.06E-04	0.9279		5.99E-04	5.2456
A6	Acrylonitrile	107-31-1	53.06	6.33	Note 2	99.7%	2.77E-03	98%	1.74E-02	9.21E-04	8.0695		5.21E-03	45.6158
A9	Ammonia	7664-41-7	17.03	5	Note 7					2.70E-01	2365.2000		0.00E+00	0.0000
B1	Benzene	71-43-2	78.11	1.71	Note 1	99.7%	1.10E-03	98%	6.90E-03	3.66E-04	3.2091		2.07E-03	18.1404
B7	Benzyl chloride	100-44-7	126.58	0.13	Note 1	99.8%	6.85E-05	98%	8.50E-04	2.27E-05	0.1991		2.55E-04	2.2349
C3	Carbon disulfide	75-15-0	76.13	0.58	Note 1	99.7%	3.65E-04	98%	2.28E-03	1.21E-04	1.0609		6.85E-04	5.9969
C5	Carbon tetrachloride	56-23-5	153.84	0.021	Note 1	99.8%	1.34E-05	98%	1.67E-04	4.46E-06	0.0391		5.01E-05	0.4388
	Carbonyl sulfide	463-58-1	60.07	0.49	Note 1	99.7%	2.43E-04	98%	1.52E-03	8.07E-05	0.7072		4.56E-04	3.9976
C10	Chlorobenzene	108-90-7	112.56	0.159	Note 1	99.8%	7.45E-05	98%	9.25E-04	2.47E-05	0.2165		2.77E-04	2.4307
	Chlorodifluoromethane	75-45-6	86.47	1.3	Note 2	99.8%	4.68E-04	98%	5.81E-03	1.55E-04	1.3601		1.74E-03	15.2670
E4	Chloroethane	75-00-3	64.52	1.25	Note 2	99.8%	3.36E-04	98%	4.17E-03	1.11E-04	0.9758		1.25E-03	10.9534
C11	Chloroform	67-66-3	119.39	0.02	Note 1	99.8%	9.93E-06	98%	1.23E-04	3.30E-06	0.0289		3.70E-05	0.3243
	Chloromethane	74-87-3	50.49	1.21	Note 2	99.8%	2.54E-04	98%	3.16E-03	8.44E-05	0.7392		9.47E-04	8.2973
D4	Dichlorobenzene	106-46-7	147	0.82	Note 1	99.8%	5.01E-04	98%	6.23E-03	1.66E-04	1.4584		1.87E-03	16.3710
	Dichlorodifluoromethane	75-71-8	120.91	15.7	Note 2	99.8%	7.90E-03	98%	9.81E-02	2.62E-03	22.9678		2.94E-02	257.8139
	Dichlorofluoromethane	75-43-4	102.92	2.62	Note 2	99.8%	1.12E-03	98%	1.39E-02	3.72E-04	3.2626		4.18E-03	36.6223
M13	Dichloromethane (methylene chloride)	74-87-3	84.94	0.119	Note 1	99.8%	4.21E-05	98%	5.22E-04	1.40E-05	0.1223		1.57E-04	1.3728
E3	Ethylbenzene	100-41-4	106.16	2.748	Note 2	99.7%	2.41E-03	98%	1.51E-02	8.00E-04	7.0089		4.52E-03	39.6207
E5	Ethylene dibromide	106-93-4	187.88	0.001	Note 2	99.8%	7.82E-07	98%	9.71E-06	2.59E-07	0.0023		2.91E-06	0.0255
F2	Formaldehyde	50-00-0	NA	NA	Note 4	97.7%	2.97E-02		1.17E+00	9.85E-03	86.2899		3.51E-01	3072.1320
	Fluorotrichloromethane	75-69-4	137.38	0.76	Note 2	99.8%	4.34E-04	98%	5.40E-03	1.44E-04	1.2633		1.62E-03	14.1802
H6	Hexane, n-	110-54-3	86.18	6.57	Note 2	99.7%	4.68E-03	98%	2.93E-02	1.55E-03	13.6033		8.78E-03	76.8982
H9	Hydrogen chloride	7647-01-0	36.46	NA	Note 3	NA	5.35E+00	NA	5.35E+00	1.78E+00	15559.5		1.61E+00	14059.8
H12	Hydrogen sulfide	7783-06-4	34.08	33.65	Note 1	99.7%	9.47E-03	98%	5.93E-02	3.15E-03	27.5523		1.78E-02	155.7504
M3	Mercury (total)	7439-97-6	200.61	0.000292	Note 2	0.0%	1.51E-04	0%	1.51E-04	5.03E-05	0.4402		4.54E-05	0.3978
M9	Methyl ethyl ketone	78-93-3	72.11	7.09	Note 2	99.7%	4.22E-03	98%	2.64E-02	1.40E-03	12.2833		7.93E-03	69.4362

APPENDIX A.4.1
TOXIC EMISSION INVENTORY FOR THE ENGINES (OPERATIONAL IMPACT) AND FLARES (CONSTRUCTION IMPACT)
BIOGAS RENEWABLE GENERATION PROJECT

										RECIP ENGINE SCENARIO			FLARES	
										GE JGS620 GS-L.L (4 UNITS)			FLARES SYSTEM	
TAC Code	TAC Compounds	CAS	MW	Concentration, ppmv	Data Source	ICE Total Control Efficiency (% wt)[6]	ICE Controlled Emission Rate (lbs/mmscf)	Flare Destruction Efficiency (% wt)[5]	Flare Controlled Emission Rate (lbs/mmscf)	Hourly Emission (lbs/hr)	Yearly Emission (lbs/yr)		Hourly Emission (lbs/hr)	Yearly Emission (lbs/yr)
	Methyl isobutyl ketone	108-10-1	100.16	1.87	Note 2	99.7%	1.55E-03	98%	9.68E-03	5.14E-04	4.5000		2.90E-03	25.4378
P2	Tetrachloroethylene	127-18-4	165.83	0.154	Note 1	99.8%	1.06E-04	98%	1.32E-03	3.53E-05	0.3090		3.96E-04	3.4684
T3	Toluene	108-88-3	92.14	5.436	Note 1	99.7%	4.14E-03	98%	2.59E-02	1.37E-03	12.0338		7.77E-03	68.0255
T8	Trichloroethylene	79-01-6	131.4	0.089	Note 1	99.8%	4.87E-05	98%	6.04E-04	1.62E-05	0.1415		1.81E-04	1.5883
V4	Vinyl chloride	75-01-4	62.5	0.093	Note 1	99.8%	2.42E-05	98%	3.00E-04	8.03E-06	0.0703		9.01E-05	0.7894
X1	Xylenes	1330-20-7	106.16	4.828	Note 1	99.7%	4.23E-03	98%	2.65E-02	1.41E-03	12.3141		7.95E-03	69.6101

Notes:
1. Average analytical results from Scholl Canyon LFG Sampling 2013 - 2016
2. Based on USEPA default value from *AP-42, Table 2.4-1, Default Concentrations for LFG Constituents* .
3. Calculated based on chlorinated compounds in the average samplings and USEPA AP-42 default value, Table 2.4-1
4. Formaldehyde emission factors for tubine and engine are based on the CATEF Clearing house Report; Formaldehyde emission factor for flare is based on SCAQMD AB2588 Supplemental Instruction.
5. 98% Destruction efficiency of NMOC pursuant to SCAQMD rule 1150.1/NSPS Subpart WWW
6. ICE Control efficiency is calculated based on 97.7% control efficiency of catalyst (default value of SCAQMD Rule 1401 Calculator) and 86.1% or 93.0% control efficiency of ICE (USEPA AP-42, Table 2.4-3). The overall control efficiency is calculated as follow: Overall Control Efficiency = 1-(1-CE of catalyst)*(1-CE of ICE).
7. Ammonia emissions occur in operating IC Engines due to SCR. Concentration of ammonia is based on BACT/LAER limit.

APPENDIX B.4.2

TOXIC EMISSION FACTORS AND ITS SUPPORTING DOCUMENTATION:

- HYDROGEN CHLORIDE EMISSION FACTORS CALCULATION
- SCHOLL CANYON LANDFILL GAS LAB ANALYSIS (2013 – 2016)
- USEPA AP-42 TABLE 2.4-1: DEFAULT CONCENTRATIONS FOR LFG CONSTITUENTS
- FORMALEDHYDE EMISSION FACTORS FROM CATEF CLERAING HOUSE REPORT FOR TURBINE AND ENGINE; SCAQMD AB2588 SUPPLEMENTAL INSTRUCATION FOR FLARE SYSTEM
- USEPA AP-42 TABLE 2.4-3: CONTROL EFFICIENCIES FOR LFG CONSTITUENTS

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APPENDIX A.4.2
EMISSION FACTOR FOR HYDROGEN CHLORIDE EMISSIONS
SCHOLL CANYON LANDFILL GAS FACILITY

Hydrogen Chloride Emission Factor	5.35	lbs/mmcf
Hydrogen Chloride Molecular Weight	36.46	lb/mol

LFG Influent Chlorinated Compound	CAS	No. of Cl Atoms	Concentration, ppmv	Conversion Eff, (%Wt)	HCL Conversion, lb/mmcf
1,1,1 - Trichloroethane	71-55-6	3	0.021	100%	0.005935349
1,1,2,2 - Tetrachloroethane	79-34-5	4	1.11	100%	0.418300775
1,1 - Dichloroethane	75-34-3	2	0.039	100%	0.007348527
1,1 - Dichloroethene	75-35-4	2	0.019	100%	0.003580052
1,2 - Dichloroethane	107-06-2	2	0.102	100%	0.019219225
1,2 - Dichloropropane	78-87-5	2	0.18	100%	0.033916279
Benzyl chloride	100-44-7	1	0.13	100%	0.012247545
Carbon tetrachloride	56-23-5	4	0.021	100%	0.007913798
Chlorobenzene	108-90-7	1	0.159	100%	0.01497969
Chlorodifluoromethane	75-45-6	1	1.3	100%	0.122475452
Chloroethane	75-00-3	1	1.25	100%	0.117764858
Chloroform	67-66-3	3	0.02	100%	0.005652713
Chloromethane	74-87-3	1	1.21	100%	0.113996382
Dichlorobenzene	106-46-7	2	0.82	100%	0.154507494
Dichlorodifluoromethane	75-71-8	2	15.7	100%	2.95825323
Dichlorofluoromethane	75-43-4	2	2.62	100%	0.493670284
Dichloromethane (methylene chloride)	74-87-3	2	0.119	100%	0.022422429
Fluorotrichloromethane	75-69-4	3	0.76	100%	0.214803101
t-1,2-dichloroethene	156-59-2	2	2.84	100%	0.535123514
Tetrachloroethylene	127-18-4	4	0.154	100%	0.058034522
Trichloroethylene	79-01-6	3	0.089	100%	0.025154574
Vinyl chloride	75-01-4	1	0.093	100%	0.008761705

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APPENDIX A.4.2
TOXIC LAB ANALYSIS FOR LANDFILL GAS CONDUCTED FROM 2013 THROUGH 2016.
SCHOLL CANYON LANDFILL GAS FACILITY

LFG LAB ANALYSIS		7/16/2013		11/4/2013		3/10/2014			6/11/2014			7/23/2014		11/18/2014		1/26/2015		4/20/2015			5/20/2015		1/16/2016	
		North	South	North	South	North	South	South	North	North	South	North	South	North	South	North	South	North	North	South	Flare 8	Flare 10	Flare	AVG
Toxic Compounds	CAS	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Hydrogen sulfide	7783-06-4	28000	36000	37000	34000	37000	34000	24000	42000	46000	30000	28000	29000	22000	34000	23000	38000	36000	37000	39000	---	---	39000	33650
Carbonyl sulfide	463-58-1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	53	53
Carbon disulfide	75-15-0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	32	32
Dimethyl sulfide	67-68-5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1500	1500
Methylene chloride	74-87-3	62	140	98	140	68	220	150	71	72	130	63	150	86	160	170	170	97	99	130	110	110	---	119
Chloroform	**67-66-3**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**40**	**40**	**40**	**40**	**20**	**20**	**20**	**40**	**40**	---	**20**
1,1,1 - Trichloroethane	**71-55-6**	**21**	**21**	**21**	**21**	**21**	**21**	**21**	**21**	**21**	**21**	**21**	**21**	**41**	**41**	**41**	**41**	**21**	**21**	**21**	**40**	**40**	---	**21**
Carbon tetrachloride	**56-23-5**	**21**	**21**	**21**	**21**	**21**	**21**	**21**	**21**	**21**	**21**	**21**	**21**	**40**	**40**	**40**	**40**	**21**	**21**	**21**	**40**	**40**	---	**21**
1,1 - Dichloroethene	**75-35-4**	**19**	**19**	**19**	**19**	**19**	**19**	**19**	**19**	**19**	**19**	**19**	**19**	**41**	**41**	**41**	**41**	**19**	**19**	**19**	**43**	**43**	---	**19**
Trichloroethylene	79-01-6	100	81	110	84	110	89	65	100	110	84	98	84	91	78	89	90	90	97	70	75	77	---	89
Tetrachloroethylene	127-18-4	190	150	180	150	180	150	110	170	190	150	180	140	180	130	150	140	160	170	110	125	125	---	154
Chlorobenzene	108-90-7	230	120	220	120	230	110	79	170	200	120	230	100	220	110	190	140	170	190	110	135	145	---	159
Vinyl Chloride	75-01-4	170	56	170	78	160	66	42	150	120	57	130	54	140	56	110	49.5	100	110	20	54	61	---	93
1,1 - Dichloroethane	75-34-3	40	32	44	35	46	36	26	44	41	31	38	24	46	41	50	35	49	49	28	41	41	---	39
1,2 - Dichloroethane	107-06-2	100	100	100	100	100	100	100	100	100	100	100	100	100	120	100	130	100	100	100	100	100	---	102
Benzene	71-43-2	4000	1500	1100	1500	2400	1600	1100	3000	3000	1400	1700	1200	1300	3700	1100	1300	990	1000	1400	1200	1150	970	1710
Toluene	108-88-3	7400	4700	6200	4600	6500	4600	3300	6000	6500	4700	6200	4100	6700	5600	6200	5400	6400	6700	4700	4850	5050	3200	5436
Ethylbenzene	100-41-4	5000	2200	3100	2000	4200	2100	1500	3400	4100	2300	3800	2000	3700	2700	2900	2000	2900	3200	1900	2150	2200	1100	2748
Acetonitrile	75-05-8	760	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	---	665
1,2 - Dibromoethane	**106-93-4**	**19**	**19**	**19**	**19**	**19**	**19**	**19**	**19**	**19**	**19**	**19**	**19**	**41**	**41**	**41**	**41**	**41**	**41**	**41**	**41**	**41**	---	**41**
Benzyl Chloride	**100-44-7**	**130**	**130**	**130**	**130**	**130**	**130**	**130**	**130**	**130**	**130**	**130**	**130**	**170**	**170**	**210**	**210**	**520**	**520**	**520**	**520**	**520**	---	**130**
Xylenes	1330-20-7	6700	3710	6600	3810	7100	3780	2760	5200	6400	3840	6900	3550	6800	3110	5600	3650	5900	6700	3610	4160	4360	1980	4828
Dichlorobenzene	**106-46-7**	**820**	**820**	**820**	**820**	**820**	**820**	**820**	**820**	**820**	**820**	**820**	**820**	**930**	**930**	**820**	**820**	**820**	**820**	**820**	**940**	**940**	---	**820**

NOTES:
1. All readings for chloroform, 1,1,1-trichloroethane, carbon tetrachloride, and 1,1-dichloroethene are non-detect. Concentration is estimated based on detection Limit. Most samples used detection limit of 20 ppb for Chloroform, 21 ppb for 1,1,1-Trichloroethane, 21 ppb for Carbon tetrachloride, and 19 ppb for 1,1 - Dichloroethene.
2. All readings for 1,2-Dibromoethane are non-detect. Concentration is estimated based on detection Limit. Most samples used detection limit of 41 ppb.

4. All readings for Dichlorobenzene are non-detect. Concentration is estimated based on detection Limit. Most samples used detection limit of 820 ppb.

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American Analytics Landfill Gas Analysis For Sample Collected On 01/06/16

Analyte	Concentration	Method	Reporting Limit	Results	Sampling Media	Notes
Hydrogen	0-0.5 Mol%	EPA 3C (Mod)	0.1%	<0.1%	Polymer Bag	subcontracted
Carbon Dioxide	25-35 Mol%	EPA 3C (Mod)	0.1%	**28%**	Polymer Bag	
Oxygen/Argon	3-10 Mol%	EPA 3C (Mod)	0.1%	**4.5%**	Polymer Bag	
Nitrogen	20-50 Mol%	EPA 3C (Mod)	0.1%	**36.0%**	Polymer Bag	
Methane	30-60 Mol%	EPA 3C (Mod)	0.1%	**32.0%**	Polymer Bag	
Ethane	0-0.5 Mol%	GC/FID	20 ppmV	<100000 ppmV	Polymer Bag	
Propane	0-0.5 Mol%	GC/FID	20 ppmV	**18 ppmV**	Polymer Bag	
Pentane	0-0.5 Mol%	GC/FID	20 ppmV	<10 ppmV	Polymer Bag	
Hexane	0-0.5 Mol%	GC/FID	20 ppmV	<10 ppmV	Polymer Bag	
Benzene	0-0.01 Mol%	EPA 8260B (Mod)	1 ppmV	**0.97 ppmV**	Polymer Bag	
Toluene	0-0.01 Mol%	EPA 8260B (Mod)	1 ppmV	**3.2 ppmV**	Polymer Bag	
Ethylbenzene	0-0.01 Mol%	EPA 8260B (Mod)	1 ppmV	**1.1 ppmV**	Polymer Bag	
m,p-Xylene	0-0.01 Mol%	EPA 8260B (Mod)	1 ppmV	**1.5 ppmV**	Polymer Bag	
o-Xylene	0-0.01 Mol%	EPA 8260B (Mod)	1 ppmV	0.48 ppmV	Polymer Bag	
Styrene	0-0.01 Mol%	EPA 8260B (Mod)	1 ppmV	<0.23 ppmV	Polymer Bag	
C3 Benzenes	0-0.01 Mol%	EPA 8260B (Mod)	1 ppmV	<0.4 ppmV	Polymer Bag	
Naphthalene	0-0.01 Mol%	EPA 8260B (Mod)	1 ppmV	<0.38 ppmV	Polymer Bag	
C1 Naphthalene	0-0.01 Mol%	EPA 8260B (Mod)	TIC*	not found	Polymer Bag	
C2 Naphthalene	0-0.01 Mol%	EPA 8260B (Mod)	TIC*	not found	Polymer Bag	
Hydrogen Sulfide	0-50 ppmv	ASTM D 5540-12	0.05 ppmV	**39 ppmV**	Polymer Bag	subcontracted
Carbonyl Sulfide	0-5 ppmv	ASTM D 5540-12	0.05 ppmV	**0.053 ppmV**	Polymer Bag	subcontracted
Carbon Disulfide	0-5 ppmv	ASTM D 5540-12	0.05 ppmV	**0.032 ppmV**	Polymer Bag	subcontracted
Methyl Mercaptan	0-5 ppmv	ASTM D 5540-12	0.05 ppmV	**1.0 ppmV**	Polymer Bag	subcontracted
Dimethyl Sulfide	0-5 ppmv	ASTM D 5540-12	0.05 ppmV	**1.5 ppmV**	Polymer Bag	subcontracted
Total Sulfur**	0-50 ppmv	ASTM D 5540-12	0.05 ppmV	**42 ppmV**	Polymer Bag	subcontracted
1,1,3,3-tetramethyldisiloxane	0-10 mg/m3	GC/MS (ALS AQL111)	TIC*	not found	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
pentamethyldisiloxane	0-10 mg/m3	GC/MS (ALS AQL111)	TIC*	not found	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
hexamethyldisilane	0-10 mg/m3	GC/MS (ALS AQL111)	TIC*	not found	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
hexamethyldisiloxane (L2)	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	**580 ug/m3**	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Octamethyltrisiloxane (L3)	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	<0.27 ug/m3	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Decamethyltetrasiloxane (L4)	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	<0.28 ug/m3	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Dodecamethylpentasiloxane (L5)	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	<0.28 ug/m3	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Hexamethylcyclotetrasiloxane (D3)	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	**63 ug/m3**	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Octamethylcyclotetrasiloxane (D4)	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	**120 ug/m3**	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Decamethylcyclopentasiloxane (D5)	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	**52 ug/m3**	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Dodecamethylcyclohexasiloxane (D6)	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	<0.28 ug/m3	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Trimethylsilanol	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	**3500 ug/m3**	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Total Silicon	0-10 mg/m3	GC/MS (ALS AQL111)	200 ug/m3	**1400 ug/m3**	Sorbent Tube; 30 min @ 0.2L/min	subcontracted
Mercury	0-10 µg/m3	EPA 7471B (Mod)	0.5 ug/m3	<0.5 ug/m3	Filter Cassette; 4 hours @ 2L/min	
Arsenic	0-50 µg/m3	EPA 6020B (Mod)	2 ug/m3	<2 ug/m3	Filter Cassette; 4 hours @ 2L/min	
Beryllium	0-10 µg/m3	EPA 6020B (Mod)	2 ug/m3	<2 ug/m3	Filter Cassette; 4 hours @ 2L/min	
Cadmium	0-10 µg/m3	EPA 6020B (Mod)	2 ug/m3	<2 ug/m3	Filter Cassette; 4 hours @ 2L/min	
Copper	0-500 µg/m3	EPA 6020B (Mod)	2 ug/m3	<2 ug/m3	Filter Cassette; 4 hours @ 2L/min	
Molybdenum	0-10 µg/m3	EPA 6020B (Mod)	2 ug/m3	<2 ug/m3	Filter Cassette; 4 hours @ 2L/min	
Lead	0-10 µg/m3	EPA 6020B (Mod)	2 ug/m3	<2 ug/m3	Filter Cassette; 4 hours @ 2L/min	
Antimony	0-50 µg/m3	EPA 6020B (Mod)	2 ug/m3	<2 ug/m3	Filter Cassette; 4 hours @ 2L/min	
Selenium	0-10 µg/m3	EPA 6020B (Mod)	2 ug/m3	<2 ug/m3	Filter Cassette; 4 hours @ 2L/min	
Zinc	0-500 µg/m3	EPA 6020B (Mod)	2 ug/m3	**7.4 ug/m3**	Filter Cassette; 4 hours @ 2L/min	

*: Tentatively Identified Compound

**: Total Reduced Sulfur as Hydrogen Sulfide

ANNUAL RULE 1150.1 SOURCE TEST
FLARE NO's. 8 AND 10
SCHOLL CANYON LANDFILL
MAY 2015

PREPARED FOR:
County Sanitation Districts of Los Angeles County
1955 Workman Mill Road
Whittier, California 90601

FOR SUBMITTAL TO:
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, California 91765

TEST DATE:
May 20, 2015

ISSUE DATE:
June 23, 2015

TESTED BY:
Mr. Joe Adamiak, QSTI
SCEC
1631 E. Saint Andrew Place
Santa Ana, California 92705

Report No: 2025.5003.rpt1

Prepared By: _____
Joe Adamiak, Senior Project Manager

Reviewed By: _____
Rudy Nunez, District Manager

TABLE 4-3
TRACE ORGANIC SPECIES DESTRUCTION EFFICIENCY RESULTS
LACSD Scholl Canyon
Flare 8
May 20, 2015

Sample Location:	INLET		EXHAUST		Flare Destruction Efficiency
Test No.:	VOC - AVG 1 & 2		VOC - AVG 1, 2 & 3		
Time:					
Flow Rate, dscfm:	702		5,216		
Species	**ppb**	**lb/hr**	**ppb**	**lb/hr**	**%**
1,1,1-Trichloroethane	ND< 40	< 5.93E-04	ND< 0.10	< 1.10E-05	NA
1,1-Dichloroethane	ND< 41	< 4.51E-04	ND< 0.10	< 8.17E-06	NA
1,1-Dichloroethene	ND< 43	< 4.63E-04	ND< 0.11	< 8.80E-06	NA
1,2-Dibromoethane	ND< 41	< 8.56E-04	ND< 0.10	< 1.55E-05	NA
1,2-Dichlorobenzene	ND< 400	< 6.53E-03	ND< 1.0	< 1.21E-04	NA
1,2-Dichloroethane	ND< 100	< 1.10E-03	ND< 0.1	< 8.17E-06	NA
1,3-Butadiene	ND< 96	< 5.77E-04	ND< 0.24	< 1.07E-05	NA
1,3-Dichlorobenzene	ND< 210	< 3.43E-03	ND< 0.53	< 6.43E-05	NA
1,4-Dichlorobenzene	ND< 330	< 5.39E-03	ND< 0.49	< 5.95E-05	NA
Acetonitrile	ND< 660	< 3.01E-03	ND< 1.6	< 5.42E-05	NA
Benzene	1,200	1.04E-02	12.9	8.29E-04	92.04%
Benzyl chloride	ND< 520	< 7.31E-03	ND< 1.3	< 1.36E-04	NA
Carbon Tetrachloride	ND< 40	< 6.84E-04	ND< 0.10	< 1.27E-05	NA
Chlorobenzene	135	1.69E-03	0.13	1.24E-05	99.27%
Chloroform	ND< 40	< 5.31E-04	ND< 0.10	< 9.86E-06	NA
Ethylbenzene	2,150	2.54E-02	0.13	1.14E-05	99.96%
Methylene Chloride	110	1.04E-03	ND< 0.10	< 7.01E-06	> 99.3%
Tetrachloroethene	125	1.37E-03	ND< 0.10	< 8.17E-06	> 99.41%
Toluene	4,850	4.96E-02	0.78	5.91E-05	99.88%
Trichloroethene	75	8.25E-04	ND< 0.10	< 8.17E-06	> 99.01%
Trichlorofluoromethane	45	6.87E-04	ND< 0.09	< 1.02E-05	> 98.51%
Vinyl Chloride	54	3.72E-04	ND< 0.10	< 5.16E-06	> 98.61%
cis-1,2-Dichloroethene	170	1.83E-03	ND< 0.10	< 8.00E-06	> 99.56%
m+p-Xylenes	3,100	3.66E-02	ND< 0.52	< 4.56E-05	> 99.88%
o-Xylene	1,060	1.25E-02	ND< 0.23	< 2.02E-05	> 99.84%
tert-Butyl methyl ether (MTBE)	ND< 200	< 1.96E-03	ND< 0.49	< 3.57E-05	NA
Total Trace Organics:		< 1.75E-01		< 1.58E-03	> 99.10%

ND< - indicates that the species was not detected in the sample above the analytical detection limit for this species.
The values reported is this table are the detection limit for this species and the actual concentration is lower.
NA - indicates that the destruction efficiency cannot be calculated because the inlet concentration is below the detection limit.

TABLE 4-4
TRACE ORGANIC SPECIES DESTRUCTION EFFICIENCY RESULTS
LACSD Scholl Canyon
Flare 10
May 20, 2015

Sample Location:	INLET		EXHAUST		Flare Destruction Efficiency
Test No.:	VOC - AVG 1 & 2		VOC - AVG 1, 2 & 3		
Time:					
Flow Rate, dscfm:	686		5,140		
Species	**ppb**	**lb/hr**	**ppb**	**lb/hr**	**%**
1,1,1-Trichloroethane	ND< 40	< 5.80E-04	ND< 0.10	< 1.09E-05	NA
1,1-Dichloroethane	ND< 41	< 4.41E-04	ND< 0.10	< 8.05E-06	NA
1,1-Dichloroethene	ND< 43	< 4.53E-04	ND< 0.11	< 8.68E-06	NA
1,2-Dibromoethane	ND< 41	< 8.37E-04	ND< 0.10	< 1.53E-05	NA
1,2-Dichlorobenzene	ND< 400	< 6.39E-03	ND< 1	< 1.20E-04	NA
1,2-Dichloroethane	ND< 100	< 1.07E-03	ND< 0.10	< 8.05E-06	NA
1,3-Butadiene	ND< 96	< 5.64E-04	ND< 0.24	< 1.06E-05	NA
1,3-Dichlorobenzene	ND< 210	< 3.35E-03	ND< 0.53	< 6.34E-05	NA
1,4-Dichlorobenzene	ND< 330	< 5.27E-03	ND< 0.49	< 5.86E-05	NA
Acetonitrile	ND< 660	< 2.94E-03	4.8	1.59E-04	NA
Benzene	1,150	9.76E-03	2.3	1.47E-04	98.50%
Benzyl chloride	ND< 520	< 7.15E-03	ND< 1.3	< 1.34E-04	NA
Carbon Tetrachloride	ND< 40	< 6.68E-04	ND< 0.10	< 1.25E-05	NA
Chlorobenzene	145	1.77E-03	ND< 0.10	< 9.16E-06	> 99.48%
Chloroform	ND< 40	< 5.19E-04	ND< 0.10	< 9.71E-06	NA
Ethylbenzene	2,200	2.54E-02	0.11	9.79E-06	99.96%
Methylene Chloride	110	1.01E-03	ND< 0.1	< 6.91E-06	> 99.3%
Tetrachloroethene	125	1.34E-03	ND< 0.1	< 8.05E-06	> 99.40%
Toluene	5,050	5.05E-02	0.59	4.42E-05	99.91%
Trichloroethene	77	8.22E-04	ND< 0.10	< 8.05E-06	99.02%
Trichlorofluoromethane	48	7.16E-04	ND< 0.09	< 1.01E-05	98.60%
Vinyl Chloride	61	4.14E-04	ND< 0.10	< 5.08E-06	98.77%
cis-1,2-Dichloroethene	175	1.84E-03	ND< 0.10	< 7.89E-06	99.57%
m+p-Xylenes	3,250	3.75E-02	ND< 0.52	< 4.49E-05	99.88%
o-Xylene	1,110	1.28E-02	ND< 0.23	< 1.99E-05	99.84%
tert-Butyl methyl ether (MTBE)	ND< 200	< 1.91E-03	ND< 0.49	< 3.51E-05	NA
Total Trace Organics:		< 1.76E-01		< 9.74E-04	> 99.45%

ND< - indicates that the species was not detected in the sample above the analytical detection limit for this species.
The values reported is this table are the detection limit for this species and the actual concentration is lower.
NA - indicates that the destruction efficiency cannot be calculated because the inlet concentration is below the detection limit.

TABLE D

LANDFILL GAS MONITORING
SCHOLL CANYON LANDFILL
January 26, 2015

Compounds	North Header	South Header
Hydrogen Sulfide, ppm	23	38
Permanent Gases, %	97.5	97.9
Oxygen, %	5.6	5.1
Argon, %	0.33	0.35
Nitrogen, %	29.2	31.4
Methane, %	33.9	32.2
Carbon Dioxide, %	28.4	28.9
Methylene Chloride, ppb	170	170
Chloroform, ppb	< 40	< 40
1,1,1-Trichloroethane, ppb	< 20	< 20
Carbon Tetrachloride, ppb	< 21	< 21
1,1-Dichloroethene, ppb	< 21	< 21
Trichloroethylene, ppb	89	90
Tetrachloroethylene, ppb	150	140
Chlorobenzene, ppb	190	140
Vinyl Chloride, ppb	110	< 99
1,1-Dichloroethane, ppb	50	35
1,2-Dichloroethane, ppb	< 100	130
Benzene, ppb	1100	1300
Toluene, ppb	6200	5400
Ethylbenzene, ppb	2900	2000
Acetonitrile, ppb	< 660	< 660
1,2-Dibromoethane, ppb	< 41	< 41
Benzyl Chloride, ppb	< 210	< 210
Xylene, ppb	5600	3650
Dichlorobenzene, ppb	< 820	< 820

TABLE D

LANDFILL GAS MONITORING
SCHOLL CANYON LANDFILL
April 20, 2015

Compounds	North Header	North Header (Duplicate)	South Header
Hydrogen Sulfide, ppm	36	37	39
Permanent Gases, %	97.9	98.5	98
Oxygen, %	3.7	3.7	6.1
Argon, %	0.24	0.25	0.37
Nitrogen, %	24	22.7	32.6
Methane, %	38.1	39.1	31.5
Carbon Dioxide, %	31.9	32.7	27.5
Methylene Chloride, ppb	97	99	130
Chloroform, ppb	< 20	< 20	< 20
1,1,1-Trichloroethane, ppb	< 20	< 20	< 20
Carbon Tetrachloride, ppb	< 21	< 21	< 21
1,1-Dichloroethene, ppb	< 21	< 21	< 21
Trichloroethylene, ppb	90	97	70
Tetrachloroethylene, ppb	160	170	110
Chlorobenzene, ppb	170	190	110
Vinyl Chloride, ppb	100	110	< 40
1,1-Dichloroethane, ppb	49	49	28
1,2-Dichloroethane, ppb	< 100	< 100	< 100
Benzene, ppb	990	1000	1400
Toluene, ppb	6400	6700	4700
Ethylbenzene, ppb	2900	3200	1900
Acetonitrile, ppb	< 660	< 660	< 660
1,2-Dibromoethane, ppb	< 41	< 41	< 41
Benzyl Chloride, ppb	< 520	< 520	< 520
Xylene, ppb	5900	6700	3610
Dichlorobenzene, ppb	< 820	< 820	< 820

TABLE D

LANDFILL GAS MONITORING
SCHOLL CANYON LANDFILL
November 18, 2014

Compounds	North Header	South Header
Hydrogen Sulfide, ppm	22	34
Permanent Gases, %	98	98
Oxygen, %	5	5.8
Argon, %	0.32	0.41
Nitrogen, %	28.9	36.5
Methane, %	34.4	28.5
Carbon Dioxide, %	29.4	26.7
Methylene Chloride, ppb	86	160
Chloroform, ppb	< 40	< 40
1,1,1-Trichloroethane, ppb	< 41	< 41
Carbon Tetrachloride, ppb	< 40	< 40
1,1-Dichloroethene, ppb	< 41	< 41
Trichloroethylene, ppb	91	78
Tetrachloroethylene, ppb	180	130
Chlorobenzene, ppb	220	110
Vinyl Chloride, ppb	140	56
1,1-Dichloroethane, ppb	46	< 41
1,2-Dichloroethane, ppb	< 100	120
Benzene, ppb	1300	3700
Toluene, ppb	6700	5600
Ethylbenzene, ppb	3700	2700
Acetonitrile, ppb	< 660	1300
1,2-Dibromoethane, ppb	< 41	< 41
Benzyl Chloride, ppb	< 170	< 170
Xylene, ppb	6800	3110
Dichlorobenzene, ppb	< 930	< 930

TABLE D

LANDFILL GAS MONITORING
SCHOLL CANYON LANDFILL
July 23, 2014

Compounds	North Header	South Header
Hydrogen Sulfide, ppm	28	29
Permanent Gases, %	98.1	97.7
Oxygen, %	4.2	7.5
Argon, %	0.29	0.43
Nitrogen, %	26	38.3
Methane, %	36.6	27
Carbon Dioxide, %	31	24.4
Methylene Chloride, ppb	63	150
Chloroform, ppb	< 20	< 20
1,1,1-Trichloroethane, ppb	< 21	< 21
Carbon Tetrachloride, ppb	< 21	< 21
1,1-Dichloroethene, ppb	< 19	< 19
Trichloroethylene, ppb	98	84
Tetrachloroethylene, ppb	180	140
Chlorobenzene, ppb	230	100
Vinyl Chloride, ppb	130	54
1,1-Dichloroethane, ppb	38	24
1,2-Dichloroethane, ppb	< 100	< 100
Benzene, ppb	1700	1200
Toluene, ppb	6200	4100
Ethylbenzene, ppb	3800	2000
Acetonitrile, ppb	< 660	< 660
1,2-Dibromoethane, ppb	< 19	< 19
Benzyl Chloride, ppb	< 130	< 130
Xylene, ppb	6900	3550
Dichlorobenzene, ppb	< 820	< 820

TABLE D

LANDFILL GAS MONITORING
SCHOLL CANYON LANDFILL
June 11, 2014

Compounds	North Header	North Header (Duplicate)	South Header
Hydrogen Sulfide, ppm	42	46	30
Permanent Gases, %	97.8	97.8	97.7
Oxygen, %	4.9	4.8	5.4
Argon, %	0.34	0.34	0.37
Nitrogen, %	30.5	30.1	33.5
Methane, %	33.1	33.4	30.5
Carbon Dioxide, %	28.9	29.2	27.9
Methylene Chloride, ppb	71	72	130
Chloroform, ppb	< 20	< 20	< 20
1,1,1-Trichloroethane, ppb	< 21	< 21	< 21
Carbon Tetrachloride, ppb	< 21	< 21	< 21
1,1-Dichloroethene, ppb	< 19	< 19	< 19
Trichloroethylene, ppb	100	110	84
Tetrachloroethylene, ppb	170	190	150
Chlorobenzene, ppb	170	200	120
Vinyl Chloride, ppb	150	120	57
1,1-Dichloroethane, ppb	44	41	31
1,2-Dichloroethane, ppb	< 100	< 100	< 100
Benzene, ppb	3000	3000	1400
Toluene, ppb	6000	6500	4700
Ethylbenzene, ppb	3400	4100	2300
Acetonitrile, ppb	< 660	< 660	< 660
1,2-Dibromoethane, ppb	< 19	< 19	< 19
Benzyl Chloride, ppb	< 130	< 130	< 130
Xylene, ppb	5200	6400	3840
Dichlorobenzene, ppb	< 820	< 820	< 820

TABLE D

LANDFILL GAS MONITORING
SCHOLL CANYON LANDFILL
March 10, 2014

Compounds	North Header	South Header	South Header (Duplicate)
Hydrogen Sulfide, ppm	37	34	24
Permanent Gases, %	98.1	98.3	98.2
Oxygen, %	4.2	4.9	10.2
Argon, %	0.29	0.37	0.54
Nitrogen, %	26.4	32.7	47.2
Methane, %	36.3	31.3	21
Carbon Dioxide, %	31	29.1	19.3
Methylene Chloride, ppb	68	220	150
Chloroform, ppb	< 20	< 20	< 20
1,1,1-Trichloroethane, ppb	< 21	< 21	< 21
Carbon Tetrachloride, ppb	< 21	< 21	< 21
1,1-Dichloroethene, ppb	< 19	< 19	< 19
Trichloroethylene, ppb	110	89	65
Tetrachloroethylene, ppb	180	150	110
Chlorobenzene, ppb	230	110	79
Vinyl Chloride, ppb	160	66	42
1,1-Dichloroethane, ppb	46	36	26
1,2-Dichloroethane, ppb	< 100	< 100	< 100
Benzene, ppb	2400	1600	1100
Toluene, ppb	6500	4600	3300
Ethylbenzene, ppb	4200	2100	1500
Acetonitrile, ppb	< 660	< 660	< 660
1,2-Dibromoethane, ppb	< 19	< 19	< 19
Benzyl Chloride, ppb	< 130	< 130	< 130
Xylene, ppb	7100	3780	2760
Dichlorobenzene, ppb	< 820	< 820	< 820

TABLE D

LANDFILL GAS MONITORING
SCHOLL CANYON LANDFILL
November 4, 2013

Compounds	North Header	South Header
Hydrogen Sulfide, ppm	37	34
Permanent Gases, %	98.1	98.2
Oxygen, %	4.4	5.8
Argon, %	0.28	0.37
Nitrogen, %	25.4	33.2
Methane, %	36.9	31
Carbon Dioxide, %	31.2	27.8
Methylene Chloride, ppb	98	140
Chloroform, ppb	< 20	< 20
1,1,1-Trichloroethane, ppb	< 21	< 21
Carbon Tetrachloride, ppb	< 21	< 21
1,1-Dichloroethene, ppb	< 19	< 19
Trichloroethylene, ppb	110	84
Tetrachloroethylene, ppb	180	150
Chlorobenzene, ppb	220	120
Vinyl Chloride, ppb	170	78
1,1-Dichloroethane, ppb	44	35
1,2-Dichloroethane, ppb	< 100	< 100
Benzene, ppb	1100	1500
Toluene, ppb	6200	4600
Ethylbenzene, ppb	3100	2000
Acetonitrile, ppb	< 660	< 660
1,2-Dibromoethane, ppb	< 19	< 19
Benzyl Chloride, ppb	< 130	< 130
Xylene, ppb	6600	3810
Dichlorobenzene, ppb	< 820	< 820

TABLE D

LANDFILL GAS MONITORING
SCHOLL CANYON LANDFILL
July 16, 2013

Compounds	North Header	South Header
Hydrogen Sulfide, ppm	28	36
Permanent Gases, %	97	96.8
Oxygen, %	4.4	5.3
Argon, %	0.28	0.34
Nitrogen, %	25.2	30.4
Methane, %	36.4	32.2
Carbon Dioxide, %	30.7	28.5
Methylene Chloride, ppb	62	140
Chloroform, ppb	< 20	< 20
1,1,1-Trichloroethane, ppb	< 21	< 21
Carbon Tetrachloride, ppb	< 21	< 21
1,1-Dichloroethene, ppb	< 19	< 19
Trichloroethylene, ppb	100	81
Tetrachloroethylene, ppb	190	150
Chlorobenzene, ppb	230	120
Vinyl Chloride, ppb	170	56
1,1-Dichloroethane, ppb	40	32
1,2-Dichloroethane, ppb	< 100	< 100
Benzene, ppb	4000	1500
Toluene, ppb	7400	4700
Ethylbenzene, ppb	5000	2200
Acetonitrile, ppb	760	< 660
1,2-Dibromoethane, ppb	< 19	< 19
Benzyl Chloride, ppb	< 130	< 130
Xylene, ppb	6700	3710
Dichlorobenzene, ppb	< 820	< 820

Table 2.4-1. DEFAULT CONCENTRATIONS FOR LFG CONSTITUENTS[a]

(SCC 50100402, 50300603)

Compound	Molecular Weight	Default Concentration (ppmv)	Emission Factor Rating
1,1,1-Trichloroethane (methyl chloroform)[a]	133.41	0.48	B
1,1,2,2-Tetrachloroethane[a]	167.85	1.11	C
1,1-Dichloroethane (ethylidene dichloride)[a]	98.97	2.35	B
1,1-Dichloroethene (vinylidene chloride)[a]	96.94	0.20	B
1,2-Dichloroethane (ethylene dichloride)[a]	98.96	0.41	B
1,2-Dichloropropane (propylene dichloride)[a]	112.99	0.18	D
2-Propanol (isopropyl alcohol)	60.11	50.1	E
Acetone	58.08	7.01	B
Acrylonitrile[a]	53.06	6.33	D
Bromodichloromethane	163.83	3.13	C
Butane	58.12	5.03	C
Carbon disulfide[a]	76.13	0.58	C
Carbon monoxide[b]	28.01	141	E
Carbon tetrachloride[a]	153.84	0.004	B
Carbonyl sulfide[a]	60.07	0.49	D
Chlorobenzene[a]	112.56	0.25	C
Chlorodifluoromethane	86.47	1.30	C
Chloroethane (ethyl chloride)[a]	64.52	1.25	B
Chloroform[a]	119.39	0.03	B
Chloromethane	50.49	1.21	B
Dichlorobenzene[c]	147	0.21	E
Dichlorodifluoromethane	120.91	15.7	A
Dichlorofluoromethane	102.92	2.62	D
Dichloromethane (methylene chloride)[a]	84.94	14.3	A
Dimethyl sulfide (methyl sulfide)	62.13	7.82	C
Ethane	30.07	889	C
Ethanol	46.08	27.2	E
Ethyl mercaptan (ethanethiol)	62.13	2.28	D
Ethylbenzene[a]	106.16	4.61	B
Ethylene dibromide	187.88	0.001	E
Fluorotrichloromethane	137.38	0.76	B
Hexane[a]	86.18	6.57	B
Hydrogen sulfide	34.08	35.5	B
Mercury (total)[a,d]	200.61	2.92×10^{-4}	E

Table 2.4-1. (Concluded)

Compound	Molecular Weight	Default Concentration (ppmv)	Emission Factor Rating
Methyl ethyl ketone[a]	72.11	7.09	A
Methyl isobutyl ketone[a]	100.16	1.87	B
Methyl mercaptan	48.11	2.49	C
Pentane	72.15	3.29	C
Perchloroethylene (tetrachloroethylene)[a]	165.83	3.73	B
Propane	44.09	11.1	B
t-1,2-dichloroethene	96.94	2.84	B
Trichloroethylene (trichloroethene)[a]	131.40	2.82	B
Vinyl chloride[a]	62.50	7.34	B
Xylenes[a]	106.16	12.1	B

NOTE: This is not an all-inclusive list of potential LFG constituents, only those for which test data were available at multiple sites. References 10-67. Source Classification Codes in parentheses.

[a] Hazardous Air Pollutants listed in Title III of the 1990 Clean Air Act Amendments.

[b] Carbon monoxide is not a typical constituent of LFG, but does exist in instances involving landfill (underground) combustion. Therefore, this default value should be used with caution. Of 18 sites where CO was measured, only 2 showed detectable levels of CO.

[c] Source tests did not indicate whether this compound was the para- or ortho- isomer. The para isomer is a Title III-listed HAP.

[d] No data were available to speciate total Hg into the elemental and organic forms.

APPENDIX A.4.2
EMISSION FACTOR FOR HYDROGEN CHLORIDE EMISSIONS
SCHOLL CANYON LANDFILL GAS FACILITY

Hydrogen Chloride Emission Factor	5.35	lbs/mmcf
Hydrogen Chloride Molecular Weight	36.46	lb/mol

LFG Influent Chlorinated Compound	CAS	No. of Cl Atoms	Concentration, ppmv	Conversion Eff, (%Wt)	HCL Conversion, lb/mmcf
1,1,1 - Trichloroethane	71-55-6	3	0.021	100%	0.005935349
1,1,2,2 - Tetrachloroethane	79-34-5	4	1.11	100%	0.418300775
1,1 - Dichloroethane	75-34-3	2	0.039	100%	0.007348527
1,1 - Dichloroethene	75-35-4	2	0.019	100%	0.003580052
1,2 - Dichloroethane	107-06-2	2	0.102	100%	0.019219225
1,2 - Dichloropropane	78-87-5	2	0.18	100%	0.033916279
Benzyl chloride	100-44-7	1	0.13	100%	0.012247545
Carbon tetrachloride	56-23-5	4	0.021	100%	0.007913798
Chlorobenzene	108-90-7	1	0.159	100%	0.01497969
Chlorodifluoromethane	75-45-6	1	1.3	100%	0.122475452
Chloroethane	75-00-3	1	1.25	100%	0.117764858
Chloroform	67-66-3	3	0.02	100%	0.005652713
Chloromethane	74-87-3	1	1.21	100%	0.113996382
Dichlorobenzene	106-46-7	2	0.82	100%	0.154507494
Dichlorodifluoromethane	75-71-8	2	15.7	100%	2.95825323
Dichlorofluoromethane	75-43-4	2	2.62	100%	0.493670284
Dichloromethane (methylene chloride)	74-87-3	2	0.119	100%	0.022422429
Fluorotrichloromethane	75-69-4	3	0.76	100%	0.214803101
t-1,2-dichloroethene	156-59-2	2	2.84	100%	0.535123514
Tetrachloroethylene	127-18-4	4	0.154	100%	0.058034522
Trichloroethylene	79-01-6	3	0.089	100%	0.025154574
Vinyl chloride	75-01-4	1	0.093	100%	0.008761705

California Air Toxics Emission Factors - Detail Report

System

System Type:	Internal Combustion Engine
Material Type:	Landfill gas
APC Device:	None
Other Description:	None

Codes

SIC:	4959
SCC:	20100802
SCC Description 1:	INTERNLCOMBUSTION
SCC Description 2:	ELECTRIC GENERATN
SCC Description 3:	LANDFILL GAS
SCC Description 4:	RECIPROCATING

Substance

Substance Category:	VOC
Substance:	Formaldehyde
CAS:	50-00-0

Ratings

Method Rating:	C
Population Rating:	3
ARB Rating:	C3-v2
EPA Rating:	E

Factor

Mean:	1.29E+00	lbs/MMcf
Median:	6.95E-01	lbs/MMcf
Maximum:	4.47E+00	lbs/MMcf
Minimum:	5.70E-02	lbs/MMcf

Stats

Number of Sources:	2
RSD,%:	127.39
Uncertainty, %:	133.69
Detection Ratio:	1.00

Table B-6: DEFAULT EF FOR LANDFILL GAS COMBUSTION (LB / MMSCF)

(continued)

SOURCE: Flare, Non-Refinery

TAC Code	POLLUTANT	CAS NO.	ALL SIZES
2	Benzene	71432	0.159
12	Formaldehyde	50000	1.169
19	Total PAHs (excluding Naphthalene)	1151	0.003
19	Naphthalene	91203	0.011
29	Acetaldehyde	75070	0.043
30	Acrolein	107028	0.010
40	Ethyl benzene	100414	1.444
44	Hexane	110543	0.029
68	Toluene	108883	0.058
70	Xylene	1330207	0.029

SOURCE: Stationary and Portable Internal Combustion Engines (ICE) and Turbines

TAC Code	POLLUTANT	CAS NO.	ALL SIZES
2	Benzene	71432	0.00840
6	Carbon tetrachloride	56235	0.000720
16	Methylene chloride	75092	0.000920
18	Perchloroethylene	127184	0.00100
20	Trichloroethylene	79016	0.000760
21	Vinyl chloride	75014	0.000640
35	Chloroform	67663	0.000560
68	Toluene	108883	0.0440
70	Xylenes	1330207	0.0124

Table 2.4-3. CONTROL EFFICIENCIES FOR LFG CONSTITUENTS[a]

Control Device	Constituent[b]	Control Efficiency (%)		
		Typical	Range	Rating
Boiler/Steam Turbine (50100423)	NMOC	98.0	96-99+	D
	Halogenated Species	99.6	87-99+	D
	Non-Halogenated Species	99.8	67-99+	D
Flare[c] (50100410) (50300601)	NMOC	99.2	90-99+	B
	Halogenated Species	98.0	91-99+	C
	Non-Halogenated Species	99.7	38-99+	C
Gas Turbine (50100420)	NMOC	94.4	90-99+	E
	Halogenated Species	99.7	98-99+	E
	Non-Halogenated Species	98.2	97-99+	E
IC Engine (50100421)	NMOC	97.2	94-99+	E
	Halogenated Species	93.0	90-99+	E
	Non-Halogenated Species	86.1	25-99+	E

[a] References 10-67. Source Classification Codes in parentheses.
[b] Halogenated species are those containing atoms of chlorine, bromine, fluorine, or iodine. For any equipment, the control efficiency for mercury should be assumed to be 0. See section 2.4.4.2 for methods to estimate emissions of SO_2, CO_2, and HCl.
[c] Where information on equipment was given in the reference, test data were taken from enclosed flares. Control efficiencies are assumed to be equally representative of open flares.

B.5 HARP2 MODEL RESULTS



APPENDIX B.5

HAPR2 MODEL RESULTS

APPENDIX B.5.1
HARP2 OUTPUT SUMMARY

(COMPLETE MODELING FILES ARE AVAILABLE IN ELECTRONIC FORMAT)

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Health Risk Assessment
Glendale Water and Power
Biogas Renewable Generation Project

A detailed (Tier 4 level) health risk assessment (HRA) was performed to evaluate the potential cancer, chronic, and acute health impacts related to the Biogas Renewable Generation Project (Project). The HRA was prepared in accordance with Office of Environmental Health Hazard Assessment (OEHHA) guideline dated February 2015 and SCAQMD Risk Assessment Procedure for Rule 1401, 1401.1, and 212 Version 8.0 dated June 5, 2015. Two software programs, AERMOD and HARP2, were utilized for the HRA. AERMOD is an air dispersion model to estimate the ground level TAC concentrations and the Hotspots Analysis and Reporting Program (HARP2) is the software to estimate the cancer and non-cancer health impacts for individual receptors using ground level concentration data for multiple pollutants through multiple pathways.

The following Table 1 summarizes the maximum MICR, HIA, and HIC values at any receptors outside the facility boundary.

TABLE 1
HEALTH RISK ASSESSMENT RESULT

Equipment[a]	Residential MICR	Residential Acute HI	Residential Chronic HI	Worker MICR	Worker Acute HI	Worker Chronic HI
IC Engines[a]	4.74E-08	2.16E-03	9.52E-03	3.32E-09	2.16E-03	9.52E-03
Flares (construction phase)[a,b]	1.24E-07	1.23E-02	1.22E-03	1.86E-09	1.23E-03	1.22E-03

Note:
a) The MICR, HIA, and HIC values are the highest values of any receptors outside the landfill boundary. Since the values are already below the significance thresholds, no further analysis was conducted to obtain readings at the nearest residential or worker receptors.
b) The cancer risk of the flares was based on 2 years exposure duration for both residential and worker receptors to reflect impact during construction activities.

As shown in the above Table 1, the highest values of MICR are below the Rule 1401 threshold of 1.00E-06 and the highest values of HIA and HIC are also below the Rule 1401 threshold of 1.00. Additionally, cancer burden analysis is not conducted because MICR values at any receptor is below 1.00E-06. The complete modeling and HARP2 files are provided in electronic copies.

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APPENDIX B.5.1

HARP2 OUTPUT SUMMARY

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Appendix A.5.1 - Biogas Renewable Generation Project - Engines HARP2 Output Summary - Residential MICR - Top 50

*HARP - HRACalc v17023 6/22/2017 2:38:21 PM - Cancer Risk - Input File: C:\Work\Bee\Glendale CA\Scholl Canyon Revised 6_17\HRA\SCHOLL CANYON\hra\res_HRAInput.hra

REC	GRP	NETID	X	Y	RISK_SUM	SCENARIO	INH_RISK	SOIL_RISK	DERMAL_RISK	MMILK_RISK	WATER_RISK	FISH_RISK	CROP_RISK	BEEF_RISK	DAIRY_RISK	PIG_RISK	CHICKEN_RISK	EGG_RISK
85	ALL		390407	3779876	4.74E-08	30YrCancerDerived_Inh	4.74E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8535	ALL		389700	3780450	4.56E-08	30YrCancerDerived_Inh	4.56E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8536	ALL		389750	3780450	4.53E-08	30YrCancerDerived_Inh	4.53E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	ALL		389759	3780447	4.39E-08	30YrCancerDerived_Inh	4.39E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8638	ALL		389750	3780500	4.22E-08	30YrCancerDerived_Inh	4.22E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
86	ALL		390419.6	3779834.2	4.17E-08	30YrCancerDerived_Inh	4.17E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
87	ALL		390432.2	3779792.4	4.09E-08	30YrCancerDerived_Inh	4.09E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8637	ALL		389700	3780500	4.08E-08	30YrCancerDerived_Inh	4.08E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
21	ALL		389767.5	3780482.5	4.04E-08	30YrCancerDerived_Inh	4.04E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
84	ALL		390438.3	3779909.3	3.91E-08	30YrCancerDerived_Inh	3.91E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8433	ALL		389650	3780400	3.86E-08	30YrCancerDerived_Inh	3.86E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8739	ALL		389750	3780550	3.85E-08	30YrCancerDerived_Inh	3.85E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7285	ALL		390450	3779800	3.78E-08	30YrCancerDerived_Inh	3.78E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
19	ALL		389721	3780420.2	3.74E-08	30YrCancerDerived_Inh	3.74E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7477	ALL		390450	3779900	3.74E-08	30YrCancerDerived_Inh	3.74E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
88	ALL		390444.8	3779750.6	3.72E-08	30YrCancerDerived_Inh	3.72E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7381	ALL		390450	3779850	3.70E-08	30YrCancerDerived_Inh	3.70E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7187	ALL		390450	3779750	3.64E-08	30YrCancerDerived_Inh	3.64E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
22	ALL		389776	3780518	3.54E-08	30YrCancerDerived_Inh	3.54E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
83	ALL		390469.7	3779942.7	3.51E-08	30YrCancerDerived_Inh	3.51E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8843	ALL		389800	3780600	3.43E-08	30YrCancerDerived_Inh	3.43E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8432	ALL		389600	3780400	3.43E-08	30YrCancerDerived_Inh	3.43E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8948	ALL		389850	3780650	3.42E-08	30YrCancerDerived_Inh	3.42E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8332	ALL		389600	3780350	3.40E-08	30YrCancerDerived_Inh	3.40E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8738	ALL		389700	3780550	3.38E-08	30YrCancerDerived_Inh	3.38E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
26	ALL		389869.7	3780642	3.36E-08	30YrCancerDerived_Inh	3.36E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
89	ALL		390457.4	3779708.8	3.36E-08	30YrCancerDerived_Inh	3.36E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
27	ALL		389855.3	3780676	3.35E-08	30YrCancerDerived_Inh	3.35E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8534	ALL		389650	3780450	3.30E-08	30YrCancerDerived_Inh	3.30E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
16	ALL		389607	3780339.8	3.27E-08	30YrCancerDerived_Inh	3.27E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
17	ALL		389645	3780366.6	3.25E-08	30YrCancerDerived_Inh	3.25E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
18	ALL		389683	3780393.4	3.24E-08	30YrCancerDerived_Inh	3.24E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
29	ALL		389874.5	3780717.5	3.23E-08	30YrCancerDerived_Inh	3.23E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
30	ALL		389908	3780725	3.22E-08	30YrCancerDerived_Inh	3.22E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
15	ALL		389569	3780313	3.22E-08	30YrCancerDerived_Inh	3.22E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
14	ALL		389539.5	3780308.5	3.19E-08	30YrCancerDerived_Inh	3.19E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	ALL		389482.5	3780271.8	3.18E-08	30YrCancerDerived_Inh	3.18E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
82	ALL		390501	3779976	3.17E-08	30YrCancerDerived_Inh	3.17E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	ALL		389455	3780239.5	3.16E-08	30YrCancerDerived_Inh	3.16E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9044	ALL		389450	3780700	3.16E-08	30YrCancerDerived_Inh	3.16E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7572	ALL		390500	3779950	3.16E-08	30YrCancerDerived_Inh	3.16E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	ALL		389510	3780304	3.15E-08	30YrCancerDerived_Inh	3.15E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8231	ALL		389500	3780300	3.14E-08	30YrCancerDerived_Inh	3.14E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8132	ALL		389450	3780250	3.14E-08	30YrCancerDerived_Inh	3.14E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
81	ALL		390511	3780015	3.11E-08	30YrCancerDerived_Inh	3.11E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8844	ALL		389850	3780600	3.11E-08	30YrCancerDerived_Inh	3.11E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	ALL		389427.5	3780207.2	3.11E-08	30YrCancerDerived_Inh	3.11E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8740	ALL		389800	3780550	3.10E-08	30YrCancerDerived_Inh	3.10E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7382	ALL		390500	3779850	3.08E-08	30YrCancerDerived_Inh	3.08E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9148	ALL		389500	3780750	3.07E-08	30YrCancerDerived_Inh	3.07E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Appendix A.5.1 - Biogas Renewable Generation Project - Engines HARP2 Output Summary - Residential HIA - Top 50

*HARP - HRACalc v17023 6/22/2017 2:38:21 PM - Acute Risk - Input File: C:\Work\Bee\Glendale CA\Scholl Canyon Revised 6_17\HRA\SCHOLL CANYON\hra\res_HRAInput.hra

REC	GRP	NETID	X	Y	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	GENERAL	MAXHI
85	ALL		390407	3779876	NonCancerAcute	0.00E+00	3.09E-04	2.64E-05	0.00E+00	4.58E-09	1.90E-04	1.81E-03	0.00E+00	2.16E-03	0.00E+00	0.00E+00	2.64E-05	0.00E+00	0.00E+00	2.16E-03
86	ALL		390419.6	3779834.2	NonCancerAcute	0.00E+00	2.65E-04	2.26E-05	0.00E+00	3.93E-09	1.63E-04	1.55E-03	0.00E+00	1.85E-03	0.00E+00	0.00E+00	2.26E-05	0.00E+00	0.00E+00	1.85E-03
87	ALL		390432.2	3779792.4	NonCancerAcute	0.00E+00	2.62E-04	2.24E-05	0.00E+00	3.89E-09	1.61E-04	1.54E-03	0.00E+00	1.83E-03	0.00E+00	0.00E+00	2.24E-05	0.00E+00	0.00E+00	1.83E-03
7381	ALL		390450	3779850	NonCancerAcute	0.00E+00	2.59E-04	2.21E-05	0.00E+00	3.84E-09	1.59E-04	1.52E-03	0.00E+00	1.81E-03	0.00E+00	0.00E+00	2.21E-05	0.00E+00	0.00E+00	1.81E-03
7285	ALL		390450	3779800	NonCancerAcute	0.00E+00	2.51E-04	2.14E-05	0.00E+00	3.73E-09	1.54E-04	1.47E-03	0.00E+00	1.76E-03	0.00E+00	0.00E+00	2.14E-05	0.00E+00	0.00E+00	1.76E-03
88	ALL		390444.8	3779750.6	NonCancerAcute	0.00E+00	2.41E-04	2.06E-05	0.00E+00	3.58E-09	1.48E-04	1.42E-03	0.00E+00	1.69E-03	0.00E+00	0.00E+00	2.06E-05	0.00E+00	0.00E+00	1.69E-03
7187	ALL		390450	3779750	NonCancerAcute	0.00E+00	2.38E-04	2.03E-05	0.00E+00	3.53E-09	1.46E-04	1.40E-03	0.00E+00	1.67E-03	0.00E+00	0.00E+00	2.03E-05	0.00E+00	0.00E+00	1.67E-03
7477	ALL		390450	3779900	NonCancerAcute	0.00E+00	2.37E-04	2.02E-05	0.00E+00	3.51E-09	1.45E-04	1.39E-03	0.00E+00	1.65E-03	0.00E+00	0.00E+00	2.02E-05	0.00E+00	0.00E+00	1.65E-03
89	ALL		390457.4	3779708.8	NonCancerAcute	0.00E+00	2.36E-04	2.02E-05	0.00E+00	3.50E-09	1.45E-04	1.39E-03	0.00E+00	1.65E-03	0.00E+00	0.00E+00	2.02E-05	0.00E+00	0.00E+00	1.65E-03
7382	ALL		390500	3779850	NonCancerAcute	0.00E+00	2.30E-04	1.97E-05	0.00E+00	3.41E-09	1.41E-04	1.35E-03	0.00E+00	1.61E-03	0.00E+00	0.00E+00	1.97E-05	0.00E+00	0.00E+00	1.61E-03
84	ALL		390438.3	3779909.3	NonCancerAcute	0.00E+00	2.23E-04	1.90E-05	0.00E+00	3.31E-09	1.37E-04	1.31E-03	0.00E+00	1.56E-03	0.00E+00	0.00E+00	1.90E-05	0.00E+00	0.00E+00	1.56E-03
7286	ALL		390500	3779800	NonCancerAcute	0.00E+00	2.23E-04	1.90E-05	0.00E+00	3.30E-09	1.37E-04	1.31E-03	0.00E+00	1.56E-03	0.00E+00	0.00E+00	1.90E-05	0.00E+00	0.00E+00	1.56E-03
83	ALL		390469.7	3779942.7	NonCancerAcute	0.00E+00	2.19E-04	1.87E-05	0.00E+00	3.24E-09	1.34E-04	1.28E-03	0.00E+00	1.53E-03	0.00E+00	0.00E+00	1.87E-05	0.00E+00	0.00E+00	1.53E-03
7478	ALL		390500	3779900	NonCancerAcute	0.00E+00	2.17E-04	1.85E-05	0.00E+00	3.22E-09	1.33E-04	1.27E-03	0.00E+00	1.52E-03	0.00E+00	0.00E+00	1.85E-05	0.00E+00	0.00E+00	1.52E-03
90	ALL		390470	3779667	NonCancerAcute	0.00E+00	2.17E-04	1.85E-05	0.00E+00	3.22E-09	1.33E-04	1.27E-03	0.00E+00	1.52E-03	0.00E+00	0.00E+00	1.85E-05	0.00E+00	0.00E+00	1.52E-03
7188	ALL		390500	3779750	NonCancerAcute	0.00E+00	2.15E-04	1.84E-05	0.00E+00	3.19E-09	1.32E-04	1.26E-03	0.00E+00	1.51E-03	0.00E+00	0.00E+00	1.84E-05	0.00E+00	0.00E+00	1.51E-03
7089	ALL		390500	3779700	NonCancerAcute	0.00E+00	2.14E-04	1.82E-05	0.00E+00	3.17E-09	1.31E-04	1.25E-03	0.00E+00	1.49E-03	0.00E+00	0.00E+00	1.82E-05	0.00E+00	0.00E+00	1.49E-03
91	ALL		390471.5	3779633.5	NonCancerAcute	0.00E+00	2.13E-04	1.82E-05	0.00E+00	3.17E-09	1.31E-04	1.25E-03	0.00E+00	1.49E-03	0.00E+00	0.00E+00	1.82E-05	0.00E+00	0.00E+00	1.49E-03
92	ALL		390473	3779600	NonCancerAcute	0.00E+00	2.03E-04	1.74E-05	0.00E+00	3.02E-09	1.25E-04	1.19E-03	0.00E+00	1.42E-03	0.00E+00	0.00E+00	1.74E-05	0.00E+00	0.00E+00	1.42E-03
7572	ALL		390500	3779950	NonCancerAcute	0.00E+00	2.03E-04	1.73E-05	0.00E+00	3.01E-09	1.25E-04	1.19E-03	0.00E+00	1.42E-03	0.00E+00	0.00E+00	1.73E-05	0.00E+00	0.00E+00	1.42E-03
7383	ALL		390550	3779850	NonCancerAcute	0.00E+00	2.02E-04	1.73E-05	0.00E+00	3.00E-09	1.24E-04	1.19E-03	0.00E+00	1.41E-03	0.00E+00	0.00E+00	1.73E-05	0.00E+00	0.00E+00	1.41E-03
6990	ALL		390500	3779650	NonCancerAcute	0.00E+00	1.98E-04	1.69E-05	0.00E+00	2.94E-09	1.22E-04	1.16E-03	0.00E+00	1.39E-03	0.00E+00	0.00E+00	1.69E-05	0.00E+00	0.00E+00	1.39E-03
7287	ALL		390550	3779800	NonCancerAcute	0.00E+00	1.96E-04	1.67E-05	0.00E+00	2.90E-09	1.20E-04	1.15E-03	0.00E+00	1.37E-03	0.00E+00	0.00E+00	1.67E-05	0.00E+00	0.00E+00	1.37E-03
7189	ALL		390550	3779750	NonCancerAcute	0.00E+00	1.94E-04	1.66E-05	0.00E+00	2.88E-09	1.19E-04	1.14E-03	0.00E+00	1.36E-03	0.00E+00	0.00E+00	1.66E-05	0.00E+00	0.00E+00	1.36E-03
7479	ALL		390550	3779900	NonCancerAcute	0.00E+00	1.93E-04	1.65E-05	0.00E+00	2.86E-09	1.19E-04	1.13E-03	0.00E+00	1.35E-03	0.00E+00	0.00E+00	1.65E-05	0.00E+00	0.00E+00	1.35E-03
6891	ALL		390500	3779600	NonCancerAcute	0.00E+00	1.92E-04	1.64E-05	0.00E+00	2.85E-09	1.18E-04	1.13E-03	0.00E+00	1.34E-03	0.00E+00	0.00E+00	1.64E-05	0.00E+00	0.00E+00	1.34E-03
81	ALL		390511	3780015	NonCancerAcute	0.00E+00	1.90E-04	1.62E-05	0.00E+00	2.81E-09	1.16E-04	1.11E-03	0.00E+00	1.33E-03	0.00E+00	0.00E+00	1.62E-05	0.00E+00	0.00E+00	1.33E-03
7090	ALL		390550	3779700	NonCancerAcute	0.00E+00	1.89E-04	1.61E-05	0.00E+00	2.80E-09	1.16E-04	1.11E-03	0.00E+00	1.32E-03	0.00E+00	0.00E+00	1.61E-05	0.00E+00	0.00E+00	1.32E-03
80	ALL		390521	3780054	NonCancerAcute	0.00E+00	1.88E-04	1.60E-05	0.00E+00	2.78E-09	1.15E-04	1.10E-03	0.00E+00	1.31E-03	0.00E+00	0.00E+00	1.60E-05	0.00E+00	0.00E+00	1.31E-03
82	ALL		390501	3779976	NonCancerAcute	0.00E+00	1.86E-04	1.59E-05	0.00E+00	2.76E-09	1.14E-04	1.09E-03	0.00E+00	1.30E-03	0.00E+00	0.00E+00	1.59E-05	0.00E+00	0.00E+00	1.30E-03
93	ALL		390497	3779559	NonCancerAcute	0.00E+00	1.82E-04	1.55E-05	0.00E+00	2.69E-09	1.11E-04	1.07E-03	0.00E+00	1.27E-03	0.00E+00	0.00E+00	1.55E-05	0.00E+00	0.00E+00	1.27E-03
6991	ALL		390550	3779650	NonCancerAcute	0.00E+00	1.79E-04	1.53E-05	0.00E+00	2.65E-09	1.10E-04	1.05E-03	0.00E+00	1.25E-03	0.00E+00	0.00E+00	1.53E-05	0.00E+00	0.00E+00	1.25E-03
7384	ALL		390600	3779850	NonCancerAcute	0.00E+00	1.78E-04	1.52E-05	0.00E+00	2.64E-09	1.09E-04	1.04E-03	0.00E+00	1.24E-03	0.00E+00	0.00E+00	1.52E-05	0.00E+00	0.00E+00	1.24E-03
7190	ALL		390600	3779750	NonCancerAcute	0.00E+00	1.73E-04	1.48E-05	0.00E+00	2.57E-09	1.06E-04	1.02E-03	0.00E+00	1.21E-03	0.00E+00	0.00E+00	1.48E-05	0.00E+00	0.00E+00	1.21E-03
7480	ALL		390600	3779900	NonCancerAcute	0.00E+00	1.73E-04	1.47E-05	0.00E+00	2.56E-09	1.06E-04	1.01E-03	0.00E+00	1.21E-03	0.00E+00	0.00E+00	1.47E-05	0.00E+00	0.00E+00	1.21E-03
6892	ALL		390550	3779600	NonCancerAcute	0.00E+00	1.73E-04	1.47E-05	0.00E+00	2.56E-09	1.06E-04	1.01E-03	0.00E+00	1.21E-03	0.00E+00	0.00E+00	1.47E-05	0.00E+00	0.00E+00	1.21E-03
79	ALL		390542	3780084	NonCancerAcute	0.00E+00	1.72E-04	1.47E-05	0.00E+00	2.55E-09	1.06E-04	1.01E-03	0.00E+00	1.20E-03	0.00E+00	0.00E+00	1.47E-05	0.00E+00	0.00E+00	1.20E-03
7288	ALL		390600	3779800	NonCancerAcute	0.00E+00	1.72E-04	1.47E-05	0.00E+00	2.55E-09	1.06E-04	1.01E-03	0.00E+00	1.20E-03	0.00E+00	0.00E+00	1.47E-05	0.00E+00	0.00E+00	1.20E-03
7091	ALL		390600	3779700	NonCancerAcute	0.00E+00	1.68E-04	1.44E-05	0.00E+00	2.50E-09	1.03E-04	9.87E-04	0.00E+00	1.18E-03	0.00E+00	0.00E+00	1.44E-05	0.00E+00	0.00E+00	1.18E-03
110	ALL		390115.5	3779357	NonCancerAcute	0.00E+00	1.68E-04	1.43E-05	0.00E+00	2.49E-09	1.03E-04	9.84E-04	0.00E+00	1.17E-03	0.00E+00	0.00E+00	1.43E-05	0.00E+00	0.00E+00	1.17E-03
109	ALL		390163.8	3779355.7	NonCancerAcute	0.00E+00	1.66E-04	1.42E-05	0.00E+00	2.47E-09	1.02E-04	9.76E-04	0.00E+00	1.16E-03	0.00E+00	0.00E+00	1.42E-05	0.00E+00	0.00E+00	1.16E-03
6793	ALL		390550	3779550	NonCancerAcute	0.00E+00	1.66E-04	1.42E-05	0.00E+00	2.46E-09	1.02E-04	9.73E-04	0.00E+00	1.16E-03	0.00E+00	0.00E+00	1.42E-05	0.00E+00	0.00E+00	1.16E-03
7758	ALL		390550	3780050	NonCancerAcute	0.00E+00	1.65E-04	1.41E-05	0.00E+00	2.45E-09	1.01E-04	9.68E-04	0.00E+00	1.15E-03	0.00E+00	0.00E+00	1.41E-05	0.00E+00	0.00E+00	1.15E-03
94	ALL		390521	3779518	NonCancerAcute	0.00E+00	1.65E-04	1.41E-05	0.00E+00	2.44E-09	1.01E-04	9.66E-04	0.00E+00	1.15E-03	0.00E+00	0.00E+00	1.41E-05	0.00E+00	0.00E+00	1.15E-03
108	ALL		390212.1	3779354.5	NonCancerAcute	0.00E+00	1.65E-04	1.41E-05	0.00E+00	2.44E-09	1.01E-04	9.66E-04	0.00E+00	1.15E-03	0.00E+00	0.00E+00	1.41E-05	0.00E+00	0.00E+00	1.15E-03
6385	ALL		390100	3779350	NonCancerAcute	0.00E+00	1.64E-04	1.40E-05	0.00E+00	2.43E-09	1.01E-04	9.63E-04	0.00E+00	1.15E-03	0.00E+00	0.00E+00	1.40E-05	0.00E+00	0.00E+00	1.15E-03
6992	ALL		390600	3779650	NonCancerAcute	0.00E+00	1.64E-04	1.40E-05	0.00E+00	2.43E-09	1.01E-04	9.62E-04	0.00E+00	1.15E-03	0.00E+00	0.00E+00	1.40E-05	0.00E+00	0.00E+00	1.15E-03
6386	ALL		390150	3779350	NonCancerAcute	0.00E+00	1.64E-04	1.40E-05	0.00E+00	2.43E-09	1.01E-04	9.61E-04	0.00E+00	1.15E-03	0.00E+00	0.00E+00	1.40E-05	0.00E+00	0.00E+00	1.15E-03
6387	ALL		390200	3779350	NonCancerAcute	0.00E+00	1.64E-04	1.40E-05	0.00E+00	2.43E-09	1.01E-04	9.61E-04	0.00E+00	1.15E-03	0.00E+00	0.00E+00	1.40E-05	0.00E+00	0.00E+00	1.15E-03
107	ALL		390260.5	3779353.2	NonCancerAcute	0.00E+00	1.61E-04	1.38E-05	0.00E+00	2.39E-09	9.90E-05	9.46E-04	0.00E+00	1.13E-03	0.00E+00	0.00E+00	1.38E-05	0.00E+00	0.00E+00	1.13E-03

Appendix A.5.1 - Biogas Renewable Generation Project - Engines HARP2 Output Summary - Residential HIC - Top 50

*HARP - HRACalc v17023 6/22/2017 2:38:21 PM - Chronic Risk - Input File: C:\Work\Bee\Glendale CA\Scholl Canyon Revised 6_17\HRA\SCHOLL CANYON\hra\res_HRAInput.hra

REC	GRP	NETID	X	Y	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	GENERAL	MAXHI
85	ALL		390407	3779876	NonCancerChronicDerived_Inh	0.00E+00	7.99E-05	0.00E+00	7.97E-05	8.73E-08	8.05E-05	9.51E-03	0.00E+00	9.67E-08	0.00E+00	1.90E-08	5.80E-06	0.00E+00	0.00E+00	9.51E-03
8535	ALL		389700	3780450	NonCancerChronicDerived_Inh	0.00E+00	7.70E-05	0.00E+00	7.68E-05	8.41E-08	7.76E-05	9.16E-03	0.00E+00	9.31E-08	0.00E+00	1.83E-08	5.59E-06	0.00E+00	0.00E+00	9.16E-03
8536	ALL		389750	3780450	NonCancerChronicDerived_Inh	0.00E+00	7.65E-05	0.00E+00	7.63E-05	8.35E-08	7.71E-05	9.10E-03	0.00E+00	9.25E-08	0.00E+00	1.82E-08	5.55E-06	0.00E+00	0.00E+00	9.10E-03
20	ALL		389759	3780447	NonCancerChronicDerived_Inh	0.00E+00	7.41E-05	0.00E+00	7.39E-05	8.09E-08	7.47E-05	8.82E-03	0.00E+00	8.96E-08	0.00E+00	1.76E-08	5.38E-06	0.00E+00	0.00E+00	8.82E-03
8638	ALL		389750	3780500	NonCancerChronicDerived_Inh	0.00E+00	7.12E-05	0.00E+00	7.10E-05	7.77E-08	7.17E-05	8.47E-03	0.00E+00	8.60E-08	0.00E+00	1.69E-08	5.16E-06	0.00E+00	0.00E+00	8.47E-03
86	ALL		390419.6	3779834.2	NonCancerChronicDerived_Inh	0.00E+00	7.04E-05	0.00E+00	7.02E-05	7.68E-08	7.09E-05	8.37E-03	0.00E+00	8.51E-08	0.00E+00	1.67E-08	5.10E-06	0.00E+00	0.00E+00	8.37E-03
87	ALL		390432.2	3779792.4	NonCancerChronicDerived_Inh	0.00E+00	6.89E-05	0.00E+00	6.87E-05	7.53E-08	6.94E-05	8.20E-03	0.00E+00	8.33E-08	0.00E+00	1.64E-08	5.00E-06	0.00E+00	0.00E+00	8.20E-03
8637	ALL		389700	3780500	NonCancerChronicDerived_Inh	0.00E+00	6.89E-05	0.00E+00	6.87E-05	7.52E-08	6.94E-05	8.19E-03	0.00E+00	8.32E-08	0.00E+00	1.64E-08	5.00E-06	0.00E+00	0.00E+00	8.19E-03
21	ALL		389767.5	3780482.5	NonCancerChronicDerived_Inh	0.00E+00	6.82E-05	0.00E+00	6.80E-05	7.45E-08	6.87E-05	8.12E-03	0.00E+00	8.25E-08	0.00E+00	1.62E-08	4.95E-06	0.00E+00	0.00E+00	8.12E-03
84	ALL		390438.3	3779909.3	NonCancerChronicDerived_Inh	0.00E+00	6.60E-05	0.00E+00	6.58E-05	7.21E-08	6.65E-05	7.86E-03	0.00E+00	7.98E-08	0.00E+00	1.57E-08	4.79E-06	0.00E+00	0.00E+00	7.86E-03
8433	ALL		389650	3780400	NonCancerChronicDerived_Inh	0.00E+00	6.51E-05	0.00E+00	6.49E-05	7.11E-08	6.56E-05	7.75E-03	0.00E+00	7.87E-08	0.00E+00	1.55E-08	4.72E-06	0.00E+00	0.00E+00	7.75E-03
8739	ALL		389750	3780550	NonCancerChronicDerived_Inh	0.00E+00	6.49E-05	0.00E+00	6.48E-05	7.09E-08	6.54E-05	7.73E-03	0.00E+00	7.85E-08	0.00E+00	1.54E-08	4.71E-06	0.00E+00	0.00E+00	7.73E-03
7285	ALL		390450	3779800	NonCancerChronicDerived_Inh	0.00E+00	6.37E-05	0.00E+00	6.35E-05	6.96E-08	6.42E-05	7.58E-03	0.00E+00	7.70E-08	0.00E+00	1.51E-08	4.62E-06	0.00E+00	0.00E+00	7.58E-03
19	ALL		389721	3780420.2	NonCancerChronicDerived_Inh	0.00E+00	6.31E-05	0.00E+00	6.30E-05	6.89E-08	6.36E-05	7.51E-03	0.00E+00	7.63E-08	0.00E+00	1.50E-08	4.58E-06	0.00E+00	0.00E+00	7.51E-03
7477	ALL		390450	3779900	NonCancerChronicDerived_Inh	0.00E+00	6.31E-05	0.00E+00	6.29E-05	6.89E-08	6.36E-05	7.51E-03	0.00E+00	7.63E-08	0.00E+00	1.50E-08	4.58E-06	0.00E+00	0.00E+00	7.51E-03
88	ALL		390444.8	3779750.6	NonCancerChronicDerived_Inh	0.00E+00	6.28E-05	0.00E+00	6.26E-05	6.86E-08	6.33E-05	7.47E-03	0.00E+00	7.59E-08	0.00E+00	1.49E-08	4.56E-06	0.00E+00	0.00E+00	7.47E-03
7381	ALL		390450	3779850	NonCancerChronicDerived_Inh	0.00E+00	6.24E-05	0.00E+00	6.23E-05	6.82E-08	6.29E-05	7.43E-03	0.00E+00	7.55E-08	0.00E+00	1.48E-08	4.53E-06	0.00E+00	0.00E+00	7.43E-03
7187	ALL		390450	3779750	NonCancerChronicDerived_Inh	0.00E+00	6.14E-05	0.00E+00	6.12E-05	6.70E-08	6.19E-05	7.31E-03	0.00E+00	7.42E-08	0.00E+00	1.46E-08	4.45E-06	0.00E+00	0.00E+00	7.31E-03
22	ALL		389776	3780518	NonCancerChronicDerived_Inh	0.00E+00	5.98E-05	0.00E+00	5.96E-05	6.53E-08	6.02E-05	7.11E-03	0.00E+00	7.23E-08	0.00E+00	1.42E-08	4.34E-06	0.00E+00	0.00E+00	7.11E-03
83	ALL		390469.7	3779942.7	NonCancerChronicDerived_Inh	0.00E+00	5.92E-05	0.00E+00	5.91E-05	6.47E-08	5.97E-05	7.05E-03	0.00E+00	7.16E-08	0.00E+00	1.41E-08	4.30E-06	0.00E+00	0.00E+00	7.05E-03
8843	ALL		389800	3780600	NonCancerChronicDerived_Inh	0.00E+00	5.79E-05	0.00E+00	5.77E-05	6.32E-08	5.83E-05	6.89E-03	0.00E+00	7.00E-08	0.00E+00	1.38E-08	4.20E-06	0.00E+00	0.00E+00	6.89E-03
8432	ALL		389600	3780400	NonCancerChronicDerived_Inh	0.00E+00	5.79E-05	0.00E+00	5.77E-05	6.32E-08	5.83E-05	6.89E-03	0.00E+00	7.00E-08	0.00E+00	1.38E-08	4.20E-06	0.00E+00	0.00E+00	6.89E-03
8948	ALL		389850	3780650	NonCancerChronicDerived_Inh	0.00E+00	5.77E-05	0.00E+00	5.75E-05	6.30E-08	5.81E-05	6.86E-03	0.00E+00	6.97E-08	0.00E+00	1.37E-08	4.18E-06	0.00E+00	0.00E+00	6.86E-03
8332	ALL		389600	3780350	NonCancerChronicDerived_Inh	0.00E+00	5.74E-05	0.00E+00	5.73E-05	6.27E-08	5.78E-05	6.83E-03	0.00E+00	6.94E-08	0.00E+00	1.36E-08	4.17E-06	0.00E+00	0.00E+00	6.83E-03
8738	ALL		389700	3780550	NonCancerChronicDerived_Inh	0.00E+00	5.70E-05	0.00E+00	5.69E-05	6.23E-08	5.74E-05	6.79E-03	0.00E+00	6.89E-08	0.00E+00	1.36E-08	4.14E-06	0.00E+00	0.00E+00	6.79E-03
26	ALL		389869.7	3780642	NonCancerChronicDerived_Inh	0.00E+00	5.67E-05	0.00E+00	5.66E-05	6.20E-08	5.72E-05	6.75E-03	0.00E+00	6.86E-08	0.00E+00	1.35E-08	4.12E-06	0.00E+00	0.00E+00	6.75E-03
89	ALL		390457.4	3779708.8	NonCancerChronicDerived_Inh	0.00E+00	5.66E-05	0.00E+00	5.65E-05	6.18E-08	5.70E-05	6.74E-03	0.00E+00	6.84E-08	0.00E+00	1.35E-08	4.11E-06	0.00E+00	0.00E+00	6.74E-03
27	ALL		389855.3	3780676	NonCancerChronicDerived_Inh	0.00E+00	5.64E-05	0.00E+00	5.63E-05	6.16E-08	5.69E-05	6.72E-03	0.00E+00	6.82E-08	0.00E+00	1.34E-08	4.10E-06	0.00E+00	0.00E+00	6.72E-03
8534	ALL		389650	3780450	NonCancerChronicDerived_Inh	0.00E+00	5.57E-05	0.00E+00	5.55E-05	6.08E-08	5.61E-05	6.63E-03	0.00E+00	6.73E-08	0.00E+00	1.32E-08	4.04E-06	0.00E+00	0.00E+00	6.63E-03
16	ALL		389607	3780339.8	NonCancerChronicDerived_Inh	0.00E+00	5.52E-05	0.00E+00	5.50E-05	6.02E-08	5.56E-05	6.57E-03	0.00E+00	6.67E-08	0.00E+00	1.31E-08	4.00E-06	0.00E+00	0.00E+00	6.57E-03
17	ALL		389645	3780366.6	NonCancerChronicDerived_Inh	0.00E+00	5.49E-05	0.00E+00	5.48E-05	6.00E-08	5.53E-05	6.53E-03	0.00E+00	6.64E-08	0.00E+00	1.31E-08	3.98E-06	0.00E+00	0.00E+00	6.53E-03
18	ALL		389683	3780393.4	NonCancerChronicDerived_Inh	0.00E+00	5.47E-05	0.00E+00	5.45E-05	5.97E-08	5.51E-05	6.51E-03	0.00E+00	6.61E-08	0.00E+00	1.30E-08	3.97E-06	0.00E+00	0.00E+00	6.51E-03
29	ALL		389874.5	3780717.5	NonCancerChronicDerived_Inh	0.00E+00	5.45E-05	0.00E+00	5.44E-05	5.95E-08	5.49E-05	6.49E-03	0.00E+00	6.59E-08	0.00E+00	1.30E-08	3.95E-06	0.00E+00	0.00E+00	6.49E-03
30	ALL		389908	3780725	NonCancerChronicDerived_Inh	0.00E+00	5.44E-05	0.00E+00	5.42E-05	5.94E-08	5.48E-05	6.47E-03	0.00E+00	6.58E-08	0.00E+00	1.29E-08	3.95E-06	0.00E+00	0.00E+00	6.47E-03
15	ALL		389569	3780313	NonCancerChronicDerived_Inh	0.00E+00	5.43E-05	0.00E+00	5.42E-05	5.93E-08	5.47E-05	6.47E-03	0.00E+00	6.57E-08	0.00E+00	1.29E-08	3.94E-06	0.00E+00	0.00E+00	6.47E-03
14	ALL		389539.5	3780308.5	NonCancerChronicDerived_Inh	0.00E+00	5.38E-05	0.00E+00	5.36E-05	5.87E-08	5.42E-05	6.40E-03	0.00E+00	6.50E-08	0.00E+00	1.28E-08	3.90E-06	0.00E+00	0.00E+00	6.40E-03
12	ALL		389482.5	3780271.8	NonCancerChronicDerived_Inh	0.00E+00	5.36E-05	0.00E+00	5.35E-05	5.85E-08	5.40E-05	6.38E-03	0.00E+00	6.48E-08	0.00E+00	1.27E-08	3.89E-06	0.00E+00	0.00E+00	6.38E-03
82	ALL		390501	3779976	NonCancerChronicDerived_Inh	0.00E+00	5.34E-05	0.00E+00	5.33E-05	5.83E-08	5.38E-05	6.36E-03	0.00E+00	6.46E-08	0.00E+00	1.27E-08	3.87E-06	0.00E+00	0.00E+00	6.36E-03
11	ALL		389455	3780239.5	NonCancerChronicDerived_Inh	0.00E+00	5.34E-05	0.00E+00	5.32E-05	5.83E-08	5.38E-05	6.35E-03	0.00E+00	6.45E-08	0.00E+00	1.27E-08	3.87E-06	0.00E+00	0.00E+00	6.35E-03
9044	ALL		389450	3780700	NonCancerChronicDerived_Inh	0.00E+00	5.33E-05	0.00E+00	5.31E-05	5.82E-08	5.37E-05	6.34E-03	0.00E+00	6.44E-08	0.00E+00	1.27E-08	3.87E-06	0.00E+00	0.00E+00	6.34E-03
7572	ALL		390500	3779950	NonCancerChronicDerived_Inh	0.00E+00	5.33E-05	0.00E+00	5.31E-05	5.82E-08	5.37E-05	6.34E-03	0.00E+00	6.44E-08	0.00E+00	1.27E-08	3.86E-06	0.00E+00	0.00E+00	6.34E-03
13	ALL		389510	3780304	NonCancerChronicDerived_Inh	0.00E+00	5.31E-05	0.00E+00	5.30E-05	5.80E-08	5.35E-05	6.32E-03	0.00E+00	6.42E-08	0.00E+00	1.26E-08	3.85E-06	0.00E+00	0.00E+00	6.32E-03
8231	ALL		389500	3780300	NonCancerChronicDerived_Inh	0.00E+00	5.30E-05	0.00E+00	5.29E-05	5.79E-08	5.34E-05	6.31E-03	0.00E+00	6.41E-08	0.00E+00	1.26E-08	3.85E-06	0.00E+00	0.00E+00	6.31E-03
8132	ALL		389450	3780250	NonCancerChronicDerived_Inh	0.00E+00	5.29E-05	0.00E+00	5.28E-05	5.78E-08	5.33E-05	6.30E-03	0.00E+00	6.40E-08	0.00E+00	1.26E-08	3.84E-06	0.00E+00	0.00E+00	6.30E-03
81	ALL		390511	3780015	NonCancerChronicDerived_Inh	0.00E+00	5.25E-05	0.00E+00	5.23E-05	5.73E-08	5.29E-05	6.24E-03	0.00E+00	6.34E-08	0.00E+00	1.25E-08	3.81E-06	0.00E+00	0.00E+00	6.24E-03
8844	ALL		389850	3780600	NonCancerChronicDerived_Inh	0.00E+00	5.24E-05	0.00E+00	5.23E-05	5.73E-08	5.28E-05	6.24E-03	0.00E+00	6.34E-08	0.00E+00	1.25E-08	3.81E-06	0.00E+00	0.00E+00	6.24E-03
10	ALL		389427.5	3780207.2	NonCancerChronicDerived_Inh	0.00E+00	5.24E-05	0.00E+00	5.23E-05	5.73E-08	5.28E-05	6.24E-03	0.00E+00	6.34E-08	0.00E+00	1.25E-08	3.80E-06	0.00E+00	0.00E+00	6.24E-03
8740	ALL		389800	3780550	NonCancerChronicDerived_Inh	0.00E+00	5.23E-05	0.00E+00	5.22E-05	5.71E-08	5.27E-05	6.23E-03	0.00E+00	6.33E-08	0.00E+00	1.24E-08	3.80E-06	0.00E+00	0.00E+00	6.23E-03
7382	ALL		390500	3779850	NonCancerChronicDerived_Inh	0.00E+00	5.20E-05	0.00E+00	5.18E-05	5.67E-08	5.24E-05	6.18E-03	0.00E+00	6.28E-08	0.00E+00	1.23E-08	3.77E-06	0.00E+00	0.00E+00	6.18E-03
9148	ALL		389500	3780750	NonCancerChronicDerived_Inh	0.00E+00	5.18E-05	0.00E+00	5.17E-05	5.66E-08	5.22E-05	6.17E-03	0.00E+00	6.27E-08	0.00E+00	1.23E-08	3.76E-06	0.00E+00	0.00E+00	6.17E-03

Appendix A.5.1 - Biogas Renewable Generation Project - Engines HARP2 Output Summary - Worker MICR - Top 50

*HARP - HRACalc v17023 6/22/2017 2:45:32 PM - Cancer Risk - Input File: C:\Work\Bee\Glendale CA\Scholl Canyon Revised 6_17\HRA\SCHOLL CANYON\hra\work_HRAInput.hra

REC	GRP	NETID	X	Y	RISK_SUM	SCENARIO	INH_RISK	SOIL_RISK	DERMAL_RISK	MMILK_RISK	WATER_RISK	FISH_RISK	CROP_RISK	BEEF_RISK	DAIRY_RISK	PIG_RISK	CHICKEN_RISK	EGG_RISK
85	ALL		390407	3779876	3.32E-09	25YrCancerDerived_InhSoilDerm	3.32E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8535	ALL		389700	3780450	3.19E-09	25YrCancerDerived_InhSoilDerm	3.19E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8536	ALL		389750	3780450	3.17E-09	25YrCancerDerived_InhSoilDerm	3.17E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	ALL		389759	3780447	3.07E-09	25YrCancerDerived_InhSoilDerm	3.07E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8638	ALL		389750	3780500	2.95E-09	25YrCancerDerived_InhSoilDerm	2.95E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
86	ALL		390419.6	3779834.2	2.92E-09	25YrCancerDerived_InhSoilDerm	2.92E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
87	ALL		390432.2	3779792.4	2.86E-09	25YrCancerDerived_InhSoilDerm	2.86E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8637	ALL		389700	3780500	2.86E-09	25YrCancerDerived_InhSoilDerm	2.86E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
21	ALL		389767.5	3780482.5	2.83E-09	25YrCancerDerived_InhSoilDerm	2.83E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
84	ALL		390438.3	3779909.3	2.74E-09	25YrCancerDerived_InhSoilDerm	2.74E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8433	ALL		389650	3780400	2.70E-09	25YrCancerDerived_InhSoilDerm	2.70E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8739	ALL		389750	3780550	2.69E-09	25YrCancerDerived_InhSoilDerm	2.69E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7285	ALL		390450	3779800	2.64E-09	25YrCancerDerived_InhSoilDerm	2.64E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
19	ALL		389721	3780420.2	2.62E-09	25YrCancerDerived_InhSoilDerm	2.62E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7477	ALL		390450	3779900	2.62E-09	25YrCancerDerived_InhSoilDerm	2.62E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
88	ALL		390444.8	3779750.6	2.61E-09	25YrCancerDerived_InhSoilDerm	2.61E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7381	ALL		390450	3779850	2.59E-09	25YrCancerDerived_InhSoilDerm	2.59E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7187	ALL		390450	3779750	2.55E-09	25YrCancerDerived_InhSoilDerm	2.55E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
22	ALL		389776	3780518	2.48E-09	25YrCancerDerived_InhSoilDerm	2.48E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
83	ALL		390469.7	3779942.7	2.46E-09	25YrCancerDerived_InhSoilDerm	2.46E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8843	ALL		389800	3780600	2.40E-09	25YrCancerDerived_InhSoilDerm	2.40E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8432	ALL		389600	3780400	2.40E-09	25YrCancerDerived_InhSoilDerm	2.40E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8948	ALL		389850	3780650	2.39E-09	25YrCancerDerived_InhSoilDerm	2.39E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8332	ALL		389600	3780350	2.38E-09	25YrCancerDerived_InhSoilDerm	2.38E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8738	ALL		389700	3780550	2.37E-09	25YrCancerDerived_InhSoilDerm	2.37E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
26	ALL		389869.7	3780642	2.35E-09	25YrCancerDerived_InhSoilDerm	2.35E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
89	ALL		390457.4	3779708.8	2.35E-09	25YrCancerDerived_InhSoilDerm	2.35E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
27	ALL		389855.3	3780676	2.34E-09	25YrCancerDerived_InhSoilDerm	2.34E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8534	ALL		389650	3780450	2.31E-09	25YrCancerDerived_InhSoilDerm	2.31E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
16	ALL		389607	3780339.8	2.29E-09	25YrCancerDerived_InhSoilDerm	2.29E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
17	ALL		389645	3780366.6	2.28E-09	25YrCancerDerived_InhSoilDerm	2.28E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
18	ALL		389683	3780393.4	2.27E-09	25YrCancerDerived_InhSoilDerm	2.27E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
29	ALL		389874.5	3780717.5	2.26E-09	25YrCancerDerived_InhSoilDerm	2.26E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
30	ALL		389908	3780725	2.26E-09	25YrCancerDerived_InhSoilDerm	2.26E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
15	ALL		389569	3780313	2.25E-09	25YrCancerDerived_InhSoilDerm	2.25E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
14	ALL		389539.5	3780308.5	2.23E-09	25YrCancerDerived_InhSoilDerm	2.23E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	ALL		389482.5	3780271.8	2.22E-09	25YrCancerDerived_InhSoilDerm	2.22E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
82	ALL		390501	3779976	2.22E-09	25YrCancerDerived_InhSoilDerm	2.22E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	ALL		389455	3780239.5	2.21E-09	25YrCancerDerived_InhSoilDerm	2.21E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9044	ALL		389450	3780700	2.21E-09	25YrCancerDerived_InhSoilDerm	2.21E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7572	ALL		390500	3779950	2.21E-09	25YrCancerDerived_InhSoilDerm	2.21E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	ALL		389510	3780304	2.20E-09	25YrCancerDerived_InhSoilDerm	2.20E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8231	ALL		389500	3780300	2.20E-09	25YrCancerDerived_InhSoilDerm	2.20E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8132	ALL		389450	3780250	2.20E-09	25YrCancerDerived_InhSoilDerm	2.20E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
81	ALL		390511	3780015	2.18E-09	25YrCancerDerived_InhSoilDerm	2.18E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8844	ALL		389850	3780600	2.18E-09	25YrCancerDerived_InhSoilDerm	2.18E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	ALL		389427.5	3780207.2	2.18E-09	25YrCancerDerived_InhSoilDerm	2.18E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8740	ALL		389800	3780550	2.17E-09	25YrCancerDerived_InhSoilDerm	2.17E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7382	ALL		390500	3779850	2.16E-09	25YrCancerDerived_InhSoilDerm	2.16E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9148	ALL		389500	3780750	2.15E-09	25YrCancerDerived_InhSoilDerm	2.15E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Appendix A.5.1 - Biogas Renewable Generation Project - Engines HARP2 Output Summary - Worker HIA - Top 50

*HARP - HRACalc v17023 6/22/2017 2:45:32 PM - Acute Risk - Input File: C:\Work\Bee\Glendale CA\Scholl Canyon Revised 6_17\HRA\SCHOLL CANYON\hra\work_HRAInput.hra

REC	GRP	NETID	X	Y	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	GENERAL	MAXHI
85	ALL		390407	3779876	NonCancerAcute	0.00E+00	3.09E-04	2.64E-05	0.00E+00	4.58E-09	1.90E-04	1.81E-03	0.00E+00	2.16E-03	0.00E+00	0.00E+00	2.64E-05	0.00E+00	0.00E+00	2.16E-03
86	ALL		390419.6	3779834.2	NonCancerAcute	0.00E+00	2.65E-04	2.26E-05	0.00E+00	3.93E-09	1.63E-04	1.55E-03	0.00E+00	1.85E-03	0.00E+00	0.00E+00	2.26E-05	0.00E+00	0.00E+00	1.85E-03
87	ALL		390432.2	3779792.4	NonCancerAcute	0.00E+00	2.62E-04	2.24E-05	0.00E+00	3.89E-09	1.61E-04	1.54E-03	0.00E+00	1.83E-03	0.00E+00	0.00E+00	2.24E-05	0.00E+00	0.00E+00	1.83E-03
7381	ALL		390450	3779850	NonCancerAcute	0.00E+00	2.59E-04	2.21E-05	0.00E+00	3.84E-09	1.59E-04	1.52E-03	0.00E+00	1.81E-03	0.00E+00	0.00E+00	2.21E-05	0.00E+00	0.00E+00	1.81E-03
7285	ALL		390450	3779800	NonCancerAcute	0.00E+00	2.51E-04	2.14E-05	0.00E+00	3.73E-09	1.54E-04	1.47E-03	0.00E+00	1.76E-03	0.00E+00	0.00E+00	2.14E-05	0.00E+00	0.00E+00	1.76E-03
88	ALL		390444.8	3779750.6	NonCancerAcute	0.00E+00	2.41E-04	2.06E-05	0.00E+00	3.58E-09	1.48E-04	1.42E-03	0.00E+00	1.69E-03	0.00E+00	0.00E+00	2.06E-05	0.00E+00	0.00E+00	1.69E-03
7187	ALL		390450	3779750	NonCancerAcute	0.00E+00	2.38E-04	2.03E-05	0.00E+00	3.53E-09	1.46E-04	1.40E-03	0.00E+00	1.67E-03	0.00E+00	0.00E+00	2.03E-05	0.00E+00	0.00E+00	1.67E-03
7477	ALL		390450	3779900	NonCancerAcute	0.00E+00	2.37E-04	2.02E-05	0.00E+00	3.51E-09	1.45E-04	1.39E-03	0.00E+00	1.65E-03	0.00E+00	0.00E+00	2.02E-05	0.00E+00	0.00E+00	1.65E-03
89	ALL		390457.4	3779708.8	NonCancerAcute	0.00E+00	2.36E-04	2.02E-05	0.00E+00	3.50E-09	1.45E-04	1.39E-03	0.00E+00	1.65E-03	0.00E+00	0.00E+00	2.02E-05	0.00E+00	0.00E+00	1.65E-03
7382	ALL		390500	3779850	NonCancerAcute	0.00E+00	2.30E-04	1.97E-05	0.00E+00	3.41E-09	1.41E-04	1.35E-03	0.00E+00	1.61E-03	0.00E+00	0.00E+00	1.97E-05	0.00E+00	0.00E+00	1.61E-03
84	ALL		390438.3	3779909.3	NonCancerAcute	0.00E+00	2.23E-04	1.90E-05	0.00E+00	3.31E-09	1.37E-04	1.31E-03	0.00E+00	1.56E-03	0.00E+00	0.00E+00	1.90E-05	0.00E+00	0.00E+00	1.56E-03
7286	ALL		390500	3779800	NonCancerAcute	0.00E+00	2.23E-04	1.90E-05	0.00E+00	3.30E-09	1.37E-04	1.31E-03	0.00E+00	1.56E-03	0.00E+00	0.00E+00	1.90E-05	0.00E+00	0.00E+00	1.56E-03
83	ALL		390469.7	3779942.7	NonCancerAcute	0.00E+00	2.19E-04	1.87E-05	0.00E+00	3.24E-09	1.34E-04	1.28E-03	0.00E+00	1.53E-03	0.00E+00	0.00E+00	1.87E-05	0.00E+00	0.00E+00	1.53E-03
7478	ALL		390500	3779900	NonCancerAcute	0.00E+00	2.17E-04	1.85E-05	0.00E+00	3.22E-09	1.33E-04	1.27E-03	0.00E+00	1.52E-03	0.00E+00	0.00E+00	1.85E-05	0.00E+00	0.00E+00	1.52E-03
90	ALL		390470	3779667	NonCancerAcute	0.00E+00	2.17E-04	1.85E-05	0.00E+00	3.22E-09	1.33E-04	1.27E-03	0.00E+00	1.52E-03	0.00E+00	0.00E+00	1.85E-05	0.00E+00	0.00E+00	1.52E-03
7188	ALL		390500	3779750	NonCancerAcute	0.00E+00	2.15E-04	1.84E-05	0.00E+00	3.19E-09	1.32E-04	1.26E-03	0.00E+00	1.51E-03	0.00E+00	0.00E+00	1.84E-05	0.00E+00	0.00E+00	1.51E-03
7089	ALL		390500	3779700	NonCancerAcute	0.00E+00	2.14E-04	1.82E-05	0.00E+00	3.17E-09	1.31E-04	1.25E-03	0.00E+00	1.49E-03	0.00E+00	0.00E+00	1.82E-05	0.00E+00	0.00E+00	1.49E-03
91	ALL		390471.5	3779633.5	NonCancerAcute	0.00E+00	2.13E-04	1.82E-05	0.00E+00	3.17E-09	1.31E-04	1.25E-03	0.00E+00	1.49E-03	0.00E+00	0.00E+00	1.82E-05	0.00E+00	0.00E+00	1.49E-03
92	ALL		390473	3779600	NonCancerAcute	0.00E+00	2.03E-04	1.74E-05	0.00E+00	3.02E-09	1.25E-04	1.19E-03	0.00E+00	1.42E-03	0.00E+00	0.00E+00	1.74E-05	0.00E+00	0.00E+00	1.42E-03
7572	ALL		390500	3779950	NonCancerAcute	0.00E+00	2.03E-04	1.73E-05	0.00E+00	3.01E-09	1.25E-04	1.19E-03	0.00E+00	1.42E-03	0.00E+00	0.00E+00	1.73E-05	0.00E+00	0.00E+00	1.42E-03
7383	ALL		390550	3779850	NonCancerAcute	0.00E+00	2.02E-04	1.73E-05	0.00E+00	3.00E-09	1.24E-04	1.19E-03	0.00E+00	1.41E-03	0.00E+00	0.00E+00	1.73E-05	0.00E+00	0.00E+00	1.41E-03
6990	ALL		390500	3779650	NonCancerAcute	0.00E+00	1.98E-04	1.69E-05	0.00E+00	2.94E-09	1.22E-04	1.16E-03	0.00E+00	1.39E-03	0.00E+00	0.00E+00	1.69E-05	0.00E+00	0.00E+00	1.39E-03
7287	ALL		390550	3779800	NonCancerAcute	0.00E+00	1.96E-04	1.67E-05	0.00E+00	2.90E-09	1.20E-04	1.15E-03	0.00E+00	1.37E-03	0.00E+00	0.00E+00	1.67E-05	0.00E+00	0.00E+00	1.37E-03
7189	ALL		390550	3779750	NonCancerAcute	0.00E+00	1.94E-04	1.66E-05	0.00E+00	2.88E-09	1.19E-04	1.14E-03	0.00E+00	1.36E-03	0.00E+00	0.00E+00	1.66E-05	0.00E+00	0.00E+00	1.36E-03
7479	ALL		390550	3779900	NonCancerAcute	0.00E+00	1.93E-04	1.65E-05	0.00E+00	2.86E-09	1.19E-04	1.13E-03	0.00E+00	1.35E-03	0.00E+00	0.00E+00	1.65E-05	0.00E+00	0.00E+00	1.35E-03
6891	ALL		390500	3779600	NonCancerAcute	0.00E+00	1.92E-04	1.64E-05	0.00E+00	2.85E-09	1.18E-04	1.13E-03	0.00E+00	1.34E-03	0.00E+00	0.00E+00	1.64E-05	0.00E+00	0.00E+00	1.34E-03
81	ALL		390511	3780015	NonCancerAcute	0.00E+00	1.90E-04	1.62E-05	0.00E+00	2.81E-09	1.16E-04	1.11E-03	0.00E+00	1.33E-03	0.00E+00	0.00E+00	1.62E-05	0.00E+00	0.00E+00	1.33E-03
7090	ALL		390550	3779700	NonCancerAcute	0.00E+00	1.89E-04	1.61E-05	0.00E+00	2.80E-09	1.16E-04	1.11E-03	0.00E+00	1.32E-03	0.00E+00	0.00E+00	1.61E-05	0.00E+00	0.00E+00	1.32E-03
80	ALL		390521	3780054	NonCancerAcute	0.00E+00	1.88E-04	1.60E-05	0.00E+00	2.78E-09	1.15E-04	1.10E-03	0.00E+00	1.31E-03	0.00E+00	0.00E+00	1.60E-05	0.00E+00	0.00E+00	1.31E-03
82	ALL		390501	3779976	NonCancerAcute	0.00E+00	1.86E-04	1.59E-05	0.00E+00	2.76E-09	1.14E-04	1.09E-03	0.00E+00	1.30E-03	0.00E+00	0.00E+00	1.59E-05	0.00E+00	0.00E+00	1.30E-03
93	ALL		390497	3779559	NonCancerAcute	0.00E+00	1.82E-04	1.55E-05	0.00E+00	2.69E-09	1.11E-04	1.07E-03	0.00E+00	1.27E-03	0.00E+00	0.00E+00	1.55E-05	0.00E+00	0.00E+00	1.27E-03
6991	ALL		390550	3779650	NonCancerAcute	0.00E+00	1.79E-04	1.53E-05	0.00E+00	2.65E-09	1.10E-04	1.05E-03	0.00E+00	1.25E-03	0.00E+00	0.00E+00	1.53E-05	0.00E+00	0.00E+00	1.25E-03
7384	ALL		390600	3779850	NonCancerAcute	0.00E+00	1.78E-04	1.52E-05	0.00E+00	2.64E-09	1.09E-04	1.04E-03	0.00E+00	1.24E-03	0.00E+00	0.00E+00	1.52E-05	0.00E+00	0.00E+00	1.24E-03
7190	ALL		390600	3779750	NonCancerAcute	0.00E+00	1.73E-04	1.48E-05	0.00E+00	2.57E-09	1.06E-04	1.02E-03	0.00E+00	1.21E-03	0.00E+00	0.00E+00	1.48E-05	0.00E+00	0.00E+00	1.21E-03
7480	ALL		390600	3779900	NonCancerAcute	0.00E+00	1.73E-04	1.47E-05	0.00E+00	2.56E-09	1.06E-04	1.01E-03	0.00E+00	1.21E-03	0.00E+00	0.00E+00	1.47E-05	0.00E+00	0.00E+00	1.21E-03
6892	ALL		390550	3779600	NonCancerAcute	0.00E+00	1.73E-04	1.47E-05	0.00E+00	2.56E-09	1.06E-04	1.01E-03	0.00E+00	1.21E-03	0.00E+00	0.00E+00	1.47E-05	0.00E+00	0.00E+00	1.21E-03
79	ALL		390542	3780084	NonCancerAcute	0.00E+00	1.72E-04	1.47E-05	0.00E+00	2.55E-09	1.06E-04	1.01E-03	0.00E+00	1.20E-03	0.00E+00	0.00E+00	1.47E-05	0.00E+00	0.00E+00	1.20E-03
7288	ALL		390600	3779800	NonCancerAcute	0.00E+00	1.72E-04	1.47E-05	0.00E+00	2.55E-09	1.06E-04	1.01E-03	0.00E+00	1.20E-03	0.00E+00	0.00E+00	1.47E-05	0.00E+00	0.00E+00	1.20E-03
7091	ALL		390600	3779700	NonCancerAcute	0.00E+00	1.68E-04	1.44E-05	0.00E+00	2.50E-09	1.03E-04	9.87E-04	0.00E+00	1.18E-03	0.00E+00	0.00E+00	1.44E-05	0.00E+00	0.00E+00	1.18E-03
110	ALL		390115.5	3779357	NonCancerAcute	0.00E+00	1.68E-04	1.43E-05	0.00E+00	2.49E-09	1.03E-04	9.84E-04	0.00E+00	1.17E-03	0.00E+00	0.00E+00	1.43E-05	0.00E+00	0.00E+00	1.17E-03
109	ALL		390163.8	3779355.7	NonCancerAcute	0.00E+00	1.66E-04	1.42E-05	0.00E+00	2.47E-09	1.02E-04	9.76E-04	0.00E+00	1.16E-03	0.00E+00	0.00E+00	1.42E-05	0.00E+00	0.00E+00	1.16E-03
6793	ALL		390550	3779550	NonCancerAcute	0.00E+00	1.66E-04	1.42E-05	0.00E+00	2.46E-09	1.02E-04	9.73E-04	0.00E+00	1.16E-03	0.00E+00	0.00E+00	1.42E-05	0.00E+00	0.00E+00	1.16E-03
7758	ALL		390550	3780050	NonCancerAcute	0.00E+00	1.65E-04	1.41E-05	0.00E+00	2.45E-09	1.01E-04	9.68E-04	0.00E+00	1.15E-03	0.00E+00	0.00E+00	1.41E-05	0.00E+00	0.00E+00	1.15E-03
94	ALL		390521	3779518	NonCancerAcute	0.00E+00	1.65E-04	1.41E-05	0.00E+00	2.44E-09	1.01E-04	9.66E-04	0.00E+00	1.15E-03	0.00E+00	0.00E+00	1.41E-05	0.00E+00	0.00E+00	1.15E-03
108	ALL		390212.1	3779354.5	NonCancerAcute	0.00E+00	1.65E-04	1.41E-05	0.00E+00	2.44E-09	1.01E-04	9.66E-04	0.00E+00	1.15E-03	0.00E+00	0.00E+00	1.41E-05	0.00E+00	0.00E+00	1.15E-03
6385	ALL		390100	3779350	NonCancerAcute	0.00E+00	1.64E-04	1.40E-05	0.00E+00	2.43E-09	1.01E-04	9.63E-04	0.00E+00	1.15E-03	0.00E+00	0.00E+00	1.40E-05	0.00E+00	0.00E+00	1.15E-03
6992	ALL		390600	3779650	NonCancerAcute	0.00E+00	1.64E-04	1.40E-05	0.00E+00	2.43E-09	1.01E-04	9.62E-04	0.00E+00	1.15E-03	0.00E+00	0.00E+00	1.40E-05	0.00E+00	0.00E+00	1.15E-03
6386	ALL		390150	3779350	NonCancerAcute	0.00E+00	1.64E-04	1.40E-05	0.00E+00	2.43E-09	1.01E-04	9.61E-04	0.00E+00	1.15E-03	0.00E+00	0.00E+00	1.40E-05	0.00E+00	0.00E+00	1.15E-03
6387	ALL		390200	3779350	NonCancerAcute	0.00E+00	1.64E-04	1.40E-05	0.00E+00	2.43E-09	1.01E-04	9.61E-04	0.00E+00	1.15E-03	0.00E+00	0.00E+00	1.40E-05	0.00E+00	0.00E+00	1.15E-03
107	ALL		390260.5	3779353.2	NonCancerAcute	0.00E+00	1.61E-04	1.38E-05	0.00E+00	2.39E-09	9.90E-05	9.46E-04	0.00E+00	1.13E-03	0.00E+00	0.00E+00	1.38E-05	0.00E+00	0.00E+00	1.13E-03

Appendix A.5.1 - Biogas Renewable Generation Project - Engines HARP2 Output Summary - Worker HIC - Top 50

*HARP - HRACalc v17023 6/22/2017 2:45:32 PM - Chronic Risk - Input File: C:\Work\Bee\Glendale CA\Scholl Canyon Revised 6_17\HRA\SCHOLL CANYON\hra\work_HRAInput.hra

REC	GRP	NETID	X	Y	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	GENERAL	MAXHI
85	ALL		390407	3779876	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.68E-04	0.00E+00	1.68E-04	8.73E-08	1.69E-04	9.51E-03	0.00E+00	9.67E-08	0.00E+00	1.90E-08	5.80E-06	0.00E+00	0.00E+00	9.51E-03
8535	ALL		389700	3780450	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.62E-04	0.00E+00	1.62E-04	8.41E-08	1.63E-04	9.16E-03	0.00E+00	9.31E-08	0.00E+00	1.83E-08	5.59E-06	0.00E+00	0.00E+00	9.16E-03
8536	ALL		389750	3780450	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.61E-04	0.00E+00	1.61E-04	8.35E-08	1.62E-04	9.10E-03	0.00E+00	9.25E-08	0.00E+00	1.82E-08	5.55E-06	0.00E+00	0.00E+00	9.10E-03
20	ALL		389759	3780447	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.56E-04	0.00E+00	1.56E-04	8.09E-08	1.57E-04	8.82E-03	0.00E+00	8.96E-08	0.00E+00	1.76E-08	5.38E-06	0.00E+00	0.00E+00	8.82E-03
8638	ALL		389750	3780500	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.50E-04	0.00E+00	1.50E-04	7.77E-08	1.50E-04	8.47E-03	0.00E+00	8.60E-08	0.00E+00	1.69E-08	5.16E-06	0.00E+00	0.00E+00	8.47E-03
86	ALL		390419.6	3779834.2	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.48E-04	0.00E+00	1.48E-04	7.68E-08	1.49E-04	8.37E-03	0.00E+00	8.51E-08	0.00E+00	1.67E-08	5.10E-06	0.00E+00	0.00E+00	8.37E-03
87	ALL		390432.2	3779792.4	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.45E-04	0.00E+00	1.45E-04	7.53E-08	1.46E-04	8.20E-03	0.00E+00	8.33E-08	0.00E+00	1.64E-08	5.00E-06	0.00E+00	0.00E+00	8.20E-03
8637	ALL		389700	3780500	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.45E-04	0.00E+00	1.45E-04	7.52E-08	1.45E-04	8.19E-03	0.00E+00	8.32E-08	0.00E+00	1.64E-08	5.00E-06	0.00E+00	0.00E+00	8.19E-03
21	ALL		389767.5	3780482.5	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.44E-04	0.00E+00	1.43E-04	7.45E-08	1.44E-04	8.12E-03	0.00E+00	8.25E-08	0.00E+00	1.62E-08	4.95E-06	0.00E+00	0.00E+00	8.12E-03
84	ALL		390438.3	3779909.3	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.39E-04	0.00E+00	1.39E-04	7.21E-08	1.39E-04	7.86E-03	0.00E+00	7.98E-08	0.00E+00	1.57E-08	4.79E-06	0.00E+00	0.00E+00	7.86E-03
8433	ALL		389650	3780400	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.37E-04	0.00E+00	1.37E-04	7.11E-08	1.37E-04	7.75E-03	0.00E+00	7.87E-08	0.00E+00	1.55E-08	4.72E-06	0.00E+00	0.00E+00	7.75E-03
8739	ALL		389750	3780550	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.37E-04	0.00E+00	1.36E-04	7.09E-08	1.37E-04	7.73E-03	0.00E+00	7.85E-08	0.00E+00	1.54E-08	4.71E-06	0.00E+00	0.00E+00	7.73E-03
7285	ALL		390450	3779800	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.34E-04	0.00E+00	1.34E-04	6.96E-08	1.35E-04	7.58E-03	0.00E+00	7.70E-08	0.00E+00	1.51E-08	4.62E-06	0.00E+00	0.00E+00	7.58E-03
19	ALL		389721	3780420.2	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.33E-04	0.00E+00	1.33E-04	6.89E-08	1.33E-04	7.51E-03	0.00E+00	7.63E-08	0.00E+00	1.50E-08	4.58E-06	0.00E+00	0.00E+00	7.51E-03
7477	ALL		390450	3779900	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.33E-04	0.00E+00	1.33E-04	6.89E-08	1.33E-04	7.51E-03	0.00E+00	7.63E-08	0.00E+00	1.50E-08	4.58E-06	0.00E+00	0.00E+00	7.51E-03
88	ALL		390444.8	3779750.6	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.32E-04	0.00E+00	1.32E-04	6.86E-08	1.33E-04	7.47E-03	0.00E+00	7.59E-08	0.00E+00	1.49E-08	4.56E-06	0.00E+00	0.00E+00	7.47E-03
7381	ALL		390450	3779850	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.31E-04	0.00E+00	1.31E-04	6.82E-08	1.32E-04	7.43E-03	0.00E+00	7.55E-08	0.00E+00	1.48E-08	4.53E-06	0.00E+00	0.00E+00	7.43E-03
7187	ALL		390450	3779750	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.29E-04	0.00E+00	1.29E-04	6.70E-08	1.30E-04	7.31E-03	0.00E+00	7.42E-08	0.00E+00	1.46E-08	4.45E-06	0.00E+00	0.00E+00	7.31E-03
22	ALL		389776	3780518	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.26E-04	0.00E+00	1.26E-04	6.53E-08	1.26E-04	7.11E-03	0.00E+00	7.23E-08	0.00E+00	1.42E-08	4.34E-06	0.00E+00	0.00E+00	7.11E-03
83	ALL		390469.7	3779942.7	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.25E-04	0.00E+00	1.24E-04	6.47E-08	1.25E-04	7.05E-03	0.00E+00	7.16E-08	0.00E+00	1.41E-08	4.30E-06	0.00E+00	0.00E+00	7.05E-03
8843	ALL		389800	3780600	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.22E-04	0.00E+00	1.22E-04	6.32E-08	1.22E-04	6.89E-03	0.00E+00	7.00E-08	0.00E+00	1.38E-08	4.20E-06	0.00E+00	0.00E+00	6.89E-03
8432	ALL		389600	3780400	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.22E-04	0.00E+00	1.22E-04	6.32E-08	1.22E-04	6.89E-03	0.00E+00	7.00E-08	0.00E+00	1.38E-08	4.20E-06	0.00E+00	0.00E+00	6.89E-03
8948	ALL		389850	3780650	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.21E-04	0.00E+00	1.21E-04	6.30E-08	1.22E-04	6.86E-03	0.00E+00	6.97E-08	0.00E+00	1.37E-08	4.18E-06	0.00E+00	0.00E+00	6.86E-03
8332	ALL		389600	3780350	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.21E-04	0.00E+00	1.21E-04	6.27E-08	1.21E-04	6.83E-03	0.00E+00	6.94E-08	0.00E+00	1.36E-08	4.17E-06	0.00E+00	0.00E+00	6.83E-03
8738	ALL		389700	3780550	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.20E-04	0.00E+00	1.20E-04	6.23E-08	1.20E-04	6.79E-03	0.00E+00	6.89E-08	0.00E+00	1.36E-08	4.14E-06	0.00E+00	0.00E+00	6.79E-03
26	ALL		389869.7	3780642	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.19E-04	0.00E+00	1.19E-04	6.20E-08	1.20E-04	6.75E-03	0.00E+00	6.86E-08	0.00E+00	1.35E-08	4.12E-06	0.00E+00	0.00E+00	6.75E-03
89	ALL		390457.4	3779708.8	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.19E-04	0.00E+00	1.19E-04	6.18E-08	1.20E-04	6.74E-03	0.00E+00	6.84E-08	0.00E+00	1.35E-08	4.11E-06	0.00E+00	0.00E+00	6.74E-03
27	ALL		389855.3	3780676	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.19E-04	0.00E+00	1.19E-04	6.16E-08	1.19E-04	6.72E-03	0.00E+00	6.82E-08	0.00E+00	1.34E-08	4.10E-06	0.00E+00	0.00E+00	6.72E-03
8534	ALL		389650	3780450	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.17E-04	0.00E+00	1.17E-04	6.08E-08	1.18E-04	6.63E-03	0.00E+00	6.73E-08	0.00E+00	1.32E-08	4.04E-06	0.00E+00	0.00E+00	6.63E-03
16	ALL		389607	3780339.8	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.16E-04	0.00E+00	1.16E-04	6.02E-08	1.17E-04	6.57E-03	0.00E+00	6.67E-08	0.00E+00	1.31E-08	4.00E-06	0.00E+00	0.00E+00	6.57E-03
17	ALL		389645	3780366.6	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.16E-04	0.00E+00	1.15E-04	6.00E-08	1.16E-04	6.53E-03	0.00E+00	6.64E-08	0.00E+00	1.31E-08	3.98E-06	0.00E+00	0.00E+00	6.53E-03
18	ALL		389683	3780393.4	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.15E-04	0.00E+00	1.15E-04	5.97E-08	1.16E-04	6.51E-03	0.00E+00	6.61E-08	0.00E+00	1.30E-08	3.97E-06	0.00E+00	0.00E+00	6.51E-03
29	ALL		389874.5	3780717.5	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.15E-04	0.00E+00	1.15E-04	5.95E-08	1.15E-04	6.49E-03	0.00E+00	6.59E-08	0.00E+00	1.30E-08	3.95E-06	0.00E+00	0.00E+00	6.49E-03
30	ALL		389908	3780725	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.14E-04	0.00E+00	1.14E-04	5.94E-08	1.15E-04	6.47E-03	0.00E+00	6.58E-08	0.00E+00	1.29E-08	3.95E-06	0.00E+00	0.00E+00	6.47E-03
15	ALL		389569	3780313	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.14E-04	0.00E+00	1.14E-04	5.93E-08	1.15E-04	6.47E-03	0.00E+00	6.57E-08	0.00E+00	1.29E-08	3.94E-06	0.00E+00	0.00E+00	6.47E-03
14	ALL		389539.5	3780308.5	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.13E-04	0.00E+00	1.13E-04	5.87E-08	1.14E-04	6.40E-03	0.00E+00	6.50E-08	0.00E+00	1.28E-08	3.90E-06	0.00E+00	0.00E+00	6.40E-03
12	ALL		389482.5	3780271.8	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.13E-04	0.00E+00	1.13E-04	5.85E-08	1.13E-04	6.38E-03	0.00E+00	6.48E-08	0.00E+00	1.27E-08	3.89E-06	0.00E+00	0.00E+00	6.38E-03
82	ALL		390501	3779976	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.12E-04	0.00E+00	1.12E-04	5.83E-08	1.13E-04	6.36E-03	0.00E+00	6.46E-08	0.00E+00	1.27E-08	3.87E-06	0.00E+00	0.00E+00	6.36E-03
11	ALL		389455	3780239.5	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.12E-04	0.00E+00	1.12E-04	5.83E-08	1.13E-04	6.35E-03	0.00E+00	6.45E-08	0.00E+00	1.27E-08	3.87E-06	0.00E+00	0.00E+00	6.35E-03
9044	ALL		389450	3780700	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.12E-04	0.00E+00	1.12E-04	5.82E-08	1.13E-04	6.34E-03	0.00E+00	6.44E-08	0.00E+00	1.27E-08	3.87E-06	0.00E+00	0.00E+00	6.34E-03
7572	ALL		390500	3779950	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.12E-04	0.00E+00	1.12E-04	5.82E-08	1.12E-04	6.34E-03	0.00E+00	6.44E-08	0.00E+00	1.27E-08	3.86E-06	0.00E+00	0.00E+00	6.34E-03
13	ALL		389510	3780304	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.12E-04	0.00E+00	1.12E-04	5.80E-08	1.12E-04	6.32E-03	0.00E+00	6.42E-08	0.00E+00	1.26E-08	3.85E-06	0.00E+00	0.00E+00	6.32E-03
8231	ALL		389500	3780300	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.12E-04	0.00E+00	1.11E-04	5.79E-08	1.12E-04	6.31E-03	0.00E+00	6.41E-08	0.00E+00	1.26E-08	3.85E-06	0.00E+00	0.00E+00	6.31E-03
8132	ALL		389450	3780250	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.11E-04	0.00E+00	1.11E-04	5.78E-08	1.12E-04	6.30E-03	0.00E+00	6.40E-08	0.00E+00	1.26E-08	3.84E-06	0.00E+00	0.00E+00	6.30E-03
81	ALL		390511	3780015	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.10E-04	0.00E+00	1.10E-04	5.73E-08	1.11E-04	6.24E-03	0.00E+00	6.34E-08	0.00E+00	1.25E-08	3.81E-06	0.00E+00	0.00E+00	6.24E-03
8844	ALL		389850	3780600	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.10E-04	0.00E+00	1.10E-04	5.73E-08	1.11E-04	6.24E-03	0.00E+00	6.34E-08	0.00E+00	1.25E-08	3.81E-06	0.00E+00	0.00E+00	6.24E-03
10	ALL		389427.5	3780207.2	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.10E-04	0.00E+00	1.10E-04	5.73E-08	1.11E-04	6.24E-03	0.00E+00	6.34E-08	0.00E+00	1.25E-08	3.80E-06	0.00E+00	0.00E+00	6.24E-03
8740	ALL		389800	3780550	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.10E-04	0.00E+00	1.10E-04	5.71E-08	1.10E-04	6.23E-03	0.00E+00	6.33E-08	0.00E+00	1.24E-08	3.80E-06	0.00E+00	0.00E+00	6.23E-03
7382	ALL		390500	3779850	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.09E-04	0.00E+00	1.09E-04	5.67E-08	1.10E-04	6.18E-03	0.00E+00	6.28E-08	0.00E+00	1.23E-08	3.77E-06	0.00E+00	0.00E+00	6.18E-03
9148	ALL		389500	3780750	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.09E-04	0.00E+00	1.09E-04	5.66E-08	1.09E-04	6.17E-03	0.00E+00	6.27E-08	0.00E+00	1.23E-08	3.76E-06	0.00E+00	0.00E+00	6.17E-03

Appendix A.5.1 - Biogas Renewable Generation Project - Flares HARP2 Output Summary - Residential MICR - Top 5(

*HARP - HRACalc v17023 7/3/2017 4:46:50 PM - Cancer Risk - Input File: C:\Work\Bee\Glendale CA\Scholl Canyon Revised 6_17\HRA\Flare3\SCHOLL CANYON FLARE\hra\res_HRAInput.hr

REC	GRP	NETID	X	Y	RISK_SUM	SCENARIO	INH_RISK	SOIL_RISK	DERMAL_RISK	MMILK_RISK	WATER_RISK	FISH_RISK	CROP_RISK	BEEF_RISK	DAIRY_RISK	PIG_RISK	CHICKEN_RISK	EGG_RISK
8536	ALL		389750	3780450	1.24E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.24E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	ALL		389759	3780447	1.21E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.21E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	ALL		389427.5	3780207.2	1.21E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.21E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8535	ALL		389700	3780450	1.21E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.21E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	ALL		389400	3780175	1.21E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.21E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	ALL		389455	3780239.5	1.19E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.19E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8034	ALL		389400	3780200	1.19E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.19E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8638	ALL		389750	3780500	1.18E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.18E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8132	ALL		389450	3780250	1.18E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.18E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	ALL		389482.5	3780271.8	1.16E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.16E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
21	ALL		389767.5	3780482.5	1.15E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.15E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	ALL		389355.6	3780183.6	1.15E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.15E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8131	ALL		389400	3780250	1.14E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.14E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8433	ALL		389650	3780400	1.13E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.13E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8033	ALL		389350	3780200	1.13E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.13E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
15	ALL		389569	3780313	1.13E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.13E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8332	ALL		389600	3780350	1.12E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.12E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8231	ALL		389500	3780300	1.12E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.12E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	ALL		389510	3780304	1.11E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.11E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
14	ALL		389539.5	3780308.5	1.11E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.11E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8637	ALL		389700	3780500	1.11E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.11E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8739	ALL		389750	3780550	1.11E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.11E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
16	ALL		389607	3780339.8	1.10E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.10E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8230	ALL		389450	3780300	1.10E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.10E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8130	ALL		389350	3780250	1.10E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.10E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	ALL		389311.2	3780192.2	1.09E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.09E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
30	ALL		389908	3780725	1.09E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.09E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
19	ALL		389721	3780420.2	1.09E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.09E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8948	ALL		389850	3780650	1.09E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.09E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8032	ALL		389300	3780200	1.08E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.08E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
29	ALL		389874.5	3780717.5	1.08E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.08E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8229	ALL		389400	3780300	1.08E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.08E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
27	ALL		389855.3	3780676	1.07E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.07E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8432	ALL		389600	3780400	1.07E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.07E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
26	ALL		389869.7	3780642	1.06E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.06E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
17	ALL		389645	3780366.6	1.06E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.06E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8129	ALL		389300	3780250	1.06E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.06E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8228	ALL		389350	3780300	1.05E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.05E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8843	ALL		389800	3780600	1.05E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.05E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
22	ALL		389776	3780518	1.05E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.05E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	ALL		389266.9	3780200.9	1.05E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.05E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
31	ALL		389884.5	3780758.5	1.04E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.04E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8331	ALL		389550	3780350	1.03E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.03E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8330	ALL		389500	3780350	1.03E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.03E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8227	ALL		389300	3780300	1.03E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.03E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
18	ALL		389683	3780393.4	1.03E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.03E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8329	ALL		389450	3780350	1.02E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.02E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8128	ALL		389250	3780250	1.02E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.02E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8328	ALL		389400	3780350	1.01E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.01E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9155	ALL		389850	3780750	1.01E-07	2YrCancerDerived_InhSoilDermMMilk_FAH16to70	1.01E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Appendix A.5.1 - Biogas Renewable Generation Project - Flares HARP2 Output Summary - Residential HIA - Top 50

*HARP - HRACalc v17023 7/3/2017 4:46:50 PM - Acute Risk - Input File: C:\Work\Bee\Glendale CA\Scholl Canyon Revised 6_17\HRA\Flare3\SCHOLL CANYON FLARE\hra\res_HRAInput.hra

REC	GRP	NETID	X	Y	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DE\	RESP	SKIN	EYE	BONE/TEE	ENDO	BLOOD	ODOR	GENERAL	MAXHI
86	ALL		390419.6	3779834	NonCancer	0.00E+00	9.64E-04	1.48E-04	0.00E+00	5.08E-08	2.95E-04	3.29E-05	0.00E+00	1.23E-02	0.00E+00	0.00E+00	1.48E-04	0.00E+00	0.00E+00	1.23E-02
7381	ALL		390450	3779850	NonCancer	0.00E+00	8.40E-04	1.29E-04	0.00E+00	4.43E-08	2.57E-04	2.87E-05	0.00E+00	1.07E-02	0.00E+00	0.00E+00	1.29E-04	0.00E+00	0.00E+00	1.07E-02
87	ALL		390432.2	3779792	NonCancer	0.00E+00	8.12E-04	1.24E-04	0.00E+00	4.28E-08	2.48E-04	2.77E-05	0.00E+00	1.04E-02	0.00E+00	0.00E+00	1.24E-04	0.00E+00	0.00E+00	1.04E-02
88	ALL		390444.8	3779751	NonCancer	0.00E+00	8.06E-04	1.24E-04	0.00E+00	4.25E-08	2.47E-04	2.76E-05	0.00E+00	1.03E-02	0.00E+00	0.00E+00	1.24E-04	0.00E+00	0.00E+00	1.03E-02
7187	ALL		390450	3779750	NonCancer	0.00E+00	7.93E-04	1.21E-04	0.00E+00	4.18E-08	2.42E-04	2.71E-05	0.00E+00	1.01E-02	0.00E+00	0.00E+00	1.21E-04	0.00E+00	0.00E+00	1.01E-02
85	ALL		390407	3779876	NonCancer	0.00E+00	7.80E-04	1.19E-04	0.00E+00	4.11E-08	2.38E-04	2.67E-05	0.00E+00	9.96E-03	0.00E+00	0.00E+00	1.19E-04	0.00E+00	0.00E+00	9.96E-03
7285	ALL		390450	3779800	NonCancer	0.00E+00	7.68E-04	1.18E-04	0.00E+00	4.05E-08	2.35E-04	2.62E-05	0.00E+00	9.81E-03	0.00E+00	0.00E+00	1.18E-04	0.00E+00	0.00E+00	9.81E-03
89	ALL		390457.4	3779709	NonCancer	0.00E+00	7.33E-04	1.12E-04	0.00E+00	3.87E-08	2.24E-04	2.51E-05	0.00E+00	9.37E-03	0.00E+00	0.00E+00	1.12E-04	0.00E+00	0.00E+00	9.37E-03
111	ALL		390067.2	3779358	NonCancer	0.00E+00	7.20E-04	1.10E-04	0.00E+00	3.80E-08	2.20E-04	2.46E-05	0.00E+00	9.20E-03	0.00E+00	0.00E+00	1.10E-04	0.00E+00	0.00E+00	9.20E-03
112	ALL		390018.9	3779360	NonCancer	0.00E+00	7.19E-04	1.10E-04	0.00E+00	3.79E-08	2.20E-04	2.46E-05	0.00E+00	9.19E-03	0.00E+00	0.00E+00	1.10E-04	0.00E+00	0.00E+00	9.19E-03
90	ALL		390470	3779667	NonCancer	0.00E+00	7.15E-04	1.10E-04	0.00E+00	3.77E-08	2.19E-04	2.45E-05	0.00E+00	9.14E-03	0.00E+00	0.00E+00	1.10E-04	0.00E+00	0.00E+00	9.14E-03
6384	ALL		390050	3779350	NonCancer	0.00E+00	7.12E-04	1.09E-04	0.00E+00	3.75E-08	2.18E-04	2.43E-05	0.00E+00	9.10E-03	0.00E+00	0.00E+00	1.09E-04	0.00E+00	0.00E+00	9.10E-03
110	ALL		390115.5	3779357	NonCancer	0.00E+00	7.07E-04	1.08E-04	0.00E+00	3.73E-08	2.16E-04	2.42E-05	0.00E+00	9.04E-03	0.00E+00	0.00E+00	1.08E-04	0.00E+00	0.00E+00	9.04E-03
113	ALL		389970.5	3779361	NonCancer	0.00E+00	7.07E-04	1.08E-04	0.00E+00	3.73E-08	2.16E-04	2.42E-05	0.00E+00	9.03E-03	0.00E+00	0.00E+00	1.08E-04	0.00E+00	0.00E+00	9.03E-03
6383	ALL		390000	3779350	NonCancer	0.00E+00	7.01E-04	1.07E-04	0.00E+00	3.69E-08	2.14E-04	2.40E-05	0.00E+00	8.95E-03	0.00E+00	0.00E+00	1.07E-04	0.00E+00	0.00E+00	8.95E-03
6385	ALL		390100	3779350	NonCancer	0.00E+00	6.92E-04	1.06E-04	0.00E+00	3.65E-08	2.11E-04	2.36E-05	0.00E+00	8.84E-03	0.00E+00	0.00E+00	1.06E-04	0.00E+00	0.00E+00	8.84E-03
91	ALL		390471.5	3779634	NonCancer	0.00E+00	6.92E-04	1.06E-04	0.00E+00	3.65E-08	2.11E-04	2.36E-05	0.00E+00	8.84E-03	0.00E+00	0.00E+00	1.06E-04	0.00E+00	0.00E+00	8.84E-03
109	ALL		390163.8	3779356	NonCancer	0.00E+00	6.86E-04	1.05E-04	0.00E+00	3.61E-08	2.10E-04	2.34E-05	0.00E+00	8.76E-03	0.00E+00	0.00E+00	1.05E-04	0.00E+00	0.00E+00	8.76E-03
7382	ALL		390500	3779850	NonCancer	0.00E+00	6.85E-04	1.05E-04	0.00E+00	3.61E-08	2.09E-04	2.34E-05	0.00E+00	8.75E-03	0.00E+00	0.00E+00	1.05E-04	0.00E+00	0.00E+00	8.75E-03
7478	ALL		390500	3779900	NonCancer	0.00E+00	6.83E-04	1.05E-04	0.00E+00	3.60E-08	2.09E-04	2.33E-05	0.00E+00	8.72E-03	0.00E+00	0.00E+00	1.05E-04	0.00E+00	0.00E+00	8.72E-03
7188	ALL		390500	3779750	NonCancer	0.00E+00	6.79E-04	1.04E-04	0.00E+00	3.58E-08	2.08E-04	2.32E-05	0.00E+00	8.67E-03	0.00E+00	0.00E+00	1.04E-04	0.00E+00	0.00E+00	8.67E-03
6386	ALL		390150	3779350	NonCancer	0.00E+00	6.78E-04	1.04E-04	0.00E+00	3.58E-08	2.07E-04	2.32E-05	0.00E+00	8.66E-03	0.00E+00	0.00E+00	1.04E-04	0.00E+00	0.00E+00	8.66E-03
92	ALL		390473	3779600	NonCancer	0.00E+00	6.64E-04	1.02E-04	0.00E+00	3.50E-08	2.03E-04	2.27E-05	0.00E+00	8.48E-03	0.00E+00	0.00E+00	1.02E-04	0.00E+00	0.00E+00	8.48E-03
116	ALL		389825.6	3779365	NonCancer	0.00E+00	6.58E-04	1.01E-04	0.00E+00	3.47E-08	2.01E-04	2.25E-05	0.00E+00	8.41E-03	0.00E+00	0.00E+00	1.01E-04	0.00E+00	0.00E+00	8.41E-03
6382	ALL		389950	3779350	NonCancer	0.00E+00	6.58E-04	1.01E-04	0.00E+00	3.47E-08	2.01E-04	2.25E-05	0.00E+00	8.41E-03	0.00E+00	0.00E+00	1.01E-04	0.00E+00	0.00E+00	8.41E-03
6387	ALL		390200	3779350	NonCancer	0.00E+00	6.58E-04	1.01E-04	0.00E+00	3.47E-08	2.01E-04	2.25E-05	0.00E+00	8.41E-03	0.00E+00	0.00E+00	1.01E-04	0.00E+00	0.00E+00	8.41E-03
6990	ALL		390500	3779650	NonCancer	0.00E+00	6.58E-04	1.01E-04	0.00E+00	3.47E-08	2.01E-04	2.25E-05	0.00E+00	8.41E-03	0.00E+00	0.00E+00	1.01E-04	0.00E+00	0.00E+00	8.41E-03
7286	ALL		390500	3779800	NonCancer	0.00E+00	6.56E-04	1.01E-04	0.00E+00	3.46E-08	2.01E-04	2.24E-05	0.00E+00	8.39E-03	0.00E+00	0.00E+00	1.01E-04	0.00E+00	0.00E+00	8.39E-03
7089	ALL		390500	3779700	NonCancer	0.00E+00	6.54E-04	1.00E-04	0.00E+00	3.45E-08	2.00E-04	2.23E-05	0.00E+00	8.35E-03	0.00E+00	0.00E+00	1.00E-04	0.00E+00	0.00E+00	8.35E-03
108	ALL		390212.1	3779355	NonCancer	0.00E+00	6.51E-04	9.98E-05	0.00E+00	3.43E-08	1.99E-04	2.23E-05	0.00E+00	8.32E-03	0.00E+00	0.00E+00	9.98E-05	0.00E+00	0.00E+00	8.32E-03
7477	ALL		390450	3779900	NonCancer	0.00E+00	6.44E-04	9.86E-05	0.00E+00	3.39E-08	1.97E-04	2.20E-05	0.00E+00	8.22E-03	0.00E+00	0.00E+00	9.86E-05	0.00E+00	0.00E+00	8.22E-03
115	ALL		389873.9	3779363	NonCancer	0.00E+00	6.37E-04	9.77E-05	0.00E+00	3.36E-08	1.95E-04	2.18E-05	0.00E+00	8.14E-03	0.00E+00	0.00E+00	9.77E-05	0.00E+00	0.00E+00	8.14E-03
6388	ALL		390250	3779350	NonCancer	0.00E+00	6.33E-04	9.70E-05	0.00E+00	3.34E-08	1.94E-04	2.16E-05	0.00E+00	8.09E-03	0.00E+00	0.00E+00	9.70E-05	0.00E+00	0.00E+00	8.09E-03
107	ALL		390260.5	3779353	NonCancer	0.00E+00	6.32E-04	9.69E-05	0.00E+00	3.33E-08	1.93E-04	2.16E-05	0.00E+00	8.08E-03	0.00E+00	0.00E+00	9.69E-05	0.00E+00	0.00E+00	8.08E-03
6263	ALL		390050	3779300	NonCancer	0.00E+00	6.31E-04	9.67E-05	0.00E+00	3.33E-08	1.93E-04	2.16E-05	0.00E+00	8.07E-03	0.00E+00	0.00E+00	9.67E-05	0.00E+00	0.00E+00	8.07E-03
6380	ALL		389850	3779350	NonCancer	0.00E+00	6.30E-04	9.66E-05	0.00E+00	3.32E-08	1.93E-04	2.16E-05	0.00E+00	8.05E-03	0.00E+00	0.00E+00	9.66E-05	0.00E+00	0.00E+00	8.05E-03
6891	ALL		390500	3779600	NonCancer	0.00E+00	6.30E-04	9.66E-05	0.00E+00	3.32E-08	1.93E-04	2.15E-05	0.00E+00	8.05E-03	0.00E+00	0.00E+00	9.66E-05	0.00E+00	0.00E+00	8.05E-03
117	ALL		389777.3	3779366	NonCancer	0.00E+00	6.26E-04	9.60E-05	0.00E+00	3.30E-08	1.91E-04	2.14E-05	0.00E+00	8.00E-03	0.00E+00	0.00E+00	9.60E-05	0.00E+00	0.00E+00	8.00E-03
6379	ALL		389800	3779350	NonCancer	0.00E+00	6.24E-04	9.56E-05	0.00E+00	3.29E-08	1.91E-04	2.13E-05	0.00E+00	7.97E-03	0.00E+00	0.00E+00	9.56E-05	0.00E+00	0.00E+00	7.97E-03
114	ALL		389922.2	3779362	NonCancer	0.00E+00	6.20E-04	9.50E-05	0.00E+00	3.27E-08	1.90E-04	2.12E-05	0.00E+00	7.92E-03	0.00E+00	0.00E+00	9.50E-05	0.00E+00	0.00E+00	7.92E-03
84	ALL		390438.3	3779909	NonCancer	0.00E+00	6.15E-04	9.42E-05	0.00E+00	3.24E-08	1.88E-04	2.10E-05	0.00E+00	7.85E-03	0.00E+00	0.00E+00	9.42E-05	0.00E+00	0.00E+00	7.85E-03
6264	ALL		390100	3779300	NonCancer	0.00E+00	6.08E-04	9.32E-05	0.00E+00	3.21E-08	1.86E-04	2.08E-05	0.00E+00	7.77E-03	0.00E+00	0.00E+00	9.32E-05	0.00E+00	0.00E+00	7.77E-03
6265	ALL		390150	3779300	NonCancer	0.00E+00	6.07E-04	9.30E-05	0.00E+00	3.20E-08	1.85E-04	2.07E-05	0.00E+00	7.75E-03	0.00E+00	0.00E+00	9.30E-05	0.00E+00	0.00E+00	7.75E-03
93	ALL		390497	3779559	NonCancer	0.00E+00	6.06E-04	9.28E-05	0.00E+00	3.19E-08	1.85E-04	2.07E-05	0.00E+00	7.74E-03	0.00E+00	0.00E+00	9.28E-05	0.00E+00	0.00E+00	7.74E-03
6262	ALL		390000	3779300	NonCancer	0.00E+00	6.06E-04	9.28E-05	0.00E+00	3.19E-08	1.85E-04	2.07E-05	0.00E+00	7.74E-03	0.00E+00	0.00E+00	9.28E-05	0.00E+00	0.00E+00	7.74E-03
6389	ALL		390300	3779350	NonCancer	0.00E+00	5.95E-04	9.12E-05	0.00E+00	3.14E-08	1.82E-04	2.03E-05	0.00E+00	7.60E-03	0.00E+00	0.00E+00	9.12E-05	0.00E+00	0.00E+00	7.60E-03
7383	ALL		390550	3779850	NonCancer	0.00E+00	5.93E-04	9.08E-05	0.00E+00	3.13E-08	1.81E-04	2.03E-05	0.00E+00	7.57E-03	0.00E+00	0.00E+00	9.08E-05	0.00E+00	0.00E+00	7.57E-03
6266	ALL		390200	3779300	NonCancer	0.00E+00	5.92E-04	9.07E-05	0.00E+00	3.12E-08	1.81E-04	2.02E-05	0.00E+00	7.57E-03	0.00E+00	0.00E+00	9.07E-05	0.00E+00	0.00E+00	7.57E-03
6991	ALL		390550	3779650	NonCancer	0.00E+00	5.88E-04	9.02E-05	0.00E+00	3.10E-08	1.80E-04	2.01E-05	0.00E+00	7.52E-03	0.00E+00	0.00E+00	9.02E-05	0.00E+00	0.00E+00	7.52E-03
7189	ALL		390550	3779750	NonCancer	0.00E+00	5.87E-04	9.00E-05	0.00E+00	3.10E-08	1.80E-04	2.01E-05	0.00E+00	7.50E-03	0.00E+00	0.00E+00	9.00E-05	0.00E+00	0.00E+00	7.50E-03

Appendix A.5.1 - Biogas Renewable Generation Project - Flares HARP2 Output Summary - Residential HIC - Top 50

*HARP - HRACalc v17023 7/3/2017 4:46:50 PM - Chronic Risk - Input File: C:\Work\Bee\Glendale CA\Scholl Canyon Revised 6_17\HRA\Flare3\SCHOLL CANYON FLARE\hra\res_HRAInput.hra

REC	GRP	NETID	X	Y	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	GENERAL	MAXHI
8536	ALL		389750	3780450	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.47E-04	0.00E+00	2.46E-04	5.37E-07	2.51E-04	1.22E-03	0.00E+00	3.40E-07	0.00E+00	6.60E-08	2.02E-05	0.00E+00	0.00E+00	1.22E-03
20	ALL		389759	3780447	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.42E-04	0.00E+00	2.42E-04	5.28E-07	2.47E-04	1.20E-03	0.00E+00	3.35E-07	0.00E+00	6.49E-08	1.98E-05	0.00E+00	0.00E+00	1.20E-03
10	ALL		389427.5	3780207.2	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.42E-04	0.00E+00	2.41E-04	5.27E-07	2.46E-04	1.20E-03	0.00E+00	3.34E-07	0.00E+00	6.48E-08	1.98E-05	0.00E+00	0.00E+00	1.20E-03
8535	ALL		389700	3780450	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.41E-04	0.00E+00	2.41E-04	5.26E-07	2.46E-04	1.20E-03	0.00E+00	3.33E-07	0.00E+00	6.47E-08	1.97E-05	0.00E+00	0.00E+00	1.20E-03
9	ALL		389400	3780175	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.41E-04	0.00E+00	2.41E-04	5.26E-07	2.45E-04	1.19E-03	0.00E+00	3.33E-07	0.00E+00	6.46E-08	1.97E-05	0.00E+00	0.00E+00	1.19E-03
11	ALL		389455	3780239.5	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.39E-04	0.00E+00	2.38E-04	5.20E-07	2.43E-04	1.18E-03	0.00E+00	3.29E-07	0.00E+00	6.39E-08	1.95E-05	0.00E+00	0.00E+00	1.18E-03
8034	ALL		389400	3780200	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.37E-04	0.00E+00	2.37E-04	5.17E-07	2.41E-04	1.18E-03	0.00E+00	3.28E-07	0.00E+00	6.36E-08	1.94E-05	0.00E+00	0.00E+00	1.18E-03
8638	ALL		389750	3780500	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.35E-04	0.00E+00	2.35E-04	5.13E-07	2.39E-04	1.17E-03	0.00E+00	3.25E-07	0.00E+00	6.30E-08	1.92E-05	0.00E+00	0.00E+00	1.17E-03
8132	ALL		389450	3780250	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.35E-04	0.00E+00	2.34E-04	5.12E-07	2.39E-04	1.16E-03	0.00E+00	3.24E-07	0.00E+00	6.29E-08	1.92E-05	0.00E+00	0.00E+00	1.16E-03
12	ALL		389482.5	3780271.8	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.32E-04	0.00E+00	2.31E-04	5.05E-07	2.36E-04	1.15E-03	0.00E+00	3.20E-07	0.00E+00	6.21E-08	1.90E-05	0.00E+00	0.00E+00	1.15E-03
21	ALL		389767.5	3780482.5	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.30E-04	0.00E+00	2.29E-04	5.01E-07	2.34E-04	1.14E-03	0.00E+00	3.17E-07	0.00E+00	6.15E-08	1.88E-05	0.00E+00	0.00E+00	1.14E-03
8	ALL		389355.6	3780183.6	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.29E-04	0.00E+00	2.29E-04	4.99E-07	2.33E-04	1.13E-03	0.00E+00	3.16E-07	0.00E+00	6.13E-08	1.87E-05	0.00E+00	0.00E+00	1.13E-03
8131	ALL		389400	3780250	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.27E-04	0.00E+00	2.27E-04	4.95E-07	2.31E-04	1.12E-03	0.00E+00	3.13E-07	0.00E+00	6.08E-08	1.86E-05	0.00E+00	0.00E+00	1.12E-03
8433	ALL		389650	3780400	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.26E-04	0.00E+00	2.26E-04	4.93E-07	2.30E-04	1.12E-03	0.00E+00	3.12E-07	0.00E+00	6.06E-08	1.85E-05	0.00E+00	0.00E+00	1.12E-03
8033	ALL		389350	3780200	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.26E-04	0.00E+00	2.26E-04	4.93E-07	2.30E-04	1.12E-03	0.00E+00	3.12E-07	0.00E+00	6.06E-08	1.85E-05	0.00E+00	0.00E+00	1.12E-03
15	ALL		389569	3780313	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.25E-04	0.00E+00	2.24E-04	4.90E-07	2.29E-04	1.11E-03	0.00E+00	3.10E-07	0.00E+00	6.02E-08	1.84E-05	0.00E+00	0.00E+00	1.11E-03
8332	ALL		389600	3780350	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.24E-04	0.00E+00	2.24E-04	4.89E-07	2.28E-04	1.11E-03	0.00E+00	3.10E-07	0.00E+00	6.01E-08	1.83E-05	0.00E+00	0.00E+00	1.11E-03
8231	ALL		389500	3780300	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.23E-04	0.00E+00	2.23E-04	4.87E-07	2.27E-04	1.11E-03	0.00E+00	3.08E-07	0.00E+00	5.98E-08	1.83E-05	0.00E+00	0.00E+00	1.11E-03
13	ALL		389510	3780304	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.23E-04	0.00E+00	2.22E-04	4.85E-07	2.26E-04	1.10E-03	0.00E+00	3.07E-07	0.00E+00	5.96E-08	1.82E-05	0.00E+00	0.00E+00	1.10E-03
14	ALL		389539.5	3780308.5	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.23E-04	0.00E+00	2.22E-04	4.85E-07	2.26E-04	1.10E-03	0.00E+00	3.07E-07	0.00E+00	5.96E-08	1.82E-05	0.00E+00	0.00E+00	1.10E-03
8637	ALL		389700	3780500	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.21E-04	0.00E+00	2.21E-04	4.82E-07	2.25E-04	1.10E-03	0.00E+00	3.05E-07	0.00E+00	5.93E-08	1.81E-05	0.00E+00	0.00E+00	1.10E-03
8739	ALL		389750	3780550	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.21E-04	0.00E+00	2.21E-04	4.82E-07	2.25E-04	1.10E-03	0.00E+00	3.05E-07	0.00E+00	5.93E-08	1.81E-05	0.00E+00	0.00E+00	1.10E-03
16	ALL		389607	3780339.8	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.20E-04	0.00E+00	2.20E-04	4.80E-07	2.24E-04	1.09E-03	0.00E+00	3.04E-07	0.00E+00	5.90E-08	1.80E-05	0.00E+00	0.00E+00	1.09E-03
8230	ALL		389450	3780300	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.19E-04	0.00E+00	2.19E-04	4.78E-07	2.23E-04	1.09E-03	0.00E+00	3.03E-07	0.00E+00	5.88E-08	1.79E-05	0.00E+00	0.00E+00	1.09E-03
8130	ALL		389350	3780250	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.19E-04	0.00E+00	2.19E-04	4.78E-07	2.23E-04	1.09E-03	0.00E+00	3.03E-07	0.00E+00	5.87E-08	1.79E-05	0.00E+00	0.00E+00	1.09E-03
7	ALL		389311.2	3780192.2	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.18E-04	0.00E+00	2.18E-04	4.76E-07	2.22E-04	1.08E-03	0.00E+00	3.01E-07	0.00E+00	5.85E-08	1.78E-05	0.00E+00	0.00E+00	1.08E-03
30	ALL		389908	3780725	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.18E-04	0.00E+00	2.17E-04	4.75E-07	2.22E-04	1.08E-03	0.00E+00	3.01E-07	0.00E+00	5.83E-08	1.78E-05	0.00E+00	0.00E+00	1.08E-03
19	ALL		389721	3780420.2	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.18E-04	0.00E+00	2.17E-04	4.74E-07	2.21E-04	1.08E-03	0.00E+00	3.00E-07	0.00E+00	5.83E-08	1.78E-05	0.00E+00	0.00E+00	1.08E-03
8948	ALL		389850	3780650	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.17E-04	0.00E+00	2.16E-04	4.73E-07	2.21E-04	1.07E-03	0.00E+00	3.00E-07	0.00E+00	5.81E-08	1.77E-05	0.00E+00	0.00E+00	1.07E-03
8032	ALL		389300	3780200	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.15E-04	0.00E+00	2.15E-04	4.70E-07	2.19E-04	1.07E-03	0.00E+00	2.97E-07	0.00E+00	5.77E-08	1.76E-05	0.00E+00	0.00E+00	1.07E-03
29	ALL		389874.5	3780717.5	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.15E-04	0.00E+00	2.15E-04	4.70E-07	2.19E-04	1.07E-03	0.00E+00	2.97E-07	0.00E+00	5.77E-08	1.76E-05	0.00E+00	0.00E+00	1.07E-03
8229	ALL		389400	3780300	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.15E-04	0.00E+00	2.14E-04	4.69E-07	2.19E-04	1.07E-03	0.00E+00	2.97E-07	0.00E+00	5.76E-08	1.76E-05	0.00E+00	0.00E+00	1.07E-03
27	ALL		389855.3	3780676	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.14E-04	0.00E+00	2.14E-04	4.67E-07	2.18E-04	1.06E-03	0.00E+00	2.96E-07	0.00E+00	5.74E-08	1.75E-05	0.00E+00	0.00E+00	1.06E-03
8432	ALL		389600	3780400	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.14E-04	0.00E+00	2.13E-04	4.66E-07	2.18E-04	1.06E-03	0.00E+00	2.95E-07	0.00E+00	5.73E-08	1.75E-05	0.00E+00	0.00E+00	1.06E-03
26	ALL		389869.7	3780642	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.12E-04	0.00E+00	2.11E-04	4.62E-07	2.16E-04	1.05E-03	0.00E+00	2.92E-07	0.00E+00	5.67E-08	1.73E-05	0.00E+00	0.00E+00	1.05E-03
17	ALL		389645	3780366.6	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.12E-04	0.00E+00	2.11E-04	4.61E-07	2.15E-04	1.05E-03	0.00E+00	2.92E-07	0.00E+00	5.67E-08	1.73E-05	0.00E+00	0.00E+00	1.05E-03
8129	ALL		389300	3780250	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.11E-04	0.00E+00	2.11E-04	4.61E-07	2.15E-04	1.05E-03	0.00E+00	2.92E-07	0.00E+00	5.66E-08	1.73E-05	0.00E+00	0.00E+00	1.05E-03
8228	ALL		389350	3780300	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.10E-04	0.00E+00	2.10E-04	4.58E-07	2.14E-04	1.04E-03	0.00E+00	2.90E-07	0.00E+00	5.63E-08	1.72E-05	0.00E+00	0.00E+00	1.04E-03
8843	ALL		389800	3780600	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.10E-04	0.00E+00	2.09E-04	4.57E-07	2.13E-04	1.04E-03	0.00E+00	2.89E-07	0.00E+00	5.61E-08	1.71E-05	0.00E+00	0.00E+00	1.04E-03
22	ALL		389776	3780518	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.09E-04	0.00E+00	2.09E-04	4.56E-07	2.13E-04	1.04E-03	0.00E+00	2.89E-07	0.00E+00	5.60E-08	1.71E-05	0.00E+00	0.00E+00	1.04E-03
6	ALL		389266.9	3780200.9	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.09E-04	0.00E+00	2.08E-04	4.55E-07	2.12E-04	1.03E-03	0.00E+00	2.88E-07	0.00E+00	5.59E-08	1.71E-05	0.00E+00	0.00E+00	1.03E-03
31	ALL		389884.5	3780758.5	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.08E-04	0.00E+00	2.07E-04	4.53E-07	2.11E-04	1.03E-03	0.00E+00	2.87E-07	0.00E+00	5.56E-08	1.70E-05	0.00E+00	0.00E+00	1.03E-03
8331	ALL		389550	3780350	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.07E-04	0.00E+00	2.06E-04	4.50E-07	2.10E-04	1.02E-03	0.00E+00	2.85E-07	0.00E+00	5.53E-08	1.69E-05	0.00E+00	0.00E+00	1.02E-03
8330	ALL		389500	3780350	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.06E-04	0.00E+00	2.05E-04	4.48E-07	2.09E-04	1.02E-03	0.00E+00	2.84E-07	0.00E+00	5.51E-08	1.68E-05	0.00E+00	0.00E+00	1.02E-03
8227	ALL		389300	3780300	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.05E-04	0.00E+00	2.04E-04	4.47E-07	2.08E-04	1.02E-03	0.00E+00	2.83E-07	0.00E+00	5.49E-08	1.68E-05	0.00E+00	0.00E+00	1.02E-03
18	ALL		389683	3780393.4	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.05E-04	0.00E+00	2.04E-04	4.46E-07	2.08E-04	1.01E-03	0.00E+00	2.82E-07	0.00E+00	5.48E-08	1.67E-05	0.00E+00	0.00E+00	1.01E-03
8329	ALL		389450	3780350	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.04E-04	0.00E+00	2.04E-04	4.45E-07	2.08E-04	1.01E-03	0.00E+00	2.82E-07	0.00E+00	5.47E-08	1.67E-05	0.00E+00	0.00E+00	1.01E-03
8128	ALL		389250	3780250	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.04E-04	0.00E+00	2.03E-04	4.44E-07	2.07E-04	1.01E-03	0.00E+00	2.81E-07	0.00E+00	5.46E-08	1.67E-05	0.00E+00	0.00E+00	1.01E-03
8328	ALL		389400	3780350	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.02E-04	0.00E+00	2.02E-04	4.41E-07	2.06E-04	1.00E-03	0.00E+00	2.79E-07	0.00E+00	5.41E-08	1.65E-05	0.00E+00	0.00E+00	1.00E-03
9155	ALL		389850	3780750	NonCancerChronicDerived_InhSoilDermMMilk	0.00E+00	2.01E-04	0.00E+00	2.01E-04	4.39E-07	2.05E-04	9.97E-04	0.00E+00	2.78E-07	0.00E+00	5.39E-08	1.64E-05	0.00E+00	0.00E+00	9.97E-04

Appendix A.5.1 - Biogas Renewable Generation Project - Flares HARP2 Output Summary - Worker MICR - Top 50

*HARP - HRACalc v17023 7/3/2017 4:53:18 PM - Cancer Risk - Input File: C:\Work\Bee\Glendale CA\Scholl Canyon Revised 6_17\HRA\Flare3\SCHOLL CANYON FLARE\hra\work_HRAInput.hra

REC	GRP	NETID	X	Y	RISK_SUM	SCENARIO	INH_RISK	SOIL_RISK	DERMAL_RISK	MMILK_RISK	WATER_RISK	FISH_RISK	CROP_RISK	BEEF_RISK	DAIRY_RISK	PIG_RISK	CHICKEN_RISK	EGG_RISK
8536	ALL		389750	3780450	1.87E-09	2YrCancerDerived_InhSoilDerm	1.87E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	ALL		389759	3780447	1.83E-09	2YrCancerDerived_InhSoilDerm	1.83E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	ALL		389427.5	3780207.2	1.83E-09	2YrCancerDerived_InhSoilDerm	1.83E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8535	ALL		389700	3780450	1.83E-09	2YrCancerDerived_InhSoilDerm	1.83E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	ALL		389400	3780175	1.82E-09	2YrCancerDerived_InhSoilDerm	1.82E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	ALL		389455	3780239.5	1.80E-09	2YrCancerDerived_InhSoilDerm	1.80E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8034	ALL		389400	3780200	1.79E-09	2YrCancerDerived_InhSoilDerm	1.79E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8638	ALL		389750	3780500	1.78E-09	2YrCancerDerived_InhSoilDerm	1.78E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8132	ALL		389450	3780250	1.78E-09	2YrCancerDerived_InhSoilDerm	1.78E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	ALL		389482.5	3780271.8	1.75E-09	2YrCancerDerived_InhSoilDerm	1.75E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
21	ALL		389767.5	3780482.5	1.74E-09	2YrCancerDerived_InhSoilDerm	1.74E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	ALL		389355.6	3780183.6	1.73E-09	2YrCancerDerived_InhSoilDerm	1.73E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8131	ALL		389400	3780250	1.72E-09	2YrCancerDerived_InhSoilDerm	1.72E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8433	ALL		389650	3780400	1.71E-09	2YrCancerDerived_InhSoilDerm	1.71E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8033	ALL		389350	3780200	1.71E-09	2YrCancerDerived_InhSoilDerm	1.71E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
15	ALL		389569	3780313	1.70E-09	2YrCancerDerived_InhSoilDerm	1.70E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8332	ALL		389600	3780350	1.70E-09	2YrCancerDerived_InhSoilDerm	1.70E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8231	ALL		389500	3780300	1.69E-09	2YrCancerDerived_InhSoilDerm	1.69E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	ALL		389510	3780304	1.68E-09	2YrCancerDerived_InhSoilDerm	1.68E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
14	ALL		389539.5	3780308.5	1.68E-09	2YrCancerDerived_InhSoilDerm	1.68E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8637	ALL		389700	3780500	1.67E-09	2YrCancerDerived_InhSoilDerm	1.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8739	ALL		389750	3780550	1.67E-09	2YrCancerDerived_InhSoilDerm	1.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
16	ALL		389607	3780339.8	1.67E-09	2YrCancerDerived_InhSoilDerm	1.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8230	ALL		389450	3780300	1.66E-09	2YrCancerDerived_InhSoilDerm	1.66E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8130	ALL		389350	3780250	1.66E-09	2YrCancerDerived_InhSoilDerm	1.66E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	ALL		389311.2	3780192.2	1.65E-09	2YrCancerDerived_InhSoilDerm	1.65E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
30	ALL		389908	3780725	1.65E-09	2YrCancerDerived_InhSoilDerm	1.65E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
19	ALL		389721	3780420.2	1.65E-09	2YrCancerDerived_InhSoilDerm	1.65E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8948	ALL		389850	3780650	1.64E-09	2YrCancerDerived_InhSoilDerm	1.64E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8032	ALL		389300	3780200	1.63E-09	2YrCancerDerived_InhSoilDerm	1.63E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
29	ALL		389874.5	3780717.5	1.63E-09	2YrCancerDerived_InhSoilDerm	1.63E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8229	ALL		389400	3780300	1.63E-09	2YrCancerDerived_InhSoilDerm	1.63E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
27	ALL		389855.3	3780676	1.62E-09	2YrCancerDerived_InhSoilDerm	1.62E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8432	ALL		389600	3780400	1.62E-09	2YrCancerDerived_InhSoilDerm	1.62E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
26	ALL		389869.7	3780642	1.60E-09	2YrCancerDerived_InhSoilDerm	1.60E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
17	ALL		389645	3780366.6	1.60E-09	2YrCancerDerived_InhSoilDerm	1.60E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8129	ALL		389300	3780250	1.60E-09	2YrCancerDerived_InhSoilDerm	1.60E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8228	ALL		389350	3780300	1.59E-09	2YrCancerDerived_InhSoilDerm	1.59E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8843	ALL		389800	3780600	1.59E-09	2YrCancerDerived_InhSoilDerm	1.59E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
22	ALL		389776	3780518	1.58E-09	2YrCancerDerived_InhSoilDerm	1.58E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	ALL		389266.9	3780200.9	1.58E-09	2YrCancerDerived_InhSoilDerm	1.58E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
31	ALL		389884.5	3780758.5	1.57E-09	2YrCancerDerived_InhSoilDerm	1.57E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8331	ALL		389550	3780350	1.56E-09	2YrCancerDerived_InhSoilDerm	1.56E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8330	ALL		389500	3780350	1.56E-09	2YrCancerDerived_InhSoilDerm	1.56E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8227	ALL		389300	3780300	1.55E-09	2YrCancerDerived_InhSoilDerm	1.55E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
18	ALL		389683	3780393.4	1.55E-09	2YrCancerDerived_InhSoilDerm	1.55E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8329	ALL		389450	3780350	1.54E-09	2YrCancerDerived_InhSoilDerm	1.54E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8128	ALL		389250	3780250	1.54E-09	2YrCancerDerived_InhSoilDerm	1.54E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8328	ALL		389400	3780350	1.53E-09	2YrCancerDerived_InhSoilDerm	1.53E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9155	ALL		389850	3780750	1.52E-09	2YrCancerDerived_InhSoilDerm	1.52E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Appendix A.5.1 - Biogas Renewable Generation Project - Flares HARP2 Output Summary - Worker HIA - Top 50

*HARP - HRACalc v17023 7/3/2017 4:53:18 PM - Acute Risk - Input File: C:\Work\Bee\Glendale CA\Scholl Canyon Revised 6_17\HRA\Flare3\SCHOLL CANYON FLARE\hra\work_HRAInput.hra

REC	GRP	NETID	X	Y	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	GENERAL	MAXHI
86	ALL		390419.6	3779834.2	NonCancerAcute	0.00E+00	9.64E-04	1.48E-04	0.00E+00	5.08E-08	2.95E-04	3.29E-05	0.00E+00	1.23E-02	0.00E+00	0.00E+00	1.48E-04	0.00E+00	0.00E+00	1.23E-02
7381	ALL		390450	3779850	NonCancerAcute	0.00E+00	8.40E-04	1.29E-04	0.00E+00	4.43E-08	2.57E-04	2.87E-05	0.00E+00	1.07E-02	0.00E+00	0.00E+00	1.29E-04	0.00E+00	0.00E+00	1.07E-02
87	ALL		390432.2	3779792.4	NonCancerAcute	0.00E+00	8.12E-04	1.24E-04	0.00E+00	4.28E-08	2.48E-04	2.77E-05	0.00E+00	1.04E-02	0.00E+00	0.00E+00	1.24E-04	0.00E+00	0.00E+00	1.04E-02
88	ALL		390444.8	3779750.6	NonCancerAcute	0.00E+00	8.06E-04	1.24E-04	0.00E+00	4.25E-08	2.47E-04	2.76E-05	0.00E+00	1.03E-02	0.00E+00	0.00E+00	1.24E-04	0.00E+00	0.00E+00	1.03E-02
7187	ALL		390450	3779750	NonCancerAcute	0.00E+00	7.93E-04	1.21E-04	0.00E+00	4.18E-08	2.42E-04	2.71E-05	0.00E+00	1.01E-02	0.00E+00	0.00E+00	1.21E-04	0.00E+00	0.00E+00	1.01E-02
85	ALL		390407	3779876	NonCancerAcute	0.00E+00	7.80E-04	1.19E-04	0.00E+00	4.11E-08	2.38E-04	2.67E-05	0.00E+00	9.96E-03	0.00E+00	0.00E+00	1.19E-04	0.00E+00	0.00E+00	9.96E-03
7285	ALL		390450	3779800	NonCancerAcute	0.00E+00	7.68E-04	1.18E-04	0.00E+00	4.05E-08	2.35E-04	2.62E-05	0.00E+00	9.81E-03	0.00E+00	0.00E+00	1.18E-04	0.00E+00	0.00E+00	9.81E-03
89	ALL		390457.4	3779708.8	NonCancerAcute	0.00E+00	7.33E-04	1.12E-04	0.00E+00	3.87E-08	2.24E-04	2.51E-05	0.00E+00	9.37E-03	0.00E+00	0.00E+00	1.12E-04	0.00E+00	0.00E+00	9.37E-03
111	ALL		390067.2	3779358.3	NonCancerAcute	0.00E+00	7.20E-04	1.10E-04	0.00E+00	3.80E-08	2.20E-04	2.46E-05	0.00E+00	9.20E-03	0.00E+00	0.00E+00	1.10E-04	0.00E+00	0.00E+00	9.20E-03
112	ALL		390018.9	3779359.5	NonCancerAcute	0.00E+00	7.19E-04	1.10E-04	0.00E+00	3.79E-08	2.20E-04	2.46E-05	0.00E+00	9.19E-03	0.00E+00	0.00E+00	1.10E-04	0.00E+00	0.00E+00	9.19E-03
90	ALL		390470	3779667	NonCancerAcute	0.00E+00	7.15E-04	1.10E-04	0.00E+00	3.77E-08	2.19E-04	2.45E-05	0.00E+00	9.14E-03	0.00E+00	0.00E+00	1.10E-04	0.00E+00	0.00E+00	9.14E-03
6384	ALL		390050	3779350	NonCancerAcute	0.00E+00	7.12E-04	1.09E-04	0.00E+00	3.75E-08	2.18E-04	2.43E-05	0.00E+00	9.10E-03	0.00E+00	0.00E+00	1.09E-04	0.00E+00	0.00E+00	9.10E-03
110	ALL		390115.5	3779357	NonCancerAcute	0.00E+00	7.07E-04	1.08E-04	0.00E+00	3.73E-08	2.16E-04	2.42E-05	0.00E+00	9.04E-03	0.00E+00	0.00E+00	1.08E-04	0.00E+00	0.00E+00	9.04E-03
113	ALL		389970.5	3779360.8	NonCancerAcute	0.00E+00	7.07E-04	1.08E-04	0.00E+00	3.73E-08	2.16E-04	2.42E-05	0.00E+00	9.03E-03	0.00E+00	0.00E+00	1.08E-04	0.00E+00	0.00E+00	9.03E-03
6383	ALL		390000	3779350	NonCancerAcute	0.00E+00	7.01E-04	1.07E-04	0.00E+00	3.69E-08	2.14E-04	2.40E-05	0.00E+00	8.95E-03	0.00E+00	0.00E+00	1.07E-04	0.00E+00	0.00E+00	8.95E-03
6385	ALL		390100	3779350	NonCancerAcute	0.00E+00	6.92E-04	1.06E-04	0.00E+00	3.65E-08	2.11E-04	2.36E-05	0.00E+00	8.84E-03	0.00E+00	0.00E+00	1.06E-04	0.00E+00	0.00E+00	8.84E-03
91	ALL		390471.5	3779633.5	NonCancerAcute	0.00E+00	6.92E-04	1.06E-04	0.00E+00	3.65E-08	2.11E-04	2.36E-05	0.00E+00	8.84E-03	0.00E+00	0.00E+00	1.06E-04	0.00E+00	0.00E+00	8.84E-03
109	ALL		390163.8	3779355.7	NonCancerAcute	0.00E+00	6.86E-04	1.05E-04	0.00E+00	3.61E-08	2.10E-04	2.34E-05	0.00E+00	8.76E-03	0.00E+00	0.00E+00	1.05E-04	0.00E+00	0.00E+00	8.76E-03
7382	ALL		390500	3779850	NonCancerAcute	0.00E+00	6.85E-04	1.05E-04	0.00E+00	3.61E-08	2.09E-04	2.34E-05	0.00E+00	8.75E-03	0.00E+00	0.00E+00	1.05E-04	0.00E+00	0.00E+00	8.75E-03
7478	ALL		390500	3779900	NonCancerAcute	0.00E+00	6.83E-04	1.05E-04	0.00E+00	3.60E-08	2.09E-04	2.33E-05	0.00E+00	8.72E-03	0.00E+00	0.00E+00	1.05E-04	0.00E+00	0.00E+00	8.72E-03
7188	ALL		390500	3779750	NonCancerAcute	0.00E+00	6.79E-04	1.04E-04	0.00E+00	3.58E-08	2.08E-04	2.32E-05	0.00E+00	8.67E-03	0.00E+00	0.00E+00	1.04E-04	0.00E+00	0.00E+00	8.67E-03
6386	ALL		390150	3779350	NonCancerAcute	0.00E+00	6.78E-04	1.04E-04	0.00E+00	3.58E-08	2.07E-04	2.32E-05	0.00E+00	8.66E-03	0.00E+00	0.00E+00	1.04E-04	0.00E+00	0.00E+00	8.66E-03
92	ALL		390473	3779600	NonCancerAcute	0.00E+00	6.64E-04	1.02E-04	0.00E+00	3.50E-08	2.03E-04	2.27E-05	0.00E+00	8.48E-03	0.00E+00	0.00E+00	1.02E-04	0.00E+00	0.00E+00	8.48E-03
116	ALL		389825.6	3779364.6	NonCancerAcute	0.00E+00	6.58E-04	1.01E-04	0.00E+00	3.47E-08	2.01E-04	2.25E-05	0.00E+00	8.41E-03	0.00E+00	0.00E+00	1.01E-04	0.00E+00	0.00E+00	8.41E-03
6382	ALL		389950	3779350	NonCancerAcute	0.00E+00	6.58E-04	1.01E-04	0.00E+00	3.47E-08	2.01E-04	2.25E-05	0.00E+00	8.41E-03	0.00E+00	0.00E+00	1.01E-04	0.00E+00	0.00E+00	8.41E-03
6387	ALL		390200	3779350	NonCancerAcute	0.00E+00	6.58E-04	1.01E-04	0.00E+00	3.47E-08	2.01E-04	2.25E-05	0.00E+00	8.41E-03	0.00E+00	0.00E+00	1.01E-04	0.00E+00	0.00E+00	8.41E-03
6990	ALL		390500	3779650	NonCancerAcute	0.00E+00	6.58E-04	1.01E-04	0.00E+00	3.47E-08	2.01E-04	2.25E-05	0.00E+00	8.41E-03	0.00E+00	0.00E+00	1.01E-04	0.00E+00	0.00E+00	8.41E-03
7286	ALL		390500	3779800	NonCancerAcute	0.00E+00	6.56E-04	1.01E-04	0.00E+00	3.46E-08	2.01E-04	2.24E-05	0.00E+00	8.39E-03	0.00E+00	0.00E+00	1.01E-04	0.00E+00	0.00E+00	8.39E-03
7089	ALL		390500	3779700	NonCancerAcute	0.00E+00	6.54E-04	1.00E-04	0.00E+00	3.45E-08	2.00E-04	2.23E-05	0.00E+00	8.35E-03	0.00E+00	0.00E+00	1.00E-04	0.00E+00	0.00E+00	8.35E-03
108	ALL		390212.1	3779354.5	NonCancerAcute	0.00E+00	6.51E-04	9.98E-05	0.00E+00	3.43E-08	1.99E-04	2.23E-05	0.00E+00	8.32E-03	0.00E+00	0.00E+00	9.98E-05	0.00E+00	0.00E+00	8.32E-03
7477	ALL		390450	3779900	NonCancerAcute	0.00E+00	6.44E-04	9.86E-05	0.00E+00	3.39E-08	1.97E-04	2.20E-05	0.00E+00	8.22E-03	0.00E+00	0.00E+00	9.86E-05	0.00E+00	0.00E+00	8.22E-03
115	ALL		389873.9	3779363.4	NonCancerAcute	0.00E+00	6.37E-04	9.77E-05	0.00E+00	3.36E-08	1.95E-04	2.18E-05	0.00E+00	8.14E-03	0.00E+00	0.00E+00	9.77E-05	0.00E+00	0.00E+00	8.14E-03
6388	ALL		390250	3779350	NonCancerAcute	0.00E+00	6.33E-04	9.70E-05	0.00E+00	3.34E-08	1.94E-04	2.16E-05	0.00E+00	8.09E-03	0.00E+00	0.00E+00	9.70E-05	0.00E+00	0.00E+00	8.09E-03
107	ALL		390260.5	3779353.2	NonCancerAcute	0.00E+00	6.32E-04	9.69E-05	0.00E+00	3.33E-08	1.93E-04	2.16E-05	0.00E+00	8.08E-03	0.00E+00	0.00E+00	9.69E-05	0.00E+00	0.00E+00	8.08E-03
6263	ALL		390050	3779300	NonCancerAcute	0.00E+00	6.31E-04	9.67E-05	0.00E+00	3.33E-08	1.93E-04	2.16E-05	0.00E+00	8.07E-03	0.00E+00	0.00E+00	9.67E-05	0.00E+00	0.00E+00	8.07E-03
6380	ALL		389850	3779350	NonCancerAcute	0.00E+00	6.30E-04	9.66E-05	0.00E+00	3.32E-08	1.93E-04	2.16E-05	0.00E+00	8.05E-03	0.00E+00	0.00E+00	9.66E-05	0.00E+00	0.00E+00	8.05E-03
6891	ALL		390500	3779600	NonCancerAcute	0.00E+00	6.30E-04	9.66E-05	0.00E+00	3.32E-08	1.93E-04	2.15E-05	0.00E+00	8.05E-03	0.00E+00	0.00E+00	9.66E-05	0.00E+00	0.00E+00	8.05E-03
117	ALL		389777.3	3779365.9	NonCancerAcute	0.00E+00	6.26E-04	9.60E-05	0.00E+00	3.30E-08	1.91E-04	2.14E-05	0.00E+00	8.00E-03	0.00E+00	0.00E+00	9.60E-05	0.00E+00	0.00E+00	8.00E-03
6379	ALL		389800	3779350	NonCancerAcute	0.00E+00	6.24E-04	9.56E-05	0.00E+00	3.29E-08	1.91E-04	2.13E-05	0.00E+00	7.97E-03	0.00E+00	0.00E+00	9.56E-05	0.00E+00	0.00E+00	7.97E-03
114	ALL		389922.2	3779362.1	NonCancerAcute	0.00E+00	6.20E-04	9.50E-05	0.00E+00	3.27E-08	1.90E-04	2.12E-05	0.00E+00	7.92E-03	0.00E+00	0.00E+00	9.50E-05	0.00E+00	0.00E+00	7.92E-03
84	ALL		390438.3	3779909.3	NonCancerAcute	0.00E+00	6.15E-04	9.42E-05	0.00E+00	3.24E-08	1.88E-04	2.10E-05	0.00E+00	7.85E-03	0.00E+00	0.00E+00	9.42E-05	0.00E+00	0.00E+00	7.85E-03
6264	ALL		390100	3779300	NonCancerAcute	0.00E+00	6.08E-04	9.32E-05	0.00E+00	3.21E-08	1.86E-04	2.08E-05	0.00E+00	7.77E-03	0.00E+00	0.00E+00	9.32E-05	0.00E+00	0.00E+00	7.77E-03
6265	ALL		390150	3779300	NonCancerAcute	0.00E+00	6.07E-04	9.30E-05	0.00E+00	3.20E-08	1.85E-04	2.07E-05	0.00E+00	7.75E-03	0.00E+00	0.00E+00	9.30E-05	0.00E+00	0.00E+00	7.75E-03
93	ALL		390497	3779559	NonCancerAcute	0.00E+00	6.06E-04	9.28E-05	0.00E+00	3.19E-08	1.85E-04	2.07E-05	0.00E+00	7.74E-03	0.00E+00	0.00E+00	9.28E-05	0.00E+00	0.00E+00	7.74E-03
6262	ALL		390000	3779300	NonCancerAcute	0.00E+00	6.06E-04	9.28E-05	0.00E+00	3.19E-08	1.85E-04	2.07E-05	0.00E+00	7.74E-03	0.00E+00	0.00E+00	9.28E-05	0.00E+00	0.00E+00	7.74E-03
6389	ALL		390300	3779350	NonCancerAcute	0.00E+00	5.95E-04	9.12E-05	0.00E+00	3.14E-08	1.82E-04	2.03E-05	0.00E+00	7.60E-03	0.00E+00	0.00E+00	9.12E-05	0.00E+00	0.00E+00	7.60E-03
7383	ALL		390550	3779850	NonCancerAcute	0.00E+00	5.93E-04	9.08E-05	0.00E+00	3.13E-08	1.81E-04	2.03E-05	0.00E+00	7.57E-03	0.00E+00	0.00E+00	9.08E-05	0.00E+00	0.00E+00	7.57E-03
6266	ALL		390200	3779300	NonCancerAcute	0.00E+00	5.92E-04	9.07E-05	0.00E+00	3.12E-08	1.81E-04	2.02E-05	0.00E+00	7.57E-03	0.00E+00	0.00E+00	9.07E-05	0.00E+00	0.00E+00	7.57E-03
6991	ALL		390550	3779650	NonCancerAcute	0.00E+00	5.88E-04	9.02E-05	0.00E+00	3.10E-08	1.80E-04	2.01E-05	0.00E+00	7.52E-03	0.00E+00	0.00E+00	9.02E-05	0.00E+00	0.00E+00	7.52E-03
7189	ALL		390550	3779750	NonCancerAcute	0.00E+00	5.87E-04	9.00E-05	0.00E+00	3.10E-08	1.80E-04	2.01E-05	0.00E+00	7.50E-03	0.00E+00	0.00E+00	9.00E-05	0.00E+00	0.00E+00	7.50E-03

Appendix A.5.1 - Biogas Renewable Generation Project - Flares HARP2 Output Summary - Worker HIC - Top 50

*HARP - HRACalc v17023 7/3/2017 4:53:18 PM - Chronic Risk - Input File: C:\Work\Bee\Glendale CA\Scholl Canyon Revised 6_17\HRA\Flare3\SCHOLL CANYON FLARE\hra\work_HRAInput.hra

REC	GRP	NETID	X	Y	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	GENERAL	MAXHI
8536	ALL		389750	3780450	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.68E-04	0.00E+00	1.67E-04	5.37E-07	1.72E-04	1.22E-03	0.00E+00	3.40E-07	0.00E+00	6.60E-08	2.02E-05	0.00E+00	0.00E+00	1.22E-03
20	ALL		389759	3780447	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.65E-04	0.00E+00	1.65E-04	5.28E-07	1.69E-04	1.20E-03	0.00E+00	3.35E-07	0.00E+00	6.49E-08	1.98E-05	0.00E+00	0.00E+00	1.20E-03
10	ALL		389427.5	3780207.2	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.65E-04	0.00E+00	1.64E-04	5.27E-07	1.69E-04	1.20E-03	0.00E+00	3.34E-07	0.00E+00	6.48E-08	1.98E-05	0.00E+00	0.00E+00	1.20E-03
8535	ALL		389700	3780450	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.64E-04	0.00E+00	1.64E-04	5.26E-07	1.69E-04	1.20E-03	0.00E+00	3.33E-07	0.00E+00	6.47E-08	1.97E-05	0.00E+00	0.00E+00	1.20E-03
9	ALL		389400	3780175	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.64E-04	0.00E+00	1.64E-04	5.26E-07	1.69E-04	1.19E-03	0.00E+00	3.33E-07	0.00E+00	6.46E-08	1.97E-05	0.00E+00	0.00E+00	1.19E-03
11	ALL		389455	3780239.5	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.63E-04	0.00E+00	1.62E-04	5.20E-07	1.67E-04	1.18E-03	0.00E+00	3.29E-07	0.00E+00	6.39E-08	1.95E-05	0.00E+00	0.00E+00	1.18E-03
8034	ALL		389400	3780200	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.62E-04	0.00E+00	1.61E-04	5.17E-07	1.66E-04	1.18E-03	0.00E+00	3.28E-07	0.00E+00	6.36E-08	1.94E-05	0.00E+00	0.00E+00	1.18E-03
8638	ALL		389750	3780500	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.60E-04	0.00E+00	1.60E-04	5.13E-07	1.64E-04	1.17E-03	0.00E+00	3.25E-07	0.00E+00	6.30E-08	1.92E-05	0.00E+00	0.00E+00	1.17E-03
8132	ALL		389450	3780250	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.60E-04	0.00E+00	1.59E-04	5.12E-07	1.64E-04	1.16E-03	0.00E+00	3.24E-07	0.00E+00	6.29E-08	1.92E-05	0.00E+00	0.00E+00	1.16E-03
12	ALL		389482.5	3780271.8	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.58E-04	0.00E+00	1.57E-04	5.05E-07	1.62E-04	1.15E-03	0.00E+00	3.20E-07	0.00E+00	6.21E-08	1.90E-05	0.00E+00	0.00E+00	1.15E-03
21	ALL		389767.5	3780482.5	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.56E-04	0.00E+00	1.56E-04	5.01E-07	1.60E-04	1.14E-03	0.00E+00	3.17E-07	0.00E+00	6.15E-08	1.88E-05	0.00E+00	0.00E+00	1.14E-03
8	ALL		389355.6	3780183.6	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.56E-04	0.00E+00	1.55E-04	4.99E-07	1.60E-04	1.13E-03	0.00E+00	3.16E-07	0.00E+00	6.13E-08	1.87E-05	0.00E+00	0.00E+00	1.13E-03
8131	ALL		389400	3780250	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.55E-04	0.00E+00	1.54E-04	4.95E-07	1.59E-04	1.12E-03	0.00E+00	3.13E-07	0.00E+00	6.08E-08	1.86E-05	0.00E+00	0.00E+00	1.12E-03
8433	ALL		389650	3780400	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.54E-04	0.00E+00	1.54E-04	4.93E-07	1.58E-04	1.12E-03	0.00E+00	3.12E-07	0.00E+00	6.06E-08	1.85E-05	0.00E+00	0.00E+00	1.12E-03
8033	ALL		389350	3780200	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.54E-04	0.00E+00	1.54E-04	4.93E-07	1.58E-04	1.12E-03	0.00E+00	3.12E-07	0.00E+00	6.06E-08	1.85E-05	0.00E+00	0.00E+00	1.12E-03
15	ALL		389569	3780313	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.53E-04	0.00E+00	1.53E-04	4.90E-07	1.57E-04	1.11E-03	0.00E+00	3.10E-07	0.00E+00	6.02E-08	1.84E-05	0.00E+00	0.00E+00	1.11E-03
8332	ALL		389600	3780350	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.53E-04	0.00E+00	1.52E-04	4.89E-07	1.57E-04	1.11E-03	0.00E+00	3.10E-07	0.00E+00	6.01E-08	1.83E-05	0.00E+00	0.00E+00	1.11E-03
8231	ALL		389500	3780300	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.52E-04	0.00E+00	1.52E-04	4.87E-07	1.56E-04	1.11E-03	0.00E+00	3.08E-07	0.00E+00	5.98E-08	1.83E-05	0.00E+00	0.00E+00	1.11E-03
13	ALL		389510	3780304	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.52E-04	0.00E+00	1.51E-04	4.85E-07	1.56E-04	1.10E-03	0.00E+00	3.07E-07	0.00E+00	5.96E-08	1.82E-05	0.00E+00	0.00E+00	1.10E-03
14	ALL		389539.5	3780308.5	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.52E-04	0.00E+00	1.51E-04	4.85E-07	1.55E-04	1.10E-03	0.00E+00	3.07E-07	0.00E+00	5.96E-08	1.82E-05	0.00E+00	0.00E+00	1.10E-03
8637	ALL		389700	3780500	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.51E-04	0.00E+00	1.50E-04	4.82E-07	1.55E-04	1.10E-03	0.00E+00	3.05E-07	0.00E+00	5.93E-08	1.81E-05	0.00E+00	0.00E+00	1.10E-03
8739	ALL		389750	3780550	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.51E-04	0.00E+00	1.50E-04	4.82E-07	1.55E-04	1.10E-03	0.00E+00	3.05E-07	0.00E+00	5.93E-08	1.81E-05	0.00E+00	0.00E+00	1.10E-03
16	ALL		389607	3780339.8	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.50E-04	0.00E+00	1.49E-04	4.80E-07	1.54E-04	1.09E-03	0.00E+00	3.04E-07	0.00E+00	5.90E-08	1.80E-05	0.00E+00	0.00E+00	1.09E-03
8230	ALL		389450	3780300	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.49E-04	0.00E+00	1.49E-04	4.78E-07	1.53E-04	1.09E-03	0.00E+00	3.03E-07	0.00E+00	5.88E-08	1.79E-05	0.00E+00	0.00E+00	1.09E-03
8130	ALL		389350	3780250	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.49E-04	0.00E+00	1.49E-04	4.78E-07	1.53E-04	1.09E-03	0.00E+00	3.03E-07	0.00E+00	5.87E-08	1.79E-05	0.00E+00	0.00E+00	1.09E-03
7	ALL		389311.2	3780192.2	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.49E-04	0.00E+00	1.48E-04	4.76E-07	1.52E-04	1.08E-03	0.00E+00	3.01E-07	0.00E+00	5.85E-08	1.78E-05	0.00E+00	0.00E+00	1.08E-03
30	ALL		389908	3780725	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.48E-04	0.00E+00	1.48E-04	4.75E-07	1.52E-04	1.08E-03	0.00E+00	3.01E-07	0.00E+00	5.83E-08	1.78E-05	0.00E+00	0.00E+00	1.08E-03
19	ALL		389721	3780420.2	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.48E-04	0.00E+00	1.48E-04	4.74E-07	1.52E-04	1.08E-03	0.00E+00	3.00E-07	0.00E+00	5.83E-08	1.78E-05	0.00E+00	0.00E+00	1.08E-03
8948	ALL		389850	3780650	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.48E-04	0.00E+00	1.47E-04	4.73E-07	1.52E-04	1.07E-03	0.00E+00	3.00E-07	0.00E+00	5.81E-08	1.77E-05	0.00E+00	0.00E+00	1.07E-03
8032	ALL		389300	3780200	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.47E-04	0.00E+00	1.46E-04	4.70E-07	1.51E-04	1.07E-03	0.00E+00	2.97E-07	0.00E+00	5.77E-08	1.76E-05	0.00E+00	0.00E+00	1.07E-03
29	ALL		389874.5	3780717.5	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.47E-04	0.00E+00	1.46E-04	4.70E-07	1.50E-04	1.07E-03	0.00E+00	2.97E-07	0.00E+00	5.77E-08	1.76E-05	0.00E+00	0.00E+00	1.07E-03
8229	ALL		389400	3780300	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.46E-04	0.00E+00	1.46E-04	4.69E-07	1.50E-04	1.07E-03	0.00E+00	2.97E-07	0.00E+00	5.76E-08	1.76E-05	0.00E+00	0.00E+00	1.07E-03
27	ALL		389855.3	3780676	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.46E-04	0.00E+00	1.46E-04	4.67E-07	1.50E-04	1.06E-03	0.00E+00	2.96E-07	0.00E+00	5.74E-08	1.75E-05	0.00E+00	0.00E+00	1.06E-03
8432	ALL		389600	3780400	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.46E-04	0.00E+00	1.45E-04	4.66E-07	1.49E-04	1.06E-03	0.00E+00	2.95E-07	0.00E+00	5.73E-08	1.75E-05	0.00E+00	0.00E+00	1.06E-03
26	ALL		389869.7	3780642	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.44E-04	0.00E+00	1.44E-04	4.62E-07	1.48E-04	1.05E-03	0.00E+00	2.92E-07	0.00E+00	5.67E-08	1.73E-05	0.00E+00	0.00E+00	1.05E-03
17	ALL		389645	3780366.6	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.44E-04	0.00E+00	1.44E-04	4.61E-07	1.48E-04	1.05E-03	0.00E+00	2.92E-07	0.00E+00	5.67E-08	1.73E-05	0.00E+00	0.00E+00	1.05E-03
8129	ALL		389300	3780250	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.44E-04	0.00E+00	1.44E-04	4.61E-07	1.48E-04	1.05E-03	0.00E+00	2.92E-07	0.00E+00	5.66E-08	1.73E-05	0.00E+00	0.00E+00	1.05E-03
8228	ALL		389350	3780300	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.43E-04	0.00E+00	1.43E-04	4.58E-07	1.47E-04	1.04E-03	0.00E+00	2.90E-07	0.00E+00	5.63E-08	1.72E-05	0.00E+00	0.00E+00	1.04E-03
8843	ALL		389800	3780600	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.43E-04	0.00E+00	1.42E-04	4.57E-07	1.46E-04	1.04E-03	0.00E+00	2.89E-07	0.00E+00	5.61E-08	1.71E-05	0.00E+00	0.00E+00	1.04E-03
22	ALL		389776	3780518	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.42E-04	0.00E+00	1.42E-04	4.56E-07	1.46E-04	1.04E-03	0.00E+00	2.89E-07	0.00E+00	5.60E-08	1.71E-05	0.00E+00	0.00E+00	1.04E-03
6	ALL		389266.9	3780200.9	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.42E-04	0.00E+00	1.42E-04	4.55E-07	1.46E-04	1.03E-03	0.00E+00	2.88E-07	0.00E+00	5.59E-08	1.71E-05	0.00E+00	0.00E+00	1.03E-03
31	ALL		389884.5	3780758.5	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.42E-04	0.00E+00	1.41E-04	4.53E-07	1.45E-04	1.03E-03	0.00E+00	2.87E-07	0.00E+00	5.56E-08	1.70E-05	0.00E+00	0.00E+00	1.03E-03
8331	ALL		389550	3780350	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.41E-04	0.00E+00	1.40E-04	4.50E-07	1.44E-04	1.02E-03	0.00E+00	2.85E-07	0.00E+00	5.53E-08	1.69E-05	0.00E+00	0.00E+00	1.02E-03
8330	ALL		389500	3780350	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.40E-04	0.00E+00	1.40E-04	4.48E-07	1.44E-04	1.02E-03	0.00E+00	2.84E-07	0.00E+00	5.51E-08	1.68E-05	0.00E+00	0.00E+00	1.02E-03
8227	ALL		389300	3780300	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.40E-04	0.00E+00	1.39E-04	4.47E-07	1.43E-04	1.02E-03	0.00E+00	2.83E-07	0.00E+00	5.49E-08	1.68E-05	0.00E+00	0.00E+00	1.02E-03
18	ALL		389683	3780393.4	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.39E-04	0.00E+00	1.39E-04	4.46E-07	1.43E-04	1.01E-03	0.00E+00	2.82E-07	0.00E+00	5.48E-08	1.67E-05	0.00E+00	0.00E+00	1.01E-03
8329	ALL		389450	3780350	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.39E-04	0.00E+00	1.39E-04	4.45E-07	1.43E-04	1.01E-03	0.00E+00	2.82E-07	0.00E+00	5.47E-08	1.67E-05	0.00E+00	0.00E+00	1.01E-03
8128	ALL		389250	3780250	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.39E-04	0.00E+00	1.38E-04	4.44E-07	1.42E-04	1.01E-03	0.00E+00	2.81E-07	0.00E+00	5.46E-08	1.67E-05	0.00E+00	0.00E+00	1.01E-03
8328	ALL		389400	3780350	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.38E-04	0.00E+00	1.37E-04	4.41E-07	1.41E-04	1.00E-03	0.00E+00	2.79E-07	0.00E+00	5.41E-08	1.65E-05	0.00E+00	0.00E+00	1.00E-03
9155	ALL		389850	3780750	NonCancerChronicDerived_InhSoilDerm	0.00E+00	1.37E-04	0.00E+00	1.37E-04	4.39E-07	1.41E-04	9.97E-04	0.00E+00	2.78E-07	0.00E+00	5.39E-08	1.64E-05	0.00E+00	0.00E+00	9.97E-04

Appendix C BIOLOGICAL RESOURCES TECHNICAL REPORT



Biogas Renewable Generation Project

Updated Biological Resources Technical Report

Report Date

Prepared for:

City of Glendale
141 North Glendale Avenue
Glendale, California 91206

Prepared by:

Stantec Consulting Services Inc.
290 Conejo Ridge Ave.
Thousand Oaks, California 91361

Sign-off Sheet

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Prepared by 

M. Weber, for:

Rocky Brown, Associate Biologist

Reviewed by 

StephAnnie Roberts, Senior Project Manager

Approved by 

Jared Varonin, Principal Biologist

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Abbreviations

amsl	above mean sea level
BMPs	Best Management Practices
BRTR	Biological Recourses Technical Report
BSA	Biological Study Area
CCH	Consortium of California Herbaria
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
ESA	Endangered Species Act
MBTA	Migratory Bird Treaty Act
MCVII	Manual of California Vegetation, Volume II
MW	Megawatt
NEPA	National Environmental Policy Act
NPPA	Native Plant Protection Act
Project	Biogas Renewable Generation Project
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
SCLF	Scholl Canyon Landfill
SR	California State Route
USACE	United States Army Corps of Engineers
USFWS	U.S. Fish & Wildlife Service
USGS	U.S. Geological Survey
WEAP	Worker Environmental Awareness Program
WDR	Waste Discharge Requirement
LFG	Landfill Gas



1.0 INTRODUCTION

This report is intended to document the biological resources that are associated with the Biogas Renewable Generation Project (Project) located within the Scholl Canyon Landfill (SCLF) in Glendale, California (refer to **Appendix A, Figure 1**). The survey was conducted by Stantec biologists on April 29, 2019, within the approximately 235-acre Project Biological Study Area (BSA), which includes the southern and western sections of the SCLF and adjacent lands proposed for development of the Project components and a surrounding 300-foot buffer area (refer to **Appendix A, Figure 2** for a depiction of the BSA).

Throughout the planning stages for the Project, Stantec biologists conducted several surveys within the BSA to evaluate potential constraints to Project's implementation regarding biological resources. Based on the results of these previous surveys, Stantec prepared an initial Biological Resources Technical Report (BRTR) (Stantec, 2017), dated July 20, 2017, for the Project. This report is based on the results of the most recent (April 29, 2019) biological survey, though the previous analysis was consulted along with other background materials.

1.1 PURPOSE OF THE REPORT

This report serves as an update to the existing BRTR prepared by Stantec, dated July 20, 2017. This report describes the existing biological resources and environmental conditions that occur within or adjacent to the BSA with special emphasis on habitat for special-status plant and wildlife species, special-status/sensitive natural communities, and wildlife movement corridors, and evaluates the potential for special-status species to occur within the BSA based on conditions observed in the field.

1.2 PROJECT LOCATION

The Project is located within the existing SCLF property, which is located at 3001 Scholl Canyon Road in the City of Glendale, California, approximately one-half mile north of California State Route (SR) 134 (**Appendix A, Figure 1**). The BSA is situated in Township 1 North, Range 13 West of the U.S. Geographical Survey (USGS) Pasadena 7.5-minute topographic quadrangle.

1.3 PROJECT DESCRIPTION

The purpose of the Project is to beneficially utilize the methane-rich renewable landfill gas (LFG) produced by the Scholl Canyon Landfill. The Project includes the construction and operation of an approximately 12-megawatt (MW) power generation facility that would utilize LFG as fuel to generate renewable energy (electricity) and associated infrastructure. Project components are depicted in **Appendix A, Figure 2**.



2.0 METHODOLOGIES

Stantec biologists have conducted several surveys within the BSA during the Project's planning phase to evaluate potential constraints to its implementation with regard to biological resources. Field evaluations were conducted on October 21, 2015, November 3, 2015, January 15, 2016, and July 11, 2017, with focused rare plant surveys occurring on January 15, April 15, and September 8, 2016. The results of these surveys were presented in a BRTR prepared by Stantec, dated July 20, 2017, that has been used as a baseline for this follow-up survey and updated reporting.

To support the update, Stantec biologists conducted a reconnaissance-level survey on April 29, 2019. Prior to the survey, a preliminary literature review was performed of readily available resources relevant to environmental conditions within the BSA, including the 2017 BRTR. The field assessment included a non-protocol survey for plants, wildlife, and other biological resources and was intended to detect the presence of special-status plant and wildlife species, including nesting birds, where possible. The survey was conducted on foot within the BSA where accessible based on terrain, vegetative cover, and availability of public access.

2.1 LITERATURE REVIEW

Stantec biologists conducted a literature search focused on the BSA prior to the field survey. The BSA is located within the USGS Pasadena, California, 7.5-minute topographic quadrangle. A search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) was conducted for this quadrangle to determine special-status plants, wildlife, and vegetation communities that have been documented within the vicinity of the BSA (CDFW, 2019). The following eight adjacent quadrangles were also included in the database search to encompass potential occurrences of special-status species in the region surrounding the BSA:

- Sunland
- Condor Peak
- Chilao Flat
- Burbank
- Mount Wilson
- Hollywood
- Los Angeles
- El Monte

Additional data regarding the potential occurrence of special-status species and policies relating to these special-status natural resources were gathered from the following sources:

- State and federally listed endangered and threatened animals of California (CDFW, 2018b);
- Special Animals List (CDFW, 2018c);
- List of California Sensitive Natural Terrestrial Communities (CDFW, 2018d);
- Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2018); and
- Consortium of California Herbaria (CCH, 2018).

2.2 HABITAT ASSESSMENT AND BIOLOGICAL SURVEYS

2.2.1 Site Reconnaissance and Wildlife Surveys

In order to document the environmental conditions, present within the BSA, Stantec conducted a habitat assessment and reconnaissance-level survey on April 29, 2019. The primary goal of this survey was to identify and assess habitat



that may be capable of supporting special-status plant or wildlife species and determine the potential need for additional focused surveys for special-status resources. Biologists also recorded all incidental plant and wildlife observations, but this assessment did not include focused, protocol-level surveys for rare plants or other special-status resources.

The BSA was investigated on foot by experienced field biologists walking meandering transects through accessible portions of the BSA at an average pace of approximately 1.5 kilometer/hour while visually scanning for wildlife and their sign and listening to wildlife songs and calls. Biologists halted approximately every 50 meters to listen for wildlife or as necessary to identify, record, or enumerate any detected species. Terrestrial insects and other invertebrates were searched for on flowers and leaves, under loose bark, and under stones and logs on the ground throughout the BSA. Randomly selected areas within appropriate micro habitats (e.g., leaf litter, woody debris piles, etc.) were hand raked or visually inspected to determine the presence/absence of gastropods, reptiles, small mammals, and amphibians. Species present were identified and recorded through direct visual observation, sound, or their sign (e.g., scat, tracks, etc.) and all potential refugia sites search were returned to their original state upon completion of inspection. Species identifications conform to the most up-to-date field guides and technical literature.

The survey was conducted during the recognized bird breeding/nestingseason and time of day when resident and migratory birds would be expected to be present and potentially exhibiting nesting activity, small mammals would be active and detectable visually or by sign, and above-ground amphibian and reptile movement would generally be detectable. However, it should be noted that some wildlife species and/or individuals may have been difficult to detect due to their elusive nature, cryptic morphology, or nocturnal behavior. Surveys were conducted during daylight hours when temperatures were such that reptiles and other wildlife would be active (i.e., between 65-95° Fahrenheit).

2.2.2 Vegetation Mapping

Vegetation mapping was conducted concurrently with the reconnaissance survey. Vegetation descriptions and nomenclature are based on Sawyer et al. (2009), where applicable, and have been defined at least to the alliance level. Vegetation maps were prepared by recording tentative vegetation type boundaries over recent aerial photograph base maps using the Esri® Collector for ArcGIS app on an Apple® iPad® coupled with a Bad Elf® GNSS Surveyor sub-meter external global positioning system (GPS) unit. Mapping was further refined in the office using ArcGIS (version 10.4) with aerial photograph base maps with an accuracy of one foot. Most boundaries shown on the maps are accurate within approximately three feet; however, boundaries between some vegetation types are less precise due to difficulties interpreting aerial imagery and accessing stands of vegetation.

Vegetation communities can overlap in many characteristics and over time may shift from one community type to another. Note also that all vegetation maps and descriptions are subject to variability for the following reasons:

- In some cases, vegetation boundaries result from distinct events, such as wildfire or flooding, but vegetation types usually tend to intergrade on the landscape, without precise boundaries between them. Even distinct boundaries caused by fire or flood can be disguised after years of post-disturbance succession. Mapped boundaries represent best professional judgment, but usually should not be interpreted as literal delineations between sharply defined vegetation types.
- Natural vegetation tends to exist in generally recognizable types, but also may vary over time and geographic region. Written descriptions cannot reflect all local or regional variation. Many (perhaps most)



stands of natural vegetation do not strictly fit into any named type. Therefore, a mapped unit is given the best name available in the classification system being used, but this name does not imply that the vegetation unambiguously matches written descriptions.

- Vegetation tends to be patchy. Small patches of one named type are often included within larger stands mapped as units of another type.



3.0 REGULATORY ENVIRONMENT

3.1 FEDERAL REGULATIONS

3.1.1 Federal Endangered Species Act

Federal Endangered Species Act (ESA) provisions protect federally listed threatened and endangered species and their habitats from unlawful take and ensure that federal actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Under the ESA, "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct." The U.S. Fish & Wildlife Service's (USFWS) regulations define harm to mean "an act which actually kills or injures wild-life." Such an act "may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR § 17.3). Critical habitat is defined in Section 3(5)(A) of the ESA as "(i) the specific areas within the geographical area occupied by the species on which are found those physical or biological features (I) essential to the conservation of the species, and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species upon a determination by the Secretary of Commerce or the Secretary of the Interior (Secretary) that such areas are essential for the conservation of the species." The effects analyses for designated critical habitat must consider the role of the critical habitat in both the continued survival and the eventual recovery (i.e., the conservation) of the species in question, consistent with the Ninth Circuit judicial opinion, Gifford Pinchot Task Force v. USFWS. Activities that may result in "take" of individuals are regulated by the USFWS. The USFWS produced an updated list of candidate species December 6, 2007 (72 FR 69034). Candidate species are not afforded any legal protection under ESA; however, candidate species typically receive special attention from Federal and State agencies during the environmental review process.

3.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711) makes it unlawful to possess, buy, sell, purchase, barter or "take" any migratory bird listed in Title 50 of the Code of Federal Regulations Part 10. "Take" is defined as possession or destruction of migratory birds, their nests or eggs. Disturbances that cause nest abandonment and/or loss of reproductive effort or the loss of habitats upon which these birds depend may be a violation of the MBTA. The MBTA prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary. This act encompasses whole birds, parts of birds, and bird nests and eggs.

3.1.3 Bald and Golden Eagle Protection Act of 1940 (16 USC 668)

The Bald Eagle Protection Act of 1940 (16 U.S.C. 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: "disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior'' (72 FR 31132; 50 CFR 22.3).



The USFWS is the primary federal authority charged with the management of golden eagles in the United States. A permit for take of golden eagles, including take from disturbance such as loss of foraging habitat, may be required if this Project affects such resources. USFWS guidance on the applicability of current Eagle Act statutes and mitigation is currently under review. On November 10, 2009, the USFWS implemented new rules (74 FR 46835) governing the "take" of golden and bald eagles. The new rules were released under the existing Bald and Golden Eagle Act which has been the primary regulation protection unlisted eagle populations since 1940. All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by the USFWS under this act. The definition of disturb (72 FR 31132) includes interfering with normal breeding, feeding, or sheltering behavior to the degree that it causes or is likely to cause decreased productivity or nest abandonment. If a permit is required, due to the current uncertainty on the status of golden eagle populations in western United States, it is expected permits would only be issued for safety emergencies or if conservation measures implemented in accordance with a permit would result in a reduction of ongoing take or a net take of zero.

3.1.4 Federally Regulated Habitats

Areas meeting the regulatory definition of "Waters of the U.S." (Jurisdictional Waters) are subject to the jurisdiction of the United States Army Corps of Engineers (USACE) under provisions of Section 404 of the Clean Water Act (CWA) (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as "Waters of the U.S.," tributaries of waters otherwise defined as "Waters of the U.S.," the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to "Waters of the U.S." (33 CFR, Part 328, Section 328.3). Wetlands on non-agricultural lands are identified using the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987). The BSA falls within the South Pacific Division of the USACE and is under the jurisdiction of the Los Angeles District.

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit would be effective in the absence of State water quality certification pursuant to Section 401 of the CWA. As a part of the permit process the USACE works directly with the USFWS to assess potential project impacts on biological resources.

3.2 STATE REGULATIONS

3.2.1 California Environmental Quality Act

The California Environmental Quality Act (CEQA) establishes State policy to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures. CEQA applies to actions directly undertaken, financed, or permitted by State lead agencies. Regulations for implementation are found in the State CEQA Guidelines published by the Resources Agency. These guidelines establish an overall process for the environmental evaluation of projects.

3.2.2 California Endangered Species Act

Provisions of the California Endangered Species Act protect State-listed Threatened and Endangered species. The CDFW regulates activities that may result in "take" of individuals ("take" means "hunt, pursue, catch, capture, or kill,



or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of "take" under the California Fish and Game Code. Additionally, the California Fish and Game Code contains lists of vertebrate species designated as "fully protected" (California Fish & Game Code §§ 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], 5515 [fish]). Such species may not be taken or possessed.

In addition to Federal and State-listed species, the CDFW also has produced a list of Species of Special Concern to serve as a "watch list." Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Species of Special Concern may receive special attention during environmental review, but they do not have statutory protection.

Birds of prey are protected in California under the State Fish and Game Code. Section 3503.5 states it is "unlawful to take, possess, or destroy any birds of prey (in the order Falconiformes or Strigiformes) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFW. Under Sections 3503 and 3503.5 of the State Fish and Game Code, activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory nongame bird as designated in the MBTA, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to Fish and Game Code Section 3800 are prohibited.

3.2.3 Native Plant Protection Act (Fish & Game Code 1900-1913)

California's Native Plant Protection Act (NPPA) requires all State agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that would otherwise be destroyed. The Applicant is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

3.2.4 Section 3503 & 3503.5 of the Fish and Game Code

Under these sections of the Fish and Game Code, the Applicant is not allowed to conduct activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory non-game bird as designated in the MBTA, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to Fish and Game Code Section 3800.

3.2.5 Porter-Cologne Water Quality Control Act

Regional Water Quality Control Boards (RWQCBs) regulate the "discharge of waste" to "waters of the State." All projects proposing to discharge waste that could affect waters of the State must file a waste discharge report with the appropriate regional board. The board responds to the report by issuing waste discharge requirements (WDR) or by waiving WDRs for that project discharge. Both terms "discharge of waste" and "waters of the State" are broadly defined such that discharges of waste include fill, any material resulting from human activity, or any other "discharge."



Isolated wetlands within California, which are no longer considered “waters of the United States” as defined by Section 404 of the CWA, are addressed under the Porter-Cologne Act.

3.2.6 State-Regulated Habitats

The State Water Resources Control Board is the State agency (together with the RWQCBs) charged with implementing water quality certification in California. The BSA falls under the jurisdiction of the Santa Ana RWQCB.

The CDFW extends the definition of stream to include “intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS-defined), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife” (CDFW, 1994).

Activities that result in the diversion or obstruction of the natural flow of a stream; or which substantially change its bed, channel, or bank; or which utilize any materials (including vegetation) from the streambed, may require that the project applicant enter into a Streambed Alteration Agreement with the CDFW.

3.3 LOCAL REGULATIONS

3.3.1 City of Glendale General Plan – Open Space and Conservation Element

The Open Space and Conservation Element of the City of Glendale General Plan contains policies and programs which are designed to identify and manage natural resources within the City. It provides a broad overview of existing conditions, issues, and opportunities and a comprehensive approach to the management of natural resources.

The Policies relative to natural resources that apply to the BSA are as follows:

Policy 1: Natural resources, including open spaces, biological habitats, and native plant communities should be maintained and, where necessary, restored.

Policy 4: Natural and man-made aesthetic features should be recognized and identified as important natural resources to the community that require proper management.

Policy 5: Proper management of environmental resources, especially natural resources, can assist in reducing hazards to the life and property of the City's residents and should be considered in project planning.

Policy 7: Projects proposed by public agencies, special districts and private developers should demonstrate compliance with the policies, goals and objectives of this element prior to proceeding.

The Goals and Objectives relative to natural resources that apply to the BSA are as follows:

Goal 1: Continue identification, acquisition, and protection of open space land vital to ensure enhancement of the quality of life within the City.

- **Objective 3:** Develop a fee structure for open space acquisition and management in connection with the development review process.

- **Objective 5:** During the environmental and development review processes, on- and off-site impacts of development on open space and related biological and geological systems should be evaluated. Mitigation measures should be applied to alleviate specific impacts through site planning and design modifications that will protect the integrity of valuable open spaces.

Goal 2: Protect vital or sensitive open space areas including ridgelines, canyons, streams, geologic formations, watersheds and historic, cultural, aesthetic and ecologically significant areas from the negative impacts of development and urbanization.

- **Objective 3:** Continue to apply and monitor open space protection measures as part of the environmental and development review processes.
- **Objective 5:** During the environmental and development review processes, on- and off-site impacts of development on open space and related biological and geological systems should be evaluated. Mitigation measures should be applied to alleviate specific impacts through site planning and design modifications that will protect the integrity of valuable open spaces.

Goal 4: Develop a program that sustains the quality of Glendale's natural communities.

- **Objective 2:** Prevent development that jeopardizes or diminishes the integrity and value of native plant and animal communities.
- **Objective 4:** Naturalize, through native revegetation programs, disturbed areas, and prevent the invasion of exotic plant materials.
- **Objective 5:** Encourage the development of landscape plans that incorporate native species in those areas adjoining open space land.

Goal 12: Continue to conserve water resources and provide for the protection and improvement of water quality.

- **Objective 6:** Continue to monitor, inventory land uses and coordinate with the Environmental Protection Agency (EPA) to avoid ground water pollution and improve groundwater quality with particular emphasis on industrial areas and landfills.

3.3.2 City of Glendale Indigenous (Protected) Tree Program

The indigenous oak, bay, and sycamore trees within the city are natural aesthetic resources which help define the character of the city. These trees are worthy of protection in order to preserve the natural environment and to protect the city's native plant life heritage for the benefit of all residents. Oak, bay, and sycamore trees are unique because of their size and beauty and their relative abundance adds distinction and character to certain neighborhoods within the community. It is pertinent to the public interest, health and welfare that these trees be protected from mutilation, indiscriminate cutting, damage, destruction or removal in order to provide for conservation purposes, for counteracting air and noise pollution and minimizing soil erosion and related environmental damage, as well as for the preservation of the natural beauty which the oak, bay, and sycamore trees lend to the city. It is the intent of this ordinance to create favorable conditions for the preservation of indigenous trees in the community while respecting



individual rights to develop, maintain and enjoy private property to the fullest possible extent consistent with the public interest, health and welfare. (Ord. 5719, § 1, 12-7-2010)

Except as provided in sections 12.44.030 and 12.44.060, a permit shall be required of any person who proposes to cut, remove, encroach upon, or relocate a protected indigenous tree. (Ord. 5719, § 1, 12-7-2010)

3.4 OTHER APPLICABLE REGULATIONS, PLANS, AND STANDARDS

3.4.1 California Native Plant Society Rare Plant Program

The mission of the CNPS Rare Plant Program is to develop current, accurate information on the distribution, ecology, and conservation status of California's rare and endangered plants, and to use this information to promote science-based plant conservation in California. Once a species has been identified as being of potential conservation concern, it is put through an extensive review process. Once a species has gone through the review process, information on all aspects of the species (e.g., listing status, habitat, distribution, threats, etc.) are entered into the online CNPS Inventory and given a California Rare Plant Rank (CRPR). In 2011, the CNPS officially changed the name "CNPS List" to "CRPR." The Program currently recognizes more than 1,600 plant taxa (species, subspecies and varieties) as rare or endangered in California.

Vascular plants listed as rare or endangered by the CNPS, but which might not have a designated status under State endangered species legislation, are defined by the following CRPR:

- CRPR 1A - Plants considered by the CNPS to be extinct in California
- CRPR 1B - Plants rare, threatened, or endangered in California and elsewhere
- CRPR 2 - Plants rare, threatened, or endangered in California, but more numerous elsewhere
- CRPR 3 - Plants about which we need more information – a review list
- CRPR 4 - Plants of limited distribution – a watch list

In addition to the CRPR designations above, the CNPS adds a Threat Rank as an extension added onto the CRPR and designates the level of endangerment by a 1 to 3 ranking, with 1 being the most endangered and 3 being the least endangered. These are described as follows:

- 0.1 – Seriously threatened in California (high degree/immediacy of threat)
- 0.2 – Fairly threatened in California (moderate degree/immediacy of threat)
- 0.3 – Not very threatened in California (low degree/immediacy of threats or no current threats known)



4.0 EXISTING CONDITIONS

4.1 SETTING

The BSA is located within the City of Glendale, just south of Flint Peak in the San Rafael Hills to the north of SR 134. The BSA ranges in elevation from approximately 940 feet (~286 meters) above mean sea level (amsl) along Glenoaks Canyon Drive at the western boundary of the BSA to 1,530 feet (~466 meters) amsl at its southeastern extent. The majority of the lands within the BSA are developed with active and reclaimed areas of the landfill occupying a significant portion of the BSA and other urban infrastructure including residential developments, roadways, and recreational open space. The slopes along the northern and southern edges of the BSA are undeveloped and support swathes of relatively undisturbed native habitat as described in further detail below.

The lands immediately surrounding the BSA primarily consist of open space within the San Rafael Hills, though residential developments abut the SCLF to the west and northeast. Beyond the buffer of relatively undeveloped hillside encircling the SCLF, the region is significantly built out with urban infrastructure, thus creating a small "island" of the San Rafael Hills that includes areas of undisturbed native habitat.

4.2 VEGETATION COMMUNITIES AND LAND COVER TYPES

Generally, mapping and description of plant communities follows the classification system described in the second edition of A Manual of California Vegetation (MCVII) (Sawyer et al., 2009). As defined in MCVII, an alliance is defined as "a category of vegetation classification which describes repeating patterns of plants across a landscape. Each alliance is defined by plant species composition, and reflects the effects of local climate, soil, water, disturbance, and other environmental factors." Vegetation communities and land cover types mapped within the BSA are presented below in **Table 1**. It should be noted that due to changes in the nomenclature for some of the vegetation communities mapped within the BSA, as well as minor variations in site conditions, the names of mapped vegetation community and land cover types from the 2019 surveys do not always match those from the 2017 surveys. **Table 1** presents a crosswalk of vegetation community and land cover types for ease of comparison (where applicable)

Species scientific and common names correspond to those described in the second edition of The Jepson Manual (Baldwin et al., 2012). Within the BSA, Stantec biologists mapped nine plant communities defined by Sawyer et al. (2009) and two additional land cover types, classified as ornamental woodland and disturbed/developed land. Characteristics of these land cover types are summarized below, and their locations are depicted in **Appendix A, Figure 2**.

Table 1 Vegetation Communities and Land Cover Types in the BSA

Vegetation Community / Land Cover Type		Total Acres in Survey Area		Project Impacts			
				2019 Survey (Acres)*		2017 Survey (Acres)	
2019 Survey	2017 Survey	2019 Survey (Acres)	2017 Survey (Acres)	Temp	Perm	Temp	Perm
Annual Brome Grassland	--	10.48	--	0.22	0.80	--	--

Vegetation Community / Land Cover Type		Total Acres in Survey Area		Project Impacts			
Black Sage Scrub	California Encelia-Black Sage Scrub	8.0	5.67	--	--	--	--
California Buckwheat Scrub	--	1.75	--	--	--	--	--
California Sagebrush Scrub	California Sagebrush Scrub	0.44	0.31	--	--	--	--
California Sagebrush-California Buckwheat Scrub	California Buckwheat Scrub	2.84	7.11	--	0.22	0.02	0.29
Chamise chaparral	Scrub Oak - Chamise Chaparral	4.82	2.40	--	--	--	--
Coast live oak woodland	Coast live oak woodland	2.95	1.3	0.00	--	--	--
Fountain Grass Swards	--	14.49	--	0.34	0.03	--	--
Laurel Sumac Scrub	Lauren Sumac Chamise Scrub	70.57	50	0.16	3.21	0.09	0.39
Developed / Disturbed	Cleared / Developed	87.18	86.75	0.91	3.73	1.13	1.45
Ornamental Woodland	Ornamental/ Non- Native	31.75	39.14	0.42	0.03	0.92	0.06
Total		235.27	192.68	2.06	8.01	2.16	2.19

*These acreages include impacts related to updated Fire Department brush clearance requirements not required as part of the 2017 impact acreage calculations.

Vegetation Community Descriptions

***BROMUS (DIANDRUS, HOREDEACEUS) – BRACHYPODIUM DISTACHYON* HERBACEOUS SEMI-NATURAL ALLIANCE**

Annual brome grasslands

Approximately 10.48 acres of this vegetation community occur within the BSA in several disturbed areas of the SCLF. It was dominated by early successional, non-native, grasses and forbs (90% to 100% absolute aerial coverage), including invasive species such as red brome ripgut brome (*Bromus diandrus*), (*Bromus madritensis* var. *rubens*), redstem filaree (*Erodium cicutarium*), California burclover (*Medicago polymorpha*), shortpod mustard (*Hirschfeldia incana*), cheeseweed (*Malva parviflora*), wild radish (*Raphanus sativus*), Russian thistle (*Salsola tragus*), and yellow sweetclover (*Melilotus indica*).

Due to changes in site conditions, expansion of the BSA, and differences in nomenclature, this community was not detailed during the 2017 survey. During the previous survey efforts, the areas comprising this vegetation community were mapped as a mixture of Cleared/Developed Land, Disturbed, Ornamenta/Non-Native, California Sagebrush Scrub, and California Buckwheat Scrub.



SALVIA MELLIFERA SHRUBLAND ALLIANCE

Black sage scrub

Approximately 8.0 acres of this vegetation community occur within the BSA on a south-facing slope to the west of the SCLF. Black sage (*Salvia mellifera*) is the dominant species with California bush sunflower (*Encelia californica*) being a near co-dominant. Other associated shrub species observed included laurel sumac (*Malosma laurina*), chamise (*Adenostoma fasciculatum*), and the understory in openings within the scrub consisted of native and non-native grasses and forbs common to the BSA.

ERIOGONUM FASCICULATUM SHRUBLAND ALLIANCE

California buckwheat scrub

Approximately 1.75 acres of this habitat type occur in a small area between the SCLF and the golf course to the north. This community appears to occupy a previously disturbed area and is likely the result of a revegetation effort. California buckwheat (*Eriogonum fasciculatum*) is the dominant species, but other species observed included bush monkeyflower (*Mimulus aurantiacus*), black sage, California fuchsia (*Epilobium canum*), sawtooth goldenbush (*Hazardia squarrosa*), and the invasive species fountain grass (*Pennisetum setaceum*) and shortpod mustard (*Hirschfeldia incana*).

ARTEMISIA CALIFORNICA SHRUBLAND ALLIANCE

California sagebrush scrub

Approximately 0.44 acre of this habitat type occurs within a small, sloped area near the western edge of the BSA, adjacent to E. Glenoaks Boulevard. This disturbed slope has been revegetated with a planting mixture including California sagebrush (*Artemisia californica*) and California buckwheat, though non-native species have since filled in the opening in the shrub layer, including Russian thistle and annual grasses.

ARTEMISIA CALIFORNICA – ERIOGONUM FASCICULATUM SHRUBLAND ALLIANCE

California sagebrush – California buckwheat scrub

Approximately 2.84 acres of this habitat type occur along thin strips of steep, north-facing slopes adjacent to Scholl Canyon Road along the southern border of the SCLF. Within the BSA, these areas are dominated by California sagebrush and California buckwheat though scrub oak (*Quercus berberidifolia*) is also present in the shrub layer along with non-native species including shortpod mustard and Russian thistle, and annual grasses and fobs in the understory.

ADENOSTOMA FASCICULATUM SHRUBLAND ALLIANCE

Chamise chaparral



Approximately 4.82 acres of this vegetation community occurs on a south facing slope immediately south of the baseball field in the northern portion of the BSA. It is dominated by chamise (*Adenostoma fasciculatum*) with other components of the shrub layer including toyon (*Heteromeles arbutifolia*), California buckwheat, bush monkeyflower, California sagebrush, and hollyleaf cherry (*Prunus ilicifolia*). Understory occupying openings within the shrub layer is comprised primarily of sparse non-native grasses and forbs.

QUERCUS AGRIFOLIA WOODLAND ALLIANCE

Coast live oak woodland

A small area (approximately 2.95 acres) occupied by this plant community occurs on the north-facing slope between the SCLF and residential area to the west, in the western portion of the BSA. Cover in this area is dominated by coast live oak trees (*Quercus agrifolia*), though toyon and laurel sumac shrubs were also observed interspersed throughout this area.

PENNISETUM SETACEUM HERBACEOUS SEMI-NATURAL ALLIANCE

Fountain grass swards

Within the BSA, approximately 14.49 acres of this community occurs on the slopes of a reclaimed area of the SCLF in the northern portion of the BSA, to the south of the golf course. The reclamation process appears to have included revegetation of the slopes with a planting mixture consisting of non-native fountain grass. This perennial species is known to become invasive in southern California and it has come to dominate this area. Native species are also present at lower cover, including California buckwheat, sawtooth goldenbush, and California fuchsia.

Due to changes in site conditions, expansion of the BSA, and differences in nomenclature, this community was not detailed during the 2017 survey. During the previous survey efforts, the areas comprising this vegetation community were mapped as a mixture of Cleared/Developed Land, Ornamenta/Non-Native, and California Buckwheat Scrub.

MALOSMA LAURINA SHRUBLAND ALLIANCE

Laurel sumac scrub

This is the most prominent native plant community within the BSA, approximately 70.57 acres of which occur along the hillsides bordering the southern and northern boundaries of the BSA. Laurel sumac is nearly co-dominant with chamise throughout these areas. Other associated species observed included lemonade berry (*Rhus integrifolia*), toyon, purple sage (*Salvia leucophylla*), black sage, deerweed (*Acmispon glaber*), bush monkeyflower, bigpod ceanothus (*Ceanothus megacarpus*), California brickellbush (*Brickellia californica*), and non-native Russian thistle.

Land Cover Type Descriptions

DEVELOPED/DISTURBED LAND

This classification, which is not described in the MCVII, was used to map the portions of the BSA (approximately 87.18 acres) that are heavily disturbed and/or developed. Developed/disturbed lands include portions of the SCLF and areas occupied by urban infrastructure such as residential developments, recreational areas (baseball diamond



and golf course), paved areas such as roads and parking lots, and landscaped areas associated with those developments. In general, these areas are populated with ornamental species or are unvegetated. Where vegetation does occur, it is comprised of ornamental species or ruderal pioneer plant species that readily colonize open disturbed soil and thrive as a result of anthropogenic impacts. Some of the plants present within this cover type included red-stem filaree, tocalote (*Centaurea melitensis*), wild oats (*Avena fatua*), and other non-native grasses and forbs.

ORNAMENTAL WOODLAND

This classification, which is not described in the MCVII, was used to map approximately 31.75 acres within the central portion of the BSA. This west-facing slope is a reclaimed area of the landfill that has been planted with a variety of ornamental trees including Peruvian pepper (*Schinus molle*), southern silky oak (*Grevillea robusta*), fan palm (*Washingtonia robusta*), and eucalyptus (*Eucalyptus* spp.). Other non-native species observed consisted of castor bean (*Ricinis communis*), pampas grass (*Cortaderia selloana*), fountain grass, English plantain (*Plantago lanceolata*), red-stem filaree, lamb's quarters (*Chenopodium album*), Russian thistle, and annual grasses.

4.2.1 Plant Species Observed within the BSA

Plant species observed within the BSA during the April 2019 surveys are listed below in Table 2.

Table 2 Plant Species Observed within the BSA

Scientific Name	Common Name
Acacia sp.**	acacia
Acmispon glaber	deerweed
Adenostoma fasciculatum	chamise
Ambrosia psilostachya	western ragweed
Artemisia californica	California sagebrush
*Arundo donax***	giant reed
*Avena fatua***	common wild oat
Baccharis salicifolia	mule fat
Brickellia californica	California brickellbush
*Bromus diandrus***	ripgut brome
*Bromus hordeaceus***	soft brome
*Bromus madritensis rubens***	foxtail brome
Calystegia sp.	morning glory
*Capsella bursa-pastoris***	shepherd's purse
*Carpobrotus edulis***	Hottentot fig
*Carduus pycnocephalus***	Italian thistle
Ceanothus megacarpus	bigpod ceanothus
*Centaurea melitensis***	Maltese star-thistle
Cercocarpus betuloides	mountain mahogany

Scientific Name	Common Name
*Chenopodium album***	lamb's quarters
*Cirsium occidentale***	western thistle
Corethrogyne filaginifolia	California aster
*Cortaderia selloana***	pampas grass
Cryptantha sp.	cryptantha
Cupressus sp.	cedar
Cuscuta californica	California dodder
*Cynodon dactylon***	Bermuda grass
Delphinium sp.	larkspur
Dichelostemma capitatum	blue dicks
Diplacus aurantiacus	sticky monkeyflower
Encelia californica	California bush sunflower
Elymus sp.	wild rye
Epilobium canum	California fuchsia
Erigeron canadensis	horseweed
Eriogonum fasciculatum	California buckwheat
Eriophyllum confertiflorum	yellow yarrow
*Erodium cicutarium***	redstem filaree
Eucalyptus sp.**	eucalyptus
*Festuca perennis***	Italian rye grass
Galium aparine	cleavers
*Gazania linearis***	treasure flower
*Glebionis coronaria***	crown daisy
*Grevillea robusta***	southern silky oak
Hazardia squarrosa	sawtooth goldenbush
*Hedera helix***	English ivy
*Hedypnois cretica***	crete weed
Helianthus annuus	common sunflower
*Helminthotheca echioides***	bristly oxtongue
Hesperoyucca whipplei	chaparral yucca
Heteromeles arbutifolia	toyon
Heterotheca grandiflora	telegraph weed
*Hirschfeldia incana***	shortpod mustard
*Hordeum murinum***	foxtail barley
Keckiella cordifolia	heartleaf keckiella
*Lactuca serriola***	prickly lettuce
Lupinus bicolor	miniature lupine
*Lysimachia arvensis***	scarlet pimpernel
Malacothrix saxatilis	cliff aster

Scientific Name	Common Name
Malosma laurina	laurel sumac
*Malva parviflora***	cheeseweed
Marah macrocarpa	chilicothe
*Medicago polymorpha***	burr medic
*Melaleuca quinquenervia***	tree
*Melaleuca viminalis***	bottlebush tree
*Melilotus indica***	yellow sweetclover
Mirabilis laevis	wishbone bush
*Nerium oleander***	oleander
*Nicotiana glauca***	tree tabacco
Oenothera sp.	evening primrose
*Opuntia ficus-indica***	Barbary fig
*Pennisetum setaceum***	fountain grass
Phacelia sp.	phacelia
Phacelia cicutaria	caterpillar phacelia
*Phoenix canariensis***	Canary Island date palm
*Plantago lanceolate***	ribwort plantain
Platanus racemosa	western sycamore
Pinus sp.	pine
*Piptatherum miliaceum***	smilo grass
*Polygonum aviculare***	postrate knotweed
Prunus ilicifolia	hollyleaf cherry
Pseudognaphalium californicum	California cudweed
Quercus agrifolia	coast live oak
Quercus berberidifolia	scrub oak
*Raphanus sativus***	wild radish
Rhamnus ilicifolia	evergreen buckthorn
Rhus ovata	sugar bush
*Ricinus communis***	castor bean
*Salsola tragus***	prickly Russian thistle
Salvia leucophylla	purple sage
Salvia mellifera	black sage
Sambucus nigra ssp. *caerulea*	blue elderberry
*Schinus molle***	Peruvian pepper tree
*Schismus arabicus***	Arabian schismus
*Sisymbrium irio***	London rocket
Solanum nigrum	black nightshade
*Sonchus asper***	spiny sowthistle
*Sonchus oleraceus***	common sowthislte



Scientific Name	Common Name
Stephanomeria virgata	rod wirelettuce
Ulmus parvifolia	Chinese elm
*Verbascum speciosum***	showy mullein
Washingtonia filifera	California palm

*No special-status species were observed in the Study Area
**Non-native Species

4.3 SOILS

Prior to conducting the April 2019 surveys, historic soils data from the Natural Resources Conservation Service (NRCS) was used to determine potential soil types that may occur within the BSA and included determining where hydric soils have historically occurred (refer to **Appendix A, Figure 3**). **Table 3** identifies the soils historically known to occur within the BSA, none of which appear on the NRCS hydric soils list.

Table 3 Historic Soil Units Occurring within the BSA

Map Unit Symbol	Map Unit Name	Description	Acres Within BSA
1002	Urban land-Palmview-Tujunga complex, 0 to 5 percent slopes	A well-drained soil that occurs on alluvial fans at elevations between 240 to 1,990 feet; parent material consists of discontinuous human-transported material over alluvium derived from granite; very high runoff; ranging from fine sandy loam to loamy sand (0 to 79”)	7.23
1148	Vista-Fallbrook-Cieneba complex, 30 to 75 percent slopes	A well-drained soil that occurs on hillslopes at elevations between 590 to 2,610 feet; parent material consists of colluvium and/or residuum weathered from diorite; medium to high runoff; sandy clay loam (0- up to 58”), underlain by bedrock	77.90
1280	Dumps	NA	150.14
Total			235.27

4.4 JURISDICTIONAL WATERS/WETLANDS

The National Wetlands Inventory has mapped R4SBA (Riverine, Intermittent, Streambed, Temporary Flooded) habitat within the BSA that consist of the headwaters in the hills along its southern boundary (data is dated March 2006). While a formal delineation of jurisdictional waters has not been conducted, the south-facing canyons in this area of the BSA did support conditions indicative of this type of feature, with flows originating from within the BSA entering into the storm drain system adjacent to the Eagle Rock Reservoir and likely ending up in the Arroyo Seco. Additionally, concrete-lined drainage channels were observed throughout the landfill and reclaimed areas that contribute flows to the stormwater conveyance system through Scholl Canyon, downslope of the SCLF, and ultimately into the Verdugo Wash. Based on field observations, the concrete-lined channels and headwaters described above may qualify as USACE/RWQCB non-wetland waters of the U.S. and/or CDFW jurisdictional waters.

Two concrete-lined drainage channels occur within the proposed Project footprint: one to the south of the golf course and another just west of the proposed power plant facility. Although a formal delineation was not conducted,



potentially jurisdictional features mapped within the BSA included approximately 0.21 acres of CDFW jurisdictional waters and 0.20 acres of non-wetland "Waters of the United States." The Project has proposed to install all gas and water lines either above or below any potentially jurisdictional features; therefore there would be no impacts to potentially jurisdictional feather.

4.5 COMMON WILDLIFE

This section describes the common wildlife observed during the reconnaissance survey and expected to occur within the BSA based on habitat characteristics and species known to occur in the region. All wildlife observed during the survey are listed in **Table 4.**

4.5.1 Invertebrates and Gastropods

A focused insect survey was not performed within the BSA; however, a variety of common insects are known to occur in the area. Habitat conditions in the BSA provide a suite of microhabitat conditions for a wide variety of terrestrial insects and other invertebrates. As in all ecological systems, invertebrates in the BSA play a crucial role in a number of biological processes. They serve as the primary or secondary food source for a variety of bird, reptile, and mammal predators; they provide important pollination vectors for numerous plant species; they act as efficient components in controlling pest populations; and they support the naturally occurring maintenance of an area by consuming detritus and contributing to necessary soil nutrients. The reconnaissance survey of the BSA detected a wide variety of common and non-native invertebrates. Some of the orders identified in the BSAs included *Hemiptera* (true bugs), *Coleoptera* (beetles), *Diptera* (flies), *Lepidoptera* (moths and butterflies), *Hymenoptera* (wasps, bees and ants), and *Orthoptera* (grasshoppers).

4.5.2 Fish

Based on the historic land uses and topography within the BSA, fish are not expected to occur nor were any observed during the 2019 surveys.

4.5.3 Amphibians

Amphibians often require a source of standing or flowing water to complete their life cycle; however, some terrestrial species can survive in drier areas by remaining in moist environments found beneath leaf litter and fallen logs, or by burrowing into the soil. Amphibian species were not observed during the reconnaissance surveys within the BSA. Their potential to occur within much of the BSA is greatly reduced because of the continual disturbance associated with the land use. However, they may inhabit other less disturbed areas within the BSA, such as the slopes surrounding SCLF. Species not observed in the BSA but known to occur in the region include the Baja California treefrog (*Pseudacris hypochondriaca*), western toad (*Anaxyrus boreas*), and the non-native bullfrog (*Lithobates catesbeiana*). These species all require aquatic habitat for all or part of their life cycle, which is only present during and immediately after substantial rain events, and therefore are not likely to occur within the BSA outside of the rainy season, generally from November through March. These species are highly cryptic and often difficult to detect. Downed logs, bark, and other woody material in various stages of decay (often referred to as coarse woody debris), present in a limited section of the BSA, could provide shelter and feeding sites for a variety of wildlife, including amphibians and reptiles (Maser and Trappe, 1984; Aubry et al., 1988).



4.5.4 Reptiles

The number and type of reptile species that may occur at a given site is related to a number of biotic and abiotic features. These include the diversity of plant communities, substrate, soil type, and presence of refugia such as rock piles, boulders, and native debris. Weather conditions were favorable during the survey for reptile activity.

The only reptiles observed during the site reconnaissance were a single western fence lizard (*Sceloporus occidentalis*) and western rattlesnake (*Crotalus viridis*). Although not observed, several other common reptiles likely occur in the BSA. Many reptile species, even if present, are difficult to detect because they are cryptic and their life history characteristics (e.g., foraging, thermoregulatory behavior, fossorial nature, camouflage etc.) limit their ability to be observed during most surveys. Further, many species are only active within relatively narrow thermal limits, avoiding both cold and hot conditions, and most take refuge in microhabitats that are not directly visible to the casual observer, such as rodent burrows, in crevices, under rocks and boards, and in dense vegetation where they are protected from unsuitable environmental conditions and predators (USACE and CDFG, 2010). In some cases, they are only observed when flushed from their refugia. Although other reptiles were not detected, suitable habitat conditions for a number of common reptiles were observed within the BSA at the time of the survey. Other species that may occur in limited areas within the BSA based on the presence of suitable habitat include western skink (*Plestiodon skiltonianus*), southern alligator lizard (*Elgaria multicarinata*), and San Diego gopher snake (*Pituophis catenifer annectens*).

4.5.5 Birds

Birds were identified by sight and sound and were observed throughout the BSA. Some of these included mourning dove (*Zenaida macroura*), California towhee (*Melozone crissalis*), house finch (*Haemorhous mexicanus*), Allen's hummingbird (*Selasphoris sasin*), western kingbird (*Tyrannus verticalis*), northern mockingbird (*Mimus polyglottos*), western scrub jay (*Aphelocoma californica*), and common raven (*Corvus corax*). All avian species identified in the BSA during the biological survey are listed in **Table 3**. It is possible that many other birds use the BSA either as wintering habitat, seasonal breeding, or as occasional migrants. Species known to occur commonly in the vicinity of the BSA but not observed during the April 2019 survey include California quail (*Callipepla californica*), Anna's hummingbird (*Calypte anna*), American crow (*Corvus branchyrhynchos*), cedar waxwing (*Bombycilla cedrorum*), bushtit (*Psaltriparus minimus*), lesser goldfinch (*Spinus psaltria*), and white-throated swift (*Aeronautes saxitalis*).

4.5.6 Mammals

Generally, the distribution of mammals on a given site is associated with the presence of factors such as access to perennial water, topographical and structural components (e.g., rock piles, vegetation) that provide cover and support prey base, and the presence of suitable soils for fossorial mammals (e.g., sandy areas). No mammal species were observed during the biological survey within the BSA. Though not observed, a number of common mammals habituated to urban environments may occur within the BSA, including California ground squirrel (*Otospermophilus beecheyi*), Audubon's cottontail (*Sylvilagus audubonii*), Virginia opossum (*Didelphis virginiana*), and raccoon (*Procyon lotor*).

Although bats were not detected in the BSA, they likely forage and roost in the riparian corridors in the region where insect abundance is high (CDFW, 2000). Because this type of foraging habitat does not occur in the BSA, it is unlikely that bats permanently inhabit or forage in significant numbers within the BSA.



4.5.7 Wildlife Species Observed within the BSA

Wildlife species observed within the BSA during the April 2019 surveys are listed below in Table 4.

Table 4 Wildlife Species Observed within the BSA

Scientific Name	Common Name
Aphelocoma californica	scrub jay
Buteo jamaicensis	red-tailed hawk
Callipepla californica	California quail
Cancis latrans	coyote
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Crotalus viridis	western rattlesnake
Haemorhous mexicanus	house finch
Melozone crissalis	California towhee
Mimus polyglottos	northern mockingbird
Pipilo maculatus	spotted towhee
Procyon lotor	racoon
Selasphorus sasin	Allen's hummingbird
Sceloporus occidentalis	western fence lizard
Spinus psaltria	lesser goldfinch
Sylvilagus audubonii	Audubon's cottontail
Tyrannus verticalis	western kingbird
Zenaida macroura	mourning dove

*No special-status species were observed in the BSA at the time of the survey.

5.0 SPECIAL STATUS BIOLOGICAL RESOURCES

The background information presented above, combined with field observations taken during the survey, was used to generate a list of special-status natural communities and special-status plant and animal taxa that either occur or may have the potential to occur within the BSA and/or adjacent habitats. For the purposes of this report, special-status taxa are defined as plants or animals that:

- Have been designated as either rare, threatened, or endangered by CDFW or the USFWS, and are protected under either the California or Federal ESAs;
- Are candidate species being considered or proposed for listing under these same acts;
- Are recognized as Species of Special Concern by the CDFW;
- Are ranked as CRPR 1, 2, 3 or 4 plant species;
- Are fully protected by the California Fish and Game Code, Sections 3511, 4700, 5050, or 5515; or
- Are of expressed concern to resource/regulatory agencies, or local jurisdictions.



5.1 SPECIAL-STATUS NATURAL COMMUNITIES

Special-status natural communities are defined by CDFW (2009) as, "...communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects." All vegetation within the state is ranked with an "S" rank; however, only those that are of special concern (S1-S3 rank) are generally evaluated under CEQA. No such communities occur within the BSA. The BSA does not occur within an area covered by any Natural Community Conservation Plan and/or Habitat Conservation Plan.

While coast live oak woodland occurs within the BSA, it has a S4 rank which is not generally evaluated under CEQA. The City of Glendale however has an "Indigenous Tree Ordinance" which provides protection for native California tree species, such as coast live oak and scrub oak, that are 6 or more inches in diameter at breast height (dbh) for single trunk trees and 8 inches dbh for multitrunked trees. Both of these species occur within the BSA.

5.2 DESIGNATED CRITICAL HABITAT

Critical habitat is defined by the USFWS (2018b) as "…a term defined and used in the Endangered Species Act. It is specific geographic areas that contain features essential to the conservation of an endangered or threatened species and that may require special management and protection. Critical habitat may also include areas that are not currently occupied by the species but will be needed for its recovery."

The nearest critical habitat to the BSA is for Santa Ana sucker (*Catostomus santaanae*), which occurs approximately eight miles to the north. The next closest is for Braunton's milk vetch, which occurs approximately ten miles to the east. Neither species is expected to occur within the BSA.

5.3 SPECIAL-STATUS PLANTS

Table 5 presents a list of special-status plants, including federally- and state listed species and CRPR 1-4 species that are known to occur in the vicinity of the BSA. No special-status plant species were observed during any of the reconnaissance-level or focused surveys conducted by Stantec.

Record searches of the CNDDB, the CNPS Online Inventory, and the Consortium of California Herbaria (CCH) was performed for special-status plant taxa. Each of the taxa identified in the record searches was assessed for their potential to occur within the BSA based on the following criteria:

- **Present**: Taxa were observed within the BSA during recent botanical surveys or population has been acknowledged by CDFW, USFWS, or local experts.
- **High**: Both a documented recent record (within 10 years) exists of the taxa within the BSA or immediate vicinity (approximately 5 miles) and the environmental conditions (including soil type) associated with taxa presence occur within the BSA.
- **Moderate**: Both a documented recent record (within 10 years) exists of the taxa within the BSA or the immediate vicinity (approximately 5 miles) and the environmental conditions associated with taxa presence are marginal and/or limited within the BSA or the BSA is located within the known current distribution of the taxa and the environmental conditions (including soil type) associated with taxa presence occur within the BSA.



- **Low**: A historical record (over 10 years) exists of the taxa within the BSA or general vicinity (approximately 10 miles) and the environmental conditions (including soil type) associated with taxa presence are marginal and/or limited within the BSA.
- **Not Likely to Occur**: The environmental conditions associated with taxa presence do not occur within the BSA.

Table 5 Known and Potential Occurrences of Special-Status Plant Taxa within the BSA

Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Acanthoscyphus parishii var. *parishii* Parish's oxytheca	4.2	Sandy or gravelly. Chaparral, lower montane coniferous forest. 1,220-2,600m.	Jun-Sep	**Low** Marginal habitat occurs within the BSA; however, the BSA is well below the species' known elevation range.
Arctostaphylos glandulosa ssp. *gabrielensis* San Gabriel manzanita	1B.2	Chaparral (rocky). 595-1,500 m.	Mar	**Low** Marginal habitat occurs within the BSA; however, the BSA is below the species' known elevation range.
Arctostaphylos parryana ssp. *tumescens* interior manzanita	4.3	Chaparral (montane), cismontane woodland. 2,100-2,310 m.	Feb-Apr	**Low** Marginal habitat occurs within the BSA; however, the BSA is well below the species' known elevation range.
Arenaria paludicola marsh sandwort	1B.1, FE, SE	Sandy, openings. Marshes and swamps (freshwater or brackish). 3-170m.	May-Aug	**Not Likely to Occur** Suitable habitat is not present within the BSA.
Asplenium vespertinum western spleenwort	4.2	Rocky. Chaparral, cismontane woodland, coastal scrub 180-1,000 m.	Feb-Jun	**Moderate** Suitable habitat occurs within the BSA.
Astragalus brauntonii Braunton's milk-vetch	1B.1, FE	Recent burns or disturbed areas, usually sandstone with carbonate layers. Chaparral, coastal scrub, valley and foothill grassland. 4-640 m.	Jan-Aug	**Moderate** Marginal habitat and disturbed areas occur within the BSA. The nearest recorded occurrence is further than 10 miles from the BSA.
Astragalus pycnostachyus var. *lanosissimus* Ventura marsh milk-vetch	1B.1, FE, SE	Coastal dunes, coastal scrub, marshes and swamps (edges, coastal salt or brackish). 1-35 m.	(Jun) Aug-Oct	**Not Likely to Occur** Suitable habitat is not present within the BSA and the BSA is well below the species' known elevation range.
Atriplex parishii Parish's brittlescale	1B.1	Alkaline. Chenopod scrub, playas, vernal pools. 25-1,900 meters	Jun-Oct	**Not Likely to Occur** Suitable habitat is not present within the BSA. The nearest recorded occurrence is approximately 6.6 miles to the west.
Atriplex serenana var. *davidsonii* Davidson's saltscale	1B.2	Alkaline. Coastal bluff scrub, coastal scrub. 10-200 meters	Apr-Oct	**Not Likely to Occur** Suitable habitat does not occur within the BSA. The nearest recorded occurrence is approximately 6.9 miles to the southwest of the BSA; however, this observation is from well over 20 years ago.



Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Berberis nevinii Nevin's barberry	1B.1, FE, SE	Sandy or gravelly. Chaparral, cismontane woodland, coastal scrub, riparian scrub. 70-825 meters	(Feb) Mar-Jun	**High** Suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.8 miles to the northeast of the BSA; however, this observation is from well over 20 years ago. The most recent observation is from 2010, approximately 6.0 miles to the southwest of the BSA.
Calochortus catalinae Catalina mariposa lily	4.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. 15-700 meters	(Feb) Mar-Jun	**Moderate** Suitable habitat occurs within the BSA.
Calochortus clavatus var. *gracilis* slender mariposa-lily	1B.1	Chaparral, coastal scrub, valley and foothill grassland. 320-1,000 m.	Mar-Jun (Nov)	**Moderate** Suitable habitat occurs within the BSA. The nearest recorded occurrence is from 2010, approximately 6.7 miles to the west of the BSA.
Calochortus palmeri var. *palmeri* Palmer's mariposa lily	1B.2	Mesic. Chaparral, lower montane coniferous forest, meadows and seeps. 710-2,390 m.	Apr-Jul	**Low** Suitable mesic conditions do not occur within the BSA.
Calochortus plummerae Plummer's mariposa-lily	4.2	Granitic, rocky. Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland. 100-1,700 m.	May-Jul	**High** Suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.6 miles to the south of the BSA; however, this observation is from well over 20 years ago. The most recent observation is from 2011, approximately 8.6 miles to the northwest of the BSA.
Calochortus weedii var. *intermedius* intermediate mariposa lily	1B.2	Rocky, calcareous. Chaparral, coastal scrub, valley and foothill grassland. 105-855 m.	May-Jul	**Moderate** Marginal habitat occurs within the BSA.
Calystegia felix lucky morning-glory	1B.1	Historically associated with wetland and marshy places, but possibly in drier situations as well. Possibly silty loam and alkaline. Meadows and seeps (sometimes alkaline), riparian scrub (alluvial). 30-215 m.	Mar-Sep	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is slightly higher than this species' known elevation range. The nearest and most recent recorded occurrence is approximately 5.9 miles southwest to the southwest of the BSA; however, this observation is from well over 20 years ago.
Camissoniopsis lewisii Lewis' evening-primrose	3	Sandy or clay. Coastal bluff scrub, cismontane woodland, coastal dune, coastal scrub, valley and foothill grassland. 0-300 m.	Mar-May (Jun)	**Moderate** Marginal habitat occurs within the BSA.



Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Castilleja gleasoni Mt. Gleason paintbrush	1B.2, SR	Granitic. Chaparral, lower montane coniferous forest, pinyon and juniper woodland. 665-2,170 m.	May-Jun (Sep)	**Low** Marginal habitat occurs within the BSA and the BSA is below this species' known elevation range. The nearest and most recent recorded occurrence is approximately 7.4 miles to the northeast of the BSA; however, this observation is from well over 20 years ago.
Castilleja plagiotoma Mojave paintbrush	4.3	Great Basin scrub (alluvial), Joshua tree woodland, lower montane coniferous forest, pinyon and juniper woodland. 300-2,500 m.	Apr-Jun	**Not Likely to Occur** No suitable habitat occurs within the BSA.
Centromadia parryi ssp. australis southern tarplant	1B.1	Marshes and swamps (margins), valley and foothill grassland (vernally mesic), vernal pools. 0-480 m.	May-Nov	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 0.8 miles to the southwest of the BSA; however, this observation is from well over 20 years ago. The most recent record in the region is from 1997.
Centromadia pungens ssp. *laevis* smooth tarplant	1B.1	Alkaline. Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland. 0-640 m.	Apr-Sep	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 1.7 miles to the east of the BSA; however, this observation is from well over 20 years ago.
Chorizanthe parryi var. fernandina San Fernando Valley spineflower	1B.1, FPT, SE	Coastal scrub (sandy), valley and foothill grassland. 150-1,220 m.	Apr-Jul	**Low** Marginal habitat occurs within the BSA. The nearest and most recent occurrence is approximately 6.1 miles to the northwest of the BSA; however, this observation is from well over 20 years ago.
Chorizanthe parryi var. *parryi* Parry's spineflower	2B.2	Sandy or rocky, openings. Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. 275-1,220 m.	Apr-Jun	**Moderate** Marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.7 miles to the north of the BSA; however, the date of this observation cannot be confirmed. The most recent occurrence for which the date is known is from 1919, approximately 3.8 miles to the northeast of the BSA.
Cladium californicum California saw-grass	2B.2	Meadows and seeps, marshes and swamps (alkaline or freshwater). 60-1,600 m.	Jun-Sep	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 9.9 miles to the east of the BSA; however, this record is from well over 20 years ago.



Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Clinopodium mimuloides monkey-flower savory	4.2	Streambanks, mesic. Chaparral, north coast coniferous forest. 305-1,800 m.	Jun-Oct	**Not Likely to Occur** No suitable habitat occurs within the BSA.
Convolvulus simulans small-flowered morning-glory	4.2	Clay, serpentinite seeps. Chaparral (openings), coastal scrub, valley and foothill grassland. 30-740 m.	Mar-Jul	**Not Likely to Occur** No suitable habitat occurs within the BSA.
Cuscuta obtusiflora var. *glandulosa* Peruvian dodder	1B.1	Marshes and swamps (freshwater). 15-280 m.	Jul-Oct	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 9.3 miles to the southeast of the BSA; however, the date of this observation cannot be confirmed.
Diplacus johnstonii Johnston's monkeyflower	4.3	Lower montane coniferous forest (scree, disturbed areas, rocky or gravelly, roadside). 975-2,920 m.	(Apr) May-Aug	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below the species' known elevation range.
Dodecahema leptoceras slender-horned spineflower	1B.2, FE, SE	Sandy. Chaparral, cismontane woodland, coastal scrub (alluvial fan). 200-760 m.	Apr-Jun	**Moderate** Marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.8 miles to the north of the BSA; however, this record is from well over 20 years ago. The most recent observation is from 2003, approximately 4.5 miles to the northwest of the BSA.
Dudleya multicaulis many-stemmed dudleya	1B.2	Often clay. Chaparral, coastal scrub, valley and foothill grassland. 15-790 m.	Apr-Jul	**Low** Marginal habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 6.3 miles to the southwest of the BSA; however, this record is from well over 20 years ago.
Frasera neglecta pine green-gentian	4.3	Lower montane coniferous forest, pinyon and juniper woodland, upper montane coniferous forest.1,400-2,500 m.	May-Jul	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below the species' known elevation range.
Galium angustifolium ssp. *gabrielense* San Antonio Canyon bedstraw	4.3	Granitic, sandy or rocky. Chaparral, lower montane coniferous forest. 1,200-2,650 m.	Apr-Aug	**Low** Marginal habitat occurs within the BSA; however, the BSA is well below the species' known elevation range.
Galium grande San Gabriel bedstraw	1B.2	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest. 425-1,500 m.	Jan-Jul	**Moderate** Marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 7.8 miles to the northeast of the BSA; however, this record is from well over 20 years ago. The most recent record is from 2003, approximately 9.8 miles to the northeast of the BSA.



Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Galium jepsonii Jepson's bedstraw	4.3	Granitic, rocky or gravelly. Lower montane coniferous forest, upper montane coniferous forest. 1,540-2,500 m.	Jul-Aug	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below the species' known elevation range.
Galium johnstonii Johnston's bedstraw	4.3	Chaparral, lower montane coniferous forest, pinyon and juniper woodland, riparian woodland. 1,220-2,300 m.	Jun-Jul	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below the species' known elevation range.
Helianthus nuttallii ssp. *parishii* Los Angeles sunflower	1A	Marshes and swamps (coastal salt and freshwater). 10-1,525 m.	Aug-Oct	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 3.6 miles to the southeast; however, this observation is from well over 20 years ago.
Heuchera caespitosa urn-flowered alumroot	4.3	Rocky. Cismontane woodland, lower montane coniferous forest, riparian forest (montane), upper montane coniferous forest. 1,155-2,650 m.	May-Aug	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below the species' known elevation range.
Hordeum intercedens vernal barley	3.2	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), vernal pools. 5-1,000 m.	Mar-Jun	**Not Likely to Occur** No suitable habitat occurs within the BSA.
Horkelia cuneata var. *puberula* mesa horkelia	1B.1	Sandy or gravelly. Chaparral (maritime), cismontane woodland, coastal scrub. 70-810 m.	Feb-Jul (Sep)	**Low** Marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.5 miles to the west; however, this record is well over 20 years old. The most recent record is from 1967, approximately 4.7 miles to the northeast of the BSA.
Hulsea vestita ssp. *gabrielensis* San Gabriel Mountains sunflower	4.3	Rocky. Lower montane coniferous forest, upper montane coniferous forest. 1,500-2,500 m.	May-Jul	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below the species' known elevation range.
Imperata brevifolia California satintail	2B.1	Mesic. Chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps (often alkali), riparian scrub. 0-1,215 m.	Sep-May	**Not Likely to Occur** No suitable habitat occurs within the BSA.
Juglans californica Southern California black walnut	4.2	Alluvial. Chaparral, cismontane woodland, coastal scrub, riparian woodland. 50-900 m.	Mar-Aug	**Low** Marginal habitat occurs within the BSA; however, this tree was not observed during multiple surveys conducted over several years throughout the BSA.



Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	1B.1	Marshes and swamps (coastal salt), playas, vernal pools.1-1,220 m.	Feb-Jun	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 1.7 miles to the east; however, this observation is from well over 20 years ago.
Lepechinia fragrans fragrant pitcher sage	4.2	Chaparral. 20-1,310 m.	Mar-Oct	**Moderate** Marginal habitat occurs within the BSA.
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	4.3	Chaparral, coastal scrub. 1-885 m.	Jan-Jul	**Moderate** Marginal habitat occurs within the BSA. The nearest and most recent occurrence is approximately 4.8 miles to the northeast of the BSA; however, this record is from over 20 ears ago.
Lilium humboldtii ssp. *ocellatum* ocellated Humboldt lily	4.2	Openings. Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland. 30-1,800 m.	Mar-Jul (Aug)	**Moderate** Marginal habitat occurs within the BSA.
Linanthus concinnus San Gabriel linanthus	1B.2	Rocky, openings. Chaparral, lower montane coniferous forest, upper montane coniferous forest. 1,520-2,800 m.	Apr-Jul	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below the species' known elevation range. The nearest and most recent recorded occurrence is approximately 7.4 miles to the northeast of the BSA from 2003.
Linanthus orcuttii Orcutt's linanthus	1B.3	Openings. Chaparral, lower montane coniferous forest, pinyon and juniper woodland. 915-2,145 m.	May-Jun	**Low** Marginal habitat occurs within the BSA; however, the BSA is well below the species' known elevation range.
Lupinus peirsonii Peirson's lupine	1B.3	Gravelly or rocky. Joshua tree woodland, lower montane coniferous forest, pinyon and juniper woodland, upper montane coniferous forest. 1,000-2,500 m.	Apr-Jun	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below the species' known elevation range.
Malacothamnus davidsonii Davidson's bush-mallow	1B.2	Chaparral. Cismontane woodland, coastal scrub, riparian woodland. 185-1,140 m.	Jun-Jan	**Moderate** Marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 6.9 miles to the northwest of the BSA; however, this record is from well over 20 years ago. The most recent record is from 2018, approximately 8.4 miles to the northeast of the BSA.
Monardella australis ssp. *cinereal* gray monardella	4.3	Lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest. 1,800-3,050 m.	Jul-Aug	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below the species' known elevation range.



Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Muhlenbergia californica California muhly	4.3	Mesic, seeps and streambanks. Chaparral, coastal scrub, lower montane coniferous forest, meadows and seeps. 100-2,000 m.	Jun-Sep	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 6.3 miles to the northeast; however, this record is from well over 20 years ago.
Nasturtium gambelii Gambel's water cress	1B.1, FE, ST	Marshes and swamps (freshwater or brackish). 5-330 m.	Apr-Oct	**Not Likely to Occur** No suitable habitat occurs within the BSA.
Navarretia prostrata prostrate vernal pool navarretia	1B.1	Mesic. Coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), vernal pools. 3-1,210 m.	Apr-Jul	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 6.6 miles to the southwest; however, this record is from well over 20 years ago.
Opuntia basilaris var. *brachyclada* short-joint beavertail	1B.2	Chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland. 425-1,800 m.	Apr-Jun (Aug)	**Moderate** Marginal habitat occurs within the BSA.
Orobanche valida ssp. *valida* Rock Creek broomrape	1B.2	Granitic. Chaparral, pinyon and juniper woodland. 1,250-2,000 m.	May-Sep	**Low** Marginal habitat occurs within the BSA; however, the BSA is well below the species' known elevation range.
Phacelia hubbyi Hubby's phacelia	4.2	Gravelly, rocky, talus. Chaparral, coastal scrub, valley and foothill grassland. 0-1,000 m.	Apr-Jul	**Moderate** Marginal habitat occurs within the BSA.
Phacelia mohavensis Mojave phacelia	4.3	Sandy or gravelly. Cismontane woodland, lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland. 1,400-2,500 m.	Apr-Aug	**Low** Marginal habitat occurs within the BSA; however, the BSA is well below the species' known elevation range.
Phacelia stellaris Brand's star phacelia	1B.1	Coastal dunes. Coastal scrub. 1-400 m.	Mar-Jun	**Not Likely to Occur** No suitable habitat occurs within the BSA.
Pickeringia montana var. *tomentosa* woolly chaparral-pea	4.3	Gabbroic, granitic, clay. Chaparral. 0-1,700 m.	May-Aug	**Low** Marginal habitat occurs within the BSA, though suitable substrates are not present.
Pseudognaphalium leucocephalum white rabbit-tobacco	2B.2	Sandy, gravelly. Chaparral, cismontane woodland, coastal scrub, riparian woodland. 0-2,100 m.	(Jul) Aug-Nov (Dec)	**Low** Marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.7 miles to the east of the BSA; however, this record is well over 20 years old. The most recent record is from 1932, approximately 6.9 miles to the northeast of the BSA.

Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Quercus dumosa Nuttall's scrub oak	1B.1	Sandy, clay loam, closed-cone coniferous forest, chaparral, coastal scrub. 15-400 m.	Feb-Apr (May-Aug)	**Moderate** Marginal habitat occurs within the BSA. The nearest and most recent occurrence is approximately 6.0 miles to the southwest of the BSA; however, this record is well over 20 years old.
Quercus durata var. *gabrielensis* San Gabriel oak	4.2	Chaparral, cismontane woodland. 450-1,000 m.	Apr-May	**Low** Marginal habitat occurs within the BSA; however, this tree was not observed during multiple surveys conducted over several years throughout the BSA.
Quercus engelmannii Engelmann oak	4.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. 50-1,300 m.	Mar-Jun	**Low** Marginal habitat occurs within the BSA; however, this tree was not observed during multiple surveys conducted over several years throughout the BSA.
Ribes divaricatum var. *parishii* Parish's gooseberry	1A	Riparian woodland. 65-300 m.	Feb-Apr	**Low** Limited marginal habitat occurs within the BSA. The nearest recorded occurrence is from within the BSA; however, this observation is from well over 20 years ago. The most recent record is from 1951, approximately 9.9 miles to the southeast of the BSA.
Romneya coulteri Coulter's matilija poppy	4.2	Often in burns. Chaparral, coastal scrub. 20-1,200 m.	Mar-Jul (Aug)	**Moderate** Marginal habitat occurs within the BSA.
Rupertia rigida Parish's rupertia	4.3	Chaparral, cismontane woodland, lower montane coniferous forest, meadows and seeps, pebble (pavement) plain, valley and foothill grassland. 700-2,500 m.	Jun-Aug	**Moderate** Marginal habitat occurs within the BSA.
Scutellaria bolanderi ssp. *austromontana* southern mountains skullcap	1B.2	Mesic. Chaparral, cismontane woodland, lower montane coniferous forest. 425-2,000 m.	Jun-Aug	**Moderate** Marginal habitat occurs within the BSA. The nearest and most recent occurrence is approximately 9.3 miles to the southeast of the BSA, though the date of this record cannot be confirmed.
Senecio astephanus San Gabriel ragwort	4.3	Rocky slopes. Coastal bluff scrub, chaparral. 400-1,500 m.	May-Jul	**Moderate** Marginal habitat occurs within the BSA.
Sidalcea neomexicana salt spring checkerbloom	2B.2	Alkaline, mesic. Chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, playas. 15-1,530 m.	Mar-Jun	**Not Likely to Occur** No suitable mesic habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.7 miles to the north of the BSA; however, this record is from well over 20 years ago. The most recent record is from1920, approximately 6.6 miles to the southwest of the BSA.



Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*
Sidotheca caryophylloides chickweed oxytheca	4.3	Lower montane coniferous forest (sandy). 1,114-2,600 m.	Jul-Sep (Oct)	**Not Likely to Occur** No suitable habitat occurs within the BSA and the BSA is well below this species' known elevation range.
Spermolepis lateriflora western bristly scaleseed	2A	Rocky or sandy. Sonoran Desert scrub. 365-670 m.	Mar-Apr	**Not Likely to Occur** No suitable habitat occurs within the BSA.
Symphyotrichum defoliatum San Bernardino aster	1B.2	Near ditches, streams, springs. Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic). 2-2,040 m.	Jul-Nov (Dec)	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 7.6 miles to the southwest of the BSA; however, this record is from well over 20 years ago.
Symphyotrichum greatae Greata's aster	1B.3	Mesic. Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, riparian woodland. 300-2,010 m.	Jun-Oct	**Not Likely to Occur** No suitable mesic habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.6 miles to the south of the BSA; however, this record is from well over 20 years ago. The most recent record is from2014, approximately 7.7 miles to the northeast of the BSA.
Thelypteris puberula var. *sonorensis* Sonoran maiden fern	2B.2	Meadows and seeps (seeps and streams). 50-610 m.	Jan-Sep	**Not Likely to Occur** No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 4.3 miles to the northeast of the BSA; however, this record is from well over 20 years ago.



Species	Status	Habitat and Distribution	Blooming Period	Potential to Occur*

Source: Baldwin et al. 2012; CDFW, 2019a; CNPS, 2019.
* Species listings for which nearest/most recent data are not provided originated from the CNPS database. Metadata is not available for these records.

Status Codes
US Fish and Wildlife Service (Fed.) Designations:
FE: Federally listed, endangered.
FT: Federally listed, threatened.
FPT: Federally proposed, threatened
California Department of Fish and Wildlife (State) Designations:
SE: State listed, endangered.
ST: State listed, threatened.
SR: State listed, rare
California Rare Plant Rank (CRPR) designation
1A Plants presumed extinct in California.
1B Plants rare, threatened, or endangered in California and elsewhere.
2B Plants presumed extinct in California but more common elsewhere.
3 Plants about which we need more information – a review list.
4 Plants of limited distribution – a watch list.
.1 Seriously threatened in California (high degree/immediacy of threat).
.2 Fairly threatened in California (moderate degree/immediacy of threat).
.3 Not very threatened in California (low degree/immediacy of threats or no current threats known).

5.4 SPECIAL-STATUS WILDLIFE

Special-status taxa include those listed as threatened or endangered under the federal or California Endangered Species Acts, taxa proposed for such listing, Species of Special Concern, and other taxa that have been identified by the USFWS, CDFW, or local jurisdictions as unique or rare and which have the potential to occur within the BSA. No special-status wildlife species were observed in the BSA during the survey.

The CNDDB was queried for occurrences of special-status wildlife taxa within the USGS topographical quadrangles in which the BSA occurs and the eight surrounding quadrangles, as discussed above in Section 2.0. **Table 6** summarizes the special-status wildlife taxa known to regionally occur and presents an evaluation of their potential to occur in the BSA; refer to **Appendix A, Figures 4a and b** for a graphical depiction of previously reported species locations. Each of the taxa identified in the database reviews/searches were assessed for its potential to occur within the BSA based on the following criteria:

- **Present**: Taxa (or sign) were observed in the BSA or in the same watershed (aquatic taxa only) during the most recent surveys, or a population has been acknowledged by CDFW, USFWS, or local experts.
- **High**: Habitat (including soils) for the taxa occurs onsite and a known occurrence occurs within the BSA or adjacent areas (within 5 miles of the BSA) within the past 20 years; however, these taxa were not detected during the most recent surveys.
- **Moderate**: Habitat (including soils) for the taxa occurs onsite and a known regional record occurs within the database search, but not within 5 miles of the BSA or within the past 20 years; or a known occurrence occurs within 5 miles of the BSA and within the past 20 years and marginal or limited amounts of habitat occurs onsite; or the taxa's range includes the geographic area and suitable habitat exists.



- **Low**: Limited habitat for the taxa occurs within the BSA and no known occurrences were found within the database search and the taxa's range includes the geographic area.
- **Not Likely to Occur**: The environmental conditions associated with taxa presence do not occur within the BSA.

It should be noted that the analysis of whether these species may occur within the BSA does not specify where within the BSA they may occur, but because of the development and ongoing disturbance throughout many parts of the BSA, special-status species would generally not be expected to permanently inhabit those areas. The determinations presented below are therefore more appropriate for sections of the BSA in which native or less-disturbed habitat occurs, particularly along its northern and southern edges.



Table 6 Known and Potential Occurrence of Special-Status Wildlife within the BSA

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	**Common Name**				
INSECTS					
Bombus crotchii	Crotch bumble bee	**SA**	Coastal California east to the Sierra-Cascade Crest and south into Mexico. Food plant genera include *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*.	Suitable food plants occur in the BSA. The nearest and most recent recorded occurrence is approximately 4.2 miles to the northeast of the BSA; however, this observation is from well over 20 years ago.	**Low**
Amphibians					
Rana muscosa	southern mountain yellow-legged frog	**WL, FE, SE**	Federal listing refers to populations in the San Gabriel, San Jacinto and San Bernardino Mountains (Southern DPS). The Northern DPS was determined to warrant listing as endangered in 2014. Always encountered within a few feet of water. Tadpoles may require 2-4 yrs. to complete their aquatic development.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 2009, approximately 3. 9 miles to the northeast of the BSA.	**Not Likely to Occur**
Taricha torosa	Coast Range newt	**SSC**	Coastal drainages from Mendocino County to San Diego County. Lives in terrestrial habitats and will migrate over 1 km to breed in ponds, reservoirs & slow-moving streams.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 2003, approximately 3.9 miles to the northeast of the BSA.	**Not Likely to Occur**
Fish					
Catostomus santaanae	Santa Ana sucker	**FT**	Endemic to Los Angeles Basin south coastal streams. Habitat generalists, but prefer sand-rubble-boulder bottoms, cool, clear water, and algae.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 2002, approximately 8.4 miles to the north of the BSA.	**Not Likely to Occur**
Gila orcuttii	arroyo chub	**SSC**	Native to streams from Malibu Creek to San Luis Rey River basin. Introduced into streams in Santa Clara, Ventura, Santa Ynez, Mojave, and San Diego River basins. Slow water stream sections with mud or sand bottoms. Feeds heavily on aquatic vegetation and associated invertebrates.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 2015, approximately 8.4 miles to the north of the BSA.	**Not Likely to Occur**
Rhinichthys osculus ssp. 3	Santa Ana speckled dace	**SSC, FT**	Headwaters of the Santa Ana and San Gabriel Rivers. May be extirpated from the Los Angeles River system. Requires permanent flowing streams with summer water temps of 17-20° C. Usually inhabits shallow cobble and gravel riffles.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 2015, approximately 8.4 miles to the north of the BSA.	**Not Likely to Occur**



Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Reptiles					
Anniella stebbinsi	southern California legless lizard	**SSC**	Generally south of the transverse range, extending to northwestern Baja California. Occurs in sandy or loose loamy soils under sparse vegetation. Disjunct populations in the Tehachapi and Piute Mountains in Kern County. Variety of habitats; generally in moist, loose soil. They prefer soils with a high moisture content.	Suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 0.4 mile to the north of the BSA; however, this observation is was over 20 years ago. The most recent record is from 2018, approximately 6.0 miles to the northwest.	**High**
Arizona elegans occidentalis	California glossy snake	**SSC**	Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular Ranges, south to Baja California. Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils.	Suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 4.5 miles to the northwest of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**
Aspidoscelis tigris stejnegeri	coastal whiptail	**SSC**	Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland & riparian areas. Ground may be firm soil, sandy, or rocky.	Marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 8.7 miles to the northeast of the BSA; however, this observation is was over 20 years ago. The most recent record is from 2015, approximately 9.9 miles to the northwest of the BSA.	**Moderate**
Emys marmorata	western pond turtle	**SSC**	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 1987, approximately 5.0 miles to the northeast of the BSA.	**Not Likely to Occur**
Phrynosoma blainvillii	coast horned lizard	**SSC**	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.4 miles to the northwest of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Moderate**
Birds					
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	**WL**	Resident in southern California coastal sage scrub and sparse mixed chaparral. Frequents relatively steep, often rocky hillsides with grass and forb patches.	Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 2014, approximately 8.5 miles to the southwest of the BSA.	**Moderate**



Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Athene cunicularia	burrowing owl	**SSC**	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.7 miles to the east of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**
Buteo swainsoni	Swainson's hawk	**ST**	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, & agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 1880, approximately 5.5 miles to the southeast of the BSA.	**Low (as a transient)**
Coturnicops noveboracensis	yellow rail	**SSC**	Summer resident in eastern Sierra Nevada in Mono County. Freshwater marshlands.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 1952, approximately 7.0 miles to the southwest of the BSA.	**Not Likely to Occur**
Empidonax traillii extimus	southwestern willow flycatcher	**FE, SE**	Riparian woodlands in southern California.	A small area of marginal habitat occurs within the BSA. The nearest and most recent recorded occurrence is from within the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**
Falco peregrinus anatum	American peregrine falcon	**SFP**	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	Marginal habitat occurs within the BSA. The nearest and most recent recorded occurrence is from within the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**
Polioptila californica californica	coastal California gnatcatcher	**SSC, FT**	Obligate, permanent resident of coastal sage scrub below 2,500 ft in southern California. Low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.	Limited marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 8.0 miles to the east of the BSA; however, this observation is was over 20 years ago. The most recent record is from 2005, approximately 10.0 miles to the southeast.	**Low**
Riparia riparia	bank swallow	**ST**	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 1894, approximately 0.8 mile to the south of the BSA.	**Not Likely to Occur**



Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Vireo bellii pusillus	least Bell's vireo	**FE, SE**	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2,000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, *Baccharis*, mesquite.	No suitable habitat occurs within the BSA. The nearest recorded occurrence is from within the BSA; however, this observation was over 20 years ago. The most recent record is from 2015, approximately 5.7 miles to the northeast of the BSA.	**Low (as a transient)**
Mammals					
Antrozous pallidus	pallid bat	**SSC**	Desert, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats form high temperatures. Very sensitive to disturbance of roosting sits.	Marginal habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.7 miles to the east of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**
Corynorhinus townsendii	Townsend's big-eared bat	**SSC**	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Marginal habitat occurs within the BSA, though ongoing human activities in the area reduce the potential for this species to use the site. The nearest and most recent recorded occurrence is approximately 10.0 miles to the east of the BSA.	**Low**
Eumops perotis californicus	western mastiff bat	**SSC**	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	Suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 0.70 mile to the southeast of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Moderate**
Lasionycteris noctivagans	silver-haired bat	**SA**	Primarily a coastal and montane forest dweller, feeding over streams, ponds & open brushy areas. Roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes, and rarely under rocks. Needs drinking water.	Marginal habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 3.2 miles to the northwest of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**
Lasiurus blossevillii	western red bat	**SSC**	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 10 miles to the east of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**
Lasiurus cinereus	hoary bat	**SA**	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	Suitable habitat occurs within the BSA. The nearest recorded occurrence is approximately 1.7 miles to the east of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	**Common Name**				
Lasiurus xanthinus	western yellow bat	**SSC**	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, particularly palms. Forages over water and among trees.	No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 2.6 miles to the west of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Not Likely to Occur**
Neotoma lepida intermedia	San Diego desert woodrat	**SSC**	Coastal scrub of southern California from San Diego County to San Luis Obispo County. Moderate to dense canopies preferred. They are particularly abundant in rock outcrops, rocky cliffs, and slopes.	Suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is from 2006, approximately 7.3miles to the west of the BSA.	**Moderate**
Nyctinomops macrotis	big free-tailed bat	**SSC**	Low-lying arid areas in southern California. Need high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	No suitable roosting habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 6.1 miles to the northwest of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**
Onychomys torridus ramona	southern grasshopper mouse	**SSC**	Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover. Feeds almost exclusively on arthropods, especially scorpions and orthopteran insects.	Marginal habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 1.8 miles to the east of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Low**
Taxidea taxus	American badger	**SSC**	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Suitable habitat occurs within the BSA. The nearest and most recent occurrence is approximately 2.6 miles to the southwest of the BSA; however, this species has not been observed within 10 miles of the BSA within the last 20 years.	**Moderate**

Federal Rankings:
FE = Federally Endangered
FT = Federally Threatened

State Rankings:
SE= State Endangered
ST = State Threatened
SFP = State Fully Protected
SA = CDFW Special Animal
WL = CDFW Watch List
SSC = Species of Special Concern

5.5 WILDLIFE CORRIDORS AND SPECIAL LINKAGES

Linkages and corridors facilitate regional animal movement and are generally centered in or around waterways, riparian corridors, flood control channels, contiguous habitat, and upland habitat. Drainages generally serve as movement corridors because wildlife can move easily through these areas, and fresh water is available. Corridors also offer wildlife unobstructed terrain for foraging and for dispersal of young individuals.

As the movements of wildlife species are more intensively studied using radio-tracking devices, there is mounting evidence that some wildlife species do not necessarily restrict their movements to some obvious landscape element, such as a riparian corridor. For example, recent radio-tracking and tagging studies of Coast Range newts, California red-legged frogs, southwestern pond turtles, and two-striped garter snakes found that long-distance dispersal involved radial or perpendicular movements away from a water source with little regard to the orientation of the assumed riparian "movement corridor" (Hunt, 1993; Rathbun et al., 1992; Bulger et al., 2002; Trenham, 2002; Ramirez, 2002, 2003a, 2003b). Likewise, carnivores do not necessarily use riparian corridors as movement corridors, frequently moving overland in a straight line between two points when traversing large distances (Newmark, 1995; Beier, 1993, 1995; Noss, et al., 1996; Noss et al., no date). In general, the following corridor functions can be utilized when evaluating impacts to wildlife movement corridors:

- Movement corridors are physical connections that allow wildlife to move between patches of suitable habitat. Simberloff et al. (1992) and Beier and Loe (1992) correctly state that, for most species, we do not know what corridor traits (length, width, adjacent land use, etc.) are required for a corridor to be useful. But, as Beier and Loe (1992) also note, the critical features of a movement corridor may not be its physical traits but rather how well a particular piece of land fulfills several functions, including allowing dispersal, plant propagation, genetic interchange, and recolonization following local extirpation.

- Dispersal corridors are relatively narrow, linear landscape features embedded in a dissimilar matrix that links two or more areas of suitable habitat that would otherwise be fragmented and isolated from one another by rugged terrain, changes in vegetation, or human-altered environments. Corridors of habitat are essential to the local and regional population dynamics of a species because they provide physical links for genetic exchange and allow animals to access alternative territories as dictated by fluctuating population densities.

- Habitat linkages are broader connections between two or more habitat areas. This term is commonly used as a synonym for a wildlife corridor (Meffe and Carroll, 1997). Habitat linkages may themselves serve as source areas for food, water, and cover, particularly for small- and medium-size animals.

- Travel routes are usually landscape features, such as ridgelines, drainages, canyons, or riparian corridors within larger natural habitat areas that are used frequently by animals to facilitate movement and provide access to water, food, cover, den sites, or other necessary resources. A travel route is generally preferred by a species because it provides the least amount of topographic resistance in moving from one area to another yet still provides adequate food, water, or cover (Meffe and Carroll, 1997).

- Wildlife crossings are small, narrow areas of limited extent that allow wildlife to bypass an obstacle or barrier. Crossings typically are manmade and include culverts, underpasses, drainage pipes, bridges, and tunnels to provide access past roads, highways, pipelines, or other physical obstacles. Wildlife crossings



often represent “choke points” along a movement corridor because useable habitat is physically constricted at the crossing by human-induced changes to the surrounding areas (Meffe and Carroll, 1997).

5.5.1 Wildlife Movement within the BSA

The BSA is situated in the San Rafael Hills, which functions as an “island” in which patches of native habitat occur surrounded by the heavily developed City of Glendale and the greater Los Angeles area. This relatively small expanse of native habitat and isolation from wider areas of open space would significantly constrain the movement of certain types of wildlife, particularly megafauna, within the San Rafael Hills and by extension, within the BSA. The BSA is characterized primarily by open space; however much of that land is occupied by the SCLF and recreational facilities (baseball field and golf course) that generally lack the cover, presence of refugia, or other characteristics conducive the permanent use of and/or movement through a habitat by many native wildlife species. Other barriers to terrestrial wildlife movement within the BSA include residential development, fencing, and roadways. There are localized portions of open space occupied by native habitat within the BSA such as the slopes to the north and south of the SCLF. These more open areas likely provide “live-in habitat” for a variety of common species habituated to life in urban environments such as Virginia opossum, raccoon, Audubon’s cottontail, California ground squirrel, and other small rodents.

The significant and ongoing landfill disturbance within the BSA, level of development, and general lack of native habitat, distributed only along the northern and southern edges of the BSA, would significantly constrain the passage of most large terrestrial wildlife known to occur in the San Gabriel Mountains, to the north of the San Rafael Hills and separated from the BSA by the 210 freeway. In addition, the BSA does not occur within any known wildlife movement corridor or habitat linkage (Penrod et al, 2001).



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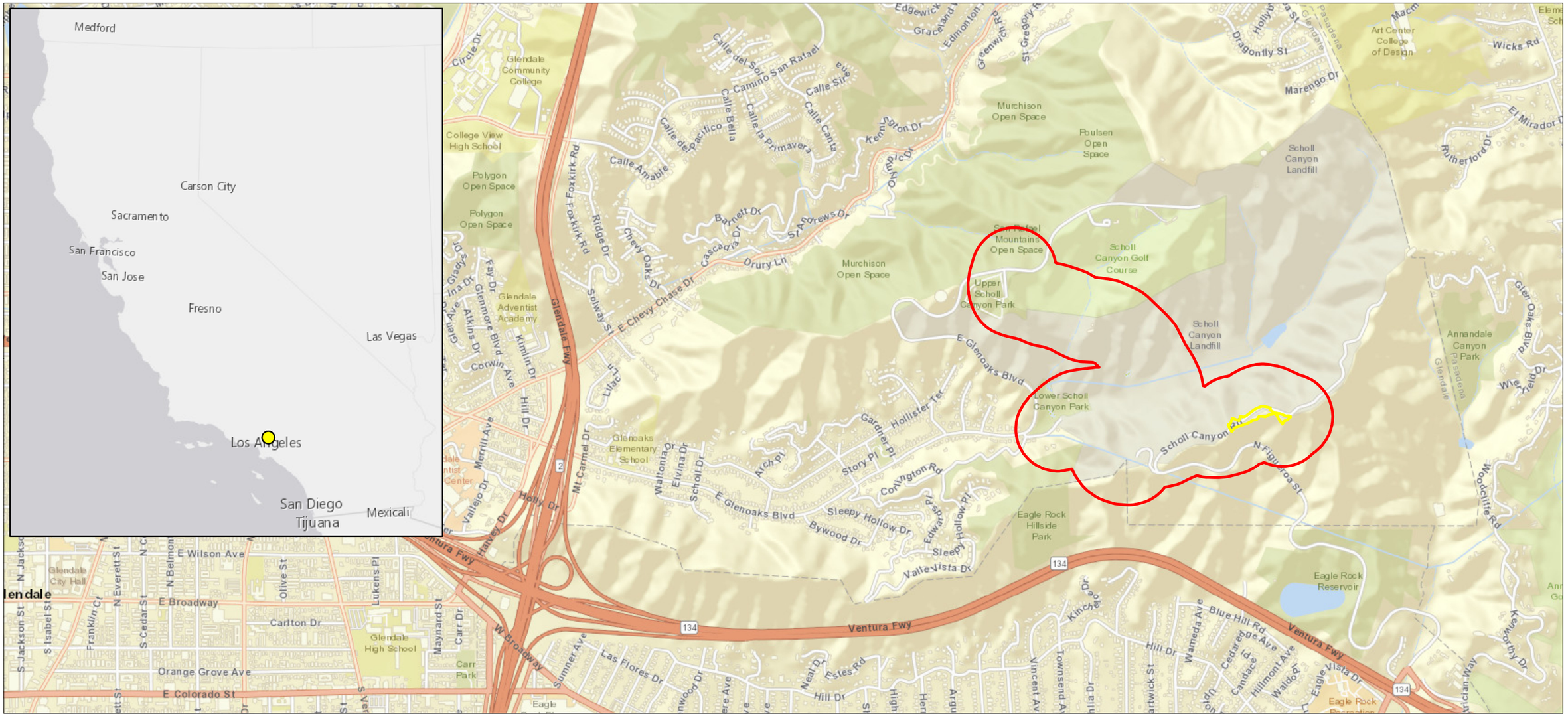
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Appendix A FIGURES



Biological Study Area

Proposed Power Plant Facility Boundary

0 400 800 metres

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N

Stantec

Project Location	Prepared by DL on 2019-05-2 TR by RB on 2019-05-17 IR Review by SR on 2019-05-23
Glendale, CA	
Client/Project	185804356

Biogas Renewable Generation Project

Figure No.

1

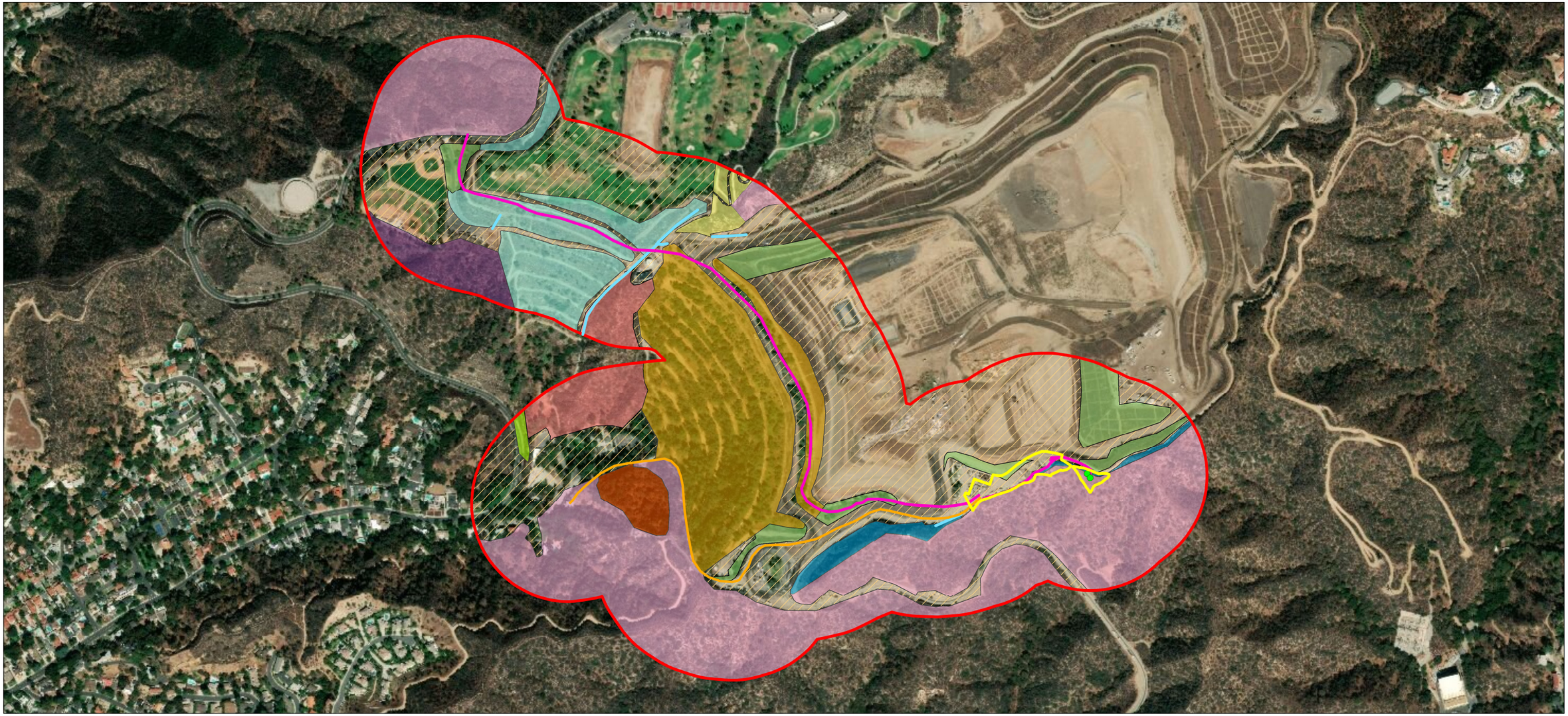
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Project Location

Notes

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet

2. Background: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community



Biological Study Area

Potentially Jurisdictional Drainage Features

Vegetation Communities & Landcover Types

- Annual Brome Grassland
- Black Sage Scrub
- California Buckwheat Scrub
- California Sagebrush - California Buckwheat Scrub
- California Sagebrush Scrub
- Chamise Chaparral
- Coast Live Oak Woodland
- Fountain Grass Swards
- Laurel Sumac Scrub
- Ornamental Woodland
- Disturbed/ Developed

Project Components

- Proposed Power Plant Facility Boundary
- Proposed Water Pipeline
- Proposed Gas Pipeline
- New Water Tank

0 170 340 metres

(At original document size of 11x17)
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Stantec

Project Location
Glendale, Ca

Prepared by DL on 2019-05-2
TR by RB on 2019-05-17
IR Review by SR on 2019-05-22

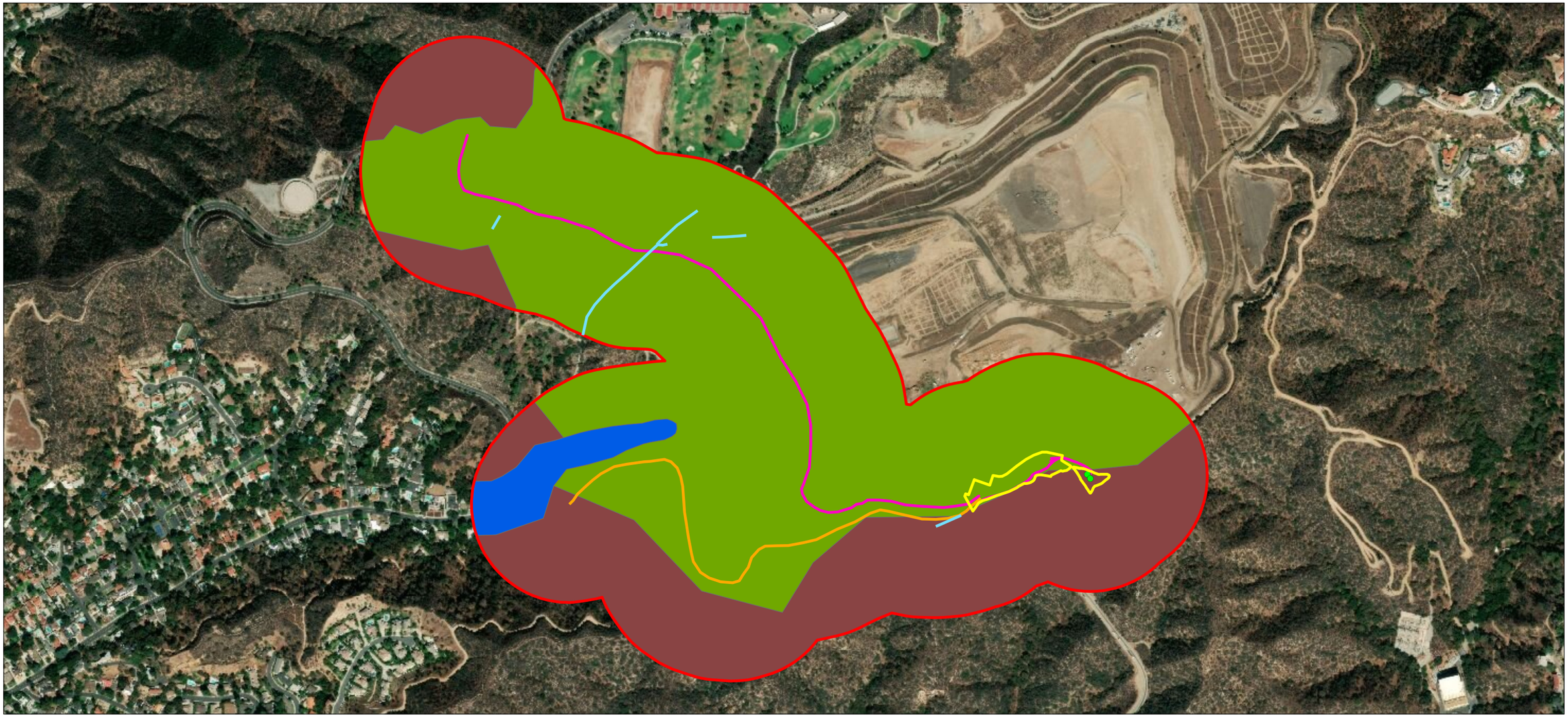
Client/Project
185804356

Biogas Renewable Generation Project

Figure No.
2

Title
Vegetation Communities & Land Cover Types

Notes
1. Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
2. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Biological Study Area

Potentially Jurisdictional Drainage Features

Map Unit Symbol

1002*

1148*

1280*

Project Components

Proposed Power Plant Facility

Proposed Water Pipeline

Proposed Gas Pipeline

New Water Tank

Notes
1.Refer to section 4.3 Table 2 for Soil Descriptions *
2. Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
3. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 170 340 metres

(At original document size of 11x17)
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Stantec

Project Location
Glendale, CA

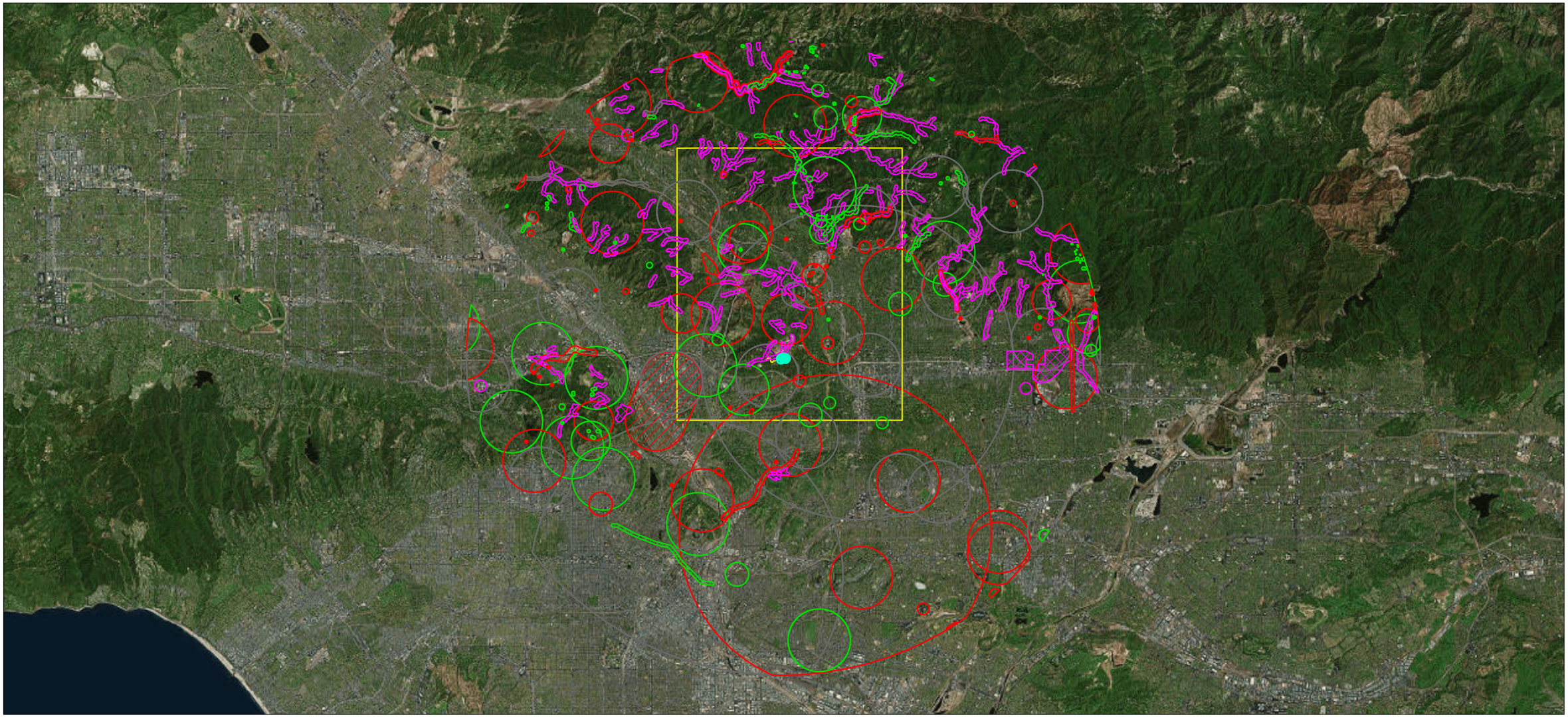
Prepared by DL on 2019-05-2
TR by RB on 2019-05-17
IR Review by SR on 2019-05-22

Client/Project
185804356

Biogas Renewable Generation Project

Figure No.
3

Title
Historic Soils Types



Proposed Power Plant Facility Boundary
Plant (80m)
Plant (specific)
Plant (non-specific)
Plant (circular)
Animal (80m)
Animal (specific)
Animal (non-specific)
Animal (circular)
Terrestrial Comm. (specific)
Terrestrial Comm. (circular)
Aquatic Comm. (specific)
Multiple (non-specific)
Multiple (circular)
Sensitive EO's (Commercial only)

0 4,700 9,400 metres

(At original document size of 11x17)
1:244,944

N

Notes
1. Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
2. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Stantec

Project Location
Glendale, CA

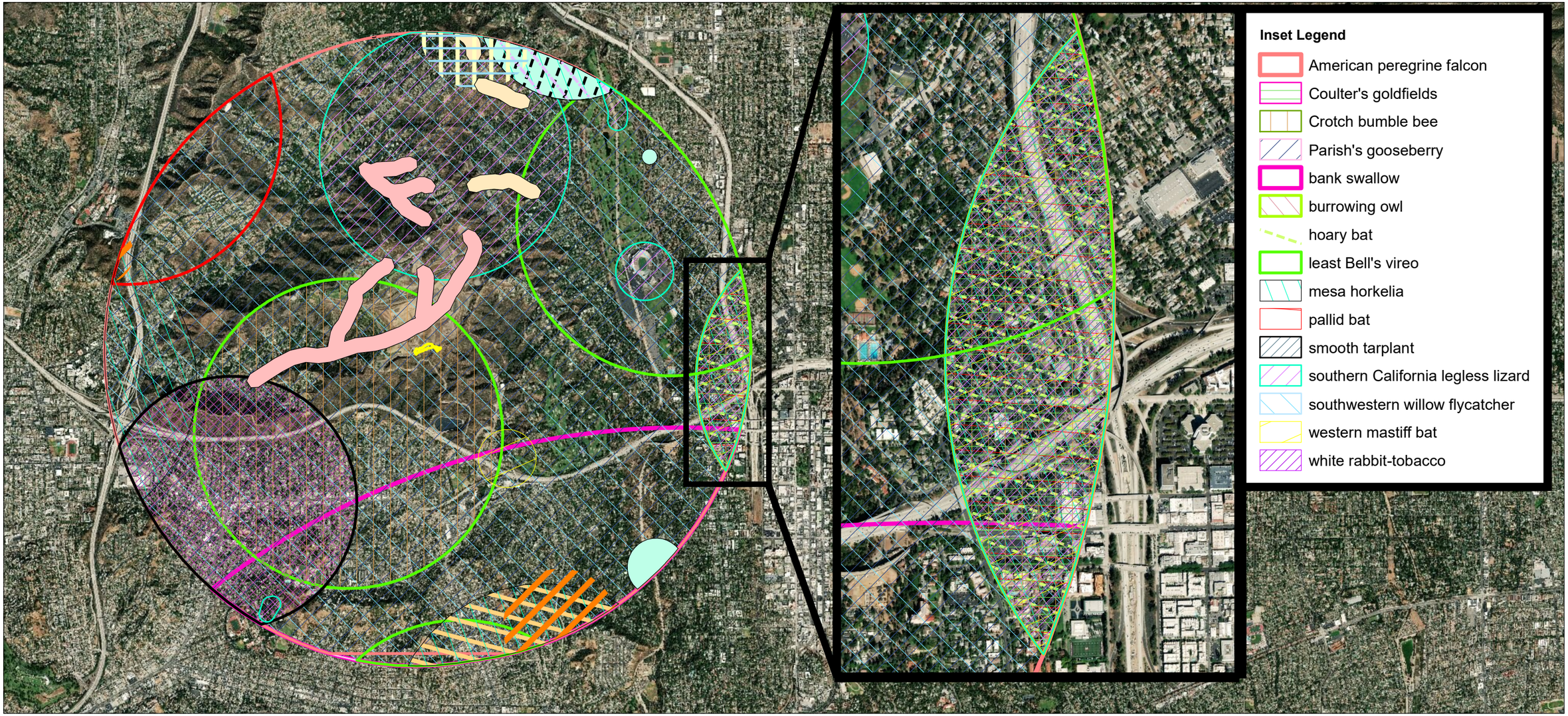
Prepared by DL on 2019-05-2
TR by RB on 2019-05-17
IR Review by SR on 2019-05-22

Client/Project
185804356

Biogas Renewable Generation Project

Figure No.
4a

Title
CNDDB - 10 Mile Search Radius



2 Mile Radius Legend

- Proposed Power Plant Facility Boundary
- American peregrine falcon
- Coulter's goldfields
- Crotch bumble bee
- Greata's aster
- Nevin's barberry
- Parish's gooseberry
- Parry's spineflower
- Plummer's mariposa-lily
- Southern Coast Live Oak Riparian Forest
- Southern Sycamore Alder Riparian Woodland
- bank swallow
- burrowing owl
- coast horned lizard
- hoary bat
- least Bell's vireo
- mesa horkelia
- pallid bat
- salt spring checkerbloom
- slender-horned spineflower
- smooth tarplant
- southern California legless lizard
- southern grasshopper mouse
- southern tarplant
- southwestern willow flycatcher
- western mastiff bat
- white rabbit-tobacco
- 2Mile_CNDDB_Buffer

0 950 1,900 metres

(At original document size of 11x17)
1:49,648

N

Stantec

Project Location
Glendale, CA

Prepared by DL on 2019-05-2
TR by RB on 2019-05-17
IR Review by SR on 2019-05-22

Client/Project
185804356

Biogas Renewable Generation Project

Figure No.
4b

Title
CNDDB - 2 Mile Search Radius

Notes
1. Coordinate System: Custom
2. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Appendix B PHOTOGRAPHIC LOG

STANTEC CONSULTING SERVICES INC.
PHOTOGRAPHIC RECORD

Client: City of Glendale	**Project Number:** 185804356
Project Name: Biogas Renewable Generation Project	**Photographer:** M. Martinez

Photo 1: April 29, 2019



Main entrance to the SCLF in the southwestern portion of the BSA, looking southeast. Note steep outcrop in the background with native scrub habitat.

Photo 2: April 29, 2019



View of the SCLF from the south-central portion of the BSA, looking northeast, with native scrub habitat in the foreground and active landfill in the background.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: City of Glendale	**Project Number:** 185804356
Project Name: Biogas Renewable Generation Project	**Photographer:** M. Martinez

Photo 3: April 29, 2019



View of the SCLF from the south-central portion of the BSA, looking northwest, with reclaimed portions of the landfill prominently depicted in the foreground and to the right side of the photo and slopes occupied by native scrub vegetation on the opposite side of the canyon in the background.

Photo 4: April 29, 2019



Representative view of the slopes along the southern boundary of the BSA, looking south from the southwestern portion of the BSA. Note native chamise chaparral habitat.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC RECORD	
Client: City of Glendale	**Project Number:** 185804356
Project Name: Biogas Renewable Generation Project	**Photographer:** M. Martinez

Photo 5: April 29, 2019



View of the ornamental woodland prominent in the western portion of the BSA with herbaceous understory in the foreground, looking west.

Photo 6: April 29, 2019



Representative concrete-lined drainage channel within the BSA.

Appendix D GEOTECHNICAL INVESTIGATION REPORT

Geotechnical Investigation Report

Biogas Renewable Generation Project
7721 Figueroa Street
Los Angeles, California



Prepared for:
City of Glendale
141 North Glendale Avenue
Glendale, California 91206

Prepared by:
Stantec Consulting Services Inc.
25864-F Business Center Drive
Redlands, California 92374

Project No: 2057123300

January 4, 2016

Sign-off Sheet

This document entitled Geotechnical Investigation Report dated January 4, 2016 was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of the City of Glendale (the "Client"). The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client.

Prepared by _____
(signature)

Jaret Fischer, P.E.

LICENSED PROFESSIONAL ENGINEER
JARET FISCHER
C 80383
EXP. 3/31/17
CIVIL
STATE OF CALIFORNIA

Reviewed by _____
(signature)

James Stone, G.E.

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Appendix C....Geophysical Survey

Facility: Biogas Renewable Generation Project
Location: 7721 North Figueroa Street
Los Angeles, California

Consultant: Stantec
Stantec JN: 2057123300

REPORT SUMMARY

Footing Bearing Pressures	4,500 psf
Passive Lateral Pressures	350D psf/ft
D = Depth to bottom of footing	
Coefficient of Friction	0.35
Expansive Soils	o Yes x No
R-Value	30 (estimated)
Automobile Traffic (TI = 4)	4.0" AC / 4.0" AB
Automobile and Truck Traffic (TI = 6)	4.0" AC / 5.0" AB
Artificial Fill Landfill debris encountered in the vicinity of Soil Boring B-8	x Yes o No
Relatively Loose Near-Surface Soils	x Yes o No
Groundwater Within 20 Feet of Surface	o Yes x No
Monitoring Well Installed	o Yes x No
Hydrocarbons Detected	o Yes x No
Existing Underground Tanks	o Yes x No
Existing Structures	x Yes o No

1.0 INTRODUCTION

1.1 AUTHORIZATION AND LIMITATIONS

This report presents the results of a geotechnical investigation performed at the request of the City of Glendale, by Stantec Consulting Services Inc. (Stantec), for the proposed power plant at the Scholl Canyon Landfill, located at 7721 North Figueroa Street in the City of Los Angeles, California. This report has been prepared for the City of Glendale and their project design consultants to be used solely in the design of the proposed project, as described herein. This report may not contain sufficient information for other uses or the purposes of other parties.

1.2 PURPOSE AND SCOPE OF WORK

The objective of this investigation was to assess the nature and engineering properties of the encountered subsurface materials and to provide geotechnical design recommendations for the proposed power plant. The scope of work consisted of the following tasks:

- Review available subsurface information for the Site,
- Drill, log and sample eleven test borings,
- Hand dig, map, and sample seven test pits,
- Conduct a geophysical seismic refraction and electrical resistivity study,
- Perform laboratory testing on selected samples,
- Evaluate geotechnical properties of materials encountered pertinent to the design and construction of the project, and
- Develop conclusions and recommendations regarding:
    - Foundation recommendations for the proposed buildings and equipment,
    - Subgrade preparation beneath new foundations and pavements,
    - Fill and backfill materials along with fill and backfill slope placement and compaction criteria,
    - Appropriate foundation type(s) for support of new structures along with geotechnical criteria for foundation design,
    - Lateral earth pressures for permanent retaining walls,
    - New flexible pavement structural sections for driveway areas,
    - Corrosivity of Site soils with respect to steel and concrete.

1.3 SITE DESCRIPTION

The Site is irregular in shape, approximately 3.9 acres in size, and partially occupied by an existing landfill gas scrubbing and pumping facility. A portion of the site is vacant. The existing facility includes liquid flammable gas compression equipment, a landfill gas flare system, and several small buildings.

2.0 PROJECT DESCRIPTION

Stantec Consulting Services Inc. of Pasadena, California provided the preliminary layout for the proposed project. The proposed development will consist of a new electric generation power plant consisting of engine or turbine generators utilizing landfill gas as fuel. The power plant will include gas and air compressors, pumps, heat exchangers, electrical equipment, and other systems. Several buildings will also be constructed on the site to house the engine generators, an office, control room, and warehouse. The Site location is shown on Figure 1 and the layout of the proposed facility areas are shown on Figure 2.

There were no structural plans or design loads available at the time of this report. Based on our experience with similar projects and the available information, it is assumed that building loads will be relatively light. We understand that the equipment is typically founded on square concrete spread footings approximately two to three feet in width or thickened mat foundations. The foundation loads for the proposed equipment were estimated for the purpose of this report at less than 100 kilopounds (kips) for equipment and less than 3.5 kips per linear foot (klf) for continuous building wall footing loads. If actual design loading conditions differ from those indicated above, the recommendations in this report may have to be re-evaluated.

Grading plans have not yet been finalized. Final grading plan should be reviewed by the Project Geotechnical Engineer. The recommendations in this report may need to be changed based on the final grading plan.

3.0 SUSBURFACE INVESTIGATION

3.1 DRILLING

Eleven test borings were drilled with hollow-stem auger equipment at the locations shown on Figure 2. The borings were logged by a Stantec representative who also collected samples of the materials encountered for examination and laboratory testing. Samples were obtained using a 2.5-inch inner diameter California Modified sampler (ASTM D3550) and during Standard Penetration Testing (SPT, ASTM D1586). The samplers were driven with a 140-pound hammer falling 30 inches. The blows required to drive the samplers each 6 inches (or less) of an 18-inch derive were recorded and are noted on the boring logs.

The logs of the test borings are in Appendix A. Soils are classified according to the Unified Soil Classification explained in Appendix A. Rock is described in terms of its physical characteristics.

3.2 GEOLOGIC TEST PITS

Seven geologic test pits (TP-1 through TP-7) were hand excavated at locations on the southern slope and aligned parallel with the face of the slope. The soil trenches were approximately 4 feet long and 4 feet wide and were excavated to depths ranging from 2 to 3.5 feet bgs. The trenches were continuously logged and mapped at locations shown on Figure 2, and slide hammer soil samples were collected for materials laboratory testing.

3.3 LABORATORY TESTING

The following laboratory tests were performed on samples collected at the Site either in general accordance with the American Society for Testing and Materials (ASTM) or contemporary practices of the soil engineering profession:

- In-Situ Moisture and Density (ASTM D2216): In-situ moisture and density are calculated by weighing and measuring the drive samples obtained from the borings to determine their in-place moisture and density. These results are used to analyze the density or consistency of the subsurface soils.
- Direct Shear Test (ASTM D3080): The tests were performed on an undisturbed sandy soil sample in order to obtain the soil shear strength values, which are among the basic soil parameters that are used to estimate soil bearing capacity and lateral earth pressures.
- Sieve Analysis (ASTM D422 and ASTM C136): This test is used to evaluate the distribution of soil grain sizes, which constitute the soil fabric and is used in soil classification and assessment of soil engineering behavior.
- Maximum Dry Density and Optimum Moisture Content (ASTM D1557): The compaction curve defines the relationship between water content and dry unit weight of soils compacted soils effort. The maximum dry density and optimum water content are used

to determine the relative density of existing soils and to determine the level of compaction during grading activities.

- Chemical Tests for Corrosion Potential (Applicable EPA, ASTM or local test methods): The pH, resistivity, soluble sulfate content, and chloride ion content were evaluated in a near surface soil sample.

The laboratory test results are presented in Appendix B.

3.4 SEISMIC REFRACTION STUDY

A Geophysical Survey that included seismic refraction and electrical resistivity measurements was completed by Southwest Geophysics, Inc. (SGI). Four P-wave refraction profiles, two refraction microtremor (ReMi) profiles, and electrical resistivity profiles were conducted in the locations shown on Figure 2. The results of the geophysical study are included in Appendix C.

4.0 REGIONAL GEOLOGIC CONDITIONS

4.1 REGIONAL PHYSIOGRAPHIC CONDITIONS

The Site is located in the northwestern portion of the Transverse Range Geomorphic Province in the southwestern part of California. The region is separated by an east to west trending series of steep mountain ranges and valleys, subparallel to faults branching from the San Andreas Fault. The Site resides in the portion of the Province drained by the Los Angeles River.

California Highway 134 is located approximately 0.4 miles southwest of the site, California Highway 210 is located approximately 2 miles east of the Site, and the Los Angeles River is located approximately 4.9 miles west of the Site. Based on interpretation of the ground surface elevation contour lines drawn on the topographic map, the Site is located at an elevation of approximately 1,410 to 1,485 feet (1988 NAVD). The topography in the vicinity of the Site is hilly, with a slope to the south then southwest toward the Los Angeles River (USGS, 1995).

4.2 REGIONAL GEOLOGY

Based on information depicted on the 2005 Geologic Map of Los Angeles, the Site is underlain by Mesozoic age quartz diorite deposits composed of plagioclase feldspar (oligoclase-andesine, hornblende, biotite, and minor quartz). Sometimes referred to as the Wilson Diorite, this unit is the most widespread bedrock type in the Glendale area. The bulk of the Verdugo Mountains and the San Rafael Hills are comprised of quartz diorite. The color of the rock is typically a light gray to light brown. The texture is generally medium grained and the structure is massive). In the central part of the San Rafael Hills, just north of Highway 134, at the southeastern margin of Glendale, the mineral grains are aligned, giving the rock a distinct banding or "foliation" resulting in a somewhat layered structure. In this area, the structure dips 60 to 70 degrees to the east and northeast (ECI, 2003).

4.3 REGIONAL HYDROGEOLOGY

According to the California Department of Water Resources (CDWR) Bulletin 118 Report, the Site is not located within a mapped groundwater basin. The closest groundwater basin is the San Fernando Valley Groundwater Basin of the South Coast Hydrologic Region (4-12), located to the west of the Site. The basin is approximately 226 square miles and is bounded on the north and northwest by the Santa Susana Mountains, on the north and northeast by the San Gabriel Mountains, on the east by the San Rafael Hills, on the south by the Santa Monica Mountains and Chalk Hills, and on the west by the Simi Hills (DWR, 2004).

5.0 REGIONAL SEISMIC CONDITIONS

5.1 REGIONAL SEISMICITY

The Site, as is most of California, is located in a seismically active area. The estimated distance of the Site to the nearest expected surface expression of nearby faults is presented in the table below.

Fault	Distance (miles) [1]	Maximum Moment Magnitude [1]
Verdugo	0.3	6.9
Raymond	2.3	6.8
Hollywood	3.3	6.7
Sierra Madre (connected)	3.9	7.2
Elysian Park Thrust	6.1	6.7
Santa Monica	6.2	7.4
Sierra Madre (San Fernando)	10.5	6.7
Clamshell-Sawpit	11.1	6.7
Puente Hills (LA Basin)	11.5	7.0
San Gabriel	12.4	7.3
Elsinore	13.7	7.8
Newport – Inglewood (L.A. Basin)	13.7	7.5
Santa Monica	13.9	7.3
Northridge	15.2	6.9
Puente Hills (Santa Fe Springs)	17.3	6.7
San Jose	19.6	6.7
Puente Hills (Coyote Hills)	19.9	6.9
Malibu Coast	21.0	6.7
Anacapa – Dume	22.7	7.2
Palos Verdes	24.4	7.7

1. Measured from 2008 National Seismic Hazard Maps - USGS (USGS, 2008).

5.2 CALIFORNIA BUILDING CODE SEISMIC CRITERIA

Based on the specified design criteria of the 2016 California Building Code (using available 2015 International Building Code data), the following Site seismic information may be considered for earthquake design.

Design Criteria	Design Value
Site Class	C
Mapped Spectral Response Acceleration for Short Periods S_S (g)	2.912
Mapped Spectral Response Acceleration for 1-second Period S_1 (g)	1.016

Design Criteria	Design Value
Maximum Considered Earthquake Spectral Acceleration for Short Periods S_{MS} (g)	2.912
Maximum Considered Earthquake Spectral Response Acceleration for 1-second Periods S_{M1} (g)	1.321
5-percent Design Spectral Response Acceleration for Short Periods S_{DS} (g)	1.942
5-percent Design Spectral Response Acceleration for 1-second Periods S_{D1} (g)	0.881
Site Coefficient F_a	1.0
Site Coefficient F_v	1.3

5.3 REGIONAL SEISMIC HAZARDS

5.3.1 Fault Rupture Hazard

The Site is not located within a currently mapped California Earthquake Fault Zone. As described above, the nearest fault is the Verdugo Fault, located approximately 0.3 miles southwest of the Site. Based on available geologic data, there is low potential for surface fault rupture from the Verdugo Fault and other nearby active faults propagating to the surface of the Site during the design life of the proposed development.

5.3.2 Liquefaction and Seismically Induced Settlements

Subsurface conditions underlying the Site consist mainly of dense to very dense silty sands over slightly weathered, hard bedrock. In addition, the groundwater level is very deep. The Site is located in an area where water bearing soils are not present. Consequently, the potential for liquefaction beneath this Site is negligible.

6.0 SURFACE AND SUSBURFACE CONDITIONS

6.1 SURFACE CONDITIONS

The Site is bordered by natural slopes on the south and southeast. The north, west and northeast sides abut the existing landfill.

Most of the area to be developed is relatively flat, at an elevation of approximately 1410 feet. The surface begins to steepen in the northeastern portion of the site, rising to almost 1500 feet east of the northeast corner of the site, where a cut slope is proposed. The ground surface has been cleared and is devoid of vegetation, except in limited areas in the northeastern part of the site, where portions of the landfill are exposed at the surface. Existing structures and equipment associated with operation of the landfill are located throughout the area.

6.2 SUBSURFACE CONDITIONS

Except in the northeastern portion, in the vicinity of boring B8, the Site is underlain by Wilson Quartz Diorite rock. The rock has weathered to a dense silty sand soil in the central portion of the Site (borings B2, B3, B4, and B11). The rock encountered beneath the remainder of the Site outside of the northeastern corner is hard, strong and moderately weathered.

Fill, consisting of medium dense to dense silty sand with landfill debris, was encountered in boring B8 in the northeast corner of the site. The fill extended to a depth of about 27 feet. Moderately weathered, hard, strong quartz diorite rock was encountered below the fill and extended to the maximum depth explored in this boring, 36-½ feet.

No groundwater was encountered in the borings. It is anticipated that the groundwater level is below a depth that would affect planned construction.

A more detailed description of the subsurface profile in each borehole is presented on boring logs in Appendix A. The stratigraphy shown represents the predominant materials encountered at various depths. Also, stratification lines indicate the approximate boundary between the major material types. The actual transition may be gradual.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 CONCLUSIONS

The new structures and equipment can be supported on shallow spread footing or mat foundations with bottom levels in weathered rock. Relatively high bearing pressures can be used. Post-construction total and differential settlements will be small.

Foundations for facilities in the northeastern end of the Site, in the vicinity of boring B8, may need to be deepened to extend into weathered rock. Current plans indicate (Figure 6) that 4 to 5 feet of excavation below planned final grade could be needed to reach the rock. Foundations could be constructed in excavations into the rock, or the excavations can be backfilled to typical shallow foundation levels with sand/cement slurry. Final procedures when final facility types and locations have been determined for this area.

A cut slope 40 to 50 feet high currently is proposed at the northeast end of the project area. At present, the slope is configured at 1.75:1 (horizontal:vertical). Based on the shear wave velocities measured in the geophysical survey (Appendix C), and the materials encountered in the borings, the rock in this area is expected to be rippable with a Caterpillar D9R bulldozer equipped with a multi- or single-shank ripper (Caterpillar, Inc., 2000). Shallower parts of the cut area could expose weathered rock susceptible to erosion. Erosion protection will be needed to reduce the potential for sloughing and raveling from the face of the slope.

Regional foliation shown on geologic maps prepared by Dibblee (1989) exhibits a north-south strike accompanied by dips to the east ranging from 55 to 60 degrees. Slopes on the south and east sides of the area to be developed exhibit moderately- to poorly-defined foliation (a planar arrangement of textural or structural features in rock). Mapped foliation shows dominant northwest to north-south strikes accompanied by dips to the north and east, respectively, ranging from 7 to 69 degrees, as shown on Figure 2. Foliation planes are either supported in the down-dip direction or project into the slope, consistent with the description by Dibblee (1989). Based on the mapped geologic data, foliation exposed on the cut slope is expected to be favorably oriented.

7.2 FOUNDATION DESIGN

Shallow spread footings or mat foundations for facilities with bottom levels in the weathered rock can be designed for the following maximum soil bearing pressures:

Load Type	Allowable Bearing Pressure (psf)
Dead Load Only	4,500
Dead Plus Live Load	5,200
Total Load, Including Wind and Seismic Loads	5,980

Footings should be at least 12 inches in width and founded a minimum of 18 inches below the lowest adjacent finish grade.

Resistance to lateral forces should be based upon a passive lateral earth pressure (equivalent fluid pressure) of 350D psf/ft where D corresponds to the embedment depth of the footing in feet, and a coefficient of friction between concrete and rock equal to 0.35. The passive earth pressure and frictional resistance can be combined without reduction.

The following parameters may be used in the foundation design:

Parameter	Value	Units
Modulus of Subgrade Reaction	250	lb/in^3
Shear Wave Velocity, V_s	1,020	ft/sec
Modulus of Elasticity (Young's Modulus), E_s	9,200	lb/in^2
Shear Modulus, G_d	4,000	lb/in^2
Poisson's Ratio, μ	0.2	--

7.3 FOUNDATION CONSTRUCTION

The Project Geotechnical Engineer should review and approve the foundation plans and observe foundation excavations prior concrete placement to check that foundation excavations extend into suitable material. The bottom of the foundation excavations should be clean and free of loose or sloughed material, debris and unsuitable material before concrete is placed.

7.4 CONCRETE SLAB-ON-GRADE FLOORS

If concrete-slab-on-grade floors will be used, the subgrade surface beneath floor areas should be proof-rolled with a smooth-wheel roller prior to slab construction. Any soft, loose, or yielding areas should be removed to the depth and extent directed by the Project Geotechnical Engineer and replaced with suitable material. The subgrade surface should be maintained at or above optimum moisture content until concrete is placed for the slab.

Where floor coverings will be placed, or if required due to proximity to the landfill, a plastic membrane at least 10 mils thick should be placed beneath the slab. The membrane should be underlain by a 4-inch thick layer of clean, free-draining crushed rock to provide uniform support for the slab and serve as a break to the rise of capillary moisture. It is recommended that a specialist be consulted regarding applicable membrane types and installation procedures where resistance to landfill gas migration is required.

Current practice commonly includes a sand layer placed between the plastic membrane and the underside of the slab. The sand can provide a degree of protection to the membrane during construction. However, the sand layer absorbs water during concrete curing and allows the

accumulation of water vapor on the bottom of the slab, considerably increasing the time required for slab moisture to reach a level suitable for installation of floor coverings. It is suggested that the concrete slab-on-grade be poured directly on the plastic membrane. Structural design of the slab should consider the potential for edge curling where the slab is poured directly on the membrane.

Slab on grade floors should be at least 6 inches in thick. Minimum reinforcement for concrete slabs-on-grade should be No. 4 deformed reinforcing bars, spaced at 18 inches on center each way. Additional reinforcing and/or slab thickness should be provided as structural conditions dictate. It is essential that during construction the slab reinforcing bars be properly supported on rebar supports to keep the reinforcing bars centralized (mid-height) in the slab during concrete placement.

Other design and construction criteria for concrete floor slabs, such as mix design, strength, durability, reinforcement, joint spacing, etc., should conform to the current specifications of the American Concrete Institute (ACI).

7.5 PERMANENT RETAINING WALLS

For cantilevered retaining walls capable of deflecting a minimum of 0.1% of the wall height at the top of wall, the following lateral earth pressures (equivalent fluid pressures with a triangular pressure distribution) may be used in design up to a wall height of 20 feet. The outside bottom edge of retaining wall foundations should have a minimum setback of 10 feet from the face of the closest adjacent slope. Alternative setbacks may be feasible. The Project Geotechnical Engineer can review retaining wall plans and determine final setback limits when the layout has been finalized.

Active:	40H psf/ft,
Passive:	350D psf/ft,

where H is the vertical height of the wall measured from the ground surface to the heel of the footing (or base of keyway) and D is the embedment depth of the footing measured from the ground surface to the bottom of the toe in front of the retaining wall (unless pavement or hardscape are present, exclude the upper foot when calculating passive resistance to account for erosion). These equivalent fluid pressures should be applied as a triangular pressure distribution behind the retaining wall and assume level backfill behind and in front of retaining wall unless otherwise noted.

Walls restrained against movement should be designed to resist at-rest pressures. An at-rest equivalent fluid pressure of 45H psf/ft is considered appropriate, where H is the vertical height of the wall measured from the ground surface to the heel of the footing (or base of keyway).

The earth pressures are based on predominately granular backfill with drained conditions, the assumption that the retaining wall is vertical, and the ground surface in front and behind the

retaining wall is level. For different wall geometries or loading conditions, the above lateral earth pressures will need to be reevaluated. The passive earth pressure indicated above does not include a safety factor; therefore, the retaining wall design should include an appropriate safety factor with respect to the overall performance of the system.

Earthquake forces on the wall can be modeled assuming an inverted triangular pressure distribution ranging from 0 at the base of the wall to 25 psf at the top of the wall.

7.6 PAVEMENT DESIGN

Preliminary flexible pavement structural sections were developed based on the visual onsite soil classifications, an assumed subgrade R-Value of 30, an equivalent single axle load (ESAL) value comparable to the referenced traffic index (TI) value below, and an AASHTO Reliability Factor of 75%. Preliminary flexible pavement sections are as follows:

Traffic Type	Auto Traffic TI = 5.0	Auto and Truck Traffic TI = 7.0
Asphalt Concrete (AC) Thickness	4.0"	4.0"
Class 2 Aggregate Base (AB) Thickness	4.0"	6.0"

*AASHTO Highway Design Manual

Proposed portland cement concrete pavement areas that are subject to vehicle traffic loads, should have a minimum thickness of six inches overlying a minimum of six inches of Class 2 Aggregate Base.

The subgrade surface below new pavements should be proof rolled with a smooth-wheeled roller before aggregate base is placed. The aggregate base for asphalt concrete pavement sections should meet Caltrans specifications for Class 2 base of Processed Miscellaneous Base (PMB), as contained in the "Greenbook" Standard Specifications for Public Works Construction. Aggregate base should be compacted to at least 95% relative compaction with uniform moisture content near optimum, as determined by ASTM D1557.

It is possible that Site grading, use of import fill soils, utility line backfilling, and related earthwork could alter the distribution of near-surface materials, thus requiring re-evaluation of the recommended pavement structural sections. Stantec recommends that at least one near surface soil sample be tested to evaluate the subgrade R-value following rough grading of the pavement areas.

7.7 EXPANSIVE SOIL POTENTIAL

The near-surface materials (upper 8 feet) consist of silty sand and quartz diorite bedrock. The predominantly granular soils and rock are not expansive. Design for expansive soils is not required.

If imported soils are used for earthwork, the proposed materials should be evaluated for expansion potential prior to import. Imported soils should be approved by the Project Geotechnical Engineer prior to utilization.

7.8 CORROSIVE SOIL POTENTIAL

Chemical tests to evaluate corrosive soil potential of near surface soils were performed by Converse Consultants. The test results indicate a soil pH ranging from 7.81 to 7.93, water soluble sulfate of 0.001 to 0.023% by weight, soluble chlorides ranging from 125 ppm to 145 ppm, and saturated resistivity ranging from 1,900 ohm-cm to 14,000 ohm-cm.

Field Wenner four-point resistivity testing was conducted by Southwest Geophysics at the Site. The results of the field resistivity testing indicate variable corrosion potential in the subsurface profile (Appendix C). In general, the resistivity decreases (higher corrosion potential) with increasing water content and salt concentration. In dry arid environments like that of the Site, seasonal low moisture content in near surface soils and evapotranspiration are important factors influencing corrosion potential of the soil profile. The field data (Appendix C) indicate relatively low (5,668 to 9,859 ohm-cm) and apparent moderate corrosion potential to ferrous metal in the near surface materials to a depth of at least four feet (note: the depth of the measured average resistivity in the soil profile is assumed to be equivalent to the probe spacing). Laboratory testing on saturated samples showed much lower resistivities, indicating moderate to severe corrosion potential.

The materials underlying the site form a low corrosive environment with respect to reinforced concrete and mild to severe corrosive environment with respect to ferrous metals. Nevertheless, Type II modified portland cement is recommended for use in concrete in contact with ground. Special corrosion-resistant coatings are not considered necessary for reinforcing steel. Adequate cover should be provided over the reinforcing steel in accordance with good construction practice.

7.9 SITE PREPARATION AND GRADING

7.9.1 Site Preparation

Existing loose soils, debris and vegetation, if any, should be removed from beneath area to be graded and where new facilities will be located. It is expected that earthwork outside of building and equipment areas will be minimal and generally consist of excavations for new utility lines, subgrade preparation for hardscape and pavements, and slopes for drainage. The bottoms of

excavations for utility trenches and below pavements and hardscape should be checked by the Project Geotechnical Engineer. Soft, wet, or otherwise unsuitable material should be excavated to the depth and extent determined by the Project Geotechnical Engineer and replaced with compacted fill.

The bottoms of excavations, and the existing ground surface where new fill will be placed, should be scarified to a depth of 12 inches, moisture conditioned to at least 2 percentage points above optimum moisture content and compacted to at least 90% relative compaction. The maximum dry density and optimum moisture content for the evaluation of relative compaction should be determined in accordance with ASTM D 1557. All references to optimum moisture content and relative compaction in this report are based on this test method.

7.9.2 Fill Materials

Excavated materials determined by the geotechnical engineer to be satisfactory can be replaced as compacted fill. It is anticipated the majority of the excavated materials can be used as compacted fill following mixing of clayey and sand soils. The geotechnical engineer should approve the fill material before placement.

Imported soil should consist of predominately granular non-detrimentally expansive (Expansion Index less than 20) material free of organics, debris and rocks greater than 4 inches in any dimension. The EI of the material should be determined in accordance with ASTM D 4829. Stantec should approve the soil to be used as fill prior to importation.

7.9.3 Fill and Backfill Placement and Compaction

Fill and backfill should be placed in 6- to 8-inch thick loose lifts, moisture conditioned to at least 2 percentage points above optimum moisture content, and compacted to at least 90% relative compaction. Fill and backfill placed within the upper 12 inches of finish grade beneath new pavements should be compacted to at least 95% relative compaction.

7.9.4 Cut and Fill Slopes

Maximum cut slope of the existing hill located on the northwest portion of the project shall not exceed 1-½:1 (horizontal:vertical). Fill placed on slopes that are steeper than 5:1 (horizontal:vertical) should be started on a level bench and keyed and benched into the existing hillside as the fill level is raised. Maximum recommended fill slopes are 2:1 (horizontal:vertical).

7.9.5 Surface Drainage

Final surface grades in the new building and equipment area should be designed to collect and direct surface water away from the new features and toward appropriate drainage facilities. In general, we recommend that the ground adjacent to structures slope away at a gradient of at

least 2%. Densely vegetated areas where runoff can be impaired should have a minimum gradient of at least 5% within the first 5 feet from the structure.

Drainage patterns established at the time of fine grading should be maintained throughout the life of the project. Site irrigation should be limited to the minimum necessary to sustain landscape growth.

Drainage on the cut slope at the northeast end of the project should be designed to prevent surface water from flowing over the face of the slope. At least one drainage swale or bench should be provided at the top of the slope and one approximately mid-way down on the face of the slope. Runoff water should be directed to suitable discharge facilities to reduce the potential for ponding at the toe of the slope.

Weathered rock exposed on the face on the cut slope is expected to be readily erodible. Erosion protection such as erosion-resistant vegetation, commercial erosion control mats or other means should be provided to minimize sloughing and raveling.

7.10 POST INVESTIGATION SERVICES

Post investigation services are an important and necessary continuation of this investigation, and it is recommended that Stantec be retained as the Project Geotechnical Engineer to perform such services. Final project grading and foundation plans, foundation details and specifications should be reviewed by Stantec prior to construction to check that the intent of the recommendations presented herein have been applied to the design. Following review of plans and specifications, observation during construction should be performed to correlate the findings of this investigation with the actual subsurface conditions exposed during construction.

During construction, the Project Geotechnical Engineer's representatives should be present at the Site to observe the geotechnical aspects of the project and to observe and test the earthwork.

8.0 CLOSURE

Our conclusions, recommendations and discussions presented herein are (1) based upon an evaluation and interpretation of the findings of the field and laboratory programs, (2) based upon an interpolation of subsurface conditions between and beyond the explorations, (3) subject to confirmation of the actual conditions encountered during construction, and (4) based upon the assumption that sufficient observation and testing will be provided by Stantec during construction.

Any person using this report for bidding or construction purposes should perform such independent investigations as he deems necessary to satisfy himself as to the surface and subsurface conditions to be encountered and the procedures to be used in the performance of work on this project.

This report contains information which is valid as of this date. However, conditions that are beyond our control or that may occur with the passage of time may invalidate, either partially or wholly, the conclusions and recommendations presented herein.

The conclusions in this report are based on interpolation and extrapolation of subsurface conditions encountered at the boring locations. The actual subsurface conditions at unexplored locations may be different. Consequently, the findings and recommendations in this report may require re-evaluation if subsurface conditions different than stated herein are encountered.

Inherent in most projects performed in the heterogeneous subsurface environment, continuing subsurface investigations and analyses may reveal conditions that are different than those presented herein. This facet of the geotechnical profession should be considered when formulating professional opinions on the limited data collected on this project.

The findings and recommendations contained in this report were developed in accordance with generally accepted current professional principles and practice ordinarily exercised, under similar circumstances, by geotechnical engineers and geologists practicing in this locality. No other warranty, express or implied, is made.

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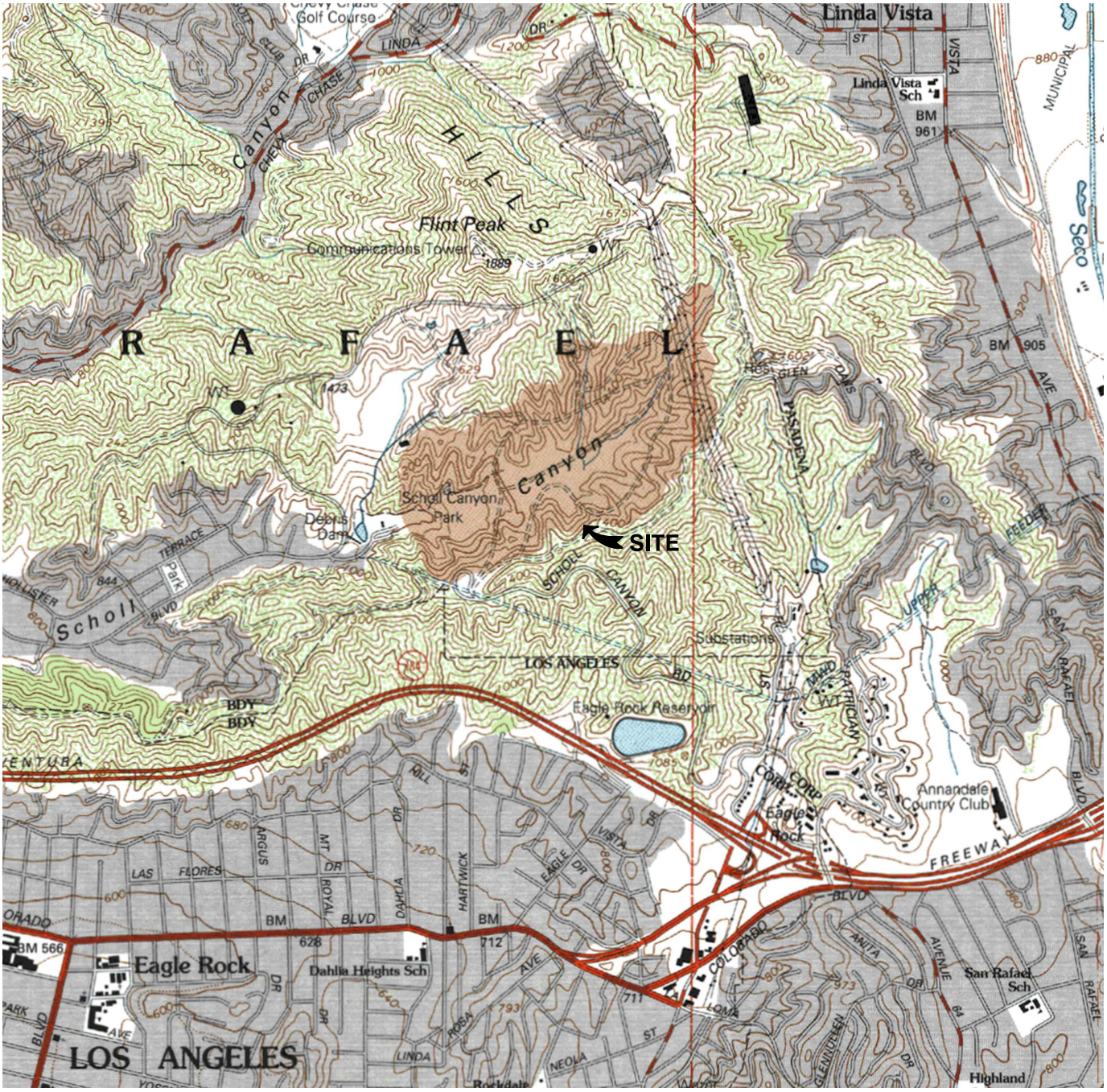
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FIGURES



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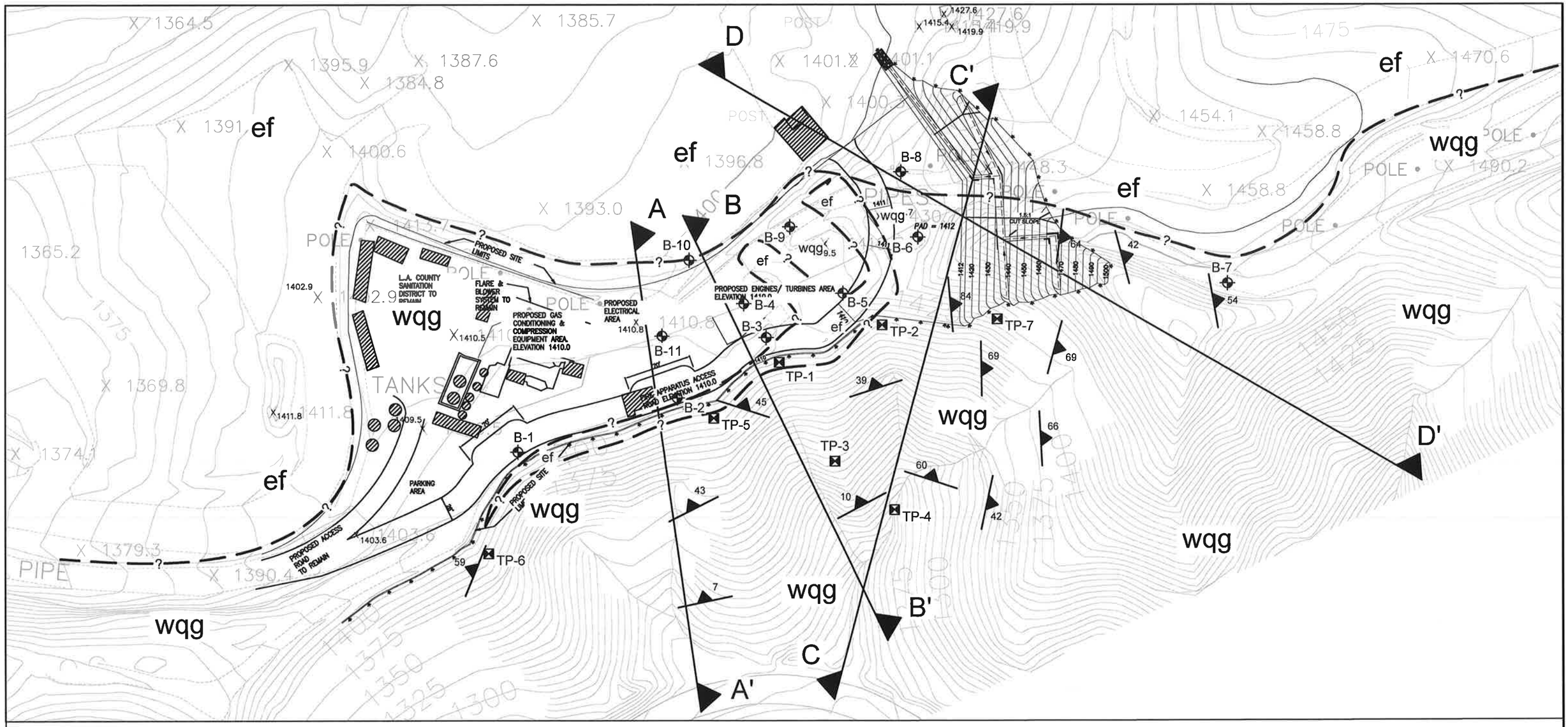
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EXPLANATION

- = Approximate Location of Proposed Features
- ef = Earth fill and landfill debris
- wqg = Wilson Quartz Diorite (Cretaceous geologic age)
- = Approximate geologic contact
- 22 = Strike and dip of foliation
- = Hollow-stem auger boring
- = Hand-dug test pit
- = Geologic cross-section
- 6 = Approximate depth to bedrock in feet

N

0 100 200

APPROXIMATE SCALE (FEET)

Stantec
25864-F BUSINESS CENTER DRIVE
REDLANDS, CA 92374
PHONE: (909) 335-6116 FAX: (909) 335-6120

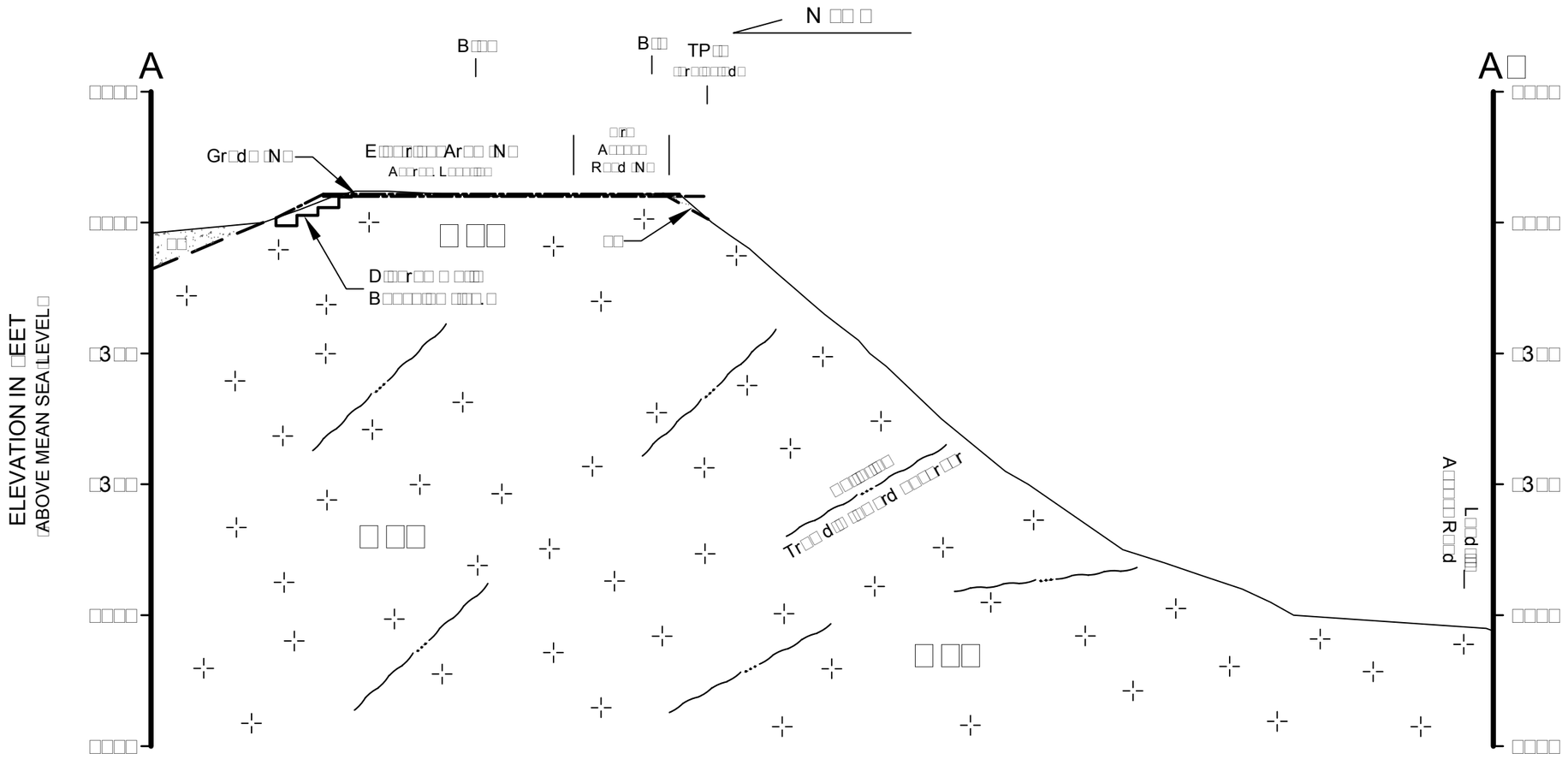
FOR: The City of Glendale
GLENDALE, CALIFORNIA

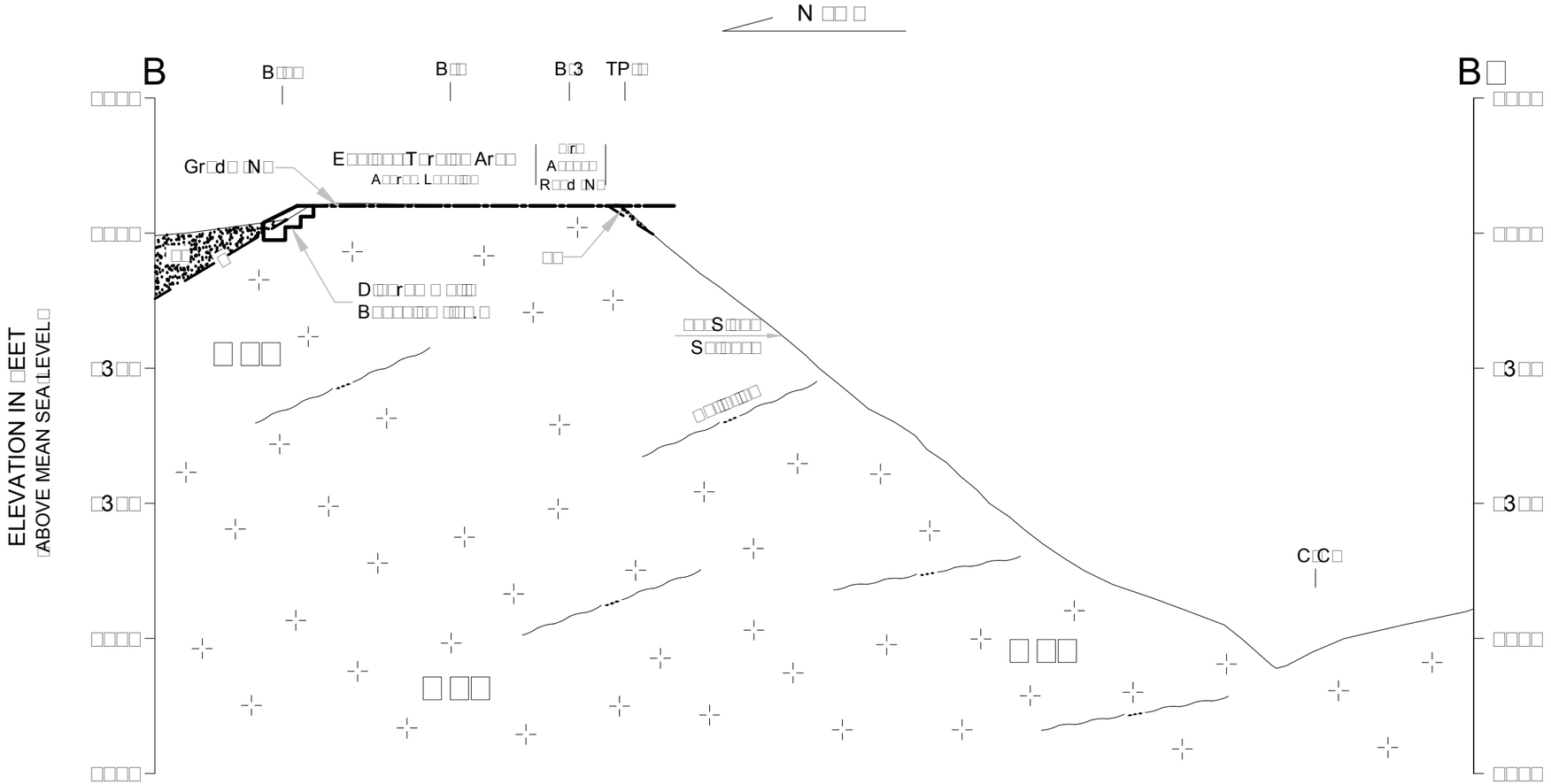
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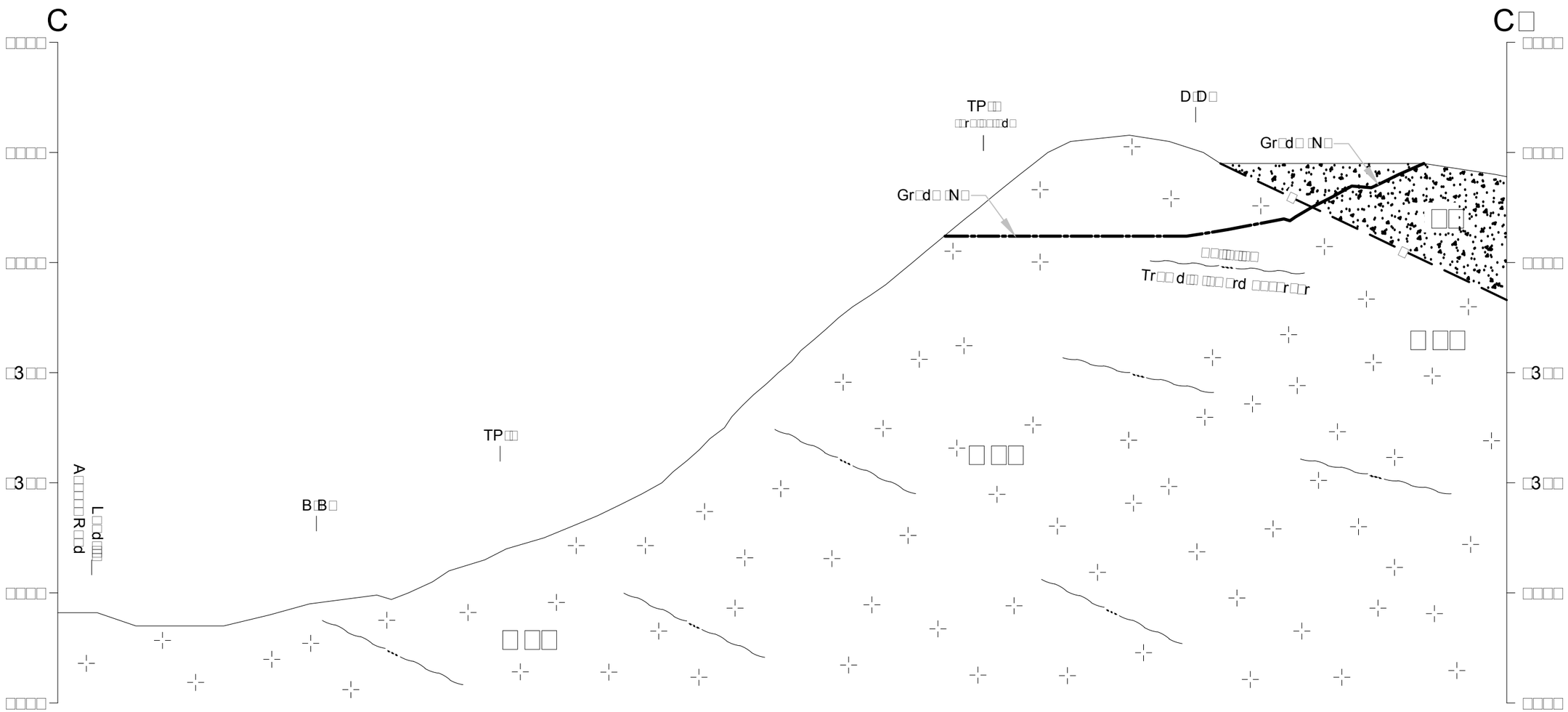

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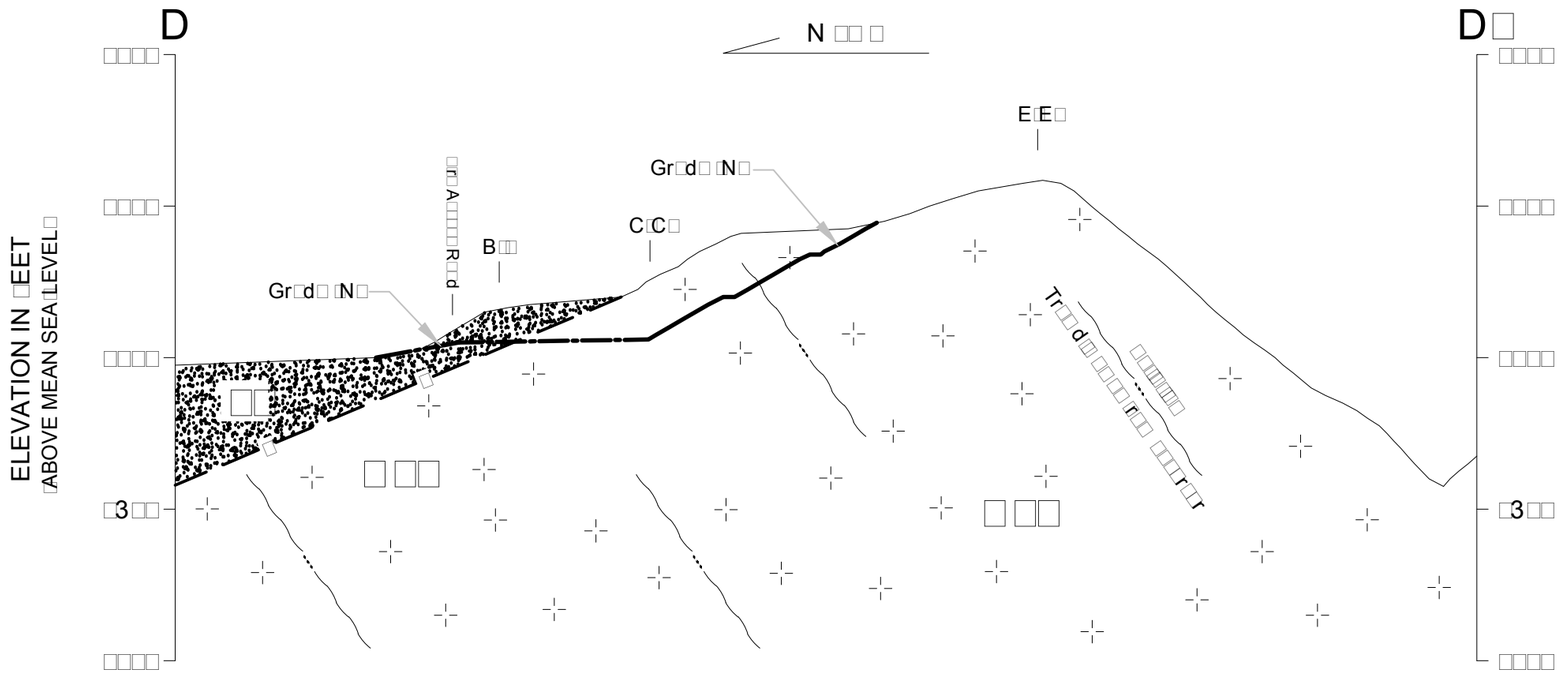
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APPENDIX A
BORING LOGS

Stantec

PROJECT: **Geotechnical Legend**
LOCATION: **123 Main St. Anywhere USA**
PROJECT NUMBER: **00AB.12345.00**

WELL / PROBEHOLE / BOREHOLE NO: **Legend** PAGE 1 OF 1

DRILLING: STARTED **1/1/06** COMPLETED: **1/1/06**
INSTALLATION: STARTED **1/1/06** COMPLETED: **1/1/06**
DRILLING COMPANY: **Drilling Sub-contractor**
DRILLING EQUIPMENT: **Drilling Equipment**
DRILLING METHOD: **Drilling Method**
SAMPLING EQUIPMENT: **Sampling Equipment**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **25.0**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **25.0**
WELL CASING DIAMETER (in): **NA** BOREHOLE DIAMETER (in):
LOGGED BY: **Onsite Technician** CHECKED BY: **Project Eng.**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Geotechnical Lab Testing	Environmental Lab Testing	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
5			Geotechnical Lab Testing CNSL - Consolidation CRSN - Corrosion EI - Expansion Index HA - Hydrometer Analysis MD - Moisture Density M - Moisture R-Val - R-Value SA - Sieve Analysis DS - Direct Shear UC - Unconfined Compression AL - Atterberg Limits #200 - #200 Sieve Wash MP - Modified Proctor		CNSL CRSN EI HA MD M R-Val SA DS UC AL #200 MP			As Shown	5	Surface Completion
10									10	
15			Environmental Lab Testing 8015M - Volatile and/or Extractable Petroleum Hydrocarbons 8260 - Halogenated Volatile Organic Compounds with Oxygenates 8270 - Semi-Volatile Organic Compounds 8081 - Organochlorine Pesticides			8015M 8260 8270 8081			15	Backfill Description
20			Hand Auger Sample Driven Sample, Blows Per 6 Inches, 2.5 Inch ID California Modified Sample Interval Driven Sample, Blows Per 6 Inches, 1.5 Inch ID SPT Sample Interval				10 11 15 20 22 23		20	
25			Hole terminated at 25 feet.						25	
30									30	
35									35	

GEO FORM 304 GEOTECHNICAL LEGEND.GPJ SECOR INTL.GDT 12/5/06

SYMBOLS AND TERMS USED ON BOREHOLE AND TEST PIT RECORDS

SOIL DESCRIPTION

Terminology describing common soil genesis:

Topsoil	-	mixture of soil and humus capable of supporting vegetative growth
Peat	-	mixture of visible and invisible fragments of decayed organic matter
Till	-	unstratified glacial deposit which may range from clay to boulders
Fill	-	material below the surface identified as placed by humans (excluding buried services)

Terminology describing soil structure:

Desiccated	-	having visible signs of weathering by oxidization of clay minerals, shrinkage cracks, etc.
Fissured	-	having cracks, and hence a blocky structure
Varved	-	composed of regular alternating layers of silt and clay
Stratified	-	composed of alternating successions of different soil types, e.g. silt and sand
Layer	-	> 75 mm in thickness
Seam	-	2 mm to 75 mm in thickness
Parting	-	< 2 mm in thickness

Terminology describing soil types:
The classification of soil types are made on the basis of grain size and plasticity in accordance with the Unified Soil Classification System (USCS) (ASTM D 2487 or D 2488). The classification excludes particles larger than 76 mm (3 inches). The USCS provides a group symbol (e.g. SM) and group name (e.g. silty sand) for identification.

Terminology describing cobbles, boulders, and non-matrix materials (organic matter or debris):
Terminology describing materials outside the USCS, (e.g. particles larger than 76 mm, visible organic matter, construction debris) is based upon the proportion of these materials present:

Trace, or occasional	Less than 10%
Some	10-20%
Frequent	> 20%

Terminology describing compactness of cohesionless soils:
The standard terminology to describe cohesionless soils includes compactness (formerly "relative density"), as determined by the Standard Penetration Test N-Value (also known as N-Index). A relationship between compactness condition and N-Value is shown in the following table.

Compactness Condition	SPT N-Value
Very Loose	<4
Loose	4-10
Compact	10-30
Dense	30-50
Very Dense	>50

Terminology describing consistency of cohesive soils:
The standard terminology to describe cohesive soils includes the consistency, which is based on undrained shear strength as measured by *in situ* vane tests, penetrometer tests, or unconfined compression tests.

Consistency	Undrained Shear Strength	
	kips/sq.ft.	kPa
Very Soft	<0.25	<12.5
Soft	0.25 - 0.5	12.5 - 25
Firm	0.5 - 1.0	25 - 50
Stiff	1.0 - 2.0	50 – 100
Very Stiff	2.0 - 4.0	100 - 200
Hard	>4.0	>200

ROCK DESCRIPTION

Terminology describing rock quality:

RQD	Rock Mass Quality
0-25	*Very Poor*
25-50	*Poor*
50-75	*Fair*
75-90	*Good*
90-100	*Excellent*

Rock quality classification is based on a modified core recovery percentage (RQD) in which all pieces of sound core over 100 mm long are counted as recovery. The smaller pieces are considered to be due to close shearing, jointing, faulting, or weathering in the rock mass and are not counted. RQD was originally intended to be done on NW core; however, it can be used on different core sizes if the bulk of the fractures caused by drilling stresses are easily distinguishable from *in situ* fractures. The terminology describing rock mass quality based on RQD is subjective and is underlain by the presumption that sound strong rock is of higher engineering value than fractured weak rock.

Terminology describing rock mass:

Spacing (mm)	Joint Classification	Bedding, Laminations, Bands
> 6000	*Extremely Wide*	-
2000-6000	*Very Wide*	*Very Thick*
600-2000	*Wide*	*Thick*
200-600	*Moderate*	*Medium*
60-200	*Close*	*Thin*
20-60	*Very Close*	*Very Thin*
<20	*Extremely Close*	*Laminated*
<6	-	*Thinly Laminated*

Terminology describing rock strength:

Strength Classification	Unconfined Compressive Strength (MPa)
Extremely Weak	< 1
Very Weak	1 – 5
Weak	5 – 25
Medium Strong	25 – 50
Strong	50 – 100
Very Strong	100 – 250
Extremely Strong	> 250

Terminology describing rock weathering:

Term	Description
Fresh	No visible signs of rock weathering. Slight discolouration along major discontinuities
Slightly Weathered	Discolouration indicates weathering of rock on discontinuity surfaces. All the rock material may be discoloured.
Moderately Weathered	Less than half the rock is decomposed and/or disintegrated into soil.
Highly Weathered	More than half the rock is decomposed and/or disintegrated into soil.
Completely Weathered	All the rock material is decomposed and/or disintegrated into soil. The original mass structure is still largely intact.

STRATA PLOT

Strata plots symbolize the soil or bedrock description. They are combinations of the following basic symbols. The dimensions within the strata symbols are not indicative of the particle size, layer thickness, etc.



Boulders Cobbles Gravel | Sand | Silt | Clay | Organics | Asphalt | Concrete | Fill | Igneous Bedrock | Meta-morphic Bedrock | Sedi-mentary Bedrock

SAMPLE TYPE

SS	Split spoon sample (obtained by performing the Standard Penetration Test)
ST	Shelby tube or thin wall tube
DP	Direct-Push sample (small diameter tube sampler hydraulically advanced)
PS	Piston sample
BS	Bulk sample
WS	Wash sample
HQ, NQ, BQ, etc.	Rock core samples obtained with the use of standard size diamond coring bits.

WATER LEVEL MEASUREMENT



measured in standpipe, piezometer, or well



inferred

RECOVERY

For soil samples, the recovery is recorded as the length of the soil sample recovered. For rock core, recovery is defined as the total cumulative length of all core recovered in the core barrel divided by the length drilled and is recorded as a percentage on a per run basis.

N-VALUE

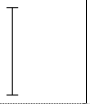
Numbers in this column are the field results of the Standard Penetration Test: the number of blows of a 140 pound (64 kg) hammer falling 30 inches (760 mm), required to drive a 2 inch (50.8 mm) O.D. split spoon sampler one foot (305 mm) into the soil. For split spoon samples where insufficient penetration was achieved and N-values cannot be presented, the number of blows are reported over sampler penetration in millimetres (e.g. 50/75). Some design methods make use of N value corrected for various factors such as overburden pressure, energy ratio, borehole diameter, etc. No corrections have been applied to the N-values presented on the log.

DYNAMIC CONE PENETRATION TEST (DCPT)

Dynamic cone penetration tests are performed using a standard 60 degree apex cone connected to A size drill rods with the same standard fall height and weight as the Standard Penetration Test. The DCPT value is the number of blows of the hammer required to drive the cone one foot (305 mm) into the soil. The DCPT is used as a probe to assess soil variability.

OTHER TESTS

S	Sieve analysis
H	Hydrometer analysis
k	Laboratory permeability
γ	Unit weight
G_s	Specific gravity of soil particles
CD	Consolidated drained triaxial
CU	Consolidated undrained triaxial with pore pressure measurements
UU	Unconsolidated undrained triaxial
DS	Direct Shear
C	Consolidation
Q_u	Unconfined compression
I_p	Point Load Index (I_p on Borehole Record equals $I_p(50)$ in which the index is corrected to a reference diameter of 50 mm)

	Single packer permeability test; test interval from depth shown to bottom of borehole
	Double packer permeability test; test interval as indicated
	Falling head permeability test using casing
	Falling head permeability test using well point or piezometer

PROJECT: **Biogas Renewable Generation Project**
LOCATION: **7721 N. Figueroa St., Los Angeles, CA**
PROJECT NUMBER: **2057123300**
DRILLING: STARTED **11/23/15** COMPLETED: **11/23/15**
INSTALLATION: STARTED **11/23/15** COMPLETED: **11/23/15**
DRILLING COMPANY: **2R Drilling**
DRILLING EQUIPMENT: **CME 75**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **B1** PAGE 1 OF 1
NORTHING (ft): **1,878,130** EASTING (ft): **6,503,248**
LATITUDE: LONGITUDE:
GROUND ELEV (ft): **1408.237** TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **6.5**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **6**
LOGGED BY: **J. Sargent** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
			5" Asphalt concrete						
			WILSON QUARTZ DIORITE (wqd)						
			10YR 3/4 dark yellowish brown; weathered dioritic-granitic bedrock; dry; very dense; moderately fractured.		1220 B1-2	SA, MD	27 50-5"		
5					1225 B1-5		21 35 50		5
			Hole terminated at 6.5 feet.						
10									10
15									15
20									20

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

PROJECT: **Biogas Renewable Generation Project**
LOCATION: **7721 N. Figueroa St., Los Angeles, CA**
PROJECT NUMBER: **2057123300**
DRILLING: STARTED **11/23/15** COMPLETED: **11/23/15**
INSTALLATION: STARTED **11/23/15** COMPLETED: **11/23/15**
DRILLING COMPANY: **2R Drilling**
DRILLING EQUIPMENT: **CME 75**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **B2** PAGE 1 OF 1
NORTHING (ft): **1,878,194** EASTING (ft): **6,503,406**
LATITUDE: LONGITUDE:
GROUND ELEV (ft): **1408.920** TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **6.5**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **6**
LOGGED BY: **J. Sargent** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
			5.5" Asphalt Concrete						
		SM	**SILTY SAND WITH GRAVEL** ; SM; 2.5Y 5/4 light olive brown; 30% fine angular gravel; 50% fine to coarse grained sand; 20% fines; dry; very dense; no staining; no odors (deeply weathered bedrock).		1252 B2-2	SA	35 50-6"		
5					1255 B2-5		50-3"		5
			Hole terminated at 6.5 feet.						
10									10
15									15
20									20

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

PROJECT: **Biogas Renewable Generation Project**
LOCATION: **7721 N. Figueroa St., Los Angeles, CA**
PROJECT NUMBER: **2057123300**
DRILLING: STARTED **11/24/15** COMPLETED: **11/24/15**
INSTALLATION: STARTED **11/24/15** COMPLETED: **11/24/15**
DRILLING COMPANY: **2R Drilling**
DRILLING EQUIPMENT: **CME 75**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **B3** PAGE 1 OF 1
NORTHING (ft): **1,878,223** EASTING (ft): **6,503,470**
LATITUDE: LONGITUDE:
GROUND ELEV (ft): **1408.354** TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **17.5**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **6**
LOGGED BY: **J. Sargent** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
			4" Asphalt Concrete						
		SM	**SILTY SAND WITH GRAVEL** ; SM; 2.5Y 5/4 light olive brown; 30% fine angular gravel; 50% fine to coarse grained sand; 20% fines; dry; very dense; no staining; no odors (deeply weathered bedrock); evidence of hydrothermal alteration present.		0855 B3-2	SA, MD	34 50-5"		
5					0900 B3-5		37 50-6"		5
					0902 B3-7		50-4"		
10					0905 B3-10		31 45 50-5"		10
15					0915 B3-15		50-5"		15
			Hole terminated at 17.5 feet.						
20									20

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

PROJECT: **Biogas Renewable Generation Project**
LOCATION: **7721 N. Figueroa St., Los Angeles, CA**
PROJECT NUMBER: **2057123300**
DRILLING: STARTED **11/24/15** COMPLETED: **11/24/15**
INSTALLATION: STARTED **11/24/15** COMPLETED: **11/24/15**
DRILLING COMPANY: **2R Drilling**
DRILLING EQUIPMENT: **CME 75**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **B4** PAGE 1 OF 1
NORTHING (ft): **1,878,273** EASTING (ft): **6,503,478**
LATITUDE: LONGITUDE:
GROUND ELEV (ft): **1411.254** TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **8.5**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **6**
LOGGED BY: **J. Sargent** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
		SM	**SILTY SAND WITH GRAVEL** ; SM; 10 YR 3/4 dark yellowish brown; 40% fine angular gravel; 40% fine to coarse grained sand; 20% fines; dry; dense; no staining; no odors; (deeply weathered bedrock) evidence of hydrothermal alteration present.		0820 B4-2	SA	10 11 21		
5					0830 B4-5		50-2"		5
					0835 B4-7		50-2"		
			Hole terminated at 8.5 feet.						
10									10
15									15
20									20

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

PROJECT: **Biogas Renewable Generation Project**
LOCATION: **7721 N. Figueroa St., Los Angeles, CA**
PROJECT NUMBER: **2057123300**
DRILLING: STARTED **11/24/15** COMPLETED: **11/24/15**
INSTALLATION: STARTED **11/24/15** COMPLETED: **11/24/15**
DRILLING COMPANY: **2R Drilling**
DRILLING EQUIPMENT: **CME 75**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **B5** PAGE 1 OF 1
NORTHING (ft): **1,878,314** EASTING (ft): **6,503,565**
LATITUDE: LONGITUDE:
GROUND ELEV (ft): **1418.679** TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **6.5**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **6**
LOGGED BY: **J. Sargent** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
			WILSON QUARTZ DIORITE (wqd)						
			Dark yellowish brown; weathered dioritic-granitic bedrock; dry; very dense; moderately fractured.		0800 B5-2		8 50-4"		
5					0805 B5-5		50-5"		5
			Hole terminated at 6.5 feet.						
10									10
15									15
20									20

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

PROJECT: **Biogas Renewable Generation Project**
LOCATION: **7721 N. Figueroa St., Los Angeles, CA**
PROJECT NUMBER: **2057123300**
DRILLING: STARTED **11/23/15** COMPLETED: **11/23/15**
INSTALLATION: STARTED **11/23/15** COMPLETED: **11/23/15**
DRILLING COMPANY: **2R Drilling**
DRILLING EQUIPMENT: **CME 75**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **B6** PAGE 1 OF 1
NORTHING (ft): **1,878,356** EASTING (ft): **6,503,665**
LATITUDE: LONGITUDE:
GROUND ELEV (ft): **1433.052** TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **6.5**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **6**
LOGGED BY: **J. Sargent** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
			WILSON QUARTZ DIORITE (wqd)						
			Dark yellowish brown; weathered dioritic-granitic bedrock; dry; very dense; moderately fractured.		1120 B6-2	SA	50-5"		
5					1122 B6-5		50-3"		5
			Hole terminated at 6.5 feet.						
10									10
15									15
20									20

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

PROJECT: **Biogas Renewable Generation Project**
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PROJECT NUMBER: **2057123300**
DRILLING: STARTED **11/23/15** COMPLETED: **11/23/15**
INSTALLATION: STARTED **11/23/15** COMPLETED: **11/23/15**
DRILLING COMPANY: **2R Drilling**
DRILLING EQUIPMENT: **CME 75**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **B7** PAGE 1 OF 1
NORTHING (ft): **1,878,310** EASTING (ft): **6,503,952**
LATITUDE: LONGITUDE:
GROUND ELEV (ft): **1472.598** TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **6.5**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **6**
LOGGED BY: **J. Sargent** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
			WILSON QUARTZ DIORITE (wqd)						
			Dark yellowish brown; weathered dioritic-granitic bedrock; dry; very dense; moderately fractured.		1048 B7-2	SA	50-4"		
5					1052 B7-5		26 37 50		5
			Hole terminated at 6.5 feet.						
10									10
15									15
20									20

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

PROJECT: **Biogas Renewable Generation Project**
LOCATION: **7721 N. Figueroa St., Los Angeles, CA**
PROJECT NUMBER: **2057123300**
DRILLING: STARTED **11/23/15** COMPLETED: **11/23/15**
INSTALLATION: STARTED **11/23/15** COMPLETED: **11/23/15**
DRILLING COMPANY: **2R Drilling**
DRILLING EQUIPMENT: **CME 75**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **B8** PAGE 1 OF 2
NORTHING (ft): **1,878,448** EASTING (ft): **6,503,697**
LATITUDE: LONGITUDE:
GROUND ELEV (ft): **1445.945** TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **36.5**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **6**
LOGGED BY: **J. Sargent** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
		SM	**SILTY SAND WITH GRAVEL** ; SM; 7.5 YR 3/3 dark brown; 15% fine gravel; 65% fine to coarse grained sand; 20% fines; moist; medium dense; no staining; no odor (FILL).		918 B8-2	SA	5 8 8		
5					922 B8-5	DS	8 10 12		5
					926 B8-7		3 4 4		
10			With some landfill debris below 15 feet		930 B8-10		3 4 4		10
15					940 B8-10	SA	7 9 7		15
20					945 B8-20		6 5 10		20

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

PROJECT: **Biogas Renewable Generation Project**
LOCATION: **7721 N. Figueroa St., Los Angeles, CA**
PROJECT NUMBER: **2057123300**
DRILLING: STARTED **11/23/15** COMPLETED: **11/23/15**
INSTALLATION: STARTED **11/23/15** COMPLETED: **11/23/15**
DRILLING COMPANY: **2R Drilling**
DRILLING EQUIPMENT: **CME 75**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **B8** PAGE 2 OF 2
NORTHING (ft): **1,878,448** EASTING (ft): **6,503,697**
LATITUDE: LONGITUDE:
GROUND ELEV (ft): **1445.945** TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **36.5**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **6**
LOGGED BY: **J. Sargent** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
			WILSON QUARTZ DIORITE (wqd); dark yellowish brown; weathered dioritic-granitic bedrock; dry; very dense; moderately fractured.		955 B8-25		7 10 13		
30					1010 B8-30	SA	13 35 46		30
35					1015 B8-35		21 50-5"		35
			Hole terminated at 36.5 feet.						
40									40
45									45

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

PROJECT: **Biogas Renewable Generation Project**
LOCATION: **7721 N. Figueroa St., Los Angeles, CA**
PROJECT NUMBER: **2057123300**
DRILLING: STARTED **11/24/15** COMPLETED: **11/24/15**
INSTALLATION: STARTED **11/24/15** COMPLETED: **11/24/15**
DRILLING COMPANY: **2R Drilling**
DRILLING EQUIPMENT: **CME 75**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **B9** PAGE 1 OF 1
NORTHING (ft): **1,878,376** EASTING (ft): **6,503,531**
LATITUDE: LONGITUDE:
GROUND ELEV (ft): **1422.006** TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **6.5**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **6**
LOGGED BY: **J. Sargent** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
			WILSON QUARTZ DIORITE (wqd); dark yellowish brown; weathered dioritic-granitic bedrock; dry; very dense; moderately fractured.		740 B9-2	SA	50-6"		
5					745 B9-5		21 32 46		5
			Hole terminated at 6.5 feet.						
10									10
15									15
20									20

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

PROJECT: **Biogas Renewable Generation Project**
LOCATION: **7721 N. Figueroa St., Los Angeles, CA**
PROJECT NUMBER: **2057123300**
DRILLING: STARTED **12/4/15** COMPLETED: **12/4/15**
INSTALLATION: STARTED **12/4/15** COMPLETED: **12/4/15**
DRILLING COMPANY: **Mike's Excavating Service**
DRILLING EQUIPMENT: **Hand Dug**
DRILLING METHOD:
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **TP-1** PAGE 1 OF 1

Stantec

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **3.0**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in):
LOGGED BY: **E. Bovenizer** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
			Earth Fill (ef); silty sand with gravel, mottled brown and dark brown, dry, loose, sand is very fine to coarse grained (FILL)		TP1-0.5	DS			
			Natural Soil (Qns); silty sand with gravell brown; dry; loose; sand is very fine to coarse grained; rootlets (NATIVE)						
			Wilson Quartz Diorite (wqd); quartz diorite; brown and white specked; dry; very hard; medium to large grained; moderately to poorly foliated.						
			Hole terminated at 3 feet.						
5									5
10									10
15									15
20									20

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

PROJECT: **Biogas Renewable Generation Project**
LOCATION: **7721 N. Figueroa St., Los Angeles, CA**
PROJECT NUMBER: **2057123300**
DRILLING: STARTED **12/4/15** COMPLETED: **12/4/15**
INSTALLATION: STARTED **12/4/15** COMPLETED: **12/4/15**
DRILLING COMPANY: **Mike's Excavating Service**
DRILLING EQUIPMENT: **Hand Dug**
DRILLING METHOD:
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **TP-2** PAGE 1 OF 1

Stantec

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **3.0**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in):
LOGGED BY: **E. Bovenizer** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
			Natural Soil (Qns); silty sand with gravell brown; dry; loose; sand is very fine to coarse grained; rootlets (NATIVE)		TP2-0.5	DS			
			Wilson Quartz Diorite (wqd); quartz diorite; brown and white specked; dry; very hard; medium to large grained; moderately to poorly foliated; foliation at 2.5 feet; N68E; 49NW Hole terminated at 3 feet.						
5									5
10									10
15									15
20									20

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

PROJECT: **Biogas Renewable Generation Project**
LOCATION: **7721 N. Figueroa St., Los Angeles, CA**
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DRILLING: STARTED **12/4/15** COMPLETED: **12/4/15**
INSTALLATION: STARTED **12/4/15** COMPLETED: **12/4/15**
DRILLING COMPANY: **Mike's Excavating Service**
DRILLING EQUIPMENT: **Hand Dug**
DRILLING METHOD:
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **TP-3** PAGE 1 OF 1
NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **3.0**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in):
LOGGED BY: **E. Bovenizer** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
			Wilson Quartz Diorite (wqd); quartz diorite; brown and white specked; dry; very hard; medium to large grained; moderately to poorly foliated; upper foot is weathered; foliation at 1.5 feet; N42E; 28NW		TP3-0.5	DS			
			Hole terminated at 3 feet.						
5									5
10									10
15									15
20									20

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

PROJECT: **Biogas Renewable Generation Project**
LOCATION: **7721 N. Figueroa St., Los Angeles, CA**
PROJECT NUMBER: **2057123300**
DRILLING: STARTED **12/4/15** COMPLETED: **12/4/15**
INSTALLATION: STARTED **12/4/15** COMPLETED: **12/4/15**
DRILLING COMPANY: **Mike's Excavating Service**
DRILLING EQUIPMENT: **Hand Dug**
DRILLING METHOD:
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **TP-4** PAGE 1 OF 1
NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **3.0**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in):
LOGGED BY: **E. Bovenizer** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
			Natural Soil (Qns); silty sand with gravell brown; dry; loose; sand is very fine to coarse grained; rootlets (NATIVE)		TP4-1.0	DS			
			Wilson Quartz Diorite (wqd); quartz diorite; brown and white specked; dry; very hard; medium to large grained; moderately to poorly foliated		TP4-3.0	DS			
			Hole terminated at 3.5 feet.						
5									5
10									10
15									15
20									20

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

PROJECT: **Biogas Renewable Generation Project**
LOCATION: **7721 N. Figueroa St., Los Angeles, CA**
PROJECT NUMBER: **2057123300**
DRILLING: STARTED **12/4/15** COMPLETED: **12/4/15**
INSTALLATION: STARTED **12/4/15** COMPLETED: **12/4/15**
DRILLING COMPANY: **Mike's Excavating Service**
DRILLING EQUIPMENT: **Hand Dug**
DRILLING METHOD:
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **TP-5** PAGE 1 OF 1
NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **3.0**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in):
LOGGED BY: **E. Bovenizer** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
			Natural Soil (Qns); silty sand with gravell brown; dry; loose; sand is very fine to coarse grained; rootlets (NATIVE)						
			Wilson Quartz Diorite (wqd); quartz diorite; brown and white specked; dry; very hard; medium to large grained; moderately to poorly foliated; upper 1.5 feet is weathered						
					TP5-3	DS			
			Hole terminated at 3.5 feet.						
5									5
10									10
15									15
20									20

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

PROJECT: **Biogas Renewable Generation Project**
LOCATION: **7721 N. Figueroa St., Los Angeles, CA**
PROJECT NUMBER: **2057123300**
DRILLING: STARTED **12/4/15** COMPLETED: **12/4/15**
INSTALLATION: STARTED **12/4/15** COMPLETED: **12/4/15**
DRILLING COMPANY: **Mike's Excavating Service**
DRILLING EQUIPMENT: **Hand Dug**
DRILLING METHOD:
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **TP-6** PAGE 1 OF 1
NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **3.0**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in):
LOGGED BY: **E. Bovenizer** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
			Wilson Quartz Diorite (wqd); quartz diorite; brown and white specked; dry; very hard; medium to large grained; moderately to poorly foliated						
			Hole terminated at 3 feet.						
5									5
10									10
15									15
20									20

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

PROJECT: **Biogas Renewable Generation Project**
LOCATION: **7721 N. Figueroa St., Los Angeles, CA**
PROJECT NUMBER: **2057123300**
DRILLING: STARTED **12/4/15** COMPLETED: **12/4/15**
INSTALLATION: STARTED **12/4/15** COMPLETED: **12/4/15**
DRILLING COMPANY: **Mike's Excavating Service**
DRILLING EQUIPMENT: **Hand Dug**
DRILLING METHOD:
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **TP-7** PAGE 1 OF 1
NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **3.0**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in):
LOGGED BY: **E. Bovenizer** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
			Natural Soil (Qns); silty sand with gravell brown; dry; loose; sand is very fine to coarse grained; rootlets (NATIVE)		TP7-1.0	DS			
			Wilson Quartz Diorite (wqd); quartz diorite; brown and white specked; dry; very hard; medium to large grained; moderately to poorly foliated; foliation at 1.5 feet; N15E; 64SE		TP7-2.0	DS			
			Hole terminated at 3 feet.						
5									5
10									10
15									15
20									20

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

PROJECT: **Biogas Renewable Generation Project**
LOCATION: **7721 N. Figueroa St., Los Angeles, CA**
PROJECT NUMBER: **2057123300**
DRILLING: STARTED **11/23/15** COMPLETED: **11/23/15**
INSTALLATION: STARTED **11/23/15** COMPLETED: **11/23/15**
DRILLING COMPANY: **2R Drilling**
DRILLING EQUIPMENT: **CME 75**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **B10** PAGE 1 OF 1
NORTHING (ft): **1,878,339** EASTING (ft): **6,503,445**
LATITUDE: LONGITUDE:
GROUND ELEV (ft): **1403.152** TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **6.5**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **6**
LOGGED BY: **J. Sargent** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
			WILSON QUARTZ DIORITE (wqd); dark yellowish brown; weathered dioritic-granitic bedrock; dry; very dense; moderately fractured.		1410 B10-2	SA	22 20 30		
5					1415 B10-5		50-5"		5
			Hole terminated at 6.5 feet.						
10									10
15									15
20									20

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

PROJECT: **Biogas Renewable Generation Project**
LOCATION: **7721 N. Figueroa St., Los Angeles, CA**
PROJECT NUMBER: **2057123300**
DRILLING: STARTED **11/23/15** COMPLETED: **11/23/15**
INSTALLATION: STARTED **11/23/15** COMPLETED: **11/23/15**
DRILLING COMPANY: **2R Drilling**
DRILLING EQUIPMENT: **CME 75**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon Sampler**

WELL / PROBEHOLE / BOREHOLE NO: **B11** PAGE 1 OF 1
NORTHING (ft): **1,878,249** EASTING (ft): **6,503,378**
LATITUDE: LONGITUDE:
GROUND ELEV (ft): **1409.831** TOC ELEV (ft):
INITIAL DTW (ft): **NE** BOREHOLE DEPTH (ft): **11.5**
STATIC DTW (ft): **NE** WELL DEPTH (ft): **---**
WELL CASING DIAMETER (in): **---** BOREHOLE DIAMETER (in): **6**
LOGGED BY: **J. Sargent** CHECKED BY: **J. Fischer**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Geotechnical Lab Testing	Blow Count	PID Reading (ppmv)	Depth (feet)
			SILTY SAND WITH GRAVEL ; 2.5Y 4/4 olive brown ; 30% fine to coarse gravel; 50% fine to coarse grained sand; 20% fines; moist; medium dense; no staining; no odor (deeply weathered bedrock).		1320 B11-2	SA, MD	9 8 7		
5					1325 B11-5		2 6 22		5
			WILSON QUARTZ DIORITE (wqd); dark yellowish brown; weathered dioritic-granitic bedrock; dry; very dense; moderately fractured.		1330 B11-7	SA, DS	40 50-4"		
10					1335 B11-10		27 50-4"		10
			Hole terminated at 11.5 feet.						
15									15
20									20

GEO FORM 304 SCHOLL_CANYON_BORING_LOGS.GPJ SECOR INTL.GDT 2/12/16

APPENDIX B
LABORATORY TEST RESULTS

Stantec

SUMMARY OF MOISTURE DENSITY TEST RESULTS
ASTM D 2216

Boring Location	Sample Depth (ft)	Wet Density (lb/ft^3)	Dry Density (lb/ft^3)	Moisture Content (percent)
B1-2	2	147.3	143.4	2.7
B3-2	2	146.5	140.7	4.1
B11-2	2	120.9	116.2	4.0

Stantec

Gradation Analysis
ASTM D 422

Project Name: Scholl Canyon Landfill
Source: B1-2

Preparation Method: ASTM D 1140 Method A
Particle Shape: Angular
Particle Hardness: Hard and Durable
Sample Dry Mass (g): 673.40
Moisture Content (%): 2.8

Project Number: 2057123300
Lab ID: B1-2
Date Received: 12-04-2015
Preparation Date: 12-26-2015
Test Date: 05-14-2014

Analysis based on total sample.

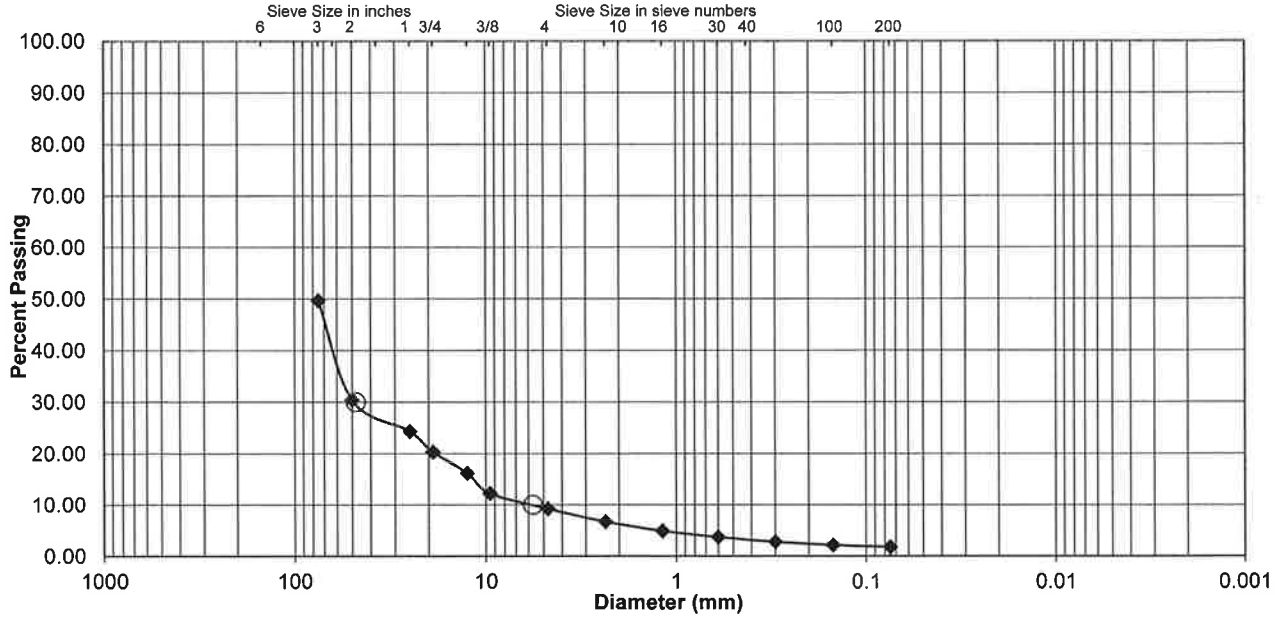
Sieve Size	Grams Retained	% Retained	% Passing
3"	339.00	50.3	49.7
2"	129.90	19.3	30.4
1"	40.60	6.0	24.3
3/4"	27.00	4.0	20.3
1/2"	27.70	4.1	16.2
3/8"	26.90	4.0	12.2
No. 4	20.20	3.0	9.2
No. 8	17.00	2.5	6.7
No. 16	12.20	1.8	4.9
No. 30	8.00	1.2	3.7
No. 50	6.30	0.9	2.8
No. 100	4.20	0.6	2.1
No. 200	2.50	0.4	1.8
Pan	11.90	1.8	---

% Gravel	90.8
% Sand	7.5
% Fines	1.8
Fines Classification	ML
D_{10} (mm)	5.6857
D_{30} (mm)	47.9272
D_{60} (mm)	N/A
Cu	N/A
Cc	N/A

Classification
Poorly Graded Gravel (GP)

Classification determined by ASTM D 2487. -200 material classification determined by visual assessment, ASTM D 2488.

Particle Size Distribution



Comments

Reviewed By

Stantec

Gradation Analysis
ASTM D 422

Project Name: Scholl Canyon Landfill
Source: B2-2

Project Number: 2057123300
Lab ID: B2-2
Date Received: 12-04-2015
Preparation Date: 12-27-2015
Test Date: 12-28-2015

Preparation Method: ASTM D 1140 Method A
Particle Shape: Angular
Particle Hardness: Hard and Durable
Sample Dry Mass (g): 377.30
Moisture Content (%): 2.7

Analysis based on total sample.

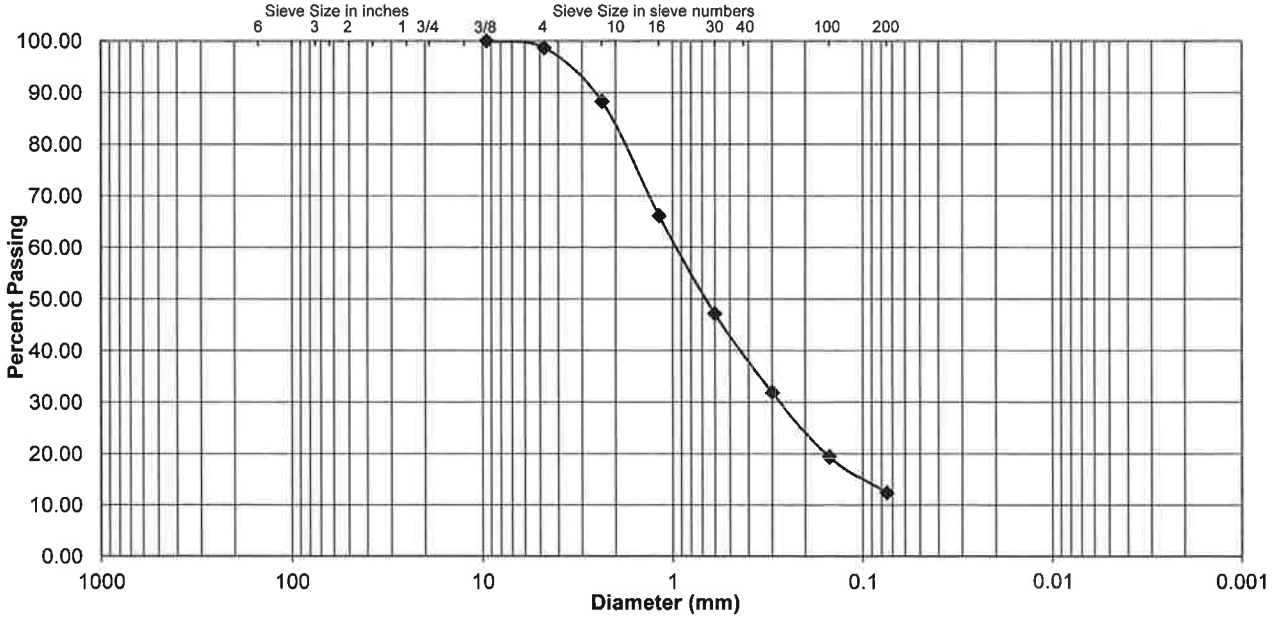
Sieve Size	Grams Retained	% Retained	% Passing
3/8"	0.00	0.0	100.0
No. 4	5.00	1.3	98.7
No. 8	39.00	10.3	88.3
No. 16	83.50	22.1	66.2
No. 30	71.90	19.1	47.2
No. 50	57.40	15.2	31.9
No. 100	47.10	12.5	19.5
No. 200	26.70	7.1	12.4
Pan	46.70	12.4	---

% Gravel	1.3
% Sand	86.3
% Fines	12.4
Fines Classification	ML
D_{10} (mm)	N/A
D_{30} (mm)	N/A
D_{60} (mm)	N/A
Cu	N/A
Cc	N/A

Classification
Silty Sand (SM)

Classification determined by ASTM D 2487. -200 material classification determined by visual assessment, ASTM D 2488.

Particle Size Distribution



Comments

Reviewed By

Stantec

Gradation Analysis
ASTM D 422

Project Name: Scholl Canyon Landfill
Source: B3-2

Preparation Method: ASTM D 1140 Method A
Particle Shape: Angular
Particle Hardness: Hard and Durable
Sample Dry Mass (g): 480.60
Moisture Content (%): 5.8

Project Number: 2057123300
Lab ID: B3-2
Date Received: 12-04-2015
Preparation Date: 12-26-2015
Test Date: 12-26-2015

Analysis based on total sample.

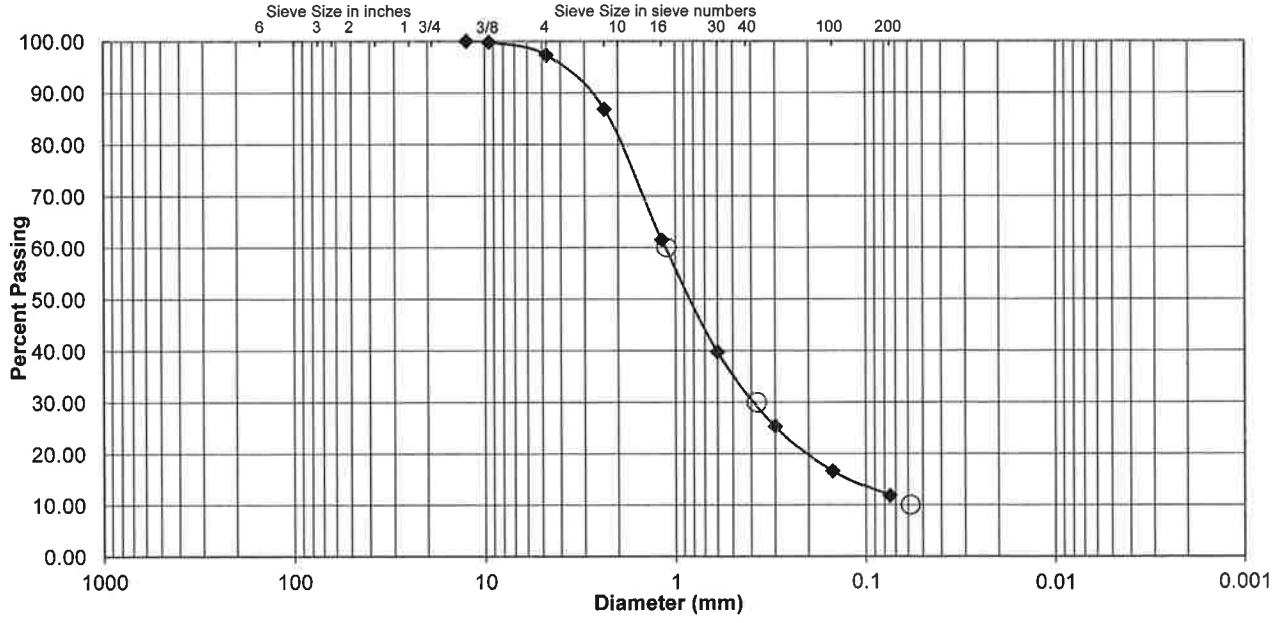
Sieve Size	Grams Retained	% Retained	% Passing
1/2"	0.00	0.0	100.0
3/8"	1.00	0.2	99.8
No. 4	11.70	2.4	97.4
No. 8	50.20	10.4	86.9
No. 16	121.60	25.3	61.6
No. 30	105.10	21.9	39.7
No. 50	69.00	14.4	25.4
No. 100	41.60	8.7	16.7
No. 200	23.70	4.9	11.8
Pan	56.70	11.8	---

% Gravel	2.6
% Sand	85.6
% Fines	11.8
Fines Classification	ML
D_{10} (mm)	0.0583
D_{30} (mm)	0.3749
D_{60} (mm)	1.1127
Cu	19.10
Cc	2.17

Classification
Well Graded Sand (SW-SM) with Silt

Classification determined by ASTM D 2487. -200 material classification determined by visual assessment, ASTM D 2488.

Particle Size Distribution



Comments

Reviewed By

Stantec

Gradation Analysis
ASTM D 422

Project Name: Scholl Canyon Landfill
Source: B4-2

Project Number: 2057123300
Lab ID: B4-2
Date Received: 12-04-2015
Preparation Date: 12-27-2015
Test Date: 12-28-2015

Preparation Method: ASTM D 1140 Method A
Particle Shape: Angular
Particle Hardness: Hard and Durable
Sample Dry Mass (g): 541.40
Moisture Content (%): 5.1

Analysis based on total sample.

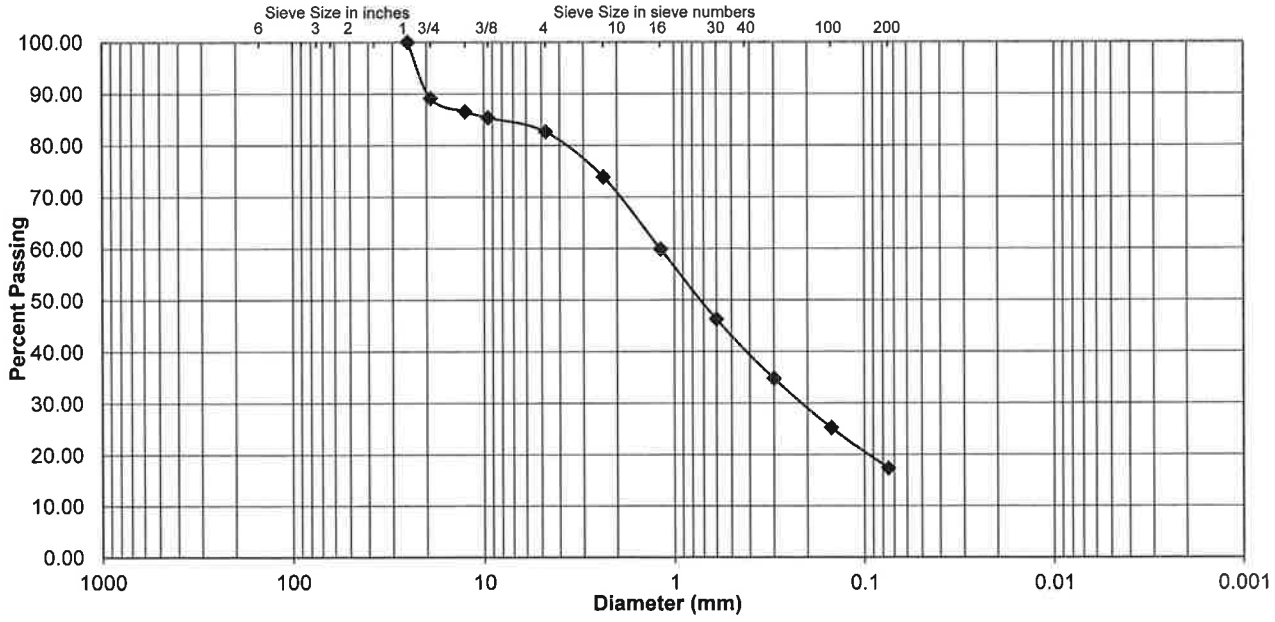
Sieve Size	Grams Retained	% Retained	% Passing
1"	0.00	0.0	100.0
3/4"	58.90	10.9	89.1
1/2"	14.00	2.6	86.5
3/8"	6.40	1.2	85.4
No. 4	14.70	2.7	82.6
No. 8	47.50	8.8	73.9
No. 16	75.80	14.0	59.9
No. 30	73.50	13.6	46.3
No. 50	62.30	11.5	34.8
No. 100	51.70	9.5	25.2
No. 200	42.90	7.9	17.3
Pan	93.70	17.3	---

% Gravel	17.4
% Sand	65.3
% Fines	17.3
Fines Classification	ML
D_{10} (mm)	N/A
D_{30} (mm)	N/A
D_{60} (mm)	N/A
Cu	N/A
Cc	N/A

Classification
Silty Sand (SM) with Gravel

Classification determined by ASTM D 2487. -200 material classification determined by visual assessment, ASTM D 2488.

Particle Size Distribution



Comments

Reviewed By

Stantec

Gradation Analysis
ASTM D 422

Project Name: Scholl Canyon Landfill
Source: B6-2

Project Number: 2057123300
Lab ID: B6-2
Date Received: 12-04-2015
Preparation Date: 12-27-2015
Test Date: 12-28-2015

Preparation Method: ASTM D 1140 Method A
Particle Shape: Angular
Particle Hardness: Hard and Durable
Sample Dry Mass (g): 170.90
Moisture Content (%): 2.0

Analysis based on total sample.

Sieve Size	Grams Retained	% Retained	% Passing
1"	0.00	0.0	100.0
3/4"	0.00	0.0	100.0
1/2"	10.80	6.3	93.7
3/8"	14.00	8.2	85.5
No. 4	15.20	8.9	76.6
No. 8	20.20	11.8	64.8
No. 16	23.60	13.8	51.0
No. 30	21.80	12.8	38.2
No. 50	19.10	11.2	27.0
No. 100	15.30	9.0	18.1
No. 200	10.70	6.3	11.8
Pan	20.20	11.8	---

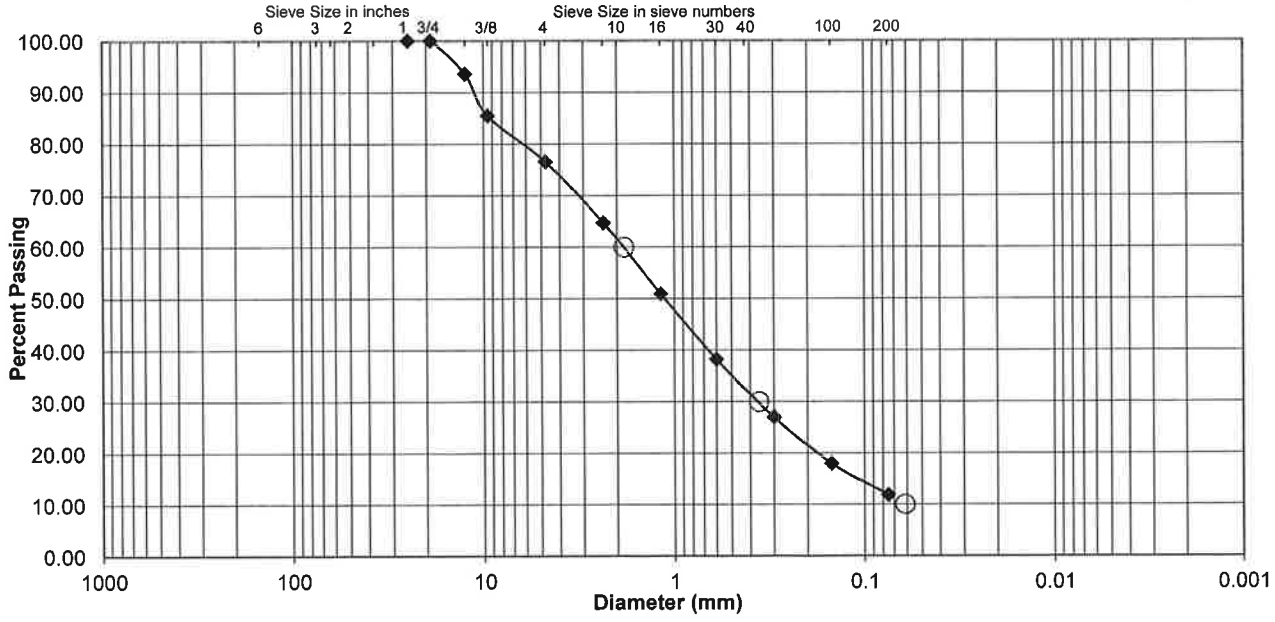
% Gravel	23.4
% Sand	64.8
% Fines	11.8
Fines Classification	ML
D_{10} (mm)	0.0613
D_{30} (mm)	0.3606
D_{60} (mm)	1.8471
Cu	30.12
Cc	1.15

Classification

Well Graded Sand (SW-SM) with Silt and Gravel

Classification determined by ASTM D 2487. -200 material classification determined by visual assessment, ASTM D 2488.

Particle Size Distribution



Comments

Reviewed By

Stantec

Gradation Analysis
ASTM D 422

Project Name: Scholl Canyon Landfill
Source: B6-2

Project Number: 2057123300
Lab ID: B6-2
Date Received: 12-04-2015
Preparation Date: 12-27-2015
Test Date: 12-28-2015

Preparation Method: ASTM D 1140 Method A
Particle Shape: Angular
Particle Hardness: Hard and Durable
Sample Dry Mass (g): 170.90
Moisture Content (%): 2.0

Analysis based on total sample.

Sieve Size	Grams Retained	% Retained	% Passing
1"	0.00	0.0	100.0
3/4"	0.00	0.0	100.0
1/2"	10.80	6.3	93.7
3/8"	14.00	8.2	85.5
No. 4	15.20	8.9	76.6
No. 8	20.20	11.8	64.8
No. 16	23.60	13.8	51.0
No. 30	21.80	12.8	38.2
No. 50	19.10	11.2	27.0
No. 100	15.30	9.0	18.1
No. 200	10.70	6.3	11.8
Pan	20.20	11.8	---

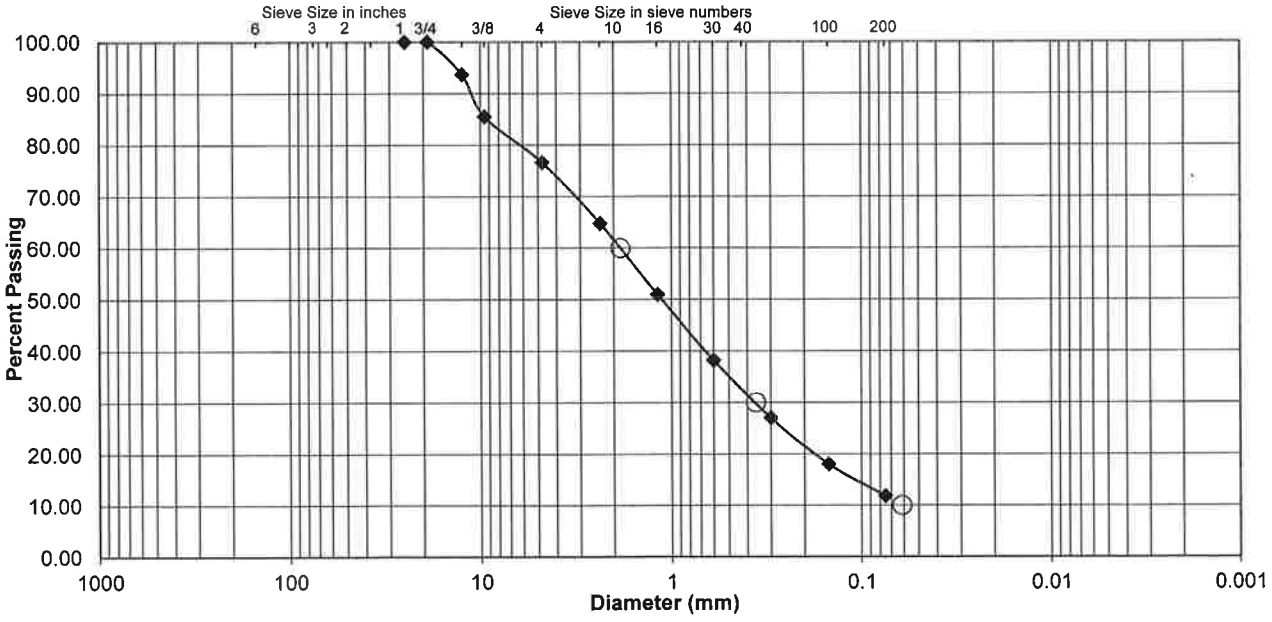
% Gravel	23.4
% Sand	64.8
% Fines	11.8
Fines Classification	ML
D_{10} (mm)	0.0613
D_{30} (mm)	0.3606
D_{60} (mm)	1.8471
Cu	30.12
Cc	1.15

Classification

Well Graded Sand (SW-SM) with Silt and Gravel

Classification determined by ASTM D 2487. -200 material classification determined by visual assessment, ASTM D 2488.

Particle Size Distribution



Comments

Reviewed By

Stantec

Gradation Analysis
ASTM D 422

Project Name: Scholl Canyon Landfill
Source: B7-2

Preparation Method: ASTM D 1140 Method A
Particle Shape: Angular
Particle Hardness: Hard and Durable
Sample Dry Mass (g): 104.50
Moisture Content (%): 2.4

Project Number: 2057123300
Lab ID: B7-2
Date Received: 12-04-2015
Preparation Date: 12-27-2015
Test Date: 12-28-2015

Analysis based on total sample.

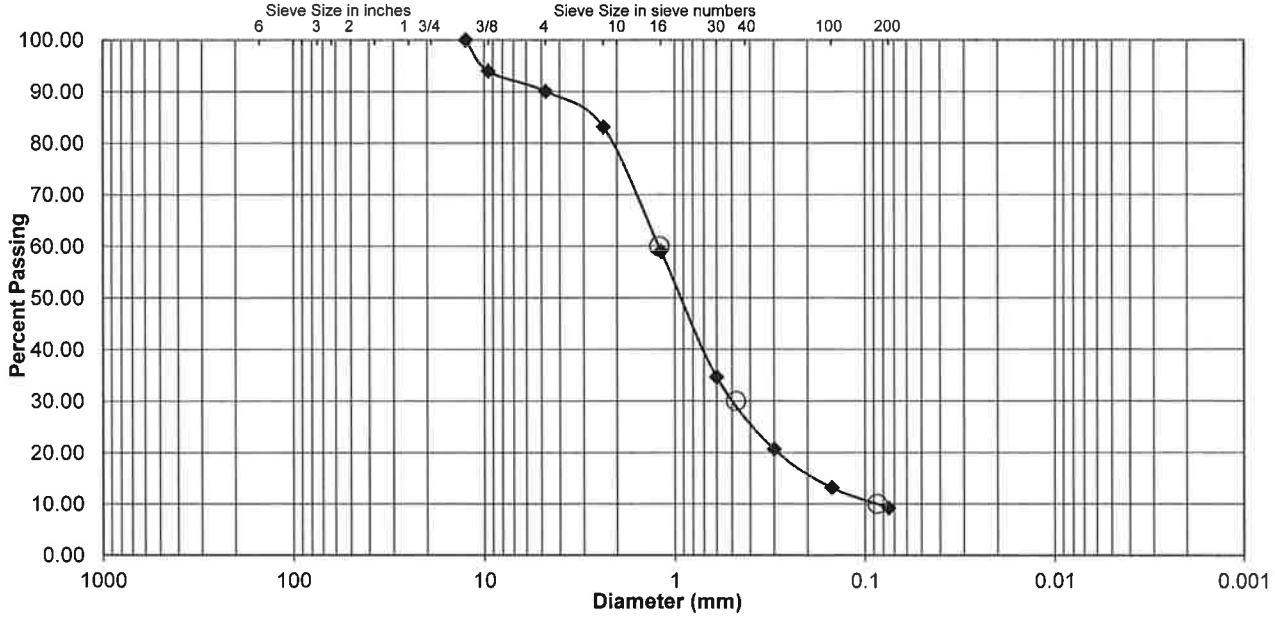
Sieve Size	Grams Retained	% Retained	% Passing
1/2"	0.00	0.0	100.0
3/8"	6.30	6.0	94.0
No. 4	4.10	3.9	90.0
No. 8	7.20	6.9	83.2
No. 16	25.20	24.1	59.0
No. 30	25.50	24.4	34.6
No. 50	14.60	14.0	20.7
No. 100	7.80	7.5	13.2
No. 200	4.20	4.0	9.2
Pan	9.60	9.2	---

% Gravel	10.0
% Sand	80.9
% Fines	9.2
Fines Classification	ML
D_{10} (mm)	0.0863
D_{30} (mm)	0.4766
D_{60} (mm)	1.2029
Cu	13.94
Cc	2.19

Classification
Well Graded Sand (SW-SM) with Silt

Classification determined by ASTM D 2487. -200 material classification determined by visual assessment, ASTM D 2488.

Particle Size Distribution



Comments

Reviewed By

Stantec

Gradation Analysis
ASTM D 422

Project Name: Scholl Canyon Landfill
Source: B8-2

Project Number: 2057123300
Lab ID: B8-2
Date Received: 12-04-2015
Preparation Date: 12-27-2015
Test Date: 12-28-2015

Preparation Method: ASTM D 1140 Method A
Particle Shape: Angular
Particle Hardness: Hard and Durable
Sample Dry Mass (g): 354.20
Moisture Content (%): 4.8

Analysis based on total sample.

Sieve Size	Grams Retained	% Retained	% Passing
3/4"	0.00	0.0	100.0
1/2"	21.50	6.1	93.9
3/8"	7.00	2.0	92.0
No. 4	18.10	5.1	86.8
No. 8	41.80	11.8	75.0
No. 16	50.20	14.2	60.9
No. 30	44.60	12.6	48.3
No. 50	39.30	11.1	37.2
No. 100	35.60	10.1	27.1
No. 200	29.10	8.2	18.9
Pan	67.00	18.9	---

% Gravel: 13.2
% Sand: 67.9
% Fines: 18.9
Fines Classification: ML

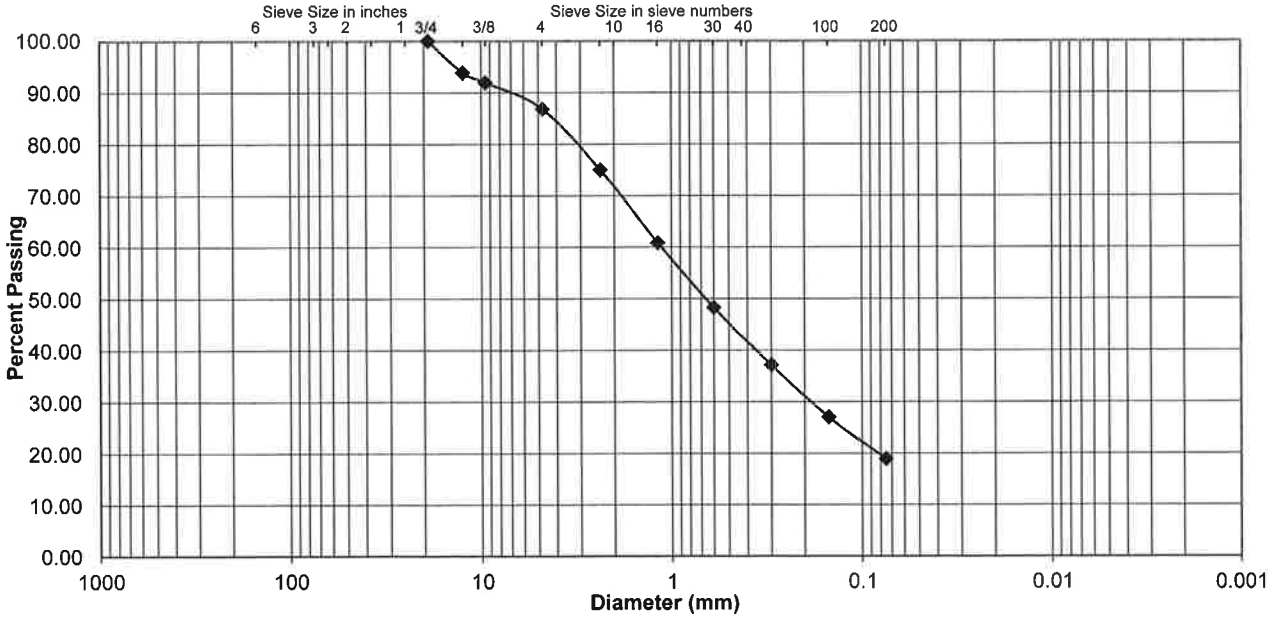
D_{10} (mm): N/A
D_{30} (mm): N/A
D_{60} (mm): N/A

Cu: N/A
Cc: N/A

Classification
Silty Sand (SM)

Classification determined by ASTM D 2487. -200 material classification determined by visual assessment, ASTM D 2488.

Particle Size Distribution



Comments

Reviewed By

Stantec

Gradation Analysis
ASTM D 422

Project Name: Scholl Canyon Landfill
Source: B8-15

Project Number: 2057123300
Lab ID: B5-15
Date Received: 12-04-2015
Preparation Date: 12-27-2015
Test Date: 12-28-2015

Preparation Method: ASTM D 1140 Method A
Particle Shape: Angular
Particle Hardness: Hard and Durable
Sample Dry Mass (g): 500.00
Moisture Content (%): 7.7

Analysis based on total sample.

Sieve Size	Grams Retained	% Retained	% Passing
3/4"	0.00	0.0	100.0
1/2"	50.20	10.0	90.0
3/8"	23.80	4.8	85.2
No. 4	36.70	7.3	77.9
No. 8	61.10	12.2	65.6
No. 16	54.80	11.0	54.7
No. 30	49.40	9.9	44.8
No. 50	45.40	9.1	35.7
No. 100	43.40	8.7	27.0
No. 200	35.20	7.0	20.0
Pan	100.00	20.0	---

% Gravel: 22.1
% Sand: 57.9
% Fines: 20.0
Fines Classification: ML

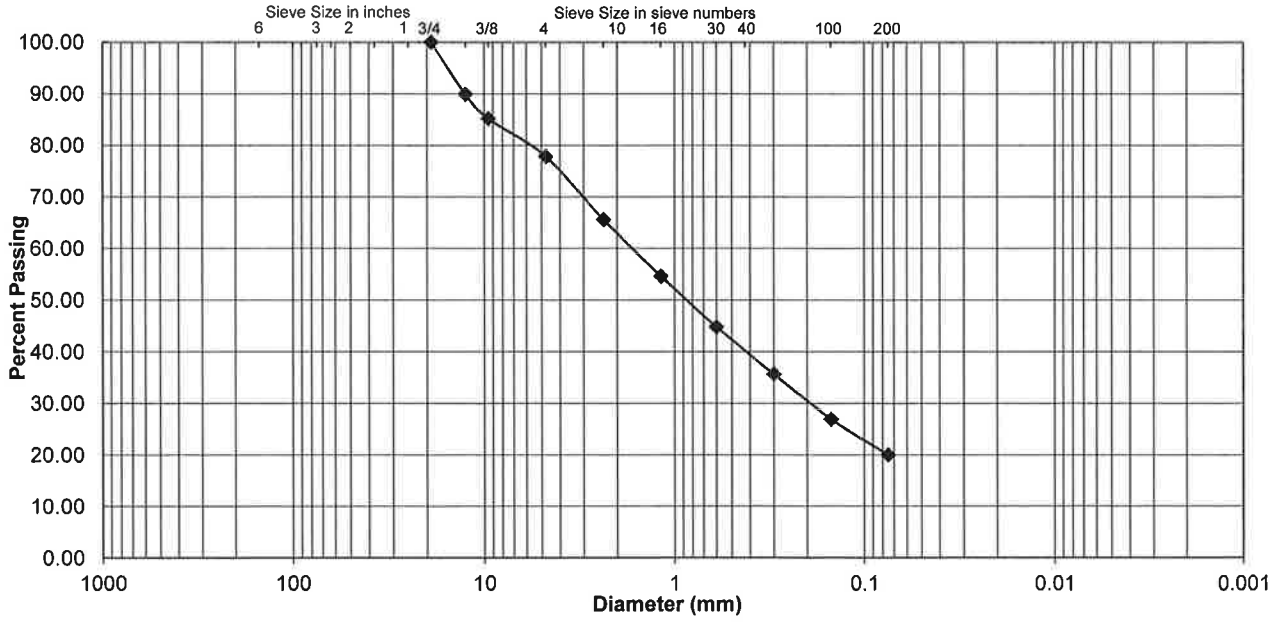
D_{10} (mm): N/A
D_{30} (mm): N/A
D_{60} (mm): N/A

Cu: N/A
Cc: N/A

Classification
Silty Sand (SM) with Gravel

Classification determined by ASTM D 2487. -200 material classification determined by visual assessment, ASTM D 2488.

Particle Size Distribution



Comments

Reviewed By

Stantec

Gradation Analysis
ASTM D 422

Project Name: Scholl Canyon Landfill
Source: B8-30

Project Number: 2057123300
Lab ID: B8-30
Date Received: 12-04-2015
Preparation Date: 12-27-2015
Test Date: 12-28-2015

Preparation Method: ASTM D 1140 Method A
Particle Shape: Angular
Particle Hardness: Hard and Durable
Sample Dry Mass (g): 410.30
Moisture Content (%): 4.6

Analysis based on total sample.

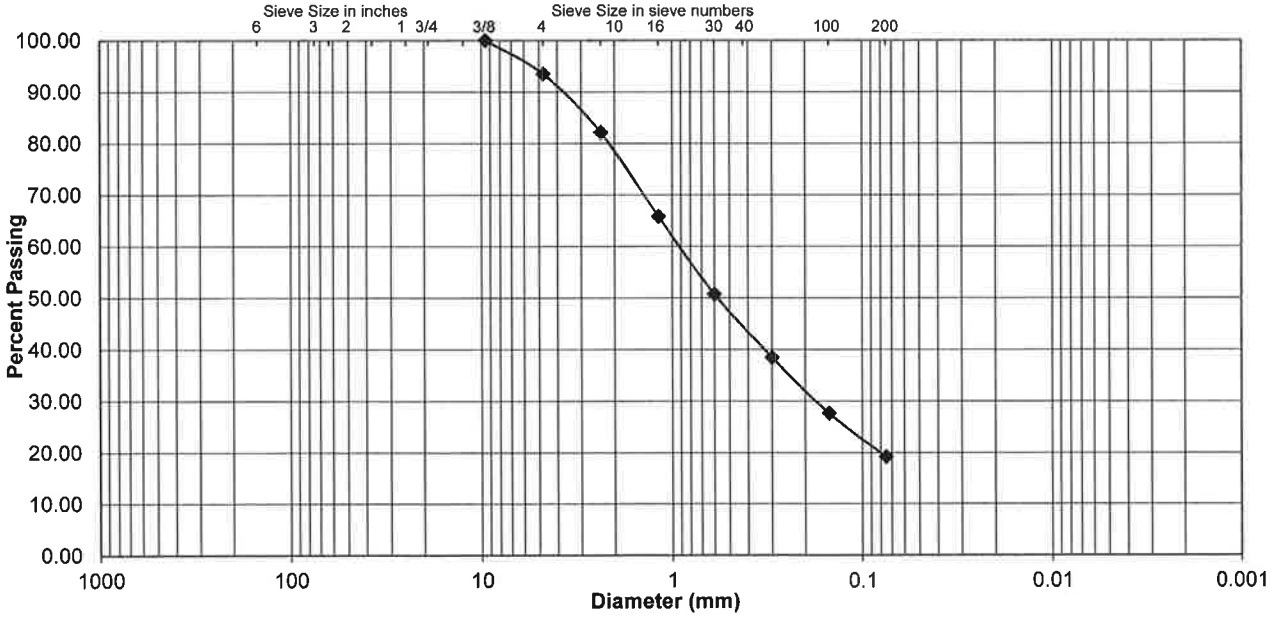
Sieve Size	Grams Retained	% Retained	% Passing
3/8"	0.00	0.0	100.0
No. 4	26.70	6.5	93.5
No. 8	46.80	11.4	82.1
No. 16	67.00	16.3	65.8
No. 30	61.60	15.0	50.7
No. 50	50.40	12.3	38.5
No. 100	44.40	10.8	27.6
No. 200	34.60	8.4	19.2
Pan	78.80	19.2	---

% Gravel	6.5
% Sand	74.3
% Fines	19.2
Fines Classification	ML
D_{10} (mm)	N/A
D_{30} (mm)	N/A
D_{60} (mm)	N/A
Cu	N/A
Cc	N/A

Classification
Silty Sand (SM)

Classification determined by ASTM D 2487. -200 material classification determined by visual assessment, ASTM D 2488.

Particle Size Distribution



Comments

Reviewed By

Stantec

Gradation Analysis
ASTM D 422

Project Name: Scholl Canyon Landfill
Source: B9-5

Project Number: 2057123300
Lab ID: B9-5
Date Received: 12-04-2015
Preparation Date: 12-27-2015
Test Date: 12-28-2015

Preparation Method: ASTM D 1140 Method A
Particle Shape: Angular
Particle Hardness: Hard and Durable
Sample Dry Mass (g): 496.00
Moisture Content (%): 4.2

Analysis based on total sample.

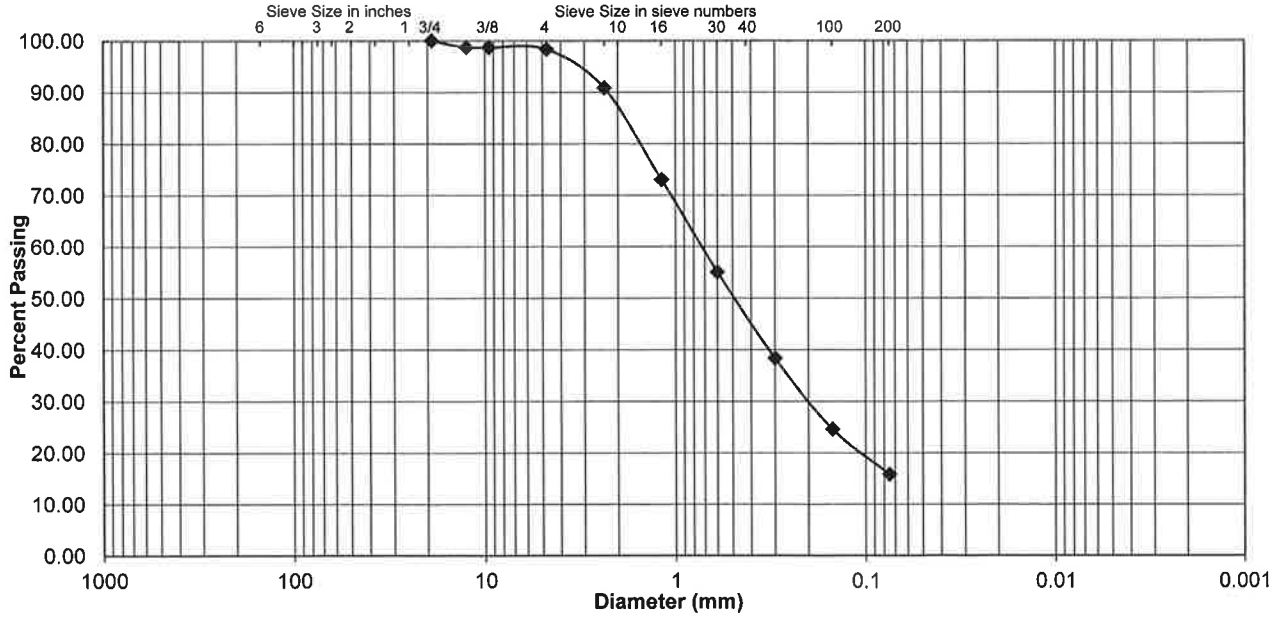
Sieve Size	Grams Retained	% Retained	% Passing
3/4"	0.00	0.0	100.0
1/2"	6.50	1.3	98.7
3/8"	0.00	0.0	98.7
No. 4	1.70	0.3	98.3
No. 8	37.20	7.5	90.8
No. 16	88.30	17.8	73.0
No. 30	89.10	18.0	55.1
No. 50	82.80	16.7	38.4
No. 100	68.10	13.7	24.7
No. 200	43.80	8.8	15.8
Pan	78.50	15.8	---

% Gravel	1.7
% Sand	82.5
% Fines	15.8
Fines Classification	ML
D_{10} (mm)	N/A
D_{30} (mm)	N/A
D_{60} (mm)	N/A
Cu	N/A
Cc	N/A

Classification
Silty Sand (SM)

Classification determined by ASTM D 2487. -200 material classification determined by visual assessment, ASTM D 2488.

Particle Size Distribution



Comments

Reviewed By

Stantec

Gradation Analysis
ASTM D 422

Project Name: Scholl Canyon Landfill
Source: B10-2

Project Number: 2057123300
Lab ID: B10-2
Date Received: 12-04-2015
Preparation Date: 12-27-2015
Test Date: 12-26-2015

Preparation Method: ASTM D 1140 Method A
Particle Shape: Angular
Particle Hardness: Hard and Durable
Sample Dry Mass (g): 410.30
Moisture Content (%): 20.7

Analysis based on total sample.

Sieve Size	Grams Retained	% Retained	% Passing
3/4"	0.00	0.0	100.0
1/2"	18.50	4.5	95.5
3/8"	23.80	5.8	89.7
No. 4	35.90	8.7	80.9
No. 8	52.30	12.7	68.2
No. 16	74.40	18.1	50.1
No. 30	59.30	14.5	35.6
No. 50	44.60	10.9	24.7
No. 100	34.00	8.3	16.5
No. 200	22.30	5.4	11.0
Pan	45.20	11.0	---

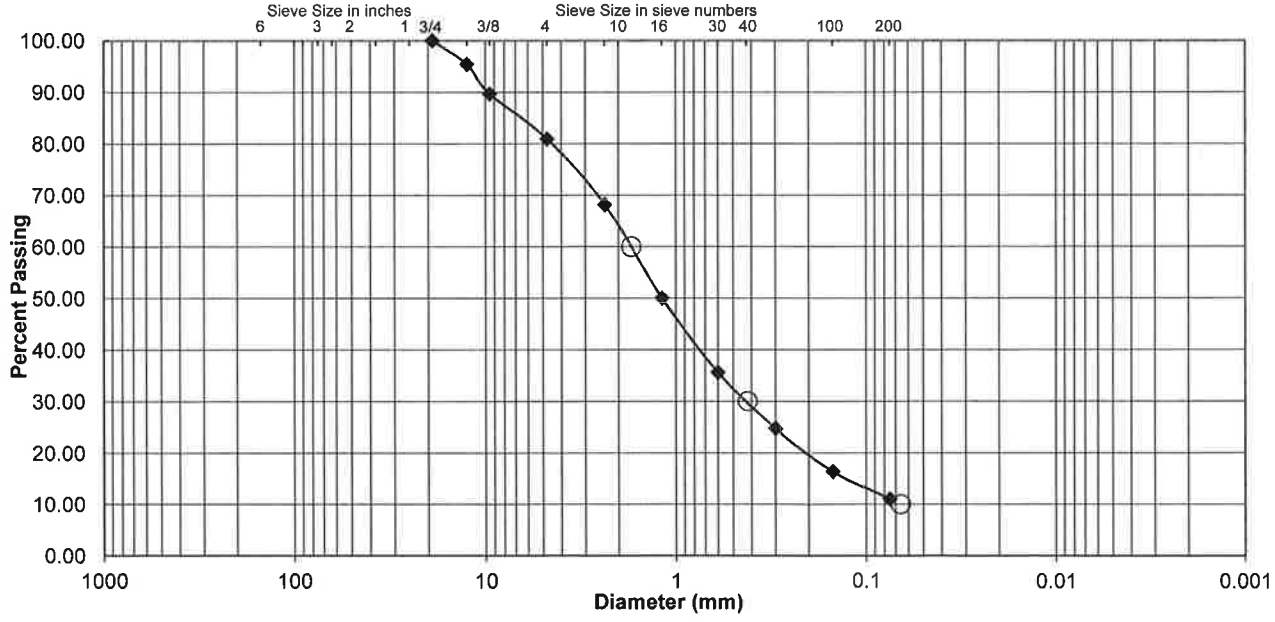
% Gravel	19.1
% Sand	69.9
% Fines	11.0
Fines Classification	ML
D_{10} (mm)	0.0659
D_{30} (mm)	0.4196
D_{60} (mm)	1.7154
Cu	26.04
Cc	1.56

Classification

Well Graded Sand (SW-SM) with Silt and Gravel

Classification determined by ASTM D 2487. -200 material classification determined by visual assessment, ASTM D 2488.

Particle Size Distribution



Comments

Reviewed By

Stantec

Gradation Analysis
ASTM D 422

Project Name: Scholl Canyon Landfill
Source: B11-2

Project Number: 2057123300
Lab ID: B11-2
Date Received: 12-04-2015
Preparation Date: 12-26-2015
Test Date: 12-26-2015

Preparation Method: ASTM D 1140 Method A
Particle Shape: Angular
Particle Hardness: Hard and Durable
Sample Dry Mass (g): 427.60
Moisture Content (%): 7.8

Analysis based on total sample.

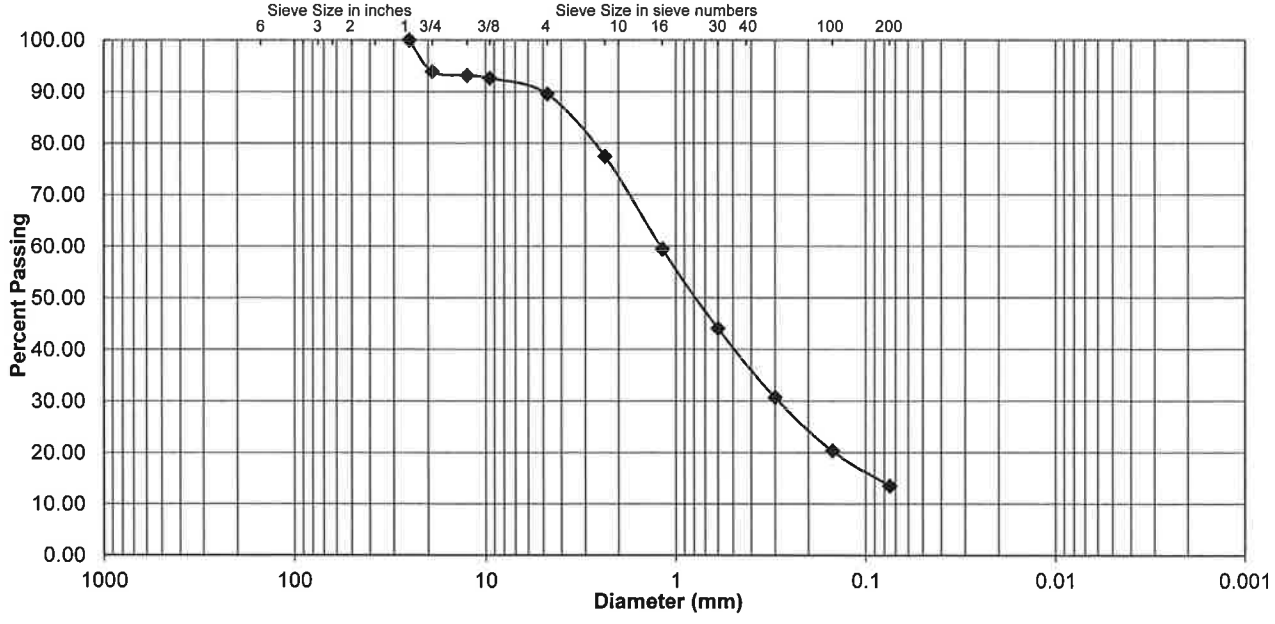
Sieve Size	Grams Retained	% Retained	% Passing
1"	0.00	0.0	100.0
3/4"	26.10	6.1	93.9
1/2"	3.30	0.8	93.1
3/8"	2.10	0.5	92.6
No. 4	13.20	3.1	89.5
No. 8	51.70	12.1	77.5
No. 16	77.00	18.0	59.4
No. 30	65.90	15.4	44.0
No. 50	57.00	13.3	30.7
No. 100	44.20	10.3	20.4
No. 200	29.50	6.9	13.5
Pan	57.60	13.5	---

% Gravel	10.5
% Sand	76.1
% Fines	13.5
Fines Classification	ML
D_{10} (mm)	N/A
D_{30} (mm)	N/A
D_{60} (mm)	N/A
Cu	N/A
Cc	N/A

Classification
Silty Sand (SM)

Classification determined by ASTM D 2487. -200 material classification determined by visual assessment, ASTM D 2488.

Particle Size Distribution



Comments

Reviewed By

Stantec

Gradation Analysis
ASTM D 422

Project Name: Scholl Canyon Landfill
Source: B11-7

Project Number: 2057123300
Lab ID: B11-7
Date Received: 12-04-2015
Preparation Date: 12-26-2015
Test Date: 12-26-2015

Preparation Method: ASTM D 1140 Method A
Particle Shape: Angular
Particle Hardness: Hard and Durable
Sample Dry Mass (g): 344.00
Moisture Content (%): 5.9

Analysis based on total sample.

Sieve Size	Grams Retained	% Retained	% Passing
3/8"	0.00	0.0	100.0
No. 4	2.30	0.7	99.3
No. 8	36.00	10.5	88.9
No. 16	78.80	22.9	66.0
No. 30	67.90	19.7	46.2
No. 50	51.90	15.1	31.1
No. 100	43.10	12.5	18.6
No. 200	24.70	7.2	11.4
Pan	39.30	11.4	---

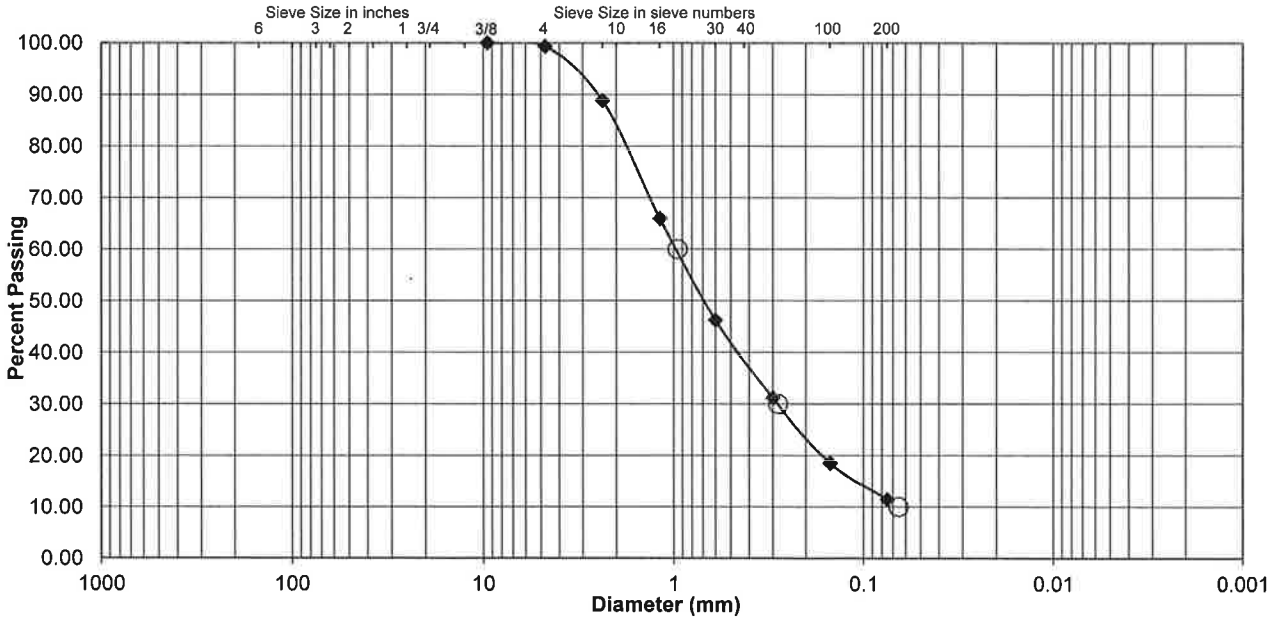
% Gravel	0.7
% Sand	87.9
% Fines	11.4
Fines Classification	ML
D_{10} (mm)	0.0654
D_{30} (mm)	0.2818
D_{60} (mm)	0.9521
Cu	14.57
Cc	1.28

Classification

Well Graded Sand (SW-SM) with Silt

Classification determined by ASTM D 2487. -200 material classification determined by visual assessment, ASTM D 2488.

Particle Size Distribution



Comments

Reviewed By

Stantec

Compaction Characteristics of Soil Using Modified Effort

ASTM D 1557 - Method A

Project: Scholl Canyon Landfill
Source:
Description: Gravely Sand w/ Silt F-C (SP-SM) Brownish Yellow
Visual Notes:

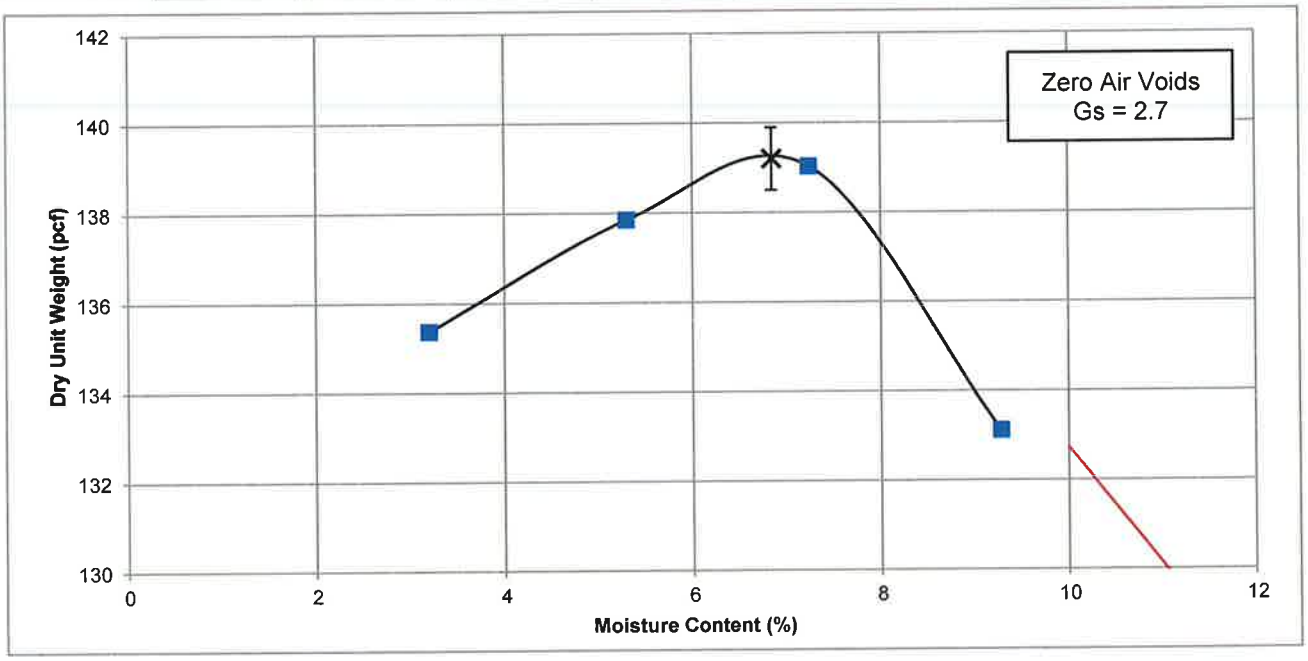
Project No.: 2057123300
Sample ID: B1-Bulk
Date Received: 12/04/2015
Date Tested: 12/10/2015

Test Fraction (%): 85.0
Gs of Test Fraction: 2.7 Estimated
Oversized Fraction Sieve: 3/4"

Oversized Fraction (%): 15.0
Gs of Oversized Fraction: 2.7 ASTM C 127
MC of Oversized Fraction (%): 5.3

Mold Weight (g): 4218.48
Preparation Method: Moist
Rammer Type: Manual

Wet Soil & Mold Weight (g)	Wet Soil Weight (g)	Moisture Content Determination: Wet Soil & Tare (g)	Dry Soil & Tare (g)	Tare (g)	Water Content (%)	Dry Unit Weight (pcf)
6310	2091	490.20	475.00	0.00	3.2	135.4
6391	2173	516.20	490.20	0.00	5.3	137.8
6450	2232	503.40	469.40	0.00	7.2	139.0
6396	2177	500.50	458.00	0.00	9.3	133.1



Maximun Dry Unit Weight (pcf): 139.2
Optimum Moisture Content (%): 6.8

Corrected Maximun Dry Unit Weight (pcf): 142.6
Corrected Optimum Moisture Content (%): 6.6

Comments:

Stantec

Compaction Characteristics of Soil Using Modified Effort

ASTM D 1557 - Method A

Project: Scholl Canyon Landfill
Source:
Description: Gravely Sand w/ Silt F-C (SP-SM) Brownish Yellow
Visual Notes:

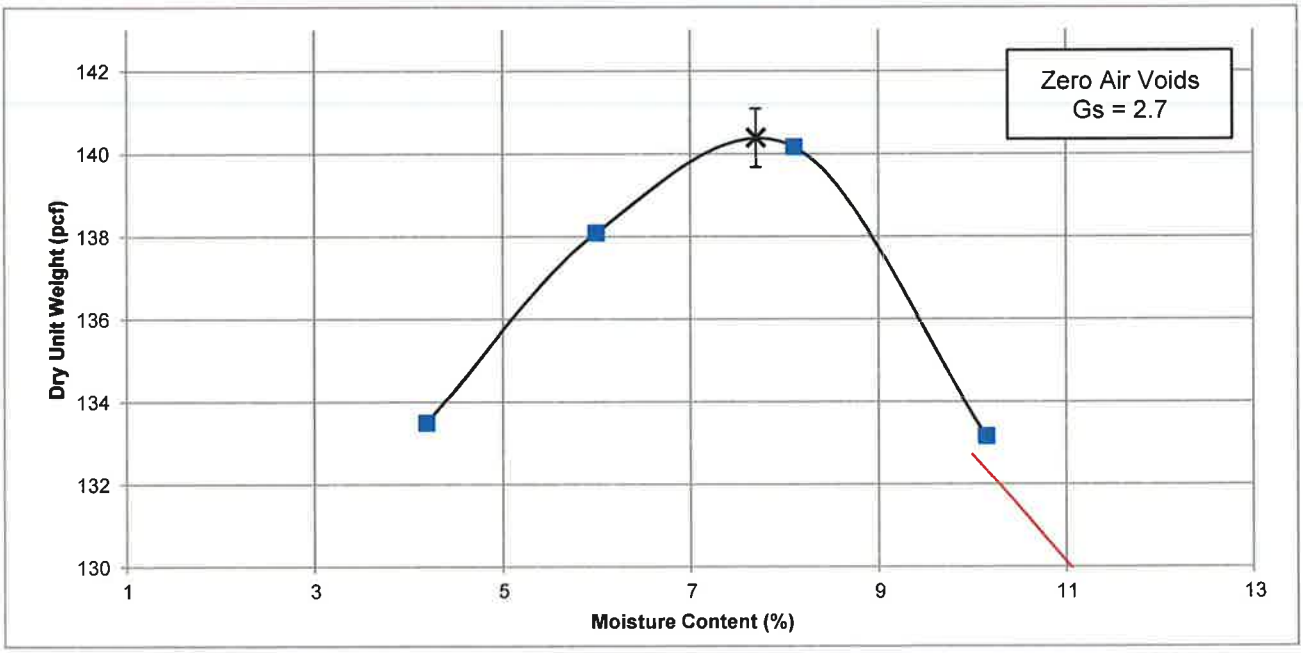
Project No.: 2057123300
Sample ID: B5-Bulk
Date Received: 12/04/2015
Date Tested: 12/10/2015

Test Fraction (%): 85.3
Gs of Test Fraction: 2.7 Estimated
Oversized Fraction Sieve: 3/4"

Oversized Fraction (%): 14.7
Gs of Oversized Fraction: 2.7 ASTM C 127
MC of Oversized Fraction (%): 8.1

Mold Weight (g): 4218.48
Preparation Method: Moist
Rammer Type: Manual

Wet Soil & Mold Weight (g)	Wet Soil Weight (g)	Moisture Content Determination: Wet Soil & Tare (g)	Dry Soil & Tare (g)	Tare (g)	Water Content (%)	Dry Unit Weight (pcf)
6301	2082	504.30	484.00	0.00	4.2	133.5
6409	2191	498.60	470.40	0.00	6.0	138.1
6486	2268	523.00	483.80	0.00	8.1	140.2
6414	2195	501.60	455.40	0.00	10.1	133.2



Maximun Dry Unit Weight (pcf): 140.4
Optimum Moisture Content (%): 7.7

Corrected Maximun Dry Unit Weight (pcf): 143.6
Corrected Optimum Moisture Content (%): 7.8

Comments:

Stantec

Compaction Characteristics of Soil Using Modified Effort

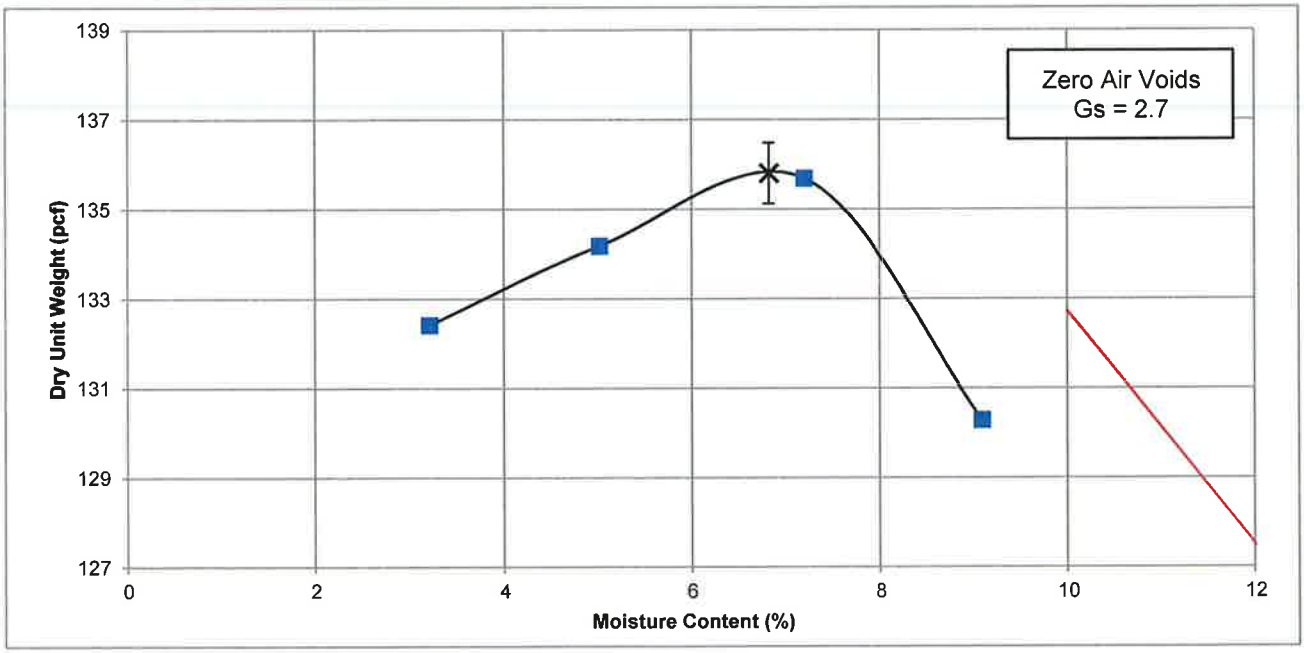
ASTM D 1557 - Method A

Project	Scholl Canyon Landfill	Project No.	2057123300
Source		Sample ID	B11-Bulk
Description	Gravely Sand w/ Silt F-C (SP-SM) Brownish Yellow	Date Received	12/04/2015
Visual Notes		Date Tested	12/10/2015

Test Fraction (%)	85.3		Oversized Fraction (%)	14.7	
Gs of Test Fraction	2.7	Estimated	Gs of Oversized Fraction	2.7	ASTM C 127
Oversized Fraction Sieve	3/4"		MC of Oversized Fraction (%)	8.1	

Mold Weight (g)	4218.48	Preparation Method	Moist	Rammer Type	Manual

Wet Soil & Mold Weight (g)	Wet Soil Weight (g)	Moisture Content Determination: Wet Soil & Tare (g)	Dry Soil & Tare (g)	Tare (g)	Water Content (%)	Dry Unit Weight (pcf)
6264	2046	523.30	507.00	0.00	3.2	132.4
6328	2109	500.10	476.20	0.00	5.0	134.2
6396	2177	498.50	465.00	0.00	7.2	135.7
6346	2127	510.00	467.50	0.00	9.1	130.3



Maximun Dry Unit Weight (pcf)	**135.8**
Optimum Moisture Content (%)	**6.8**
Corrected Maximun Dry Unit Weight (pcf)	**139.5**
Corrected Optimum Moisture Content (%)	**7.0**

Comments

Converse Consultants
Geotechnical Engineering, Environmental and Groundwater Science, Inspection and Testing Services

December 31, 2015

Mr. Jaret Fischer
Stantec Consulting Inc.
25864-F Business Center Drive
Redlands, CA 92374

Subject: **LABORATORY TEST RESULTS**
2057123300 – Scholl Canyon
Converse Project No. 15-81-104-20

Dear Mr. Fischer:

Presented below are the results of the laboratory tests that you requested for the above-referenced project. We received the samples from your office on December 7, 2015. The following tests were performed in accordance with the relevant standard:

- Ten (10) Direct Shear Tests (ASTM D3080)

We appreciate the opportunity to be of continued service to Stantec Consulting Inc. If you should have any questions or need additional information, please feel free to contact us at (909) 796-0544.

CONVERSE CONSULTANTS

Jordan Roper, P.E.
Project Engineer

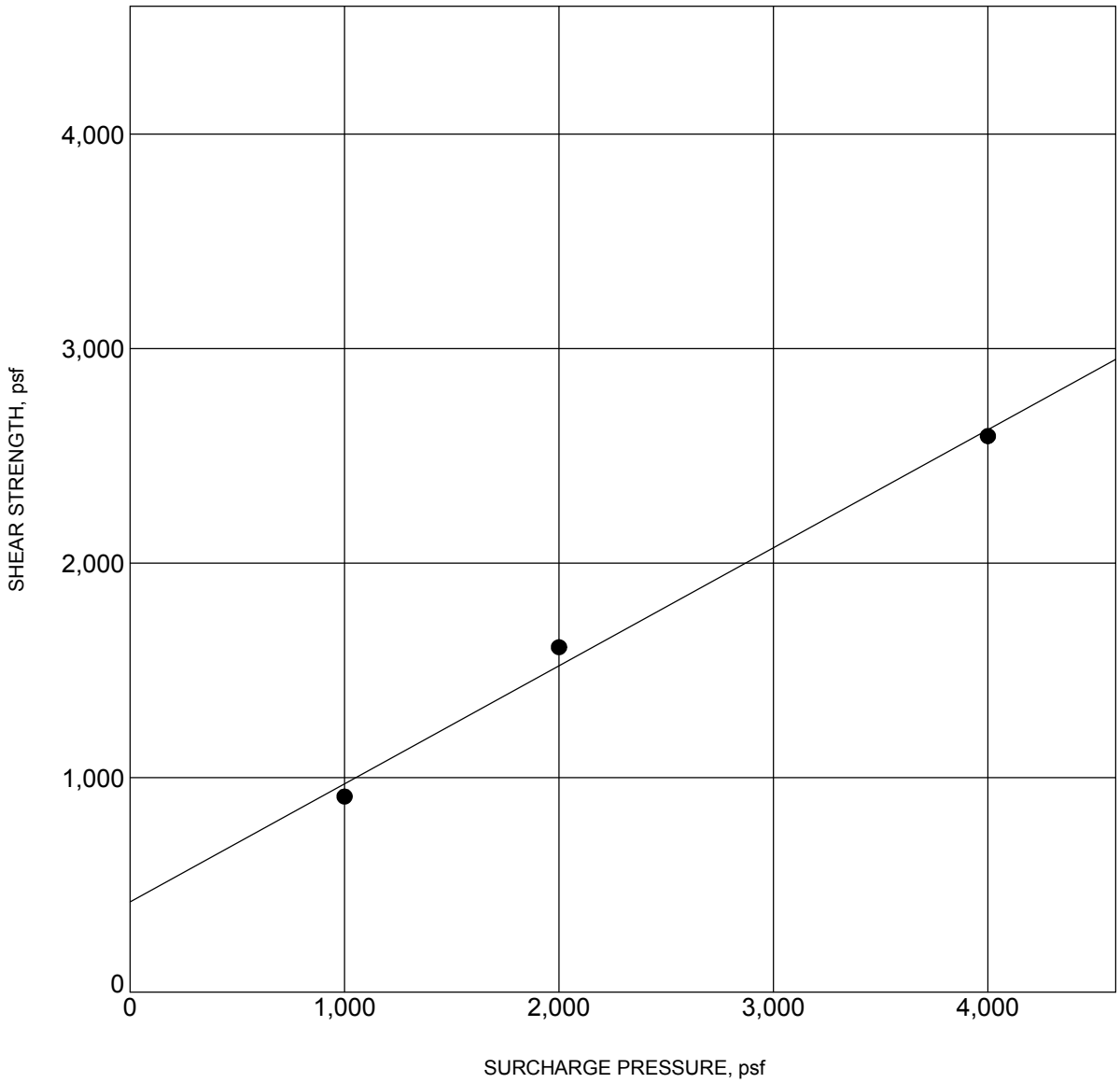
KVG/JR

Encl: Table No. 1, *Direct Shear Test Results*
Drawing No. 1 - 10, *Direct Shear Test Results*

Table No. 1, Direct Shear Test Results

Sample ID	Depth (feet)	Soil Description	Cohesion (psf)	Friction Angle (degrees)
TP-1	0.5	Silty Sand with Gravel (SM), Fine to Coarse-Grained, Yellow-Brown	420	29
TP-2*	0.5	Silty Sand with Gravel (SM), Fine to Coarse Grained, Olive-Brown	0	39
TP-3	0.5	Silty Sand with Gravel (SM), Fine to Coarse Grained, Olive-Brown	310	36
TP-4	1.0	Silty Sand (SM), Fine to Coarse Grained, Yellow-Brown	290	30
TP-4	3.0	Silty Sand (SM), Fine to Coarse Grained, Yellow-Brown	520	26
TP-5	3.0	Silty Sand (SM), Fine to Coarse Grained, Yellow-Brown	140	40
TP-6*	1.0	Silty Sand with Gravel (SM), Fine to Coarse Grained, Yellow-Brown	680	44
TP-7	1.0	Silty Sand with Clay (SM), Fine to Coarse Grained, Yellow-Brown	210	36
B-8	10.0	Sand with Gravel and Silt (SP-SM), Fine to Coarse Grained, Olive-Brown	110	36
B-11	7.0	Silty Sand (SM), Fine to Coarse Grained, Olive-Yellow	150	33

* Test results may not be representative of the soil type due to the presence of gravel in the shear plane



BORING NO.	:	**TP-1**	DEPTH (ft)	:	**0.5**
DESCRIPTION	:	**Silty Sand with Gravel (SM), Fine to Coarse-Grained, Yellow Brown**			
COHESION (psf)	:	**420**	FRICTION ANGLE (degrees):		**29**
MOISTURE CONTENT (%)	:	**4.7**	DRY DENSITY (pcf)	:	**106.6**

NOTE: Ultimate Strength.

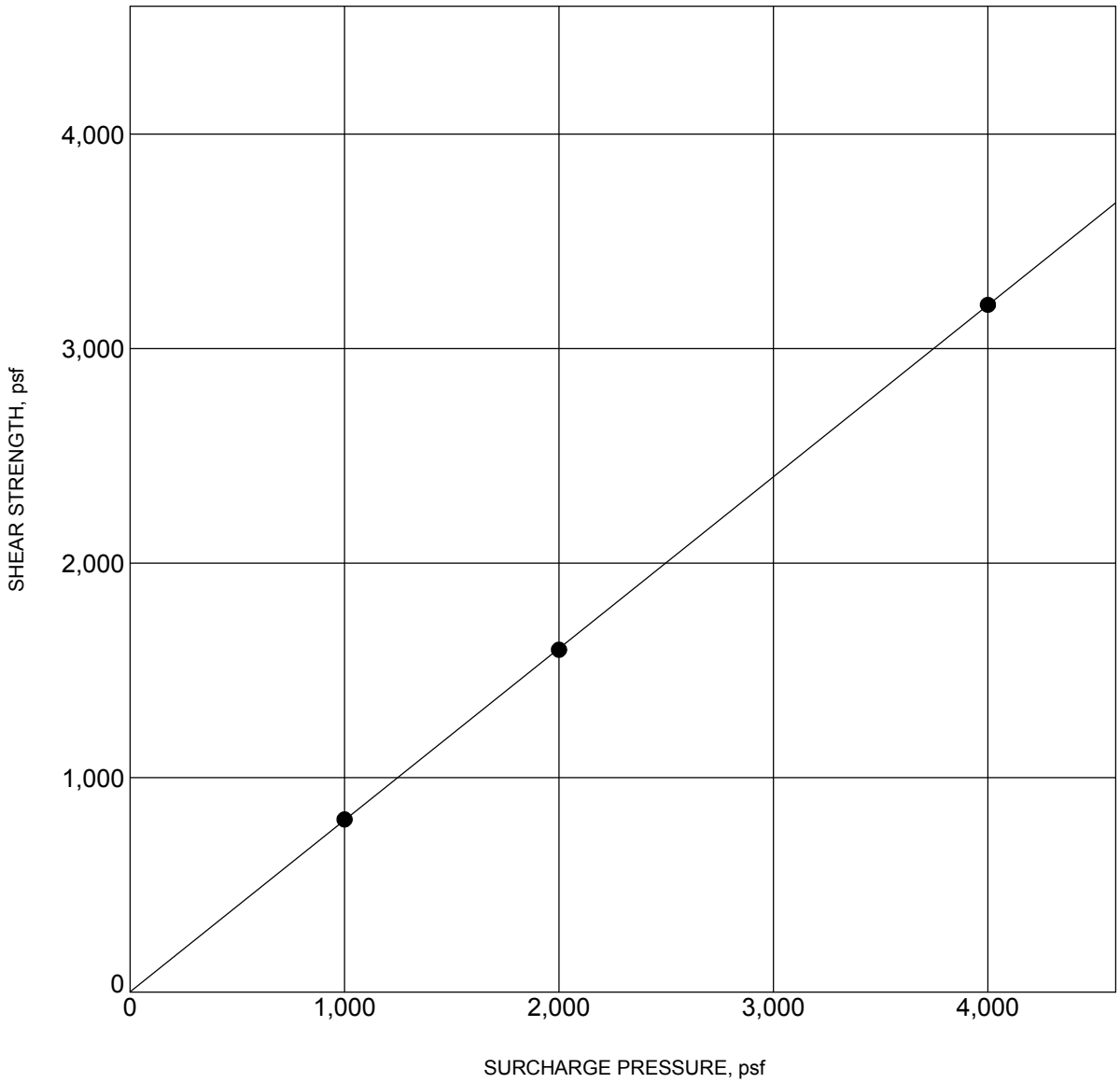
DIRECT SHEAR TEST RESULTS

Converse Consultants

Scholl Canyon
Job #: 2057123300
For: Stantec

Project No. **15-81-104-20**

Drawing No. **1**



BORING NO.	:	**TP-2**	DEPTH (ft)	:	**0.5**
DESCRIPTION	:	**Silty Sand with Gravel (SM), Fine to Coarse-Grained, Yellow Brown**			
COHESION (psf)	:	**0**	FRICTION ANGLE (degrees):		**39**
MOISTURE CONTENT (%)	:	**5.5**	DRY DENSITY (pcf)	:	**100.8**

NOTE: Ultimate Strength.

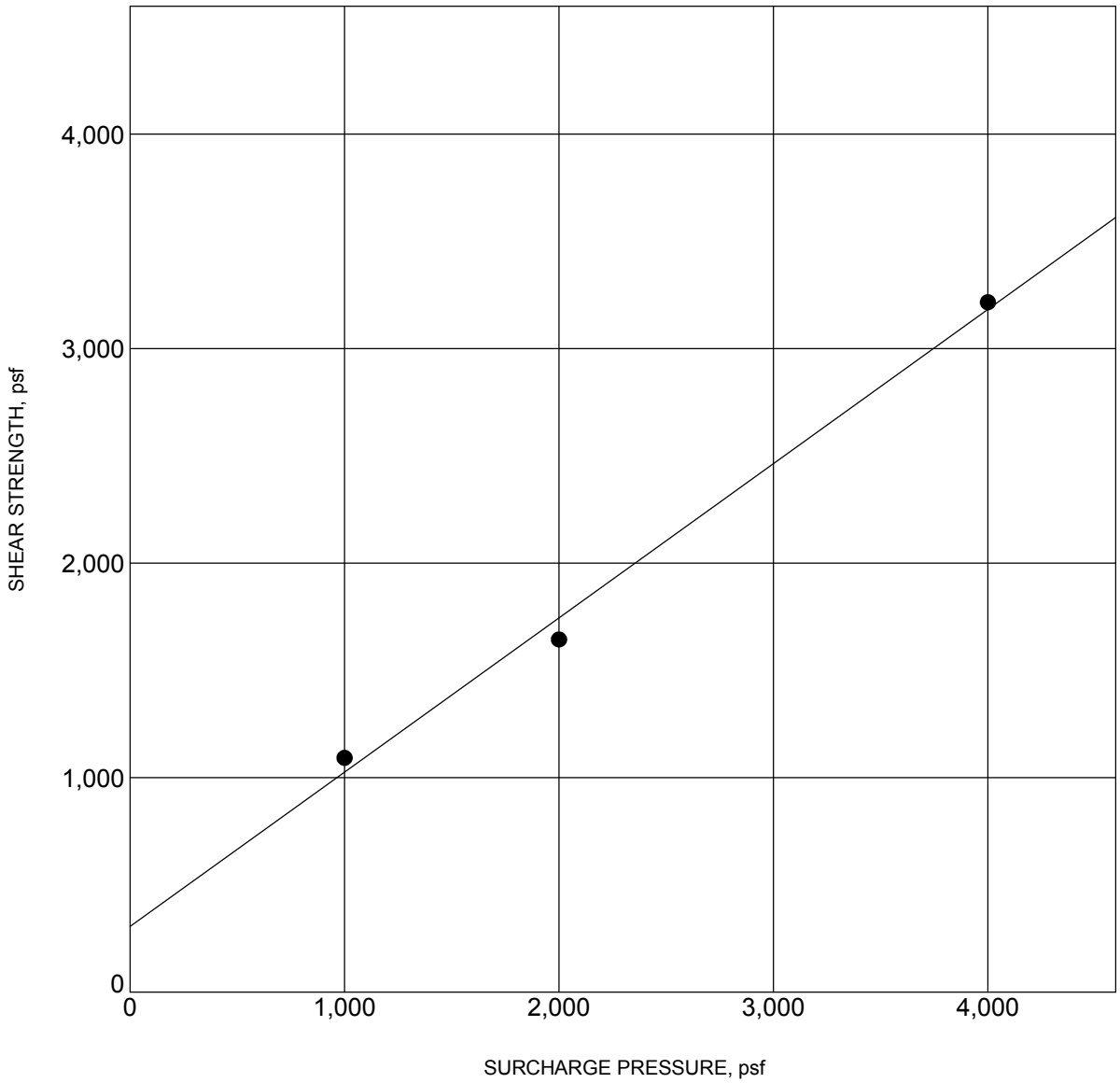
DIRECT SHEAR TEST RESULTS

Converse Consultants

Scholl Canyon
Job #: 2057123300
For: Stantec

Project No. **15-81-104-20**

Drawing No. **2**



BORING NO.	:	**TP-3**	DEPTH (ft)	:	**0.5**
DESCRIPTION	:	**Silty Sand with Gravel (SM), Fine to Coarse-Grained, Olive Brown**			
COHESION (psf)	:	**310**	FRICTION ANGLE (degrees):		**36**
MOISTURE CONTENT (%)	:	**5.3**	DRY DENSITY (pcf)	:	**104.5**

NOTE: Ultimate Strength.

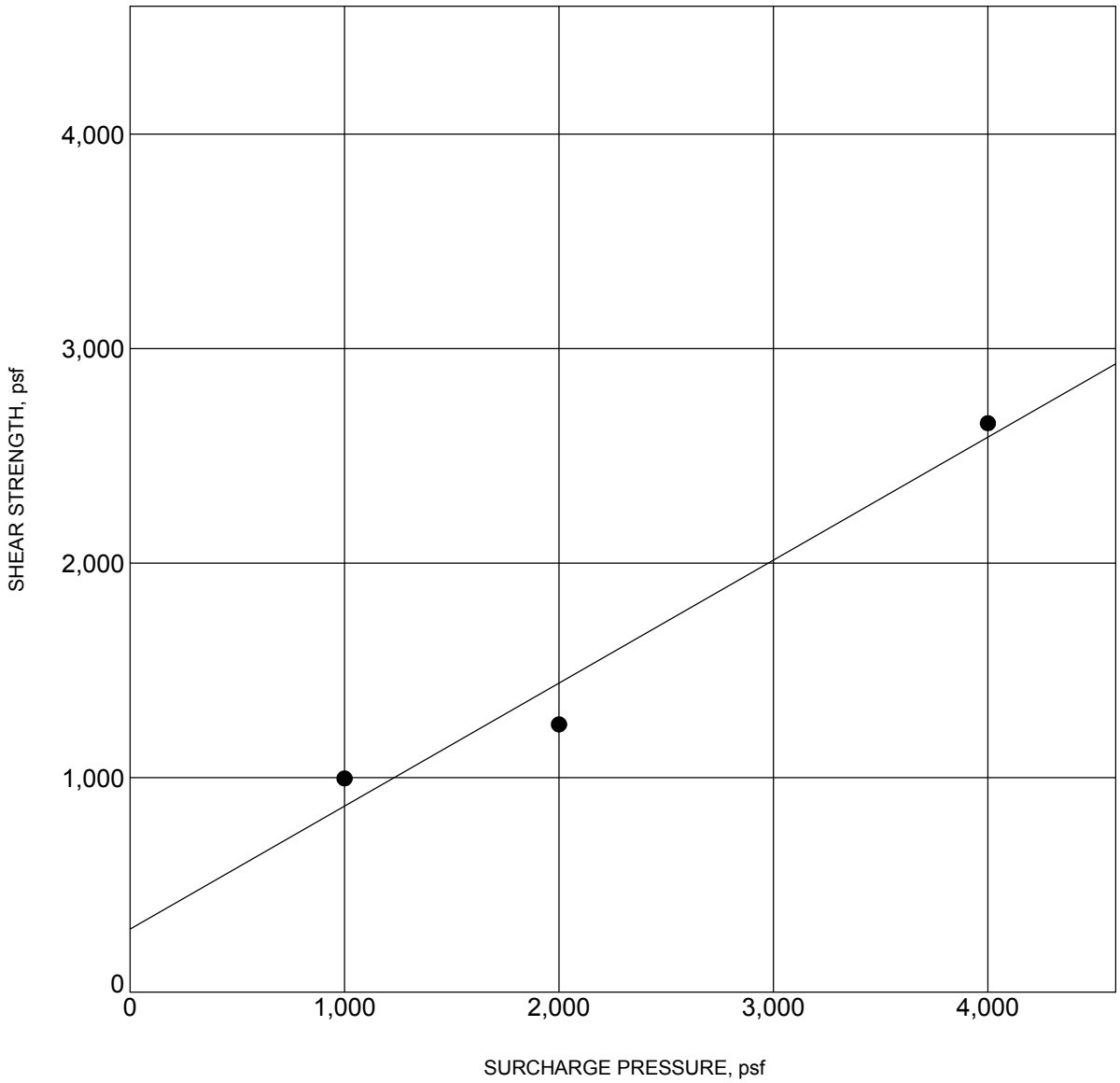
DIRECT SHEAR TEST RESULTS

Converse Consultants

Scholl Canyon
Job #: 2057123300
For: Stantec

Project No. **15-81-104-20**

Drawing No. **3**



BORING NO.	:	**TP-4**	DEPTH (ft)	:	**1.0**
DESCRIPTION	:	**Silty Sand (SM), Fine to Coarse-Grained, Yellow Brown**			
COHESION (psf)	:	**290**	FRICTION ANGLE (degrees):		**30**
MOISTURE CONTENT (%)	:	**4.0**	DRY DENSITY (pcf)	:	**104.8**

NOTE: Ultimate Strength.

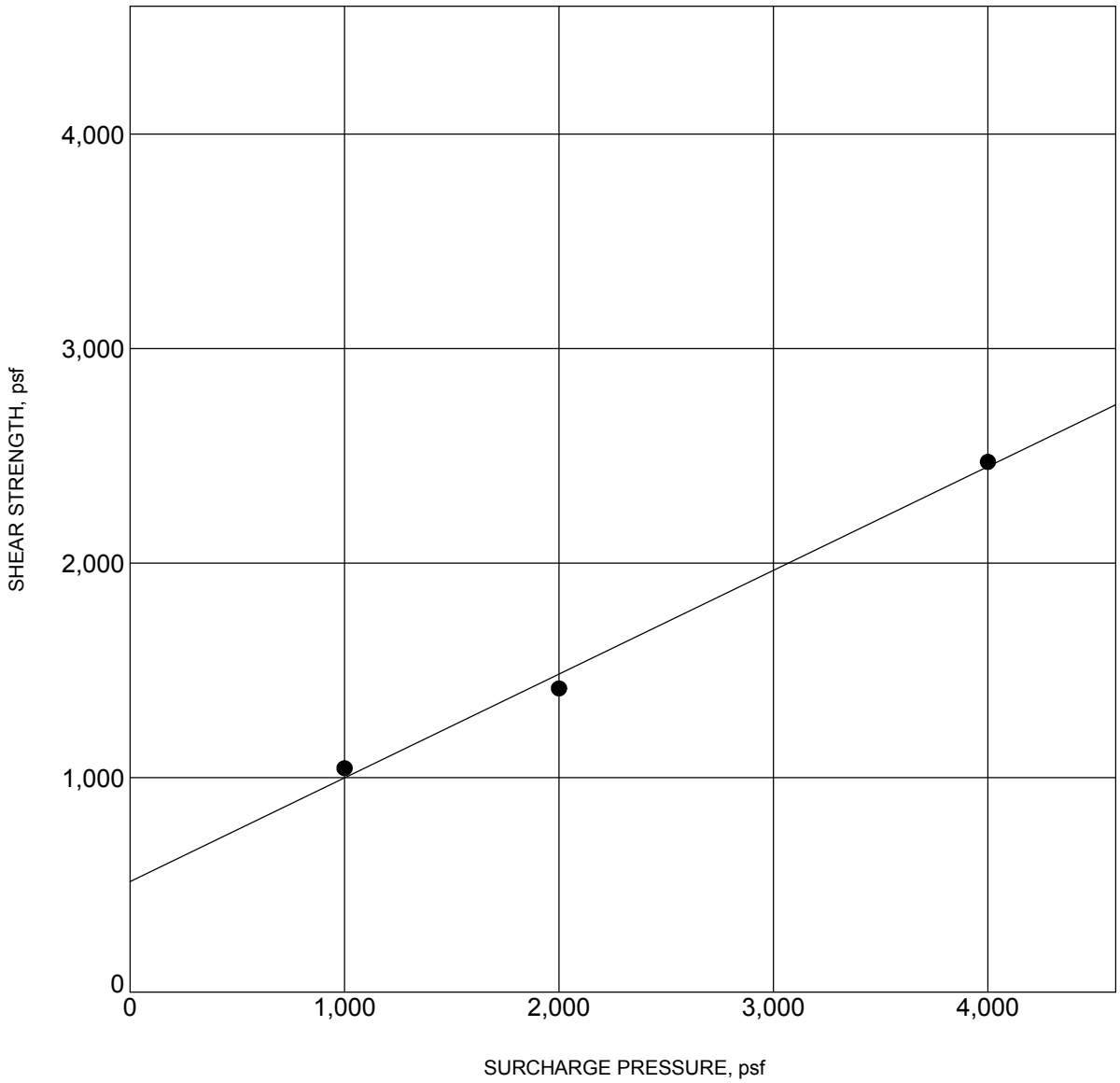
DIRECT SHEAR TEST RESULTS

Converse Consultants

Scholl Canyon
Job #: 2057123300
For: Stantec

Project No. **15-81-104-20**

Drawing No. **4**



BORING NO.	:	**TP-4**	DEPTH (ft)	:	**3.0**
DESCRIPTION	:	**Silty Sand (SM), Fine to Coarse-Grained, Yellow Brown**			
COHESION (psf)	:	**520**	FRICTION ANGLE (degrees):		**26**
MOISTURE CONTENT (%)	:	**7.7**	DRY DENSITY (pcf)	:	**112.4**

NOTE: Ultimate Strength.

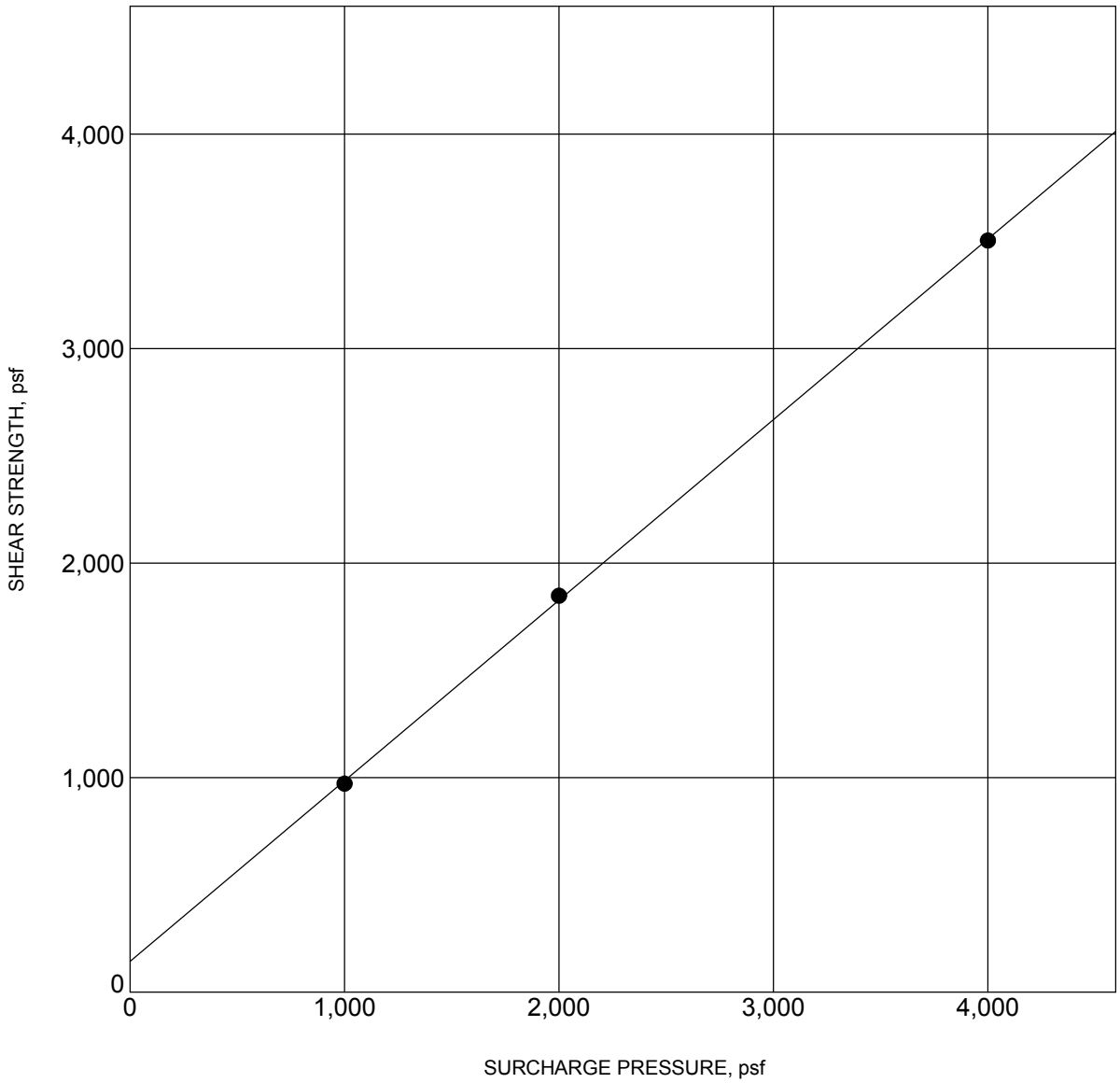
DIRECT SHEAR TEST RESULTS

Converse Consultants

Scholl Canyon
Job #: 2057123300
For: Stantec

Project No. **15-81-104-20**

Drawing No. **5**



BORING NO.	:	**TP-5**	DEPTH (ft)	:	**3.0**
DESCRIPTION	:	**Silty Sand (SM), Fine to Coarse-Grained, Yellow Brown**			
COHESION (psf)	:	**140**	FRICTION ANGLE (degrees):		**40**
MOISTURE CONTENT (%)	:	**6.0**	DRY DENSITY (pcf)	:	**117.1**

NOTE: Ultimate Strength.

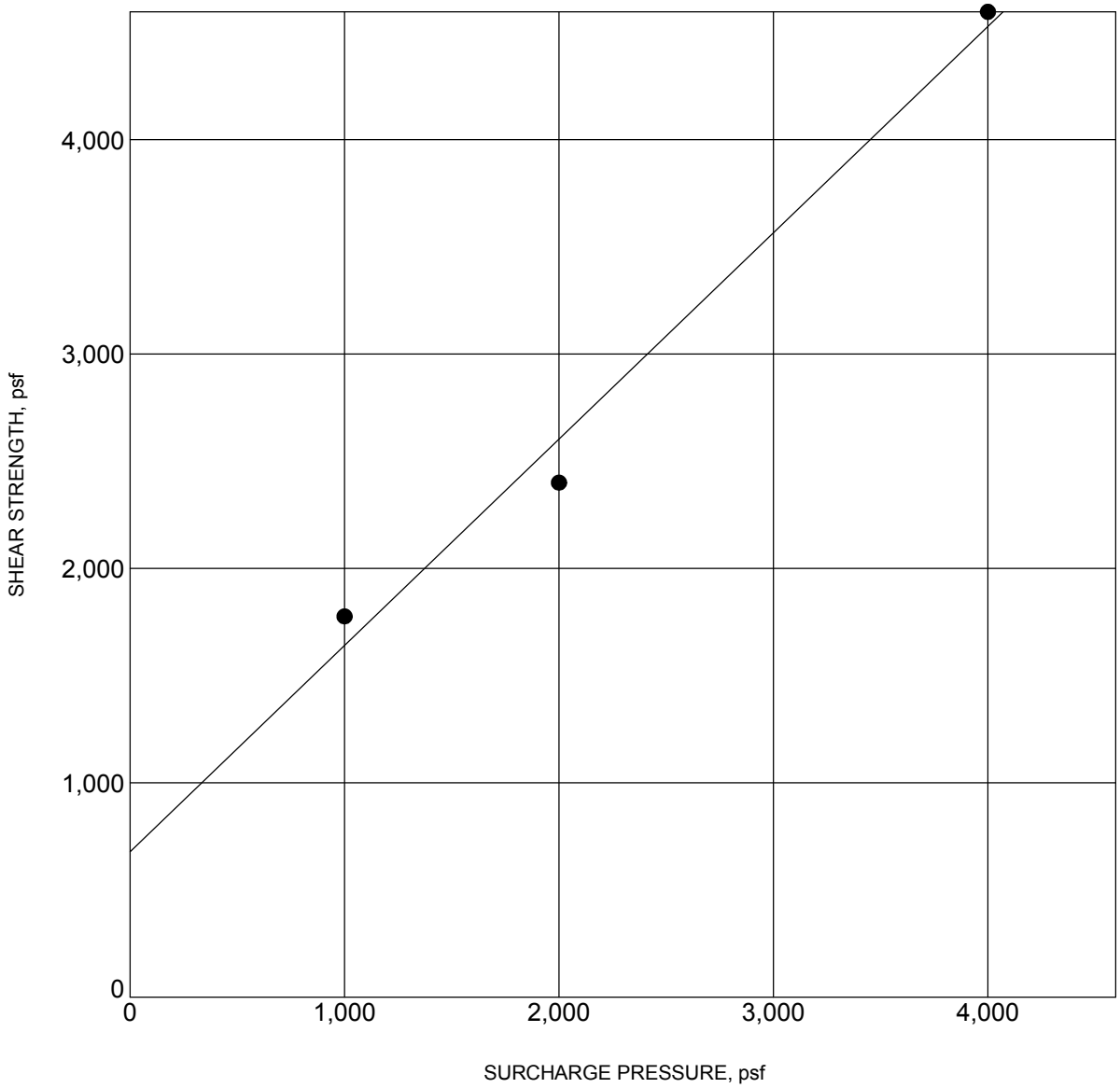
DIRECT SHEAR TEST RESULTS

Converse Consultants

Scholl Canyon
Job #: 2057123300
For: Stantec

Project No. **15-81-104-20**

Drawing No. **6**



BORING NO.	:	**TP-6**	DEPTH (ft)	:	**1.0**
DESCRIPTION	:	**Silty Sand (SM), Fine to Coarse-Grained, Yellow Brown**			
COHESION (psf)	:	**680**	FRICTION ANGLE (degrees):		**44**
MOISTURE CONTENT (%)	:	**4.2**	DRY DENSITY (pcf)	:	**121.3**

NOTE: Ultimate Strength.

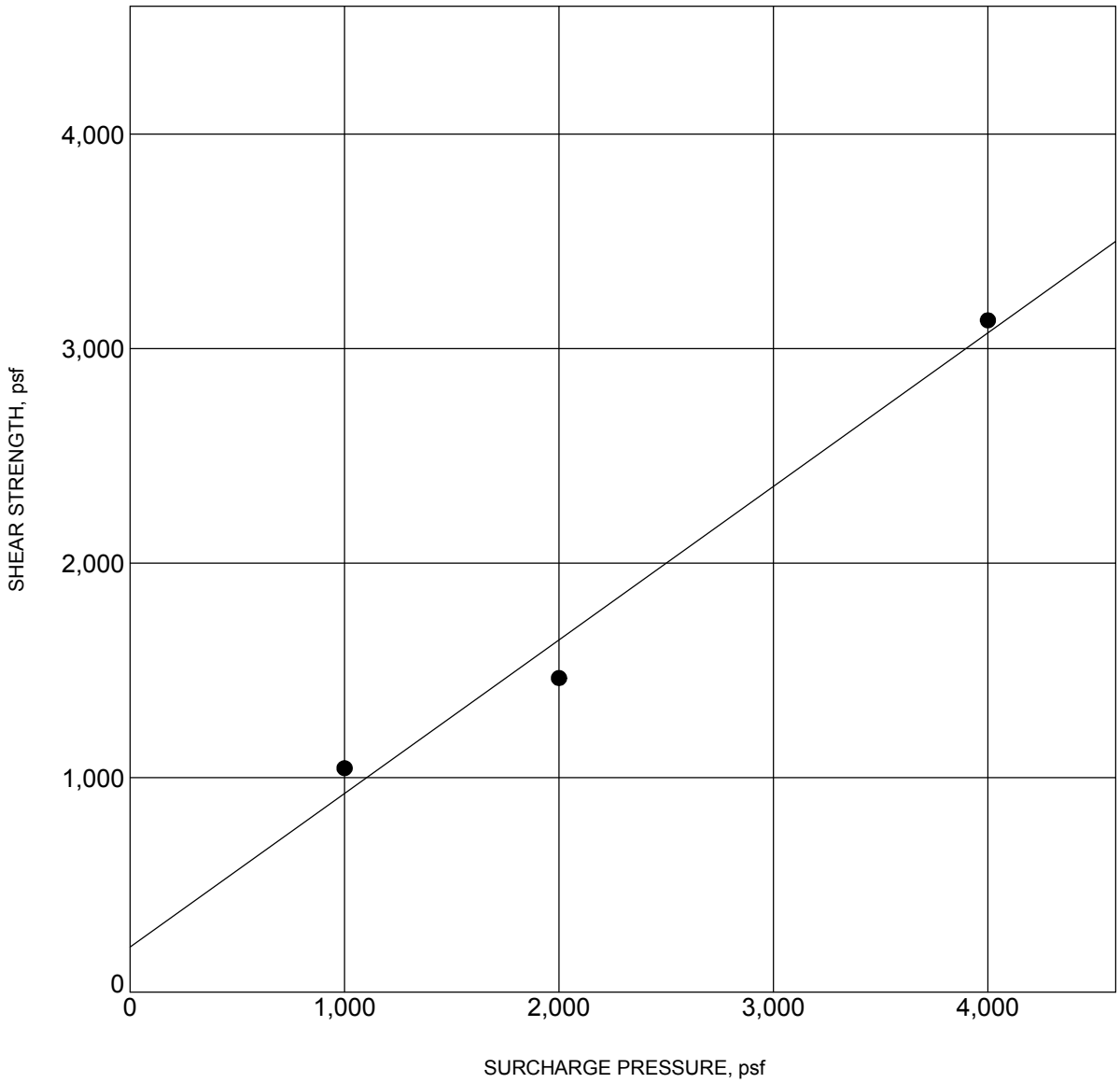
DIRECT SHEAR TEST RESULTS

Converse Consultants

Scholl Canyon
Job #: 2057123300
For: Stantec

Project No. **15-81-104-20**

Drawing No. **7**



BORING NO.	:	**TP-7**	DEPTH (ft)	:	**1.0**
DESCRIPTION	:	**Silty Sand with Clay (SM), Fine to Coarse-Grained, Yellow**			
COHESION (psf)	:	**210**	FRICTION ANGLE (degrees):		**36**
MOISTURE CONTENT (%)	:	**7.3**	DRY DENSITY (pcf)	:	**109.3**

NOTE: Ultimate Strength.

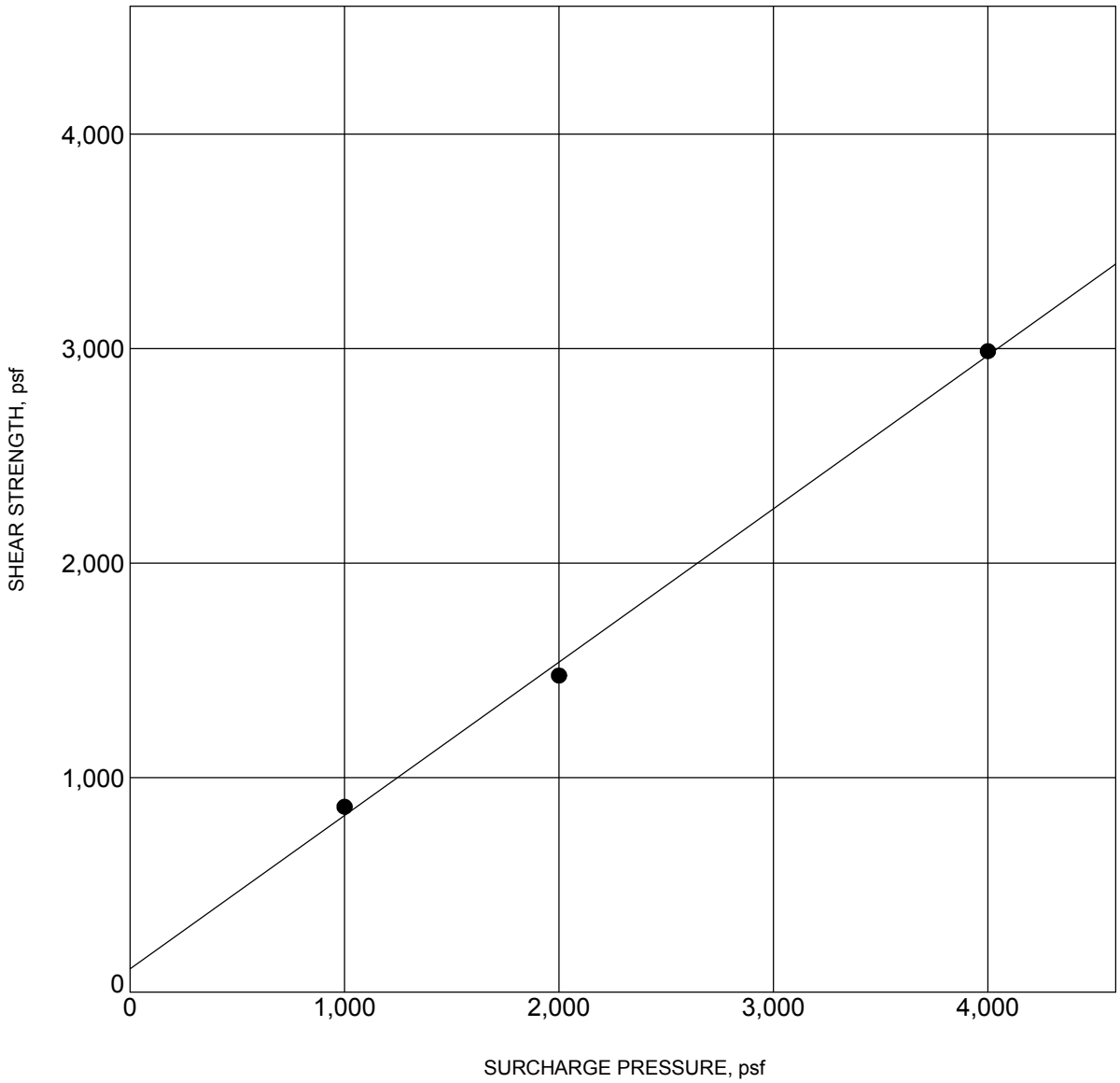
DIRECT SHEAR TEST RESULTS

Converse Consultants

Scholl Canyon
Job #: 2057123300
For: Stantec

Project No. **15-81-104-20**

Drawing No. **8**



BORING NO.	:	**B-8**	DEPTH (ft)	:	**10.0**
DESCRIPTION	:	**Sand with Gravel and Silt (SP-SM), Fine to Coarse-Grained, Olive Yellow**			
COHESION (psf)	:	**110**	FRICTION ANGLE (degrees):		**36**
MOISTURE CONTENT (%)	:	**6.3**	DRY DENSITY (pcf)	:	**108.1**

NOTE: Ultimate Strength.

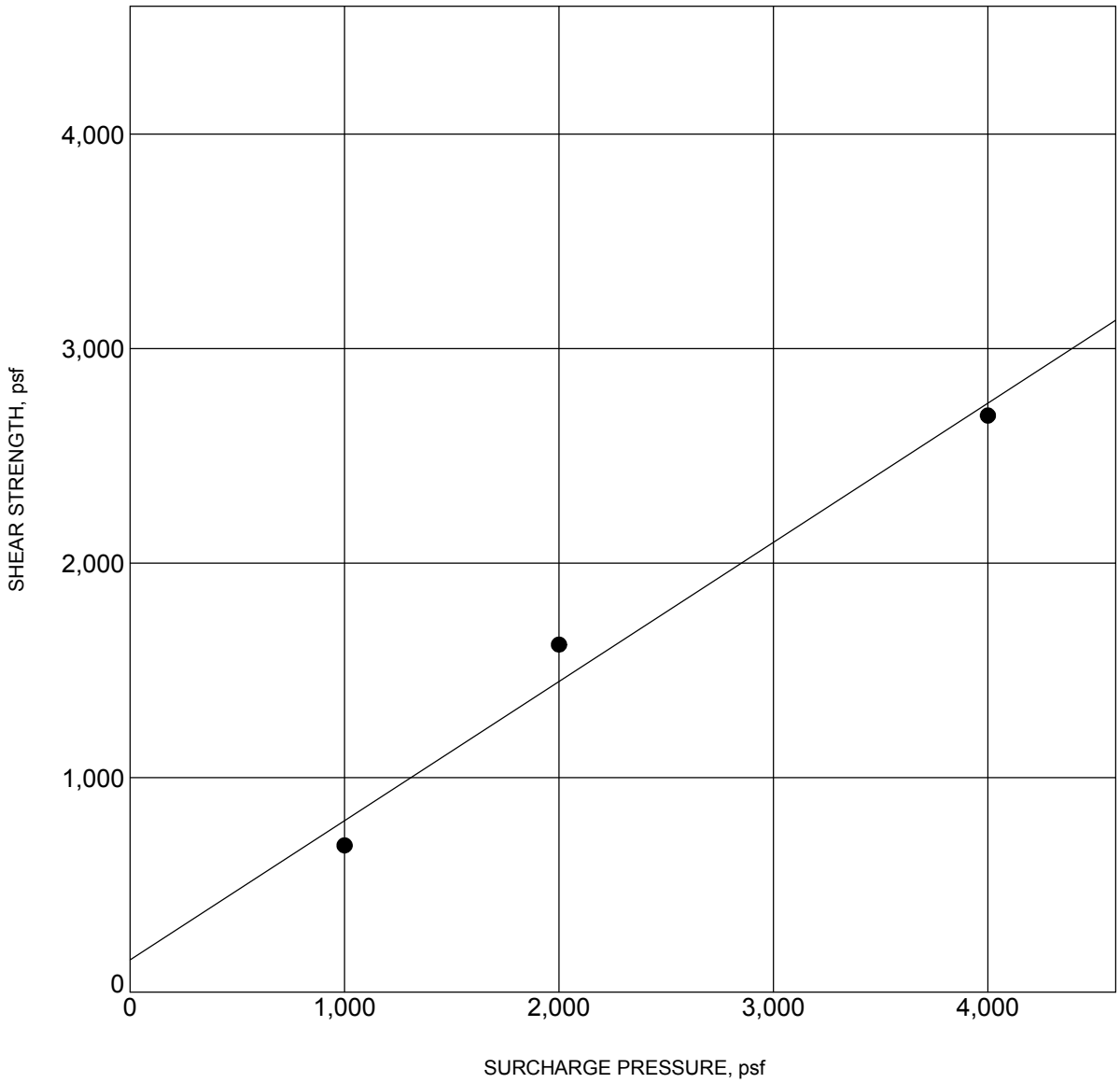
DIRECT SHEAR TEST RESULTS

Converse Consultants

Scholl Canyon
Job #: 2057123300
For: Stantec

Project No. **15-81-104-20**

Drawing No. **9**



BORING NO.	:	**B-11**	DEPTH (ft)	:	**7.0**
DESCRIPTION	:	**Silty Sand (SM), Fine to Coarse-Grained, Olive Yellow**			
COHESION (psf)	:	**150**	FRICTION ANGLE (degrees):		**33**
MOISTURE CONTENT (%)	:	**10.7**	DRY DENSITY (pcf)	:	**116.4**

NOTE: Ultimate Strength.

DIRECT SHEAR TEST RESULTS

Converse Consultants

Scholl Canyon
Job #: 2057123300
For: Stantec

Project No. **15-81-104-20**

Drawing No. **10**

SUMMARY OF CORROSION TEST RESULTS

PROJECT NAME: Scholl Canyon

PROJECT NO.: 15-81-104-20

DATE: 1/5/2016

EGLAB JOB NO.: 15-118-060

CLIENT: Converse Consultants

Summarized By: JT

BORING NO.	SAMPLE NO.	DEPTH (ft)	pH CalTrans 643	Chloride Content CalTrans 422 (ppm)	Sulfate Content CalTrans 417 (% by weight)	Minimum Resistivity CalTrans 643 (ohm-cm)
N/A	Bulk-1	N/A	7.81	140	0.023	2,900
N/A	Bulk-5	N/A	7.93	125	0.001	14,000
N/A	Bulk-11	N/A	7.82	145	0.006	1,900

APPENDIX C
GEOPHYSICAL SURVEY

GEOPHYSICAL SURVEY
SCHOLL CANYON LANDFILL
LOS ANGELES, CALIFORNIA

PREPARED FOR:

Stantec
25864-F Business Center Drive
Redlands, CA 92374-4515

PREPARED BY:

Southwest Geophysics, Inc.
8057 Raytheon Road, Suite 9
San Diego, CA 92111

December 17, 2015
Project No. 115574

SOUTHWEST GEOPHYSICS, INC.
YOUR SUBSURFACE SOLUTION

December 17, 2015
Project No. 115574

Mr. Jaret Fischer
Stantec
25864-F Business Center Drive
Redlands CA 92374-4515

Subject: Geophysical Survey
Scholl Canyon Landfill / Biogas Renewable Generation Project
Los Angeles, California

Dear Mr. Fischer:

In accordance with your authorization, we have performed a geophysical evaluation pertaining to the Scholl Canyon Landfill project located in Los Angeles, California. Specifically, our survey consisted of performing four P-wave refraction profiles, two refraction microtremor (ReMi) profiles, and collection of electrical resistivity data at one test location at the subject site. The purpose of our study was to characterize the subsurface conditions in the study area. This data report presents our survey methodology, equipment used, analysis, and results.

We appreciate the opportunity to be of service on this project. Should you have any questions related to this report, please contact the undersigned at your convenience.

Sincerely,
SOUTHWEST GEOPHYSICS, INC.

Aaron T. Puente.
Project Geologist/Geophysicist

Hans van de Vrugt, C.E.G., P.Gp.
Principal Geologist/Geophysicist

ATP/HV/hv

Distribution: Addressee (electronic)

REGISTERED GEOPHYSICIST
Hans van de Vrugt
No 1012
Exp. 2/29/16
STATE OF CALIFORNIA

8057 Raytheon Road, Suite 9 • San Diego • California 92111 • Telephone 858-527-0849 • Fax 858-225-0114

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Figure 5b – ReMi Results, RL-2
Figure 6 – Electrical Resistivity Results

1. INTRODUCTION

In accordance with your authorization, we have performed a geophysical evaluation pertaining to the Scholl Canyon Landfill project located in Los Angeles, California (Figure 1). Specifically, our survey consisted of performing four P-wave refraction profiles, two refraction microtremor (ReMi) profiles, and collection of electrical resistivity data at one test location at the subject site. The purpose of our study was to characterize the subsurface conditions in the study area. This data report presents our survey methodology, equipment used, analysis, and results.

2. SCOPE OF SERVICES

Our scope of services included:

- Performance of four P-wave refraction profiles: SL-1 through SL-4.
- Performance of two ReMi profiles: RL-1 and RL-2
- Collection of in-situ electrical resistivity measurements at one test location: R-1.
- Compilation and analysis of the data collected.
- Preparation of this illustrated data report presenting our findings.

3. SITE DESCRIPTION AND PROJECT DESCRIPTION

The project site is located along Scholl Canyon Road just north of the Ventura Freeway (134) in Los Angeles, California (Figure 1). The site is occupied by an active landfill facility. Specifically, our survey was conducted near the existing generator and power plant. Figures 2, 3a and 3b depict the general conditions in the study area.

It is our understanding that upgrades to the power plant are proposed and that your office is conducting a geotechnical evaluation of the site. The results of our survey will be used in the design and construction of the project.

4. SURVEY METHODOLOGY

As previously indicated, the primary purpose of our services was to characterize the subsurface conditions at pre-selected locations through the collection of P-wave refraction, ReMi and electrical resistivity data. The following sections provide an overview of the methodologies used during our study.

4.1 P-wave Refraction Survey

The seismic P-wave refraction method uses first-arrival times of refracted seismic waves to estimate the thicknesses and seismic velocities of subsurface layers. Seismic P-waves (compression waves) generated at the surface are refracted at boundaries separating materials of contrasting velocities. These refracted seismic waves are then detected by a series of surface vertical component 14-Hz geophones, and recorded with a 24-channel Geometrics Geode seismograph. The travel times of the seismic P-waves are used in conjunction with the shot-to-geophone distances to obtain thickness and velocity information on the subsurface materials. In general, the effective depth of evaluation for a seismic refraction traverse is approximately one-third to one-fifth the length of the traverse.

Seismic lines SL-1 through SL-4 were conducted roughly east to west with geophones spaced 5 feet apart for line lengths of 125 feet. Multiple shot points (signal generator locations) were conducted at the ends of the lines and at equally spaced intervals along the lines. The P-wave signal (shot) was generated using a 20-pound hammer and an aluminum plate.

The refraction method requires that subsurface velocities increase with depth. A layer having a velocity lower than that of the layer above will not generally be detectable by the seismic refraction method and, therefore, could lead to errors in the depth calculations of subsequent layers. In addition, lateral variations in velocity, such as those caused by buried boulders, fractures, dikes, etc. can result in the misinterpretation of the subsurface conditions.

4.2 ReMi Survey

The refraction microtremor technique uses recorded surface waves (specifically Rayleigh waves) which are contained in the background noise to develop a shear wave velocity profile of the site down to a depth, in this case, up to approximately 100 feet. Fifteen records, 32 seconds long were collected with a 24-channel Geometrics Geode seismograph and twenty-four 4.5-Hz vertical component geophones. The ReMi method does not require an increase of material velocity with depth. Therefore, low velocity zones (velocity inversions) are detectable with ReMi. The depth of exploration is dependent on the length of the line and the frequency content of the background noise. The results of the ReMi method are displayed as a one dimensional profile which represents the average condition across the length of the line.

4.3 Electrical Resistivity Survey

Electrical resistivity data were collected at one test location selected by your office. The data were collected in general accordance with ASTM G57 using an Advanced Geosciences, Inc. (AGI) MiniSting earth resistivity meter and four stainless steel electrodes in a Wenner configuration. The MiniSting can generate up to 800 volts (V) and 500 milliamps (mA) and allows for the direct measurement of resistance. Soil resistance measurements were collected at electrode spacings of approximately 2, 4, 6, 8, 10, 15, 20, and 30 feet. Stainless steel electrodes were hammered into place and the soils surrounding the electrodes were moistened with water where necessary. The soundings were performed along two orientations (generally north-south and east-west) in order to assess possible lateral variations in the study area. The roughly north-south oriented line is designated as R-1a and the roughly east-

west oriented line is designated as R-1b. Figure 2 illustrates the approximate locations of the lines.

5. DATA ANALYSIS AND RESULTS

The following sections provide a summary of our analysis and results.

5.1 P-wave Refraction Survey

Collected P-wave data were processed using SIPwin (Rimrock Geophysics, 2003) and SeisOpt® Pro™ (Optim, 2008). SIPwin was used to evaluate first arrival times and SeisOpt® Pro™ was used for analysis and interpretation. SeisOpt® Pro™ uses a nonlinear optimization technique called adaptive simulated annealing. The resulting velocity model provides a tomography image of the estimated geologic conditions. Both vertical and lateral velocity information is contained in the tomography model. Changes in layer velocity are revealed as gradients rather than discrete contacts, which typically are more representative of actual conditions.

Figures 4a through 4d display the results of the seismic P-wave profiles (SL-1 through SL-4). The models reveal that the depth to higher velocity material (bedrock) is highly variable across the study area. In addition, significant lateral variations in the velocity models are also evident in the profiles.

5.2 ReMi Survey

Collected ReMi data were processed using SeisOpt® ReMi™ software (Optim, 2005), which uses the refraction microtremor method (Louie, 2001). The program generates phase-velocity dispersion curves for each record and provides an interactive dispersion modeling tool where the user determines the best fitting model. The result is a one-dimensional shear-wave velocity model of the site with roughly 5 to 15 percent accuracy.

Table 1 and Figures 5a and 5b display the results for RL-1 and RL-2. The ReMi models represent an average shear wave velocity across the profile length. The results reveal that the subsurface conditions vary slightly across the site. In particular, the RL-2 model reveals a velocity inversion in the near surface. Based on our analysis of the collected data, the average Shear-wave velocity down to a depth of 100 feet (Vs100) is 2,543 feet per second (ft/sec) for RL-1 and 2,405 ft/sec for RL-2 (CBC, 2010). These values correspond to site classifications of **B** for RL-1 and **C** for RL-2.

5.3 Electrical Resistivity Survey

The resistivity results are presented on Figure 6. In general, the quality of the collected data is very good. The standard deviation between multiple readings is 0.1 percent or less. In general, the results of the resistivity survey are fairly consistent for the orthogonal pair indicating laterally homogeneous electrical conditions in the subsurface at the test area. The results also indicate an increase in resistivity with depth (larger spacing measurements).

Table 1 – ReMi Results		
Line No.	**Depth (feet)**	**Shear Wave Velocity (feet/second)**
RL-1	0 – 8	771
	8– 14	1,404
	14– 23	1,449
	23 – 43	2,511
	43 – 86	5,177
	86 – 100	6,012
RL-2	0 – 8	1,269
	8– 14	1,065
	14 – 24	1,291
	24 –50	2,172
	50 – 100	5,041

6. LIMITATIONS

The field evaluation and geophysical analyses presented in this report have been conducted in general accordance with current practice and the standard of care exercised by consultants performing similar tasks in the project area. No warranty, express or implied, is made regarding the conclusions, recommendations, and opinions presented in this report. There is no evaluation detailed enough to reveal every subsurface condition. Variations may exist and conditions not observed or described in this report may be present. Uncertainties relative to subsurface conditions can be reduced through additional subsurface exploration. Additional subsurface surveying will be performed upon request.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Southwest Geophysics, Inc. should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document. This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

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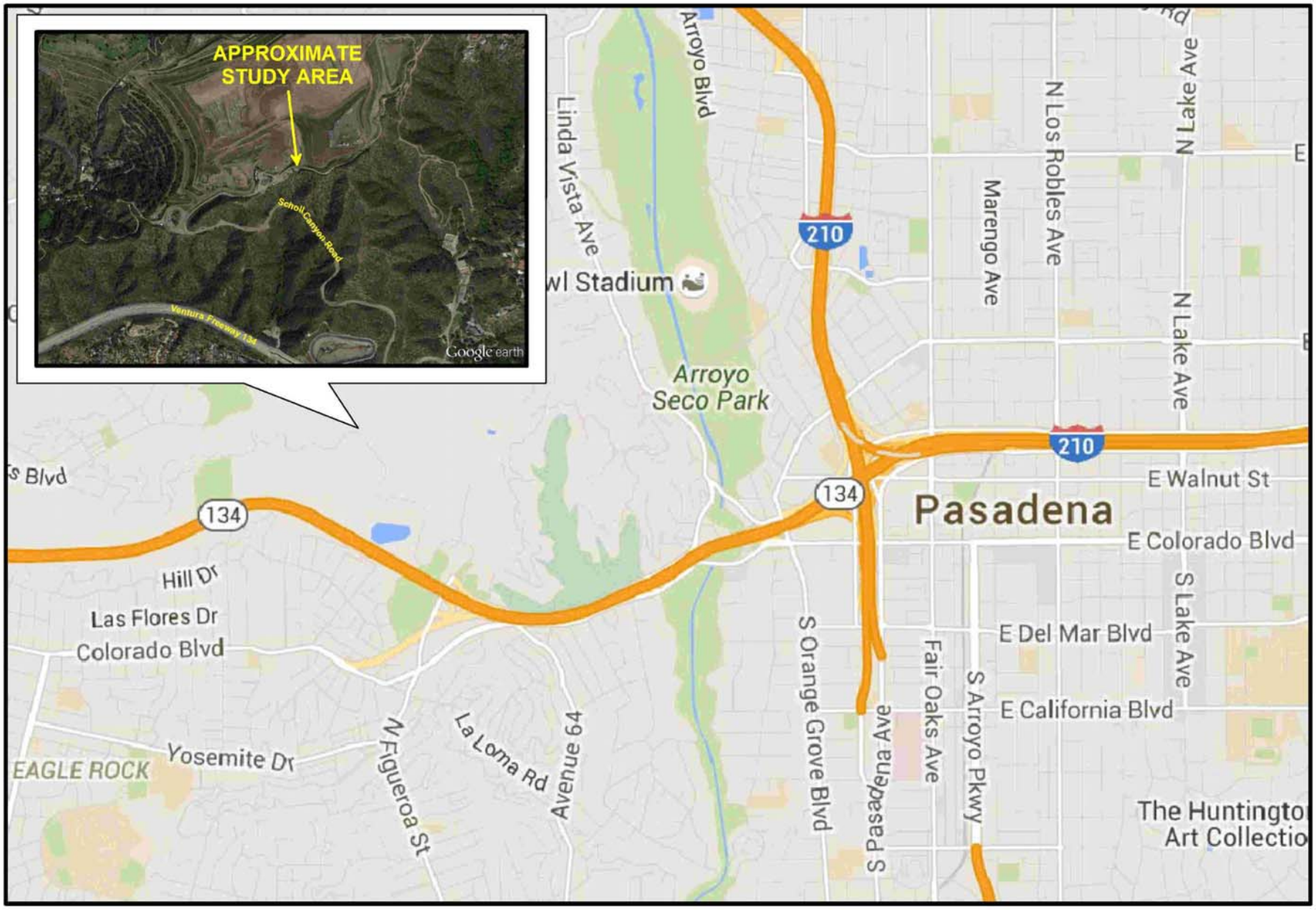
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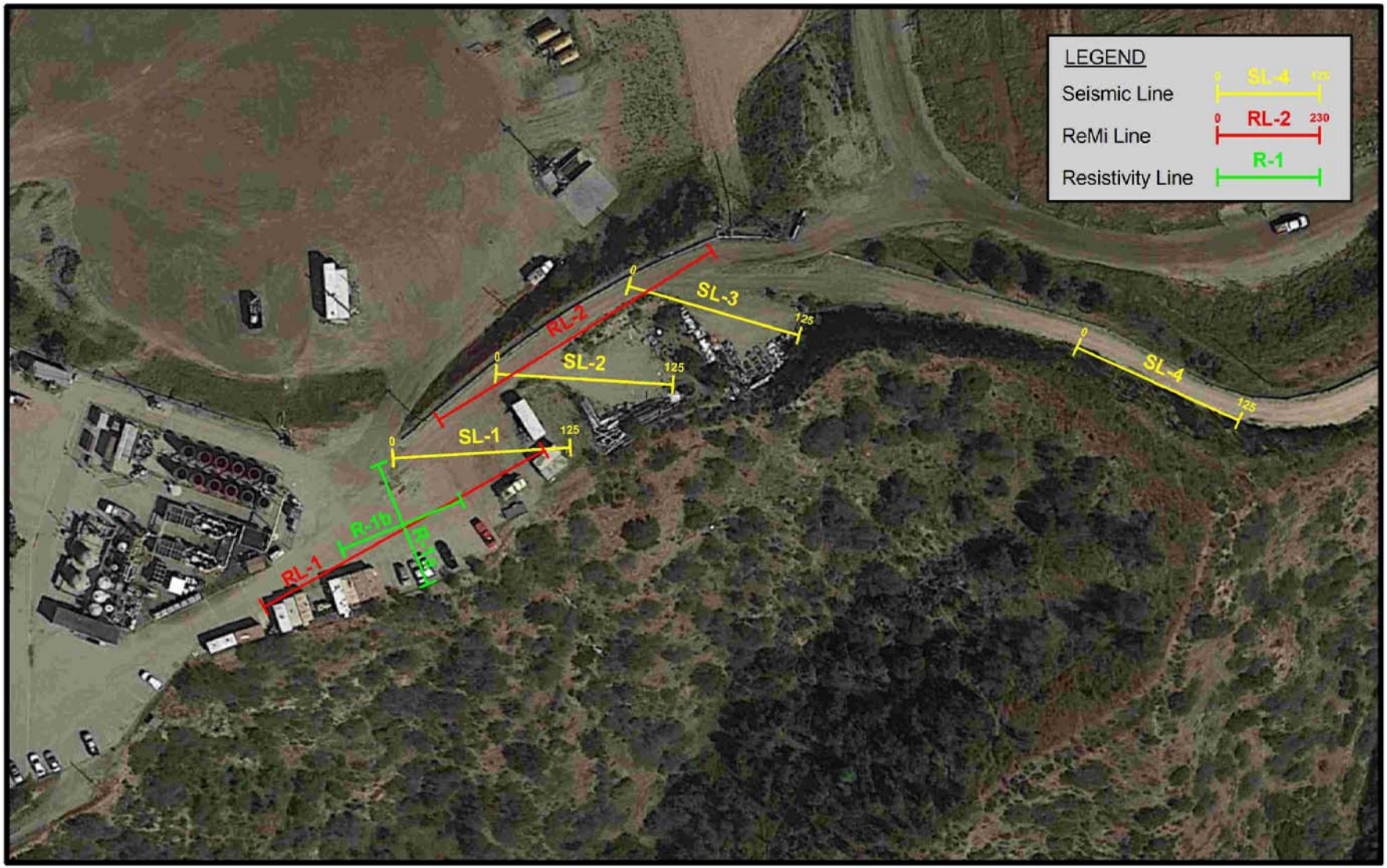
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SITE LOCATION MAP	N	Scholl Canyon Landfill Los Angeles, California	SOUTHWEST GEOPHYSICS INC.
		Project No.: 115574 / Date: 12/15	Figure 1



LINE LOCATION MAP

N

Scholl Canyon Landfill
Los Angeles, California

Project No.: 115574 | Date: 12/15

SOUTHWEST GEOPHYSICS INC.

Figure 2

0 100 200

approximate scale in feet









SITE PHOTOGRAPHS
(SL-1 through SL-4)

Scholl Canyon Landfill
Los Angeles, California

Project No.: 115574 | Date: 12/15

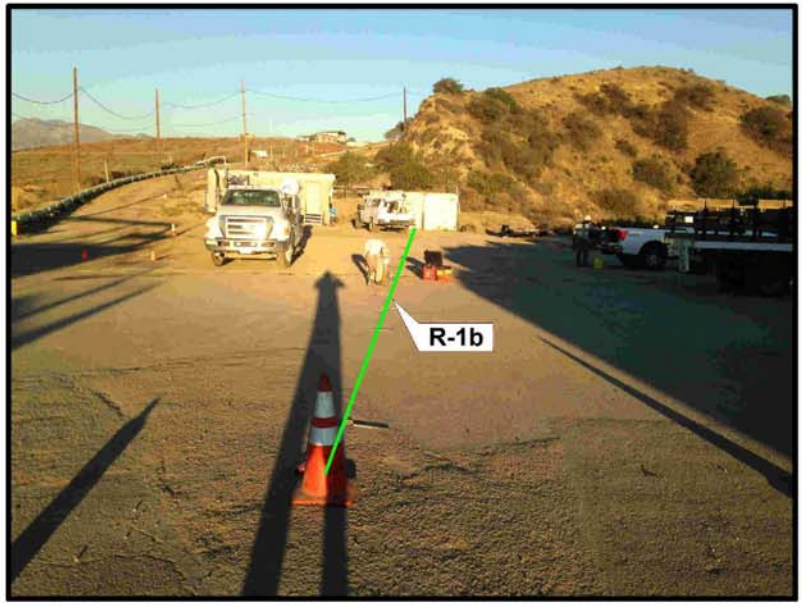
SOUTHWEST GEOPHYSICS INC.

Figure 3a









SITE PHOTOGRAPHS
(RL-1, RL-2, R-1a and R-1b)

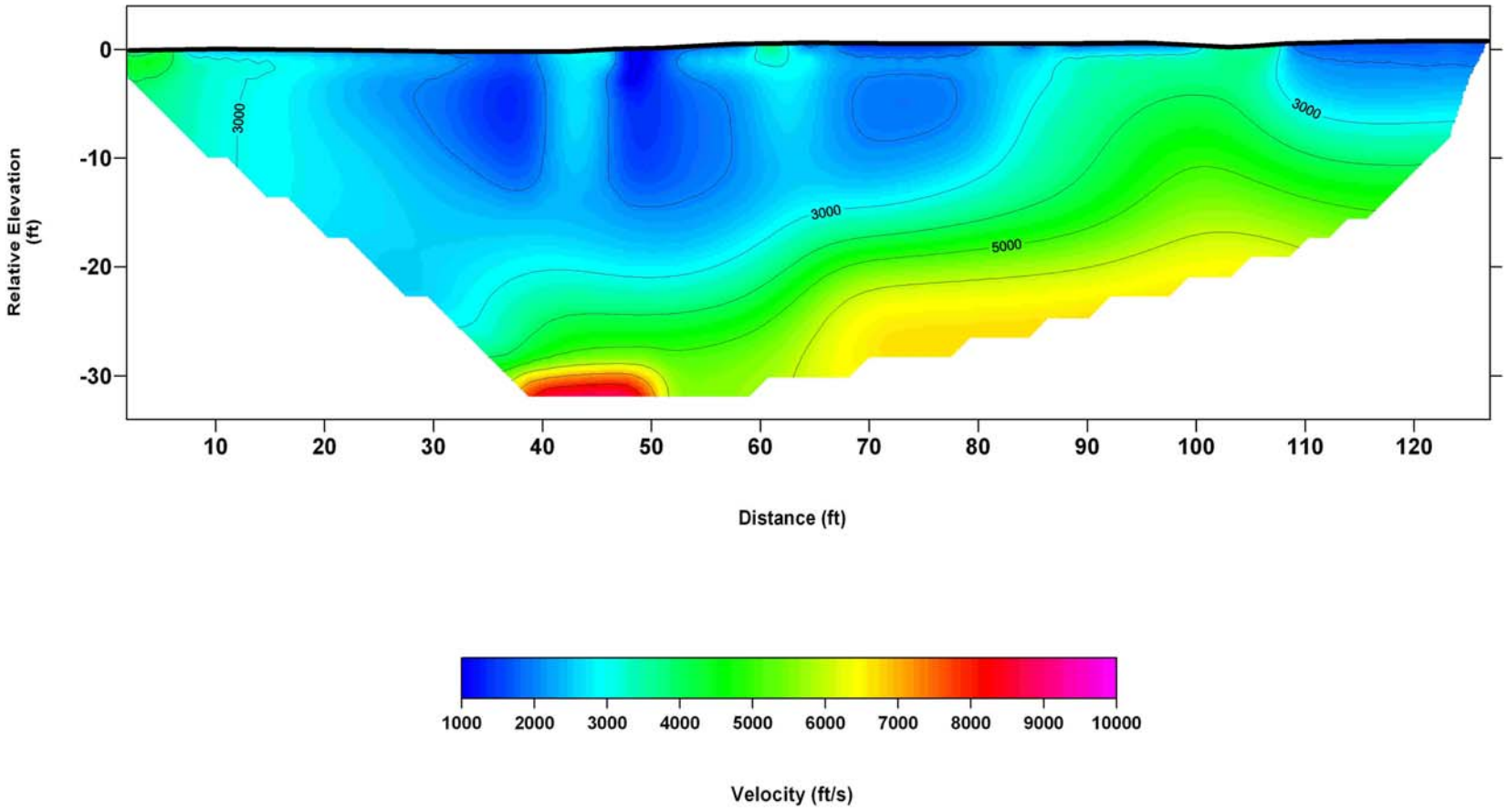
Scholl Canyon Landfill
Los Angeles, California

Project No.: 115574 | Date: 12/15

SOUTHWEST GEOPHYSICS INC.

Figure 3b

TOMOGRAPHY MODEL



SEISMIC PROFILE SL-1

Scholl Canyon Landfill
Los Angeles, California

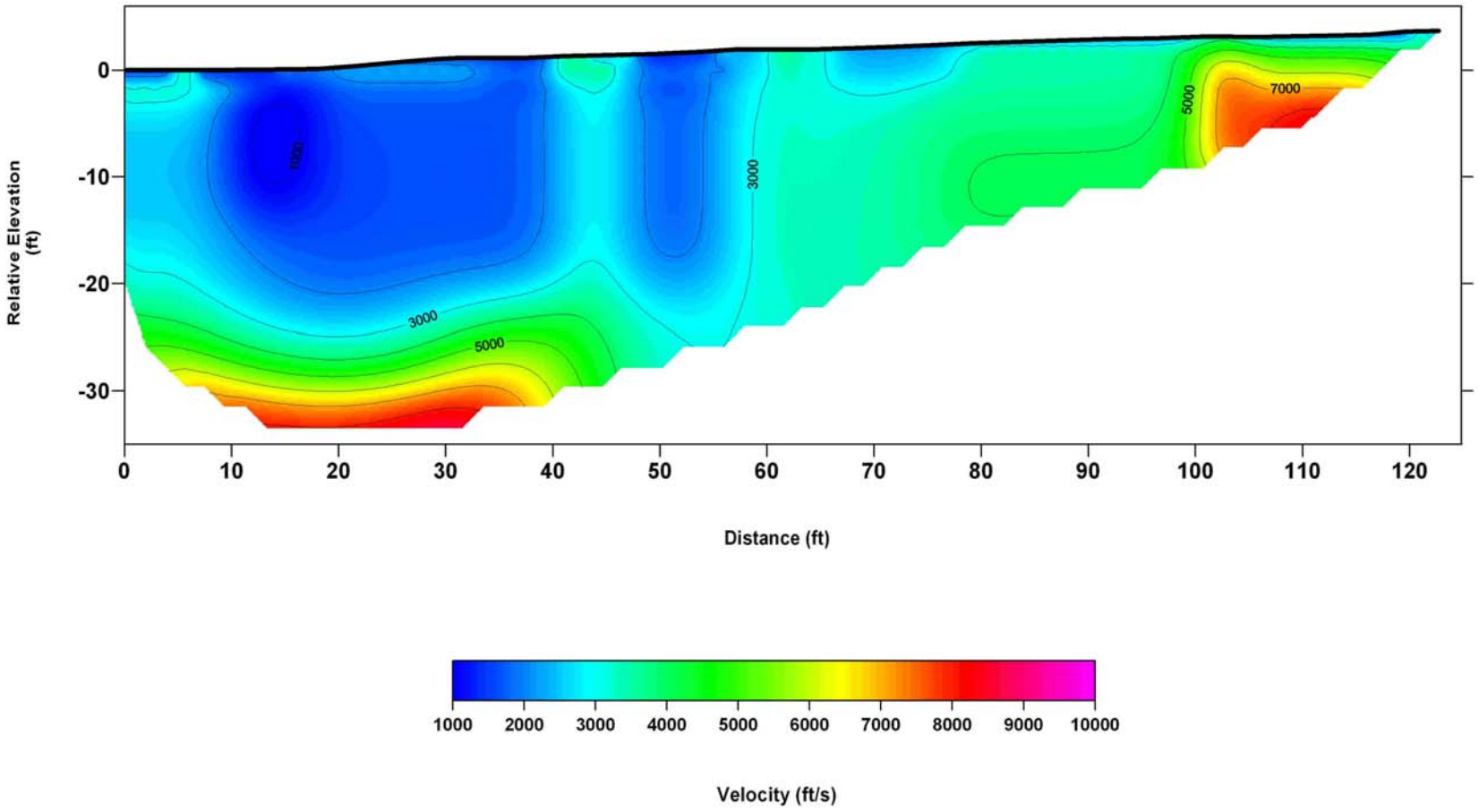
Project No.: 115574 | Date: 12/15

SOUTHWEST GEOPHYSICS INC.

Figure 4a

Note: Contour Interval = 1,000 feet per second

TOMOGRAPHY MODEL



SEISMIC PROFILE
SL-2

Scholl Canyon Landfill
Los Angeles, California

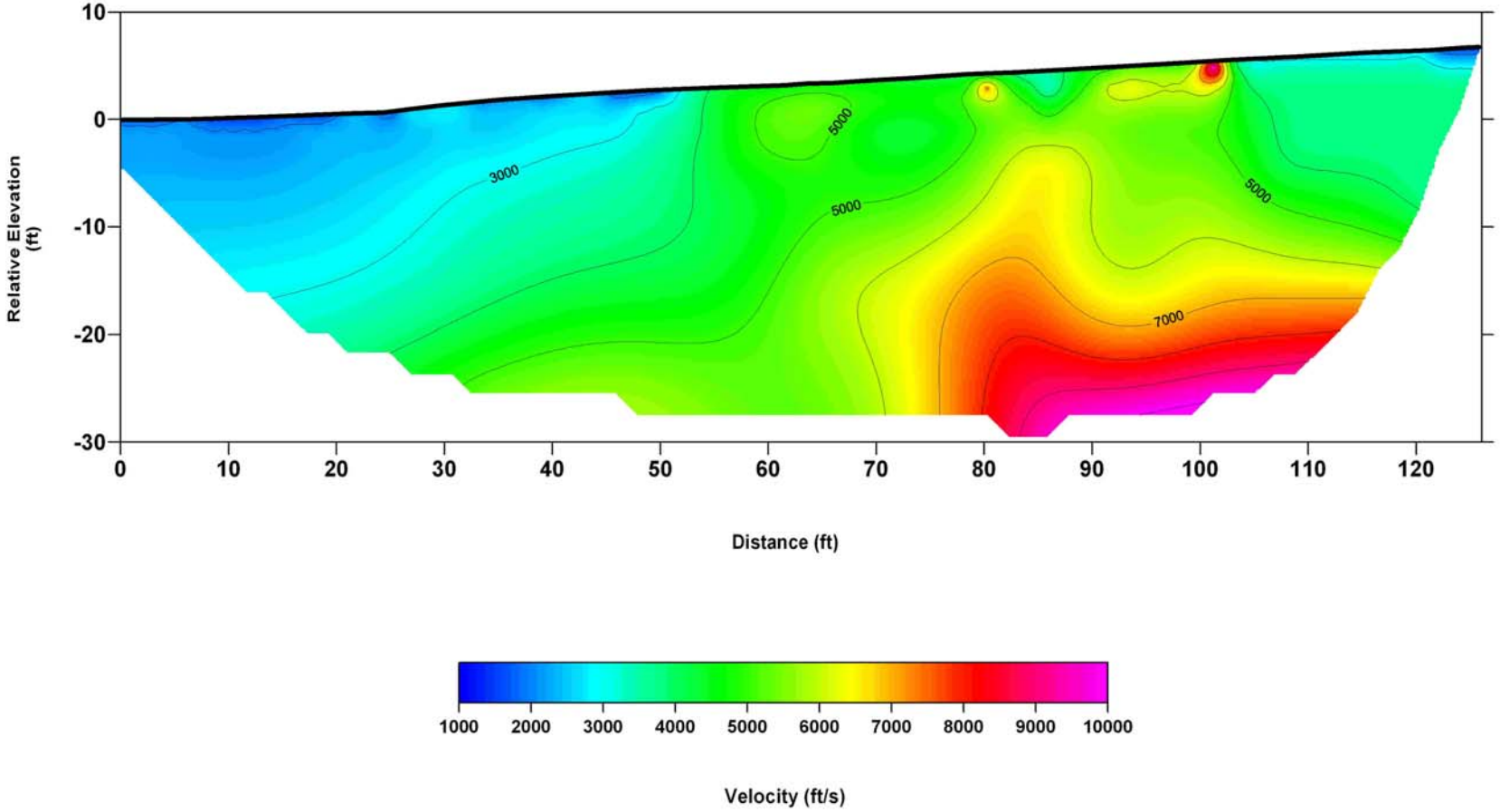
Project No.: 115574 | Date: 12/15

SOUTHWEST GEOPHYSICS INC.

Figure 4b

Note: Contour Interval = 1,000 feet per second

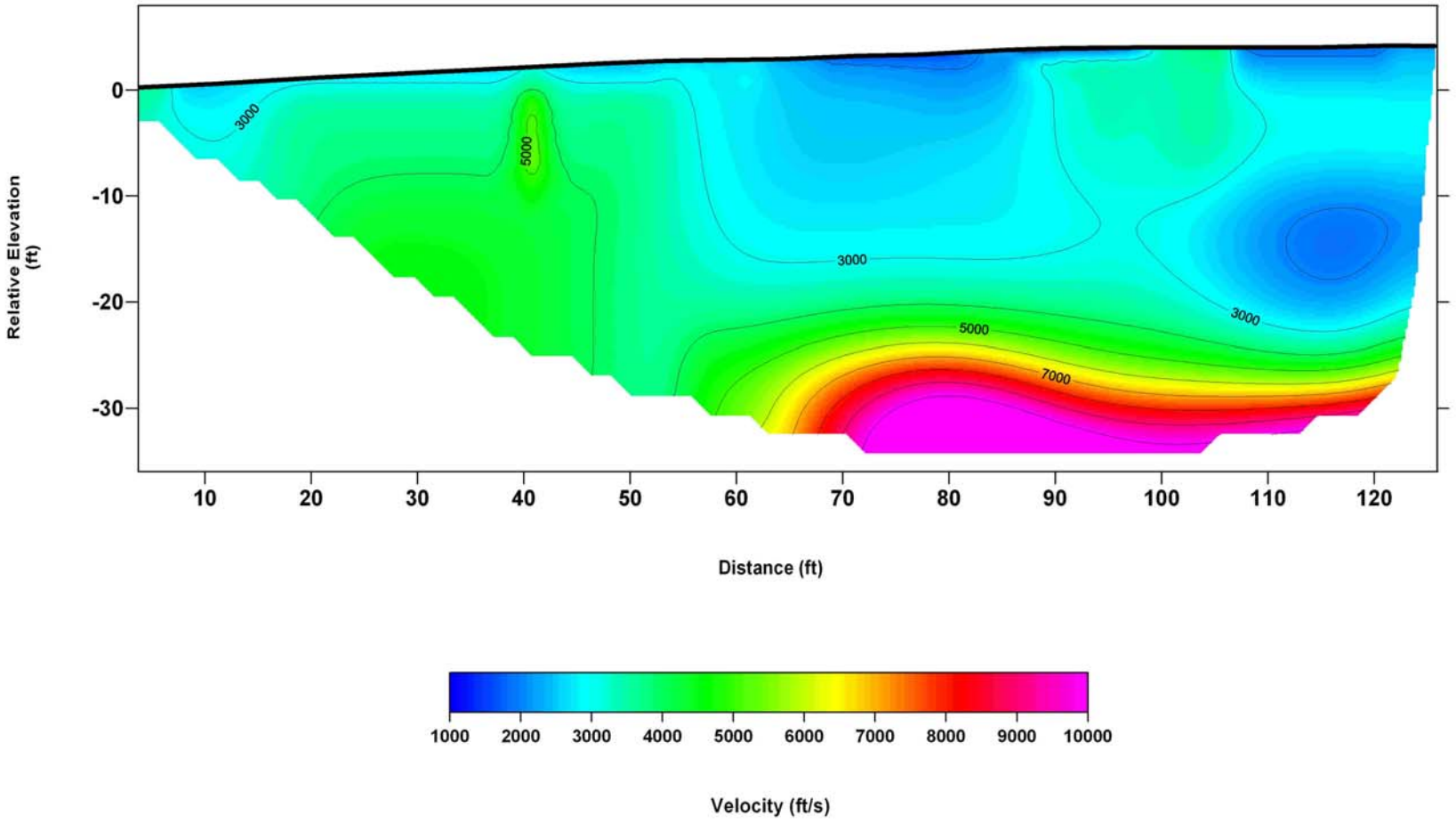
TOMOGRAPHY MODEL



SEISMIC PROFILE SL-3	Scholl Canyon Landfill Los Angeles, California Project No.: 115574 Date: 12/15	SOUTHWEST GEOPHYSICS INC. Figure 4c

Note: Contour Interval = 1,000 feet per second

TOMOGRAPHY MODEL



SEISMIC PROFILE SL-4

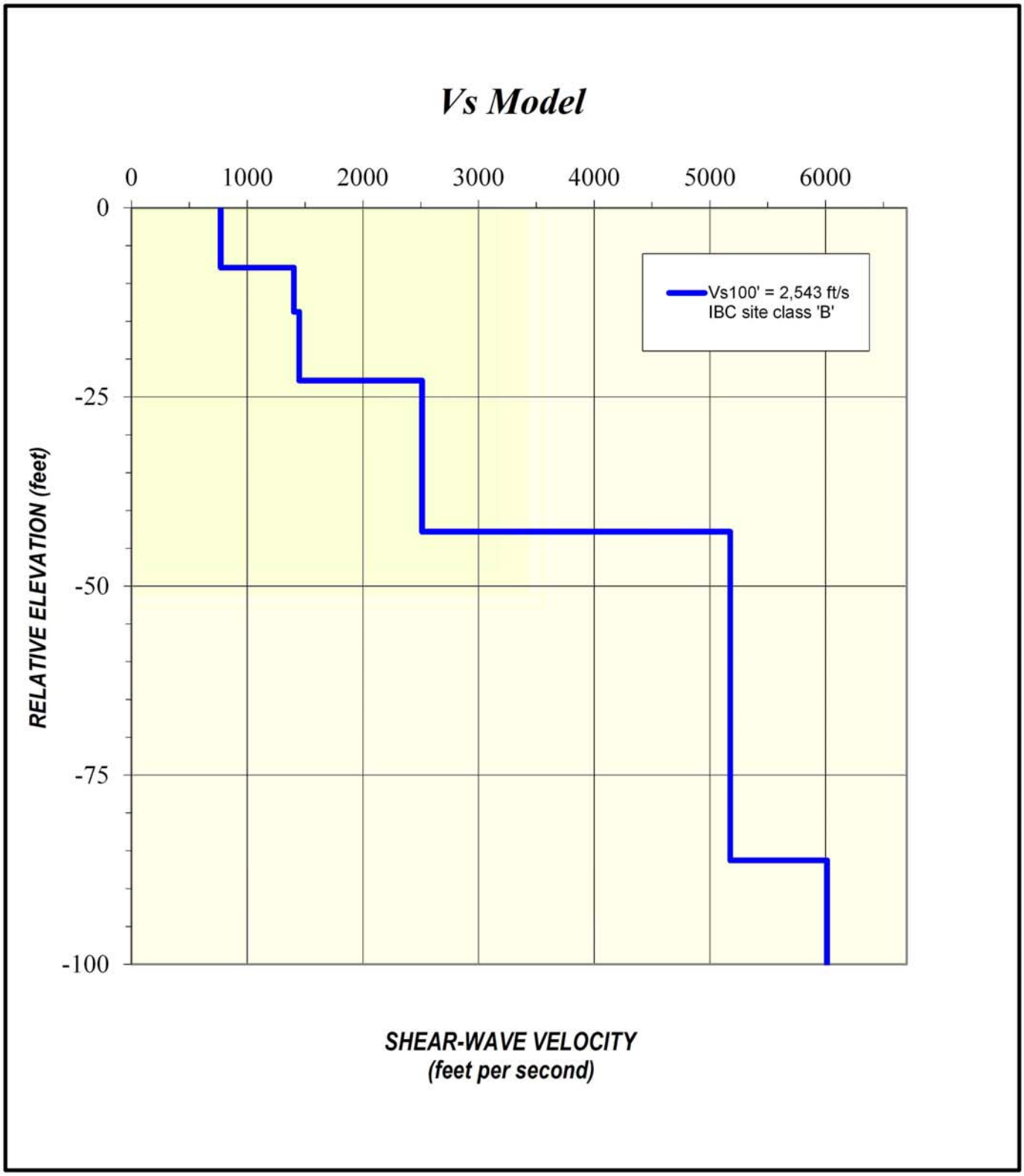
Scholl Canyon Landfill
Los Angeles, California

Project No.: 115574 | Date: 12/15

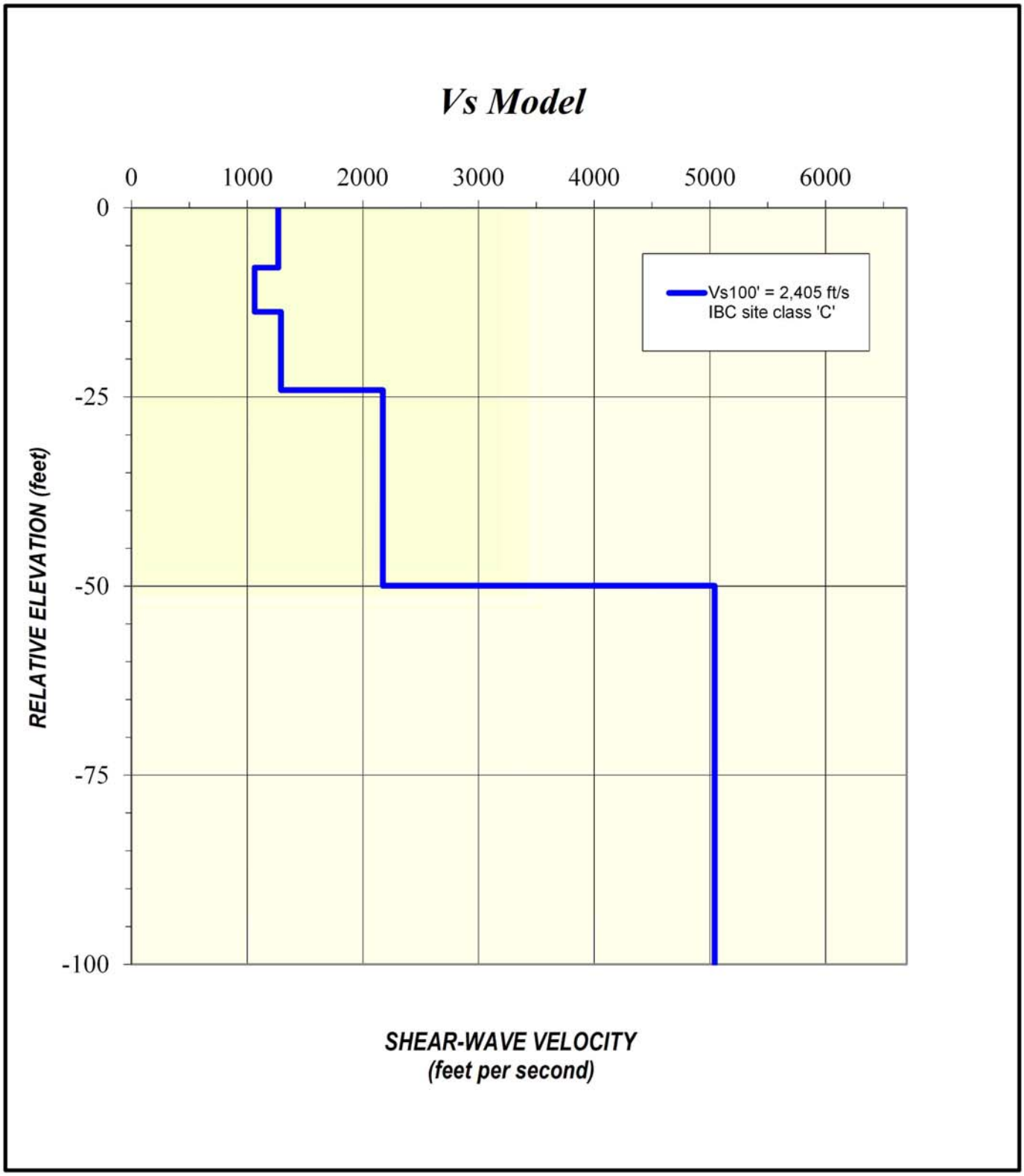
SOUTHWEST GEOPHYSICS INC.

Figure 4d

Note: Contour Interval = 1,000 feet per second



ReMi RESULTS RL-1	Scholl Canyon Landfill Los Angeles, California	SOUTHWEST GEOPHYSICS INC.
	Project No.: 115574 / Date: 12/15	Figure 5a



ReMi RESULTS RL-2	Scholl Canyon Landfill Los Angeles, California	SOUTHWEST GEOPHYSICS INC.
	Project No.: 115574 / Date: 12/15	Figure 5b

(Boring/Orientation)	(ft)	(mA)	(Ohms)	(%)	(ohm-cm)	(ohm-ft)
R-1a	2	200	17.080	0.1	6542.03	214.63
(N-S)	4	100	12.870	0.0	9859.00	323.46
	6	100	9.095	0.1	10450.77	342.87
	8	100	7.016	0.1	10749.15	352.66
	10	100	6.014	0.1	11517.49	377.87
	15	100	4.457	0.0	12803.49	420.06
	20	100	3.803	0.1	14566.35	477.90
	30	50	2.839	0.0	16311.02	535.14
R-1b	2	200	14.800	0.0	5668.74	185.98
(E-W)	4	200	11.510	0.1	8817.18	289.28
	6	100	8.813	0.0	10126.74	332.24
	8	100	7.465	0.0	11437.06	375.23
	10	100	6.482	0.1	12413.76	407.28
	15	100	5.521	0.1	15860.01	520.34
	20	20	4.324	0.0	16561.90	543.37
	30	100	3.039	0.1	17460.09	572.84

ELECTRICAL RESISTIVITY RESULTS

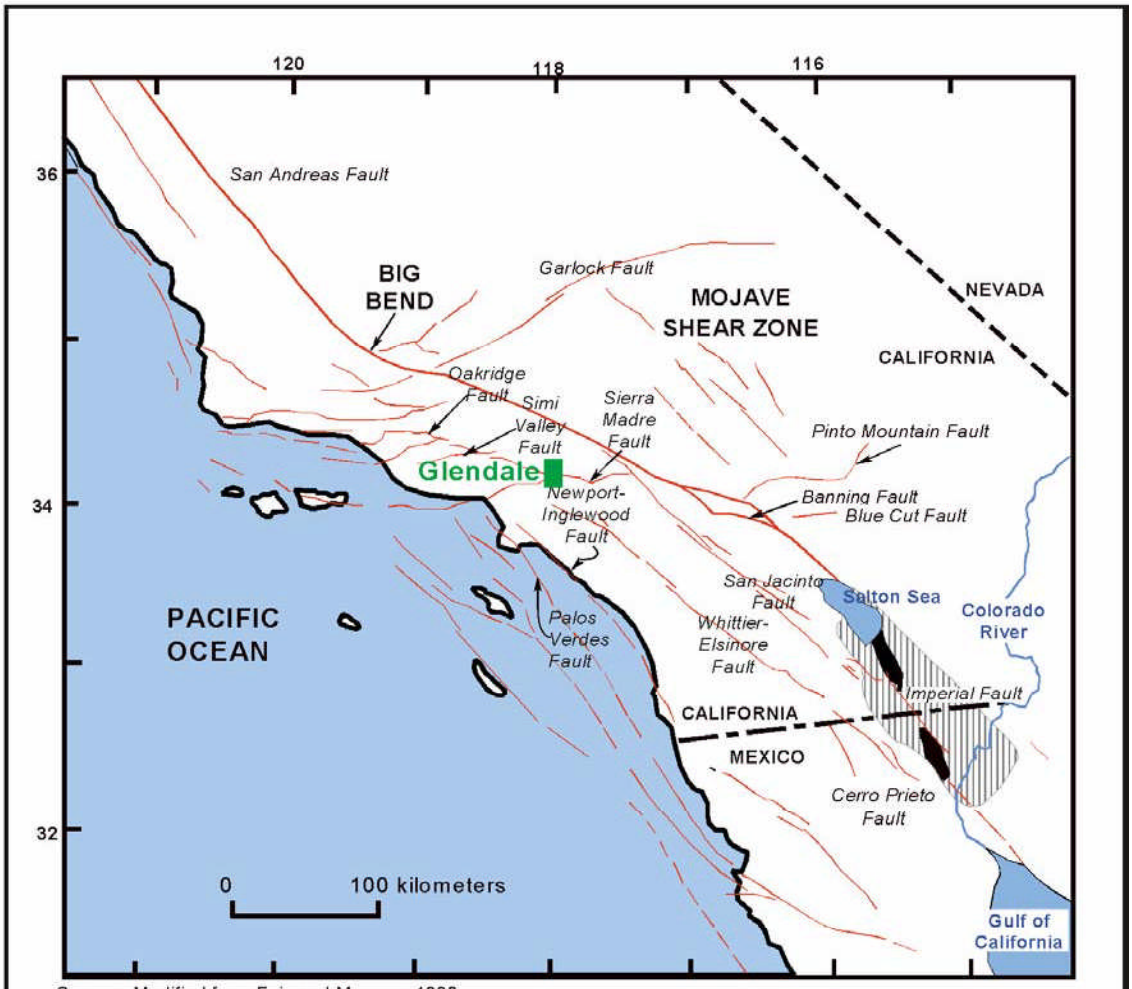
Scholl Canyon Landfill
Los Angeles, California

Project No.: 115574 | Date: 12/15

SOUTHWEST GEOPHYSICS INC.

Figure 6

Appendix E GENERAL PLAN FAULT MAPS

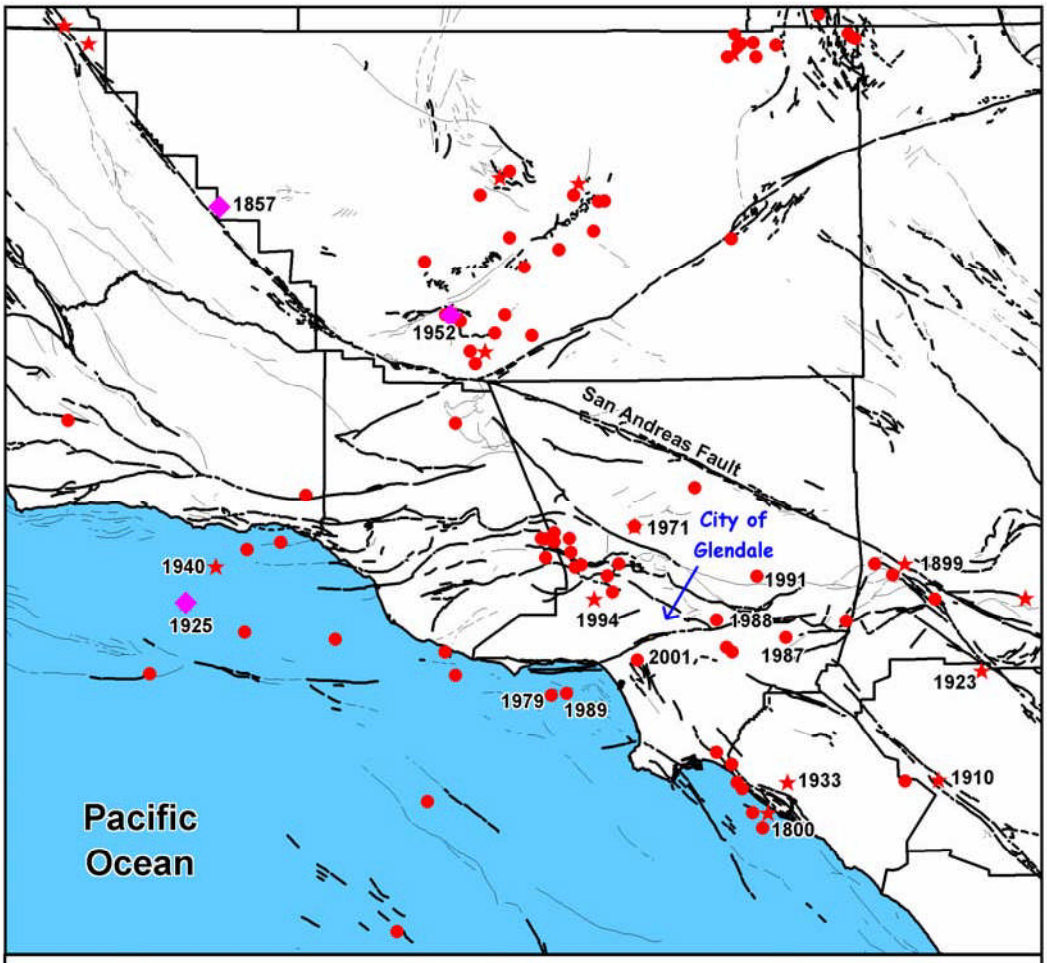


Earth Consultants International

Project Number: 2103
Date: July, 2003

Regional Fault Map

Figure 1-1



Source: Jennings, 1994; SCEC earthquake catalog; NEIC earthquake catalog

Map Explanation

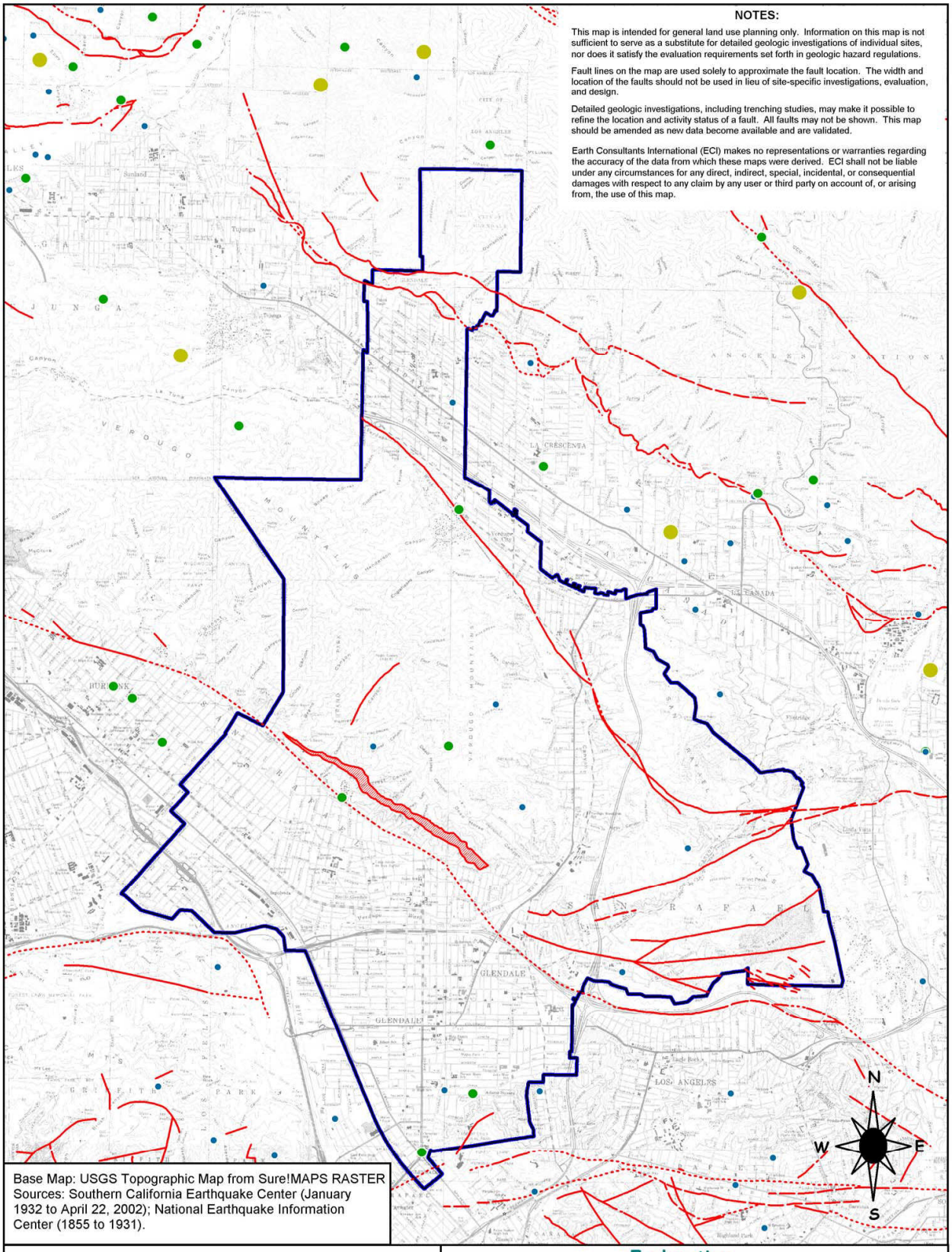
- Magnitude 7+
- Magnitude 5 - 6
- Magnitude 6 - 7
- Quaternary faults

Earth Consultants International

Project Number: 2103
Date: July, 2003

Regional Seismicity Map

Figure 1-2



Base Map: USGS Topographic Map from Sure!MAPS RASTER
Sources: Southern California Earthquake Center (January 1932 to April 22, 2002); National Earthquake Information Center (1855 to 1931).

Scale: 1:60,000

1000 0 1000 2000 3000
Meters
5000 0 5000 10000 15000
Feet

Explanation

Earthquake Magnitude
- 3 to 4
- 2 to 3
- 1 to 2

Fault, solid where location known, dashed where approximate, dotted where inferred; hatchured where defined as a zone, (for more information refer to Plate 1-2).

Glendale City Limit

CITY OF GLENDALE CALIFORNIA

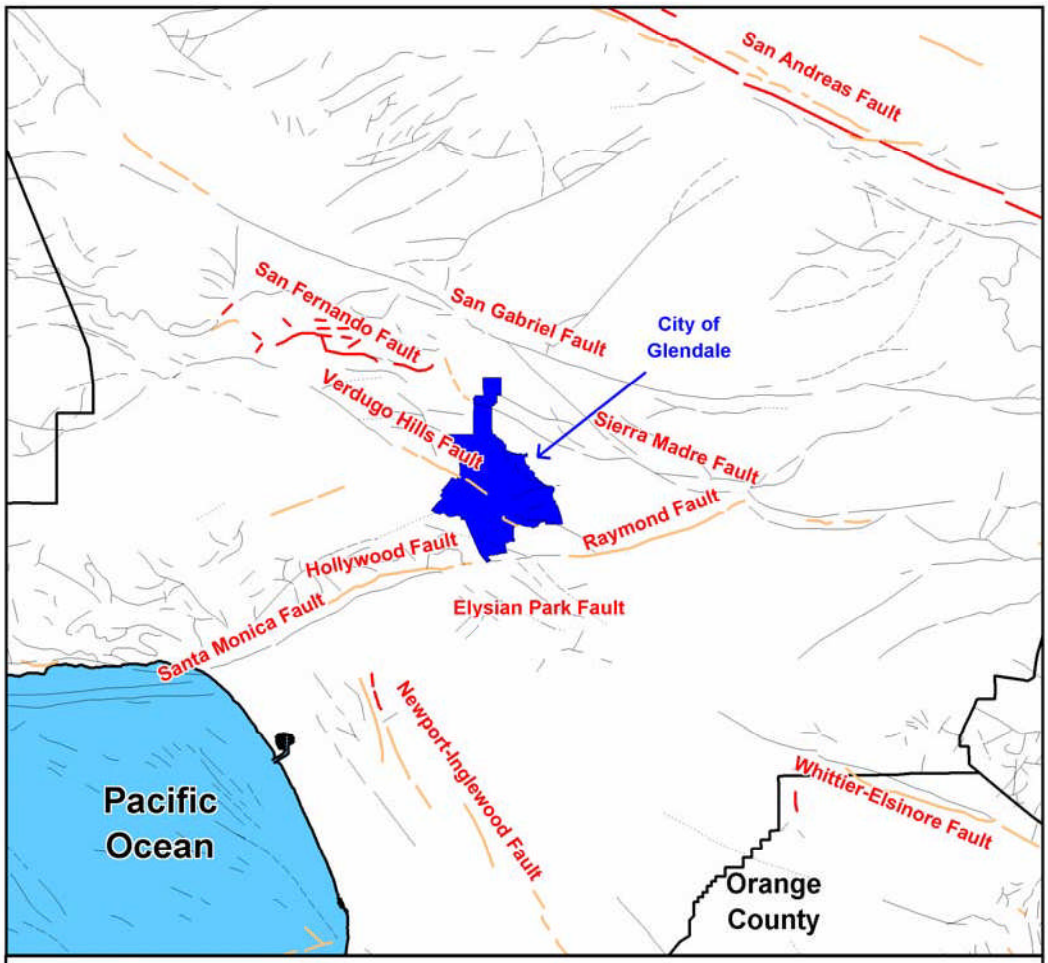
Earth Consultants International

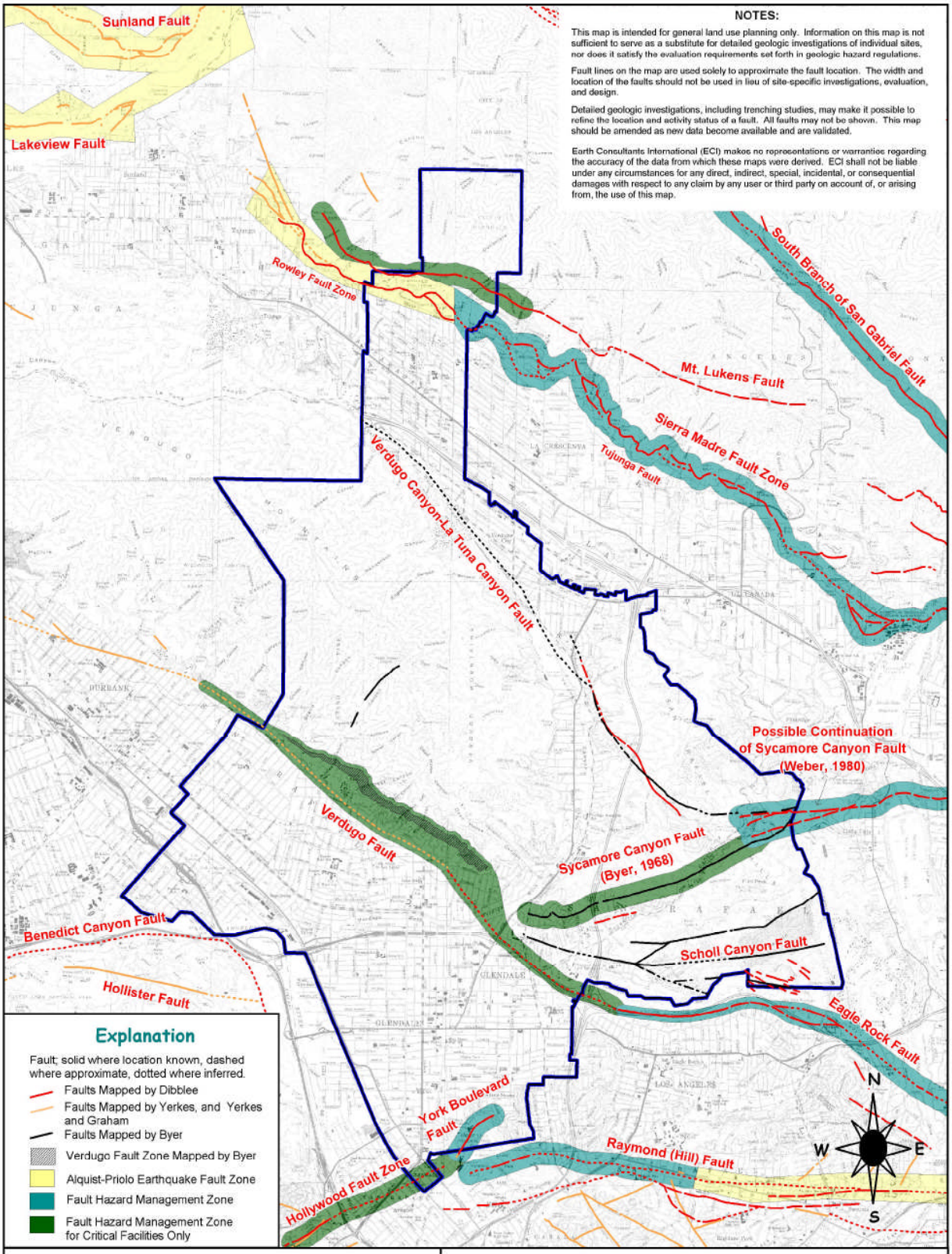
Project Number: 2103
Date: July, 2003

Historical Seismicity Map (1855-2002)

Glendale, California

Plate 1-1


San Andreas Fault
San Fernando Fault
San Gabriel Fault
City of Glendale
Verdugo Hills Fault
Sierra Madre Fault
Raymond Fault
Hollywood Fault
Elysian Park Fault
Santa Monica Fault
Newport-Inglewood Fault
Whittier-Elsinore Fault
Pacific Ocean
Orange County
Source: Jennings, 1994
Map Explanation
Fault Showing Evidence of Historic Rupture.
Fault Showing Evidence of Holocene Rupture.
Fault Showing Evidence of Pre-Holocene Rupture.
Earth Consultants International
Project Number: 2103
Date: July, 2003
Local Active and Potentially Active Faults
Figure 1-3



NOTES:

This map is intended for general land use planning only. Information on this map is not sufficient to serve as a substitute for detailed geologic investigations of individual sites, nor does it satisfy the evaluation requirements set forth in geologic hazard regulations.

Fault lines on the map are used solely to approximate the fault location. The width and location of the faults should not be used in lieu of site-specific investigations, evaluation, and design.

Detailed geologic investigations, including trenching studies, may make it possible to refine the location and activity status of a fault. All faults may not be shown. This map should be amended as new data become available and are validated.

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Explanation

Fault; solid where location known, dashed where approximate, dotted where inferred.

- Faults Mapped by Dibblee
- Faults Mapped by Yerkes, and Yerkes and Graham
- Faults Mapped by Byer
- Verdugo Fault Zone Mapped by Byer
- Alquist-Priolo Earthquake Fault Zone
- Fault Hazard Management Zone
- Fault Hazard Management Zone for Critical Facilities Only

Scale: 1:60,000

1000 0 1000 2000 3000 Meters

5000 0 5000 10000 15000 Feet

Glendale City Limit

Base Map: USGS Topographic Map from Sure!MAPS RASTER
Sources: Weber, 1980; Dibblee, 1989a, 1989b, 1991a, 1991b, 2002; Rubin, 1992; Yerkes, 1997; Yerkes and Graham, 1997; Byer, 1968.

Earth Consultants International

Project Number: 2103
Date: October, 2003

Fault Map

Glendale, California

Plate 1-2

Appendix F GREENHOUSE GAS (GHG) EMISSION INVENTORY



APPENDIX F
GREENHOUSE GASES EMISSION INVENTORY
SCHOLL CANYON LANDFILL GAS FACILITY

Greenhouse Gases	GWP[1]	Landfill gas emission factor[2], kg/mmBtu	Diesel gas emission factor[2], kg/gal
CO_2	1	52.07	10.21
CH_4	25	0.0032	0.41
N_2O	298	0.00063	0.08

NOTES:

[1]GWP = Global Warming Potential. [Source: IPCC, 4th Assessment Report, 2007]

[2]Source: USEPA website: http://www.epa.gov/climateleadership/documents/emission-factors.pdf for CH4 and N2O

GHG Emissions Project

Device/Activity	LFG Available, MMBtu/hr	Annual Op. hours	CO_2, MT/year	CH_4, MT/year	N_2O, MT/year	Total CO_2e, MT/year
Operating the Proposed Equipment	124.806	8760	56928.16	3.498562	0.68877935	57,221
Operating the Emergency Fire Pump [1]	4.9	50	2.50	0.10	0.02	11
Construction[2]			204.0199	0.0432	0	205
Facility Occupants[2]			232.3566	0.566	5.93E-03	246
					Total Project GHG Emissions:	57,683

NOTES:

[1]GHG emissions are estimated based on 50 hours per year (T&M) and fuel rate of 4.9 gal/hr

[2]GHG emissions are estimated by using CalEEmod.

Baseline GHG Emissions

Existing Equipment Type	LFG Flow, mmscf/yr	LFG Flow, mmbtu/yr	CO_2, MT/year	CH_4, MT/year	N_2O, MT/year	CO_2e, MT/year
Boiler 3,4,5	3200.33	1073710.715	55,908	3	1	56,196
Flare	145.272	48738.756	2,538	0.156	0.031	2,551
					Total Baseline GHG Emissions:	58,746

Emission Factors for Greenhouse Gas Inventories

Last Modified: 4 April 2014

Red text indicates an update from the 2011 version of this document.

Typically, greenhouse gas emissions are reported in units of carbon dioxide equivalent (CO_2e). Gases are converted to CO_2e by multiplying by their global warming potential (GWP). The emission factors listed in this document have not been converted to CO_2e. To do so, multiply the emissions by the corresponding GWP listed in the table below.

Gas	100-year GWP
CH_4	25
N_2O	298

Source: Intergovernmental Panel on Climate Change (IPCC), Fourth Assessment Report (AR4), 2007. See the source note to Table 9 for further explanation.

Table 1 Stationary Combustion Emission Factors

Fuel Type	Heating Value	CO_2 Factor	CH_4 Factor	N_2O Factor	CO_2 Factor	CH_4 Factor	N_2O Factor	Unit
	mmBtu per short ton	kg CO_2 per mmBtu	g CH_4 per mmBtu	g N_2O per mmBtu	kg CO_2 per short ton	g CH_4 per short ton	g N_2O per short ton	
Coal and Coke								
Anthracite Coal	25.09	103.69	11	1.6	2,602	276	40	short tons
Bituminous Coal	24.93	93.28	11	1.6	2,325	274	40	short tons
Sub-bituminous Coal	17.25	97.17	11	1.6	1,676	190	28	short tons
Lignite Coal	14.21	97.72	11	1.6	1,389	156	23	short tons
Mixed (Commercial Sector)	21.39	94.27	11	1.6	2,016	235	34	short tons
Mixed (Electric Power Sector)	19.73	95.52	11	1.6	1,885	217	32	short tons
Mixed (Industrial Coking)	26.28	93.90	11	1.6	2,468	289	42	short tons
Mixed (Industrial Sector)	22.35	94.67	11	1.6	2,116	246	36	short tons
Coal Coke	24.80	113.67	11	1.6	2,819	273	40	short tons
Fossil Fuel-derived Fuels (Solid)								
Municipal Solid Waste	9.95	90.70	32	4.2	902	318	42	short tons
Petroleum Coke (Solid)	30.00	102.41	32	4.2	3,072	960	126	short tons
Plastics	38.00	75.00	32	4.2	2,850	1,216	160	short tons
Tires	28.00	85.97	32	4.2	2,407	896	118	short tons
Biomass Fuels (Solid)								
Agricultural Byproducts	8.25	118.17	32	4.2	975	264	35	short tons
Peat	8.00	111.84	32	4.2	895	256	34	short tons
Solid Byproducts	10.39	105.51	32	4.2	1,096	332	44	short tons
Wood and Wood Residuals	17.48	93.80	7.2	3.6	1,640	126	63	short tons
	mmBtu per scf	kg CO_2 per mmBtu	g CH_4 per mmBtu	g N_2O per mmBtu	kg CO_2 per scf	g CH_4 per scf	g N_2O per scf	
Natural Gas								
Natural Gas (per scf)	0.001026	53.06	1.0	0.10	0.05444	0.00103	0.00010	scf
Fossil-derived Fuels (Gaseous)								
Blast Furnace Gas	0.000092	274.32	0.022	0.10	0.02524	0.000002	0.000009	scf
Coke Oven Gas	0.000599	46.85	0.48	0.10	0.02806	0.000288	0.000060	scf
Fuel Gas	0.001388	59.00	3.0	0.60	0.08189	0.004164	0.000833	scf
Propane Gas	0.002516	61.46	0.022	0.10	0.15463	0.000055	0.000252	scf
Biomass Fuels (Gaseous)								
Landfill Gas	0.000485	52.07	3.2	0.63	0.025254	0.001552	0.000306	scf
Other Biomass Gases	0.000655	52.07	3.2	0.63	0.034106	0.002096	0.000413	scf
	mmBtu per gallon	kg CO_2 per mmBtu	g CH_4 per mmBtu	g N_2O per mmBtu	kg CO_2 per gallon	g CH_4 per gallon	g N_2O per gallon	
Petroleum Products								
Asphalt and Road Oil	0.158	75.36	3.0	0.60	11.91	0.47	0.09	gallon
Aviation Gasoline	0.120	69.25	3.0	0.60	8.31	0.36	0.07	gallon
Butane	0.103	64.77	3.0	0.60	6.67	0.31	0.06	gallon
Butylene	0.105	68.72	3.0	0.60	7.22	0.32	0.06	gallon
Crude Oil	0.138	74.54	3.0	0.60	10.29	0.41	0.08	gallon
Distillate Fuel Oil No. 1	0.139	73.25	3.0	0.60	10.18	0.42	0.08	gallon
Distillate Fuel Oil No. 2	0.138	73.96	3.0	0.60	10.21	0.41	0.08	gallon
Distillate Fuel Oil No. 4	0.146	75.04	3.0	0.60	10.96	0.44	0.09	gallon
Ethane	0.068	59.60	3.0	0.60	4.05	0.20	0.04	gallon
Ethylene	0.058	65.96	3.0	0.60	3.83	0.17	0.03	gallon
Heavy Gas Oils	0.148	74.92	3.0	0.60	11.09	0.44	0.09	gallon
Isobutane	0.099	64.94	3.0	0.60	6.43	0.30	0.06	gallon
Isobutylene	0.103	68.86	3.0	0.60	7.09	0.31	0.06	gallon
Kerosene	0.135	75.20	3.0	0.60	10.15	0.41	0.08	gallon
Kerosene-type Jet Fuel	0.135	72.22	3.0	0.60	9.75	0.41	0.08	gallon
Liquefied Petroleum Gases (LPG)	0.092	61.71	3.0	0.60	5.68	0.28	0.06	gallon
Lubricants	0.144	74.27	3.0	0.60	10.69	0.43	0.09	gallon
Motor Gasoline	0.125	70.22	3.0	0.60	8.78	0.38	0.08	gallon
Naphtha (<401 deg F)	0.125	68.02	3.0	0.60	8.50	0.38	0.08	gallon
Natural Gasoline	0.110	66.88	3.0	0.60	7.36	0.33	0.07	gallon
Other Oil (>401 deg F)	0.139	76.22	3.0	0.60	10.59	0.42	0.08	gallon
Pentanes Plus	0.110	70.02	3.0	0.60	7.70	0.33	0.07	gallon
Petrochemical Feedstocks	0.125	71.02	3.0	0.60	8.88	0.38	0.08	gallon
Petroleum Coke	0.143	102.41	3.0	0.60	14.64	0.43	0.09	gallon
Propane	0.091	62.87	3.0	0.60	5.72	0.27	0.05	gallon
Propylene	0.091	65.95	3.0	0.60	6.00	0.27	0.05	gallon
Residual Fuel Oil No. 5	0.140	72.93	3.0	0.60	10.21	0.42	0.08	gallon
Residual Fuel Oil No. 6	0.150	75.10	3.0	0.60	11.27	0.45	0.09	gallon
Special Naphtha	0.125	72.34	3.0	0.60	9.04	0.38	0.08	gallon
Still Gas	0.143	66.72	3.0	0.60	9.54	0.43	0.09	gallon
Unfinished Oils	0.139	74.54	3.0	0.60	10.36	0.42	0.08	gallon
Used Oil	0.138	74.00	3.0	0.60	10.21	0.41	0.08	gallon
Biomass Fuels (Liquid)								
Biodiesel (100%)	0.128	73.84	1.1	0.11	9.45	0.14	0.01	gallon
Ethanol (100%)	0.084	68.44	1.1	0.11	5.75	0.09	0.01	gallon
Rendered Animal Fat	0.125	71.06	1.1	0.11	8.88	0.14	0.01	gallon
Vegetable Oil	0.120	81.55	1.1	0.11	9.79	0.13	0.01	gallon
	mmBtu per gallon	kg CO_2 per mmBtu	g CH_4 per mmBtu	g N_2O per mmBtu				
Steam and Hot Water								
Steam and Hot Water		66.33	1.250	0.125				mmBtu

Source:

Solid, gaseous, liquid and biomass fuels: Federal Register (2009) EPA; *40 CFR Parts 86, 87, 89 et al; Mandatory Reporting of Greenhouse Gases; Final Rule*, 30Oct09, 261 pp. Tables C-1 and C-2 at FR pp. 56409-56410. Revised emission factors for selected fuels: Federal Register (2010) EPA; 40 CFR Part 98; Mandatory Reporting of Greenhouse Gases; Final Rule, 17Dec10, 81 pp. With Amendments from Memo: Table of Final 2013 Revisions to the Greenhouse Gas Reporting Rule (PDF) to 40 CFR part 98, subpart C: Table C–1 to Subpart C—Default CO2 Emission Factors and High Heat Values for Various Types of Fuel and Table C–2 to Subpart C—Default CH4 and N2O Emission Factors for Various Types of Fuel.

Steam and Hot Water: EPA (2008) *Climate Leaders Greenhouse Gas Inventory Protocol Core Module Guidance - Indirect Emissions from Purchases/Sales of Electricity and Steam*. Assumption: 80% boiler efficiency and fuel type assumed natural gas. Factors are per mmBtu of steam or hot water purchased.

http://www.epa.gov/ghgreporting/documents/pdf/2013/documents/memo-2013-technical-revisions.pdf
http://www.epa.gov/ghgreporting/reporters/subpart/c.html

Appendix G PHASE I ENVIRONMENTAL SITE ASSESSMENT



Phase I Environmental Site Assessment

Biogas Renewable Generation Project
3001 Scholl Canyon Road
Glendale, California 91206

May 16, 2019

Prepared for:

City of Glendale Water and Power
141 North Glendale Avenue
Glendale, California 91206

Prepared by:

Stantec Consulting Services Inc.
290 Conejo Ridge Avenue
Thousand Oaks, California 91361

Project No.: 185804356

Sign-off Sheet and Signatures of Environmental Professionals

This document entitled Phase I Environmental Site Assessment was prepared by Stantec Consulting Services Inc. (“Stantec”) for the account of City of Glendale Department of Water and Power (the “Client”). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec’s professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

All information, conclusions, and recommendations provided by Stantec in this document regarding the Phase I ESA have been prepared under the supervision of and reviewed by the professionals whose signatures appear below.

Author:

C. Hulbert for:

Anuya Sawant Dickinson
Engineer in Training

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in § 312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Property. I have developed and performed all the appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Independent Reviewer:

StephAnnie Roberts
Senior Project Manager

Quality Reviewer:

M. Weber for:

Steven C. Brady CEG, CHG, ENV-SP
Senior Principal

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Abbreviations

AAI	All Appropriate Inquiry
ACM	Asbestos-containing material
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
BER	Business Environmental Risk
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulation
CREC	Controlled Recognized Environmental Conditions
CWA	Clean Water Act
ELUC	Environmental Land Use Control
EP	Environmental Professional
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
ft msl	Feet above mean sea level
HREC	Historical Recognized Environmental Conditions
HWMU	Hazardous Waste Management Unit
LBP	Lead-based paint
LFG	Landfill gas
LUST	Leaking Underground Storage Tank
NESHAP	National Emissions Standard for Hazardous Air Pollutants
PAHs	Polynuclear Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PPE	Personal protective equipment
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Conditions



RWQCB-LA	Regional Water Quality Control Board – Los Angeles
SCAQMD	South Coast Air Quality Management District
SPCC	Stormwater Prevention Control and Countermeasure
SWMU	Solid Waste Management Unit
TSCA	Toxic Substance Control Act
USDA	United States Department of Agriculture
USGS	United States Geological Survey
UST	Underground Storage Tank
VEC	Vapor Encroachment Condition
VOCs	Volatile Organic Compounds
WDR	Waste Discharge Requirements

1.0 SUMMARY

Stantec completed this Phase I Environmental Site Assessment (ESA) of the proposed project site for power generation located at 3001 Scholl Canyon Road, Glendale, California 91206 (the "Property"), on behalf of City of Glendale Department of Water and Power (the "Client"). The work was performed in accordance with Stantec's proposal and terms and conditions dated September 7, 2018. The City of Glendale Water and Power (the "User") has been designated as the User of this report.

The Phase I ESA was conducted in conformance with USEPA Standards and Practices for AAI, 40 CFR Part 213 and the requirements of ASTM Designation E 1527-13, except as may have been modified by the scope of work, and terms and conditions, requested by the Client. Any exceptions to, or deletions from, the ASTM practice are described in Section 2.3 and 8.2.

The Property, which is proposed for construction, is comprised of a three-acre landfill gas processing facility within the Scholl Canyon Landfill and a pipeline corridor extending approximately 2/3 mile to the west of the landfill. The Property is located approximately one-half mile north of the 134 Freeway on Scholl Canyon Road in the City of Glendale, Los Angeles County, California. The purpose of the proposed project development is to beneficially utilize methane-rich renewable landfill gas (LFG) as fuel to generate electricity (13 megawatts). In addition, 2/3 mile of natural gas pipeline will be constructed to connect the facility to the existing Southern California Gas Company pipeline system located at the eastern end of Scholl Canyon Drive. The Scholl Canyon Landfill is also reportedly identified as 7721 North Figueroa Street, Los Angeles, California 90047. Surrounding properties include vacant land, landfill (active and inactive) and residential properties.

The following items of note were identified during this ESA:

- Three above ground storage tanks (ASTs; 6,000, 4,885 and 4,561 gallons) storing diesel were observed approximately 500 feet east of the Property. No secondary containment was observed during site inspection. Since these ASTs are not located on the Property and no violations/leaks/spills were reported, the ASTs are considered as an item of note for the Property but not a REC.

- The Environmental Data Resources (EDR) database reported presence of a 1,000-gal underground storage tank (UST) with regular unleaded gasoline used for motor vehicle fuel at the landfill. Since no spills, leaks or violations were reported and the reported UST is not on the Property, it is considered as an item of note for the Property but not a REC.

- Industrial hygiene issues including exposure to dust, hazardous waste and chemicals were identified at the Property during the site inspection. Worker's contact exposure to the above-mentioned issues should be addressed via administrative and/or engineering controls and personal protective equipment (PPE).

Stantec performed this Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-13 of the Property. Any exceptions to, or deletions from, this practice are described in the Data

Summary
May 16, 2019

Gaps section of this report. This assessment has revealed the following RECs in connection with the Property:

- During the site reconnaissance and review of regulatory agency records, Stantec noted numerous drums and poly tanks which stored various hazardous chemicals and/or waste oil on the Property. The storage, use and disposal of petroleum hydrocarbons and hazardous chemicals at the facility is considered a REC. However, during the site reconnaissance, Stantec did not notice evidence of significant leaks or spills at the Property. Stantec also observed that some drums containing hazardous chemicals were stored on secondary containment.

- The Property is a natural gas processing facility and is a part of an active landfill, and as such, there is a possibility of release of gas emissions including methane. The landfill was historically reported to accept some contaminated soils, and groundwater is being monitored for impacts from volatile organic compounds (VOCs). Therefore, presence of a landfill is considered as a REC. However, no buildings were observed on the Property during the site reconnaissance which eliminated the current possibility of indoor air quality issues and it was reported that the landfill currently accepted only nonhazardous waste, potentially limiting the types of hazardous gas emissions from the landfill. Historical agency records review indicated that the Property was in compliance and any violations/complaints reported were rectified.

The preceding summary is intended for informational purposes only. Reading of the full body of this report is recommended.

2.0 INTRODUCTION

The objective of this Phase I ESA was to perform All Appropriate Inquiry (AAI) into the past ownership and uses of the Property consistent with good commercial or customary practice as outlined by the ASTM in "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process", Designation E1527-13. "All Appropriate Inquiry" (AAI) is the process for evaluating a property's environmental conditions for the purpose of qualifying for landowner liability protections under CERCLA. following final rule of Part 312 of Title 40, Code of Federal Regulations (40 CFR Part 312). The purpose of this Phase I ESA was to identify, to the extent feasible, adverse environmental conditions including recognized environmental conditions ("RECs") of the Property.

The ASTM E1527-13 standard indicates that the purpose of the Phase I ESA is to identify RECs, including historical recognized environmental conditions (HRECs), and controlled recognized environmental conditions (CRECs) that may exist at a property. The term "recognized environmental conditions" means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property:

(1) Due to any release to the environment;

(2) Under conditions indicative of a release to the environment; or

(3) Under conditions that pose a material threat of a future release to the environment.

ASTM defines a "HREC" as a REC that has occurred in connection with the property, but has been addressed to the satisfaction of the applicable regulatory authority and meets unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). Before calling the past release a HREC, the environmental professional must determine whether the past release is a REC when the current Phase I ESA is conducted (for example, if there has been a change in the regulations). If the EP considers the past release to be a REC at the time the Phase I ESA is conducted, the condition shall be included in the conclusions section of the report as a REC.

ASTM defines a "CREC" as a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), but with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

As defined by ASTM, RECs can include hazardous substances or petroleum products present under conditions in compliance with laws if that presence represents a material threat of future release. The presence of hazardous substances or petroleum products is, however, not a REC if that presence is a *de minimis* condition. De minimis conditions are minor occurrences of contamination that generally do not present a material risk to human health and would not likely be subject to enforcement action if brought to the attention of governmental agencies. ASTM also considers the potential for a business environmental risk (BER), defined as a risk which can have a material environmental or environmentally-driven impact on



the business associated with the current or planned use of the Property, not necessarily limited to those environmental issues required to be investigated by the ASTM standard. Consideration of BERs may involve addressing one or more ASTM non-scope considerations.

This ESA was conducted in accordance with our proposal to The City of Glendale Water and Power dated September 7, 2018. The scope of work conducted during this Phase I ESA consisted of a visual reconnaissance of the Property, interviews with key individuals, and review of reasonably ascertainable documents. The scope of work did not include an assessment for environmental regulatory compliance of any facility ever operated at the Property (past or present), or sampling and analyzing of environmental media. Stantec was not contracted to perform any independent evaluation of the purchase or lease price of the Property and its relationship to current fair market value. The conclusions presented in this ESA report are professional opinions based on data described herein. The opinions are subject to the limitations described in Section 2.3.

ASTM E1527-13 notes that the availability of record information varies from source to source. The User or Environmental Professional is not obligated to identify, obtain, or review every possible source that might exist with respect to a property. Instead, ASTM identifies record information that is reasonably ascertainable from standard sources. “Reasonably ascertainable” means:

(1) Information that is publicly available;

(2) Information that is obtainable from its source within reasonable time and cost constraints; and

(3) Information that is practicably reviewable.

2.1 PROPERTY DESCRIPTION

The Property which is proposed for construction is comprised of the three-acre landfill gas processing facility within the Scholl Canyon Landfill and a pipeline corridor extending 2/3 mile to the west of the landfill. The Property is located approximately one-half mile north of the 134 Freeway on Scholl Canyon Road in the City of Glendale, Los Angeles County, California. The purpose of the proposed project is to beneficially utilize methane-rich renewable landfill gas (LFG) as fuel to generate electricity (13 megawatts). In addition, 2/3 mile of natural gas pipeline will be constructed to connect the facility to the existing Southern California Gas Company pipeline system located at the eastern end of Scholl Canyon Drive. The Scholl Canyon Landfill is also reportedly identified as 7721 North Figueroa Street, Los Angeles, California 90047. Surrounding properties include vacant land, landfill (active and inactive) and residential properties.

2.2 SPECIAL TERMS, CONDITIONS, AND SIGNIFICANT ASSUMPTIONS

The possible contaminants of concern considered in this assessment include those hazardous compounds listed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Other than adherence to Client specific scope of work requirements, there were no other special terms, conditions, or significant assumptions associated with the Phase I ESA.

2.3 EXCEPTIONS AND LIMITING CONDITIONS

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential and actual liabilities and conditions associated with the identified property.

This report provides an evaluation of selected environmental conditions associated with the identified portion of the property that was assessed at the time the work was conducted and is based on information obtained by and/or provided to Stantec at that time. There are no assurances regarding the accuracy and completeness of this information. All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by Stantec in regards to it.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report, and are based solely on the scope of work described in the report, the limited data available and the results of the work. They are not a certification of the property's environmental condition.

The client did not provide or contract Stantec to provide recorded title records or search results for environmental liens or activity and use limitations encumbering the property or in connection with the Property. These represent data gaps; however, these data gaps are not considered significant. Based on the information obtained during the course of this ESA and general knowledge of development at and near the Property, the absence of this information did not affect the ability of the Environmental Professionals to identify RECs, HRECs, CRECs, or de minimis conditions.

This report relates solely to the specific project for which Stantec was retained and the stated purpose for which this report was prepared and shall not be used or relied upon by the client identified herein for any variation or extension of this project, any other project or any other purpose.

This report has been prepared for the exclusive use of the client identified herein and any use of or reliance on this report by any third party is prohibited, except as may be consented to in writing by Stantec or as required by law. The provision of any such consent is at Stantec's sole and unfettered discretion and will only be authorized pursuant to the conditions of Stantec's standard form reliance letter. Stantec assumes no responsibility for losses, damages, liabilities, or claims, howsoever arising, from third party use of this report.

The locations of any utilities, buildings and structures, and property boundaries illustrated in or described within this report, if any, including pole lines, conduits, water mains, sewers and other surface or sub-surface utilities and structures are not guaranteed. Before starting work, the exact location of all such utilities and structures must be confirmed by the client and Stantec assumes no liability resulting from damage to such utilities and structures.

The conclusions are based on the site conditions encountered by Stantec at the time the work was performed. Accordingly, additional studies and actions may be required. As the purpose of this report is to identify selected site conditions which may pose an environmental risk; the identification of non-environmental risks to structures or people on the site is beyond the scope of this assessment. The findings, observations, and conclusions expressed by Stantec in this report are not an opinion concerning the compliance of any past or present owner or operator of the site which is the subject of this report with any Federal, state or local law or regulation.

This report presents professional opinions and findings of a scientific and technical nature. It does not and shall not be construed to offer a legal opinion or representations as to the requirements of, nor compliance with, environmental laws, rules, regulations or policies of Federal, state or local governmental agencies. RECs raised by the report should be reviewed by client legal counsel.

Stantec specifically disclaims any responsibility to update the conclusions in this report if new or different information later becomes available or if the conditions or activities on the property subsequently change.

2.4 PERSONNEL QUALIFICATIONS

This Phase I ESA was conducted by, or under the supervision of, an individual that meets the ASTM definition of an Environmental Professional (EP). The credentials of the EP and other key Stantec personnel involved in conducting this Phase I ESA are provided in Appendix B.

3.0 USER-PROVIDED INFORMATION

ASTM E1527-13 describes responsibilities of the User to complete certain tasks in connection with the performance of "All Appropriate Inquiries" into the Property. The ASTM standard requires that the Environmental Professional request information from the User on the results of those tasks because that information can assist in the identification of RECs, CRECs, HRECs, or de minimis conditions in connection with the Property. Towards that end, Stantec requested that the User provide the following documents and information:

Description of Information	Provided (Yes / No)	Description and/or Key Findings
User Questionnaire and/or Interview	Yes	The User provided site contact information, provided access to the Property, and answered questions regarding intended use of the Property.
Environmental Liens or Activity Use Limitations	No	The user reportedly does not possess any of these documents
Previous Environmental Permits or Reports Provided by User	No	The user reportedly does not possess any of these documents.
Purpose of the Phase I ESA	Yes	In support of proposed construction on the Property.

4.0 RECORDS REVIEW

The objective of consulting historical sources of information is to develop the history of the Property and surrounding area, in order to evaluate if past uses may have resulted in RECs. Physical setting records are evaluated to determine if the physical setting may have contributed to adverse environmental conditions in connection with the Property. During the review of historical records, Stantec attempted to identify uses of the Property from the present to the first developed use of the Property. Stantec's research included the reasonably ascertainable and useful records described in this section.

4.1 PHYSICAL SETTING

A summary of the physical setting of the Property is provided in the table below with additional details in the following subsections

Topography:	The Property has a regional topographic gradient to the southwest.
Soil/Bedrock Data:	Boring logs obtained from a nearby site approximately 2 miles northeast of the Property indicated that soils consist of interbedded layers of silty sand, sand and sandy silt (Cardno ERI, 2013).
Estimated Depth to Groundwater/ Estimated Direction of Gradient:	Based on the historical groundwater sampling conducted at the nearby site approximately 2 miles from the Property, the depth to groundwater was measured at approximately 75 feet below ground surface (bgs). Groundwater flow direction was reported to be southwest (Cardno ERI, 2013).
NOTE: Site-specific groundwater flow direction and depth can only be determined by conducting site-specific testing, which Stantec has not conducted.	

4.1.1 Property Topography and Surface Water Flow

The Property is located at an elevation of approximately 1,107 feet above mean sea level (ft msl). Based on the topography and existing surface conditions, general surface water flow is to the southwest.

4.1.2 Regional and Property Geology

The Scholl Canyon area has narrow valleys lined with varying amounts of alluvium and colluvium. Bedrock in this area is quartz diorite and diorite, and is highly jointed and fractured. The Canyon which lies in the San Fernando Valley Groundwater Basin is bounded on the north and northwest by the Santa Susana Mountains, on the north and northeast by the San Gabriel Mountains, on the east by the San Rafael Hills, on the south by the Santa Monica Mountains and Chalk Hills, and on the west by the Simi Hills (DWR Bulletin 118, 2004).

The Property is underlain by granitic and metamorphic rocks including gneiss. Scholl Canyon area consists of narrow valleys covered by varying thicknesses of alluvium and colluvium and intervening ridges. Bedrock in this area, which is highly jointed and fractured, consists of quartz diorite and diorite.

Based on soil samples collected during site assessments activities at a nearby site approximately 2 miles northeast of the Property (2172 North Yucca Lane) indicated that soils consist of interbedded layers of silty sand, sand and sandy silt (Cardno ERI, 2013).

4.1.3 Regional and Property Hydrogeology

Scholl Canyon is tributary to the San Fernando Valley, which is underlain by the San Fernando Groundwater Basin. The surface and ground waters of this basin are used extensively for domestic, agricultural, and industrial purposes. The water-bearing sediments consist of the lower Pleistocene Saugus Formation, Pleistocene and Holocene age alluvium. The groundwater in this basin is mainly unconfined with some confinement within the Saugus Formation in the western part of the basin and in the Sylmar and Eagle Rock areas. Regional groundwater flow direction is generally reported toward the south southwest (DWR Bulletin 118, 2004).

Based on the historical groundwater sampling conducted at the nearby site approximately two miles from the Property, the depth to groundwater was measured at approximately 75 feet bgs. Groundwater flow direction was reported to be southwest (Cardno ERI, 2013).

4.2 FEDERAL, STATE AND TRIBAL ENVIRONMENTAL RECORDS

A regulatory agency database search report was obtained from Environmental Data Resources Inc. (EDR), a third-party environmental database search firm. A complete copy of the database search report, including the date the report was prepared, the date the information was last updated, and the definition of databases searched, is provided in Appendix D.

Stantec evaluated the information listed within the database relative to potential impact to the Property, assessing the potential for impacts based in part on the physical setting. As part of this process, inferences have been made regarding the likely groundwater flow direction at or near the Property. As described in 4.1.3, the regional groundwater flow direction is generally to the southwest. Observations about the Property and surrounding properties made during the Property reconnaissance are provided in more detail in section 5.

4.2.1 Listings for Property

The Property was identified in the environmental databases EMI, FINDS, AST, SWF/LF, Financial Assurance, LOS ANGELES CO. HMS, NPDES, WDS, CIWQS, CHMIRS, HAZNET, RCRA-SQG, US AIRS, RGA LF, ECHO, and RCRA NonGen/NLR. The Property is listed under the site names LA County Sanitation, Glendale Water and Power, Scholl Canyon LFG Facility, Scholl Canyon Sanitary Landfill, LA County Sanitation District, and Scholl Canyon Landfill.

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Database Listing	Description
RGA LF	The Property reportedly operated as Scholl Canyon Sanitary Landfill since at least 1995 through 2012.
RCRA NonGen/NLR	As of 2018, the Property was classified as a Non-Generator of hazardous waste.
FINDS	The Property is registered in the FINDS database with Registry ID: 110055841754.
AST	An aboveground storage tank is reportedly present on the Property and owned by City of Glendale Water and Power.
SWF/LF	The Property is listed as a Permitted Solid Waste Landfill with an Active status as of 2011. Accepted waste included construction/demolition, industrial, inert, manure, mixed municipal, and tires. The closure date is estimated to be April 2030.
LOS ANGELES CO. HMS	The Property is listed as Facility ID: 033066-054816 with 'Open' status.
HAZNET	The Property was listed in the database as a storage, bulking, transfer off-site facility of liquids with halogenated organic compounds and oxygenated solvents as of 2017.
CHMIRS	In January 1995, a security guard reportedly noticed a vandalism problem – treated groundwater flowing from Canyon water treatment area, and treatment stripper overflowing into the storm drain. The spill was reportedly contained.
ECHO	According to the Facility Inspection Report dated August 5, 2018, the compliance status for the Property was 'No Violation Identified'.
Financial Assurance	The post-closure information coverage date was listed as December 2017 with 'approved' status. The responsible party was U.S. Bank Corporate Trust Services.
NPDES	The Property is listed as a facility requiring National Pollutant Discharge Elimination System (NPDES) permit as of 2018. NPDES no. CAS000001.
WDS	The Property is listed as 'Other Facility – Does not fall into category of municipal/domestic, industrial, agricultural, or solid wastes. Primary waste type reportedly included Inert/Influent or Solid Wastes that do not contain soluble pollutants or organic wastes and have little adverse impact on water quality. Such wastes could cause turbidity and siltation and stormwater/stormwater runoff was included as primary waste. The Property was considered to be a minor threat to water quality.
CIWQS	The Property is listed with Regulatory Measure Type as Stormwater Industrial with Terminated status as of 2014.
EMI	The Property reportedly emitted total organic hydrocarbon gases, reactive organic gases, carbon monoxide, nitrogen oxides, sulfur oxides, and particulate

Database Listing	Description
	matters from 1995 to 2001 and from 2009 to 2014.
RCRA-SQG	The Property is listed as a generator of ignitable and corrosive waste in 1994, 1996, 1999, and 2000. No violations were reported.
US AIRS	The Property was listed in the State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards consisting of compliance monitoring from 1998 to 2017. The Property reportedly retained a Title V permit from 2006 to 2016.

The Property in conjunction with the Scholl Canyon Inactive Landfill is also listed on the Regional Water Quality Control Board's GeoTracker website as an Active Waste Discharge Requirements (WDR) site as of February 22, 2019. The WDR type is 'Landfill' and the WDR Order No. is R4-2002-0022. No other information is available.

According to Stantec's 2016 Phase I report, the Property and adjacent Scholl Canyon Inactive Landfill were listed on RWQCB's GeoTracker website as a Land Disposal Site with cleanup status 'Open – Verification Monitoring as of 1/1/1965'. The Second Quarter 2015 Monitoring Reports stated that the landfill was opened in 1961 and it accepted slightly contaminated soils, uncontaminated soils, green waste and asphalt for onsite beneficial reuse for disposal in the past. As of 2015, the landfill only accepted non-hazardous waste. The reports also stated presence of 11 groundwater monitoring wells at the active landfill and 2 groundwater monitoring wells in the vicinity of the landfill, in which sampling is conducted on a quarterly basis. The volatile organic compounds (VOCs) detected in some of the groundwater samples collected during the third quarter 2015 event were chloroform, acetone, ethylbenzene and toluene. The VOCs detected in the groundwater historically include benzene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, chlorobenzene, isopropylbenzene, n-propylbenzene and sec-propylbenzene. The reports also stated that stormwater monitoring was conducted at the landfill and per the most recent event, the monitoring parameters that exceeded USEPA benchmarks were total suspended solids, iron and zinc. The EDR database reported presence of a 500-gal UST with regular unleaded gasoline used for motor vehicle fuel at the landfill. This information is no longer available on GeoTracker.

Presence of a landfill as part of the Property is considered as a REC.

4.2.2 Listings for Nearby Sites with Potential to Impact Property

Stantec assessed data presented in the environmental agency database search report to evaluate the potential for conditions on adjacent and nearby sites to pose a REC, CREC, or HREC for the Property. The evaluation included an opinion of the potential for contamination by hazardous substances or petroleum products to migrate to the Property from a nearby property, including by vapor migration or encroachment (i.e., potential for a vapor encroachment condition [VEC]).

Listed Facility Name/Address	Database Listing	Distance/Direction from Property	REC? (YES / NO)
Scholl Canyon Golf and Tennis Co. Scholl Canyon Inactive Disposal Site	WMUDS/SWAT, HIST UST, SWF/LF	Adjacent to the north of the Property at a higher elevation	YES

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Listed Facility Name/Address	Database Listing	Distance/Direction from Property	REC? (YES / NO)
3800 East Glenoaks Blvd Glendale, California 91206			
The facility was listed as a solid waste disposal site with operational status 'closed as of December 31, 1975'. The disposal area was reportedly 68.5 acres. The present use of the facility was Scholl Canyon Golf Course. A 1,000-gallon super leaded product UST was present on the Property; however, the installation date of the UST was unknown. The historical use of the adjacent property as a landfill and continued monitoring in conjunction with the Property is considered a REC for the Property.			

The listings in the database search report are provided in Appendix C.

4.3 LOCAL/REGIONAL ENVIRONMENTAL RECORDS

Stantec checked the following sources to obtain information pertaining to Property (addresses – 7721 North Figueroa Street; 3001 Scholl Canyon Road) use and/or indications of RECs in connection with the Property:

4.3.1 California Department of Toxic Substances Control (DTSC) - Chatsworth

Agency Name Contact Information	Finding
DTSC Chatsworth 818-717-6521 Response Date: April 26, 2019	The agency provided records for the address: 7721 North Figueroa Street. The information is summarized below: • Monitoring reports from 1994 and 1996 indicate that miscellaneous unacceptable wastes including paints, cleaners, batteries were recovered at the landfill. The wastes were reportedly disposed to the appropriate facilities. • Hand written notes dated October 21, 1980, mention illegal dumping of ¾ empty barrels of oils and solvents at the site. Monitoring reports from 1994 prepared by the Solid Waste Management Department for the Regional Water Quality Control Board (RWQCB) also listed multiple occurrences of illegal dumping of paints, waste oils, and fertilizers at the facility. The recovered waste was sent to another facility for treatment.

4.3.2 County of Los Angeles – Department of Public Works (LADPW)

Agency Name, Contact Information	Findings
LADPW 626-458-3517	LADPW referred Stantec to their webpage www.ladpw.org/epd/cleanla/OpenFileReview.aspx to access public records. The online research suggested that LADPW does not have any records related to industrial waste/underground storage tanks/stormwater for the Property.

4.3.3 Glendale Fire Department

Agency Name, Contact Information	Findings
Glendale Fire Department Fax: 818-241-5386 Response date: May 13, 2019	Following records are associated with the ASTs located on the LFG facility but not on the Property - • Spill Prevention, Control and Countermeasure (SPCC) Plan was created for the LFG facility in 2005 and periodical amendments were made to the plan until 2017. Types of petroleum products used at the facility were hydraulic fluid, transmission fluid, grease, gasoline, diesel fuel, used oil, and waste oil. ASTs present onsite include three 5,000-gallon diesel ASTs, one 550-gallon transmission oil AST, one 550-gallon engine oil AST, one 550-gallon hydraulic fluid AST, and one 3,200-gallon waste oil AST. • Onsite waste oil AST (tank 1) passed the pressure test conducted in August 2017 after failing in July 2017. ASTs Tank 2,3 and 4 (transmission fluid, oil 15/40, hydraulic fluid) passed the pressure tests in July 2017. • Inspection reports from July 2017 for Tank 1 through 4 indicated miscellaneous observations including presence of debris in secondary containment, minor leaks, updated documentation, no stability support for ASTs, installation of vent cap to close the opening of top of the tank, paint failure, chipping and corrosion. • According to AST Inspection Report from July 2018, the site was not in operation at the time. Records for the entire facility, including the Property: • July 16, 2018 - Notice of Intention to Abate Public Nuisance. Notice to remove all hazardous vegetation 100 feet from buildings, 10 feet from combustion fences, and 10 feet from roadways.

	• Structural Observations Report form from November 2016 indicated no deficiencies in the footing, stems and walls of the Truck scale pits and pedestals. Records for the Property: • Violations of the industrial wastewater permit in 1997, 1998, 2002 were reported. According to the industrial waste discharge permit application from 1997, approximately 3,300 gallons of waste liquids was reportedly discharged per day. Condensate waste was generated during landfill gas processing operations. The types of chemicals, solvents contained in the waste were chlorinated, aromatic, oxygenated and other hydrocarbons from landfill gas; oil from gas compressors; and sulfur-containing compounds. • Records from the Hazardous Materials Inventory information dated March 2013 indicated presence of following hazardous materials onsite: i. Diesel fuel, motor oil, waste oil mixture, gear lubricant, petroleum naptha, transmission fluid, aerosol paint, antifreeze, mineral spirits, paint, dichlorofluoromethane, used filters, landfill gas – methane, PVC solvent cement and primer, propane, nitrogen (compressed gas), hydrogen (compressed gas), methane (compressed gas), 50% caustic, hydrochloric acid, betz-GCP-187 (a blend of phosphate and polymer), chlorine tablets.

4.3.4 Regional Water Quality Control Board – Los Angeles (RWQCB-LA)

Agency Name, Contact Information	Findings
Laura Gallardo RWQCB - LA Rb4-publicrecords@waterboards.ca.gov Response Date: May 9, 2019	Records obtained are summarized below: • RWQCB-LA maintained records for the active and inactive landfill. Groundwater monitoring is being conducted at the active and inactive landfill. According to the annual stormwater reports conducted at the landfill in 2010 and 2011, no issues of non-compliance were observed. No indication of unauthorized discharges was noted.

	• Routine inspections conducted in 2012 concluded that the landfill was well maintained with no WDR violations. • According to a Stormwater report from 2010, the best management practices (BMPs) for sediment control included application of daily cover, dust suppression, grading to direct surface water, silt fences, hay bales, and check dams. • A request letter by City of Glendale Water and Power dated June 4, 2015 indicated request for approval of Notice of Termination of Coverage under Statewide Stormwater General Permit for WDID Number 4 191022469. According to the letter, the Scholl LFG facility is part of a much larger landfill site with a different WDID. The request was approved on June 23, 2015. According to SWRQCB's GeoTracker website, the Property address 3001 Scholl Canyon Road is an active WDR Site as of February 22, 2019 under the WDR Order No. R4-2002-0022. No documents in regards to this permit were obtained at the agency or on GeoTracker.

4.3.5 South Coast Air Quality Management District (SCAQMD)

Agency Name, Contact Information	Findings
SCAQMD PublicRecordsRequests@aqmd.gov Response Date: May 7, 2019	SCAQMD stated that no Notice of Violations were associated with the Property address 7721 North Figueroa Street. Records obtained for the Property address included complaints, environmental quality labs (EQLs). The records are summarized below: • January 2010 - Permit of Operate a landfill gas treating system consisting of two compressors, absorber, storage tank, knockout drum, air-cooled chilled water unit, economizer, feed gas chiller, and refrigeration knock-out drum. Permit No. G7093. • July 2006 – AQMD request to provide records of sulfur content of the landfill gas and total volume collected met – facility in compliance. • June 2006 – Landfill Gas Treating permit # D90377; Status Inactive and Landfill Gas Treating permit # F4295; Status Inactive.

	• August 1997 – Notice of improper disposal of Class I non-friable asbestos containing material (ACM), source Honeycutt Tear off. • December 1996 - Permit of Operate a landfill gas treating system consisting of two compressors, absorber, storage tank, knockout drum, air-cooled chilled water unit, economizer, feed gas chiller, and refrigeration knock-out drum. Permit No. F4295 • May 1995 - Permit of Operate a landfill gas treating system consisting of two compressors, absorber, storage tank, knockout drum, air-cooled chilled water unit, economizer, feed gas chiller, and refrigeration knock-out drum. Permit No. D90377. • October 1990 – Compliance requirements to properly maintain and operate Air Sparge system.

4.3.6 DTSC - Cypress

Agency Name, Contact Information	Findings
Jone Barrio DTSC Cypress Jone.Barrio@dtsc.ca.gov, Julie.Johnson@dtsc.ca.gov Response date: April 30, 2019	DTSC Cypress reported that they did not find any records for the Property.

4.4 HISTORICAL RECORDS REVIEW

4.4.1 Land Title Records/Deeds

Land title records, deeds, environmental liens, and activity and use limitation documentation was not provided by the User, and public records were not searched by Stantec.

4.4.2 Aerial Photographs

Stantec reviewed historical aerial photographs provided by EDR. The general type of activity on a property and land use changes can often be discerned from the type and layout of structures visible in the photographs. However, specific elements of a facility's operation usually cannot be discerned from aerial photographs alone. The following table summarizes Stantec's observations of the reviewed historical aerial photographs. The aerial photographs are presented in Appendix E as Historical Records.

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Year	Scale	Observations, Property and Adjoining Properties
1928	1"=500'	The Property and surrounding areas appear to be forestland. An intermittent stream appears to be flowing across the southern portion of the Property.
1938	1"=500'	No significant changes to the Property and its vicinity are apparent.
1948	1"=500'	The Property and surrounding areas continue to appear as forestland. Multiple intermittent streams appear to be flowing across the Property.
1952	1"=500'	No significant changes to the Property and its vicinity are apparent.
1964	1"=500'	The Property appears undeveloped. The currently inactive landfill appears to be developed. Scholl Canyon Road appears to be developed. Few residential properties appear to the west of the Property.
1977	1"=500'	No significant changes to the Property and its vicinity are apparent.
1979	1"=500'	The Property appears to be operating as a landfill. Additional residential properties appear west of the Property.
1981	1"=500'	No significant changes to the Property are apparent. The adjacent property to the northeast appears to be developing as a golf course. Tennis courts appear 1/4 miles northeast of the Property.
1989	1"=500'	The Property appears to be developed as a landfill gas processing facility for the landfill. A water tank and a building are observed on the northern part of the Property.
1994	1"=500'	No significant changes to the Property and its vicinity are apparent.
2002	1"=500'	The landfill portion of the Property appears to be in the current configuration consisting of a condensate processing facility, flaring station, gas compressors, tool shed, refrigeration exchange skid, condensate treatment area and office area.
2005	1"=500'	No significant changes to the Property and its vicinity are apparent.
2009	1"=500'	No significant changes to the Property and its vicinity are apparent.
2012	1"=500'	No significant changes to the Property and its vicinity are apparent.
2016	1"=500'	No significant changes to the Property and its vicinity are apparent.

Name of aerial photograph source: The EDR Aerial Photo Decade Package (Appendix E)

4.4.3 City Directories

Stantec retained a third party to research available reverse city directories for the Property, in approximately five-year intervals. The City Directory is presented in Appendix E as Historical Records. The following is a general summary of Stantec's review of the city directory listings:

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Subject Property	Year	Listed Occupants
Property – 3001 Scholl Canyon Road	2014 2010	Landfill Scholl Canyon/Sanitation Dist LA County Sanitation Dist LA County

Name of city directories and source: The EDR City Directory Abstract (Appendix E)

4.4.4 Historical Fire Insurance Maps

Fire insurance maps were developed for use by insurance companies to depict facilities, properties, and their uses for many locations throughout the United States. These maps, which have been periodically updated since the late 19th century, provide information on the history of prior land use and are useful in assessing whether there may be potential environmental contamination on or near the Property.

Stantec contracted with a third party to search for copies of historical fire insurance maps covering the subject and immediately adjacent properties. No maps were available for the Property or adjacent properties. The Sanborn® Map Search Report is presented in Appendix E as Historical Records.

4.4.5 Historical Topographic Maps

Stantec reviewed historical topographic maps to help identify past Property usage and areas of potential environmental concern.

The United States Geological Survey (USGS) 7.5-Minute Topographic Map of Pasadena Quadrangle (scale 1:24,000), 7.5- Minute Topographic Map of Altadena Quadrangle (scale 1:24,000), 7.5- Minute Topographic Map of Glendale Quadrangle (scale 1:24,000), and 15- Minute Topographic Map of Los Angeles Quadrangle (scale 1:62,500) were reviewed to identify local and regional physiographic features in the vicinity of the Property (see Figure 1). Based on the review of this data, the Property is located at an elevation of approximately 1,107 ft msl and the general topographic gradient is to the southwest.

No RECs were noted during our review of the topographic maps. Copies of the historical maps are provided in Appendix E as Historical Records. The following table summarizes the maps reviewed and our observations.

Year	Scale	Observations, Property and Adjoining Properties
1894, 1896, 1900	1:62,500	No details regarding specific development of the Property and its vicinity were observed.
1928	1:24:000	Two intermittent streams are depicted as flowing across the north and south of the Property. The Glendale and Los Angles city boundary is located approximately 1/4th mile south of the Property.
1940	1:24,000	A portion was of the Property and its vicinity to the northwest was unmapped. No details regarding specific development of the Property and vicinity were observed.
1953	1:24,000	The Property and vicinity were depicted as forestland. A Debris Dam is depicted adjacent to the southwest corner of the Property. A water tank was observed approximately ¼ mile south of the Property and

Year	Scale	Observations, Property and Adjoining Properties
		two other water tanks were observed approximately ½ mile northwest of the Property. Eagle Rock Reservoir is observed approximately ½ mile southeast of the Property.
1966	1:24,000	The Property was depicted to be Scholl Canyon Park and partially a forestland. No additional details regarding specific development of the Property vicinity were observed.
1972	1:24,000	No additional details regarding specific development of the Property and its vicinity were observed.
1988	1:24,000	No additional details regarding specific development of the Property and its vicinity were observed.
1995	1:24,000	The Property is no longer depicted to be forestland and is depicted as vacant land.
2012	1:24,000	No additional details regarding specific development of the Property and its vicinity were observed.

Name of maps and source: The EDR Historical Topographic Map Report (Appendix E)

4.4.6 Other Historical Sources

Department of Conservation, Division of Oil, Gas & Geothermal Resources

Stantec reviewed the Department of Conservation, Division of Oil, Gas & Geothermal Resources (DOGGR) online well finder database to determine the number and status of historical oil and gas wells on the Property and in the surrounding areas. There were no wells reported in the vicinity of the Property.

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5.0 SITE RECONNAISSANCE

A visit to the Property and its vicinity was conducted by Mr. Scott Edblad on April 29, 2019. Access to the Property was provided by the on-site Sanitation District Engineer Marty. Figure 2 provides information about the Property and adjoining properties and the location of potential areas of environmental concern. Photographs collected during the Property visit are included in Appendix A.

5.1 SITE RECONNAISSANCE METHODOLOGY

The Site reconnaissance focused on observation of current conditions and observable indications of past uses and conditions that may indicate the presence of a REC. The Property reconnaissance was conducted on foot and Stantec utilized the following methodology to observe the Property:

- Traverse the outer Property boundary.
- Traverse transects across the Property.
- Traverse the periphery of all structures on the Property.
- Visually observe accessible interior areas expected to be used by occupants or the public, maintenance and repair areas, utility areas, and a representative sample of occupied spaces.

Weather conditions during the visit to the Property were clear and sunny. There were no weather-related Property access restrictions encountered during the reconnaissance visit.

5.2 GENERAL DESCRIPTION

Property and Area Description:	The Property is located in an urban development. Surrounding properties include combination of vacant land and residential properties.
Property Operations:	The Property is a natural gas processing facility and is a part of an active landfill which currently accepts non-hazardous solid waste.
Structures, Roads, Other Improvements:	The structures present on the Property include multiple trailers, two high voltage buildings, flaring station, condensate processing facility, and refrigeration exchange skid area. The surface is covered partly by asphalt and partly unpaved.
Property Size (acres):	3.0
Estimated % of Property Covered by Buildings and/or Pavement:	10
Observed Current Property Use/Operations:	Landfill gas processing facility.

Observed Evidence of Past Property Use(s):	None observed.
Potable Water Source:	Glendale Water and Power.
Electric Utility:	Glendale Water and Power.

5.3 HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS

The following table summarizes Stantec's observations during the Property reconnaissance.

Observations	Description/Location
Hazardous Substances and Petroleum Products as Defined by CERCLA 42 U.S.C. § 9601(14):	Hazardous substances observed on the Property included waste oil, antifreeze, hydrochloric acid, compressor oil, and diesel. All substances appeared to be stored appropriately.
Drums (≥ 5 gallons):	Miscellaneous drums storage, southeast of the Property (with or without secondary containment): • 8x55-gal magnasol • 2x55-gal magnafloc • 5x55-gal pacemaker oil • 55-gal aluminum chloride • 2x55-gal antifreeze, cleaning solvent • 55-gal sorbent waste storage drum • 55-gal oil storage drums • 16-gal hydrochloric acid storage drum
Strong, Pungent, or Noxious Odors:	None detected.
Pools of Liquid:	None observed.
Unidentified Substance Containers:	None observed.
PCB-Containing Equipment:	Undetermined. Transformers were observed on the south portion of the Property.
Other Observed Evidence of Hazardous Substances or Petroleum Products:	None observed.

5.4 INTERIOR OBSERVATIONS

The site is a landfill outdoors and no interior observations were needed.

5.5 EXTERIOR OBSERVATIONS

Stantec made the following observations during the site reconnaissance of exterior areas of the Property and/or identified the following information during the interview or records review portions of the assessment:

Observations	Description
On-site Pits, Ponds, or Lagoons:	None observed.
Stained Soil or Pavement:	No major staining observed. Cracks in asphalt roads/parking lot were observed throughout the Property.
Stressed Vegetation:	None observed.
Waste Streams and Waste Collection Areas:	A dedicated waste storage area was observed along the southern part of the Property.
Solid Waste Disposal:	A solid waste disposal area was observed on the southwest part of the Property.
Potential Areas of Fill Placement:	No mounds, piles or depressions suggesting the placement of fill material were observed on the Property.
Wastewater:	The Property has a wastewater discharge permit to discharge into the municipal wastewater system.
Stormwater:	Stormwater drains were observed on the Property; however, no evidence of contamination was observed.
Wells:	No wells were observed.
Septic Systems:	No visible evidence of the existence of a septic system was observed.
Other Exterior Observations:	None observed.

5.6 UNDERGROUND STORAGE TANKS/STRUCTURES

Existing USTs:	No visible evidence (fill pipes, vent pipes, dispensers, surface patches), which would indicate the presence of USTs, was discovered during the site reconnaissance.
Former USTs:	No visible evidence (fill pipes, vent pipes, dispensers, surface patches), reports, or other evidence of the former presence of USTs was discovered during this Phase I ESA. However, according the EDR database a 1,000-gallon super leaded product UST was reported to be present on the Property.
Other Underground Structures:	None observed.

5.7 ABOVEGROUND STORAGE TANKS

Existing ASTs:	Condensate processing facility: • 300-gal mixing (poly tank) • 2x300-gal caustic soda (poly tank) • 1,000-gal mixing (poly tank) • 3x10,000-gal condensate (poly tank) • 2,500-gal magnasol (poly tank) • 2,500-gal magnafloc (poly tank) • 3x500-gal condensate (poly tank) • 55-gal condensate (poly tank) • 55-gal drum (unknown) • 2x11,000-gal carbon tanks Refrigeration Exchange fluid area: • 55-gal hydrogen sulfide (poly tank) • 800-gal hydrogen sulfide (poly tank) • 1,100-gal sulfatrol (poly tank) • 55-gal pure carbon (vapor phase) • 40-gal oil/ condensate (poly tank) Gas Compressor Area: • 4x80-gal used oil (poly tank) • 4x16 feet^3 metal cube storing oil • 100 gal, 1,000-gal oil storage drums and poly tanks Three diesel ASTs with no secondary containment (6,000-gal, 4,885-gal and 4,561-gal) were observed approximately 500 feet east from the Property. According to historical aerial photographs, the ASTs were present at this location since at least 1983.
Former ASTs:	No visible evidence (fill pipes, vent pipes, dispensers, surface stains), reports, or other evidence of the former presence of ASTs was discovered during this Phase I ESA.

5.8 ADJOINING PROPERTIES

5.8.1 Current Uses of Adjoining Properties

As viewed from the Property and/or from public rights-of-way, Stantec made the following observations about use and activities on adjoining properties:

NORTH	Scholl Canyon Golf Course

SOUTH	Highway 134
EAST	Landfill, vacant land and residential properties further east
WEST	Lower Scholl Canyon Park

5.8.2 Observed Evidence of Past Uses of Adjoining Properties

Observations of adjoining properties providing indications of past use and activities, if any, are described below.

NORTH	None observed.
SOUTH	None observed.
EAST	None observed.
WEST	None observed.

5.8.3 Pits, Ponds or Lagoons on Adjoining Properties

As viewed from the Property and/or from public rights-of-way, Stantec made the following observations about the presence of pits, ponds and lagoons on adjoining properties:

NORTH	None observed.
SOUTH	None observed.
EAST	None observed.
WEST	None observed.

5.9 OBSERVED PHYSICAL SETTING

Topography of the Property and Surrounding Area:	The Property and surrounding areas have a general topographic gradient of southwest.

6.0 INTERVIEWS

Stantec conducted interviews with the following individuals:

Name and contact information	Relationship to Property	Key findings:
Marty	On-site Sanitation District Engineer	Mr. Marty indicated that there had not been any updates or major events at the facility since the prior site visit in 2016 for the Phase I ESA. He also indicated that there were less portions of the landfill operating in 2019.

7.0 EVALUATION

This section provides a summary overview of or Findings, Opinions, and Conclusions.

7.1 FINDINGS AND OPINIONS

Information gathered from interviews, reviews of existing data review, and a property inspection was evaluated to determine if RECs are present in connection with the Property. Based on this information, Stantec made the following findings and developed the following opinions.

Finding 1: Numerous drums and poly tanks containing various hazardous chemicals and/or waste oil were observed on the Property.

Opinion 1: Storage, use and disposal of petroleum hydrocarbons and hazardous chemicals at the facility is considered a REC. However, during the site reconnaissance, Stantec did not observe evidence of significant leaks or spills at the Property. Stantec also observed some drums containing hazardous chemicals which were stored on secondary containment.

Finding 2: The Property is a natural gas processing facility and is a part of an active landfill and as such, there is a possibility of release of gas emissions including methane. The landfill was historically reported to accept some contaminated soils, and groundwater is being monitored for impacts from VOCs.

Opinion 2: Presence of a landfill as part of the Property is considered a REC. However, no buildings were observed on the Property during the site reconnaissance which eliminated the current possibility of indoor air quality issues and it was reported that the landfill currently accepted only nonhazardous waste, potentially limiting the types of hazardous gas emissions from the landfill. Historical agency records review indicated that the Property was in compliance and any violations/complaints reported were rectified.

Finding 3: Three ASTs (6,000-gal, 4,885-gal and 4,561-gal) storing diesel were observed approximately 500 feet east from the Property. No secondary containment was observed.

Opinion 3: Since these ASTs are not on the Property and no violations were reported, the ASTs are considered as an item of note for the Property but not a REC.

Finding 4: The EDR database reported presence of a 1,000-gal UST with regular unleaded gasoline used for motor vehicle fuel at the landfill.

Opinion 4: Since no spills, leaks or violations were reported and the reported UST is not on the Property, it is considered as an item of note for the Property but not a REC.

7.2 DATA GAPS

The federal AAI rule [40 CFR 312.10(a)] and ASTM E1527-13 identify a "data gap" as the lack or inability to obtain information required by the standards and practices of the rule despite good faith efforts by the Environmental Professional or the User.

Any data gaps resulting from the Phase I ESA described in this report are listed and discussed below.

Gap	Discussion
Deletions or Exceptions from Scope of Work Referenced in Section 1.4:	None.
Weather-Related Restrictions To Site Reconnaissance:	None.
Facility Access Restrictions to Site Reconnaissance:	None.
Other Site Reconnaissance Restrictions:	None.
Data Gaps From Environmental Records Review:	None.
Data Gaps From Historical Records Review:	None.
Data Gaps From Interviews:	None.
Other Data Gaps:	None.

7.3 CONCLUSIONS

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of 3001 Scholl Canyon Road, Glendale, California 91206, the Property. Any exceptions to, or deletions from, this practice are described in Section 7.2 of this report.

The following items of note were identified during this ESA:

- Three ASTs (6,000, 4,885 and 4,561 gallons) storing diesel were observed approximately 500 feet east of the Property. No secondary containment was observed during site inspection. Since these ASTs are not located on the Property and no violations/leaks/spills were reported, the ASTs are considered as an item of note for the Property but not a REC.

- The EDR database reported presence of a 1,000-gal UST with regular unleaded gasoline used for motor vehicle fuel at the landfill. Since no spills, leaks or violations were reported and the reported UST is not on the Property, it is considered as an item of note for the Property but not a REC.

- Industrial hygiene issues including exposure to dust, hazardous waste and chemicals were identified at the Property during the site inspection. Worker's contact exposure to the above-mentioned issues should be addressed via administrative and/or engineering controls and PPE.

This assessment has revealed the following evidence of recognized environmental conditions in connection with the Property:

- During the site reconnaissance and review of regulatory agency records, Stantec noted numerous drums and poly tanks which stored various hazardous chemicals and/or waste oil on the Property. The storage, use and disposal of petroleum hydrocarbons and hazardous chemicals at the facility is considered a REC. However, during the site reconnaissance, Stantec did not notice evidence of significant leaks or spills at the Property. Stantec also observed that some drums containing hazardous chemicals were stored on secondary containment.

- The Property is a natural gas processing facility and is a part of an active landfill, and as such, there is a possibility of release of gas emissions including methane. The landfill was historically reported to accept some contaminated soils, and groundwater is being monitored for impacts from VOCs. Therefore, presence of a landfill is considered as a REC. However, no buildings were observed on the Property during the site reconnaissance which eliminated the current possibility of indoor air quality issues and it was reported that the landfill currently accepted only nonhazardous waste, potentially limiting the types of hazardous gas emissions from the landfill. Historical agency records review indicated that the Property was in compliance and any violations/complaints reported were rectified.

8.0 NON-SCOPE CONSIDERATIONS

No ASTM E1527-13 non-scope services were performed as part of this Phase I ESA with the following exceptions:

8.1 LEAD-BASED PAINT

Concern for lead-based paint (LBP) is primarily related to residential structures. The EPA's Final Rule on Disclosure of Lead-Based Paint in Housing (40 CFR Part 745) defines LBP as paint or other surface coatings that contain lead equal to or in excess of 1.0 milligram per square centimeter or 0.5 percent by weight.

The risk of lead toxicity in LBP varies based upon the condition of the paint and the year of its application. The U.S. Department of Housing and Urban Development (HUD) has identified the following risk factors:

- The age of the dwelling as follows: maximum risk is from paint applied before 1950.
- There is severe risk from paint applied before 1960.
- There is moderate risk from deteriorated paint applied before 1970.
- There is slight risk from the paint that is intact but applied before 1977.
- The condition of the painted surfaces.
- The presence of children and certain types of households in the building.
- Previously reported cases of lead poisoning in the building or area.

Samples of suspect LBP were collected for laboratory analysis of lead and was submitted to the Client in a separate report in 2015.

Conclusions of the 2015 report:

None of the paint sampled meets the definition of LBP. However, the gray paint associated with the small compressor contains concentrations of lead that would require compliance with applicable portions of OSHA 29 CFR 1926.62 (Lead – Safety and Health Regulations for Construction) and DOSH 8 CCR Section 1532.1 (Lead in Construction Standard), (Stantec 2015).

8.2 ASBESTOS

Asbestos can be found in many applications, including sprayed-on or blanket-type insulation, pipe wraps, mastics, floor and ceiling tiles, wallboard, mortar, roofing materials, and a variety of other materials commonly used in construction. The greatest asbestos-related human health risks are associated with friable asbestos, which is ACM that can be reduced to powder by hand pressure. Friable asbestos can become airborne and be inhaled, and has been associated with specific types of respiratory disease. The manufacturing and use of asbestos in most building products was curtailed during the late 1970s. Stantec

makes no warranty as to the possible existence or absence of inaccessible materials or to their evaluation with respect to asbestos content.

Samples of suspect ACM were collected for laboratory analysis of asbestos and was submitted to the Client in a separate report in 2015.

Conclusions of the report:

Based on the findings of this survey, no asbestos-containing materials were identified. No additional assessment/survey appears warranted at this time. It should be noted however that the asbestos survey was limited to accessible materials only and did not include underground utilities. Historically, certain concealed materials may be present within equipment (e.g. electrical wire wrapping, insulation materials, etc.) that contain asbestos, and some underground utility piping has been known to contain asbestos (e.g., Transite pipe). If demolition of the Property includes removal of on-site portions of underground utilities (storm drains, sewer, domestic water laterals, etc.), evaluation of the asbestos content of these components must be performed prior to the removal process. Suspect materials identified in these locations are assumed positive for asbestos until sampling and analysis indicates otherwise. If during the course of a renovation/demolition project suspect ACMs are discovered that are not included within this report, those materials are to be assumed positive for asbestos unless additional sampling, analysis and/or assessment indicates otherwise (Stantec, 2015).

8.3 POLYCHLORINATED BIPHEYNYLS (PCBS) IN CAULK

PCBs belong to a broad family of man-made organic chemicals known as chlorinated hydrocarbons. The commercial production of PCBs started in the late 1920s until their manufacture was banned in 1979 because of the possible carcinogenic risk to human health and to the environment. PCBs have a range of toxicity and vary in consistency from thin, light-colored liquids to yellow or black waxy solids. Due to their non-flammability, chemical stability, high boiling point, and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications including electrical, heat transfer, and hydraulic equipment; as plasticizers in paints, plastics, and rubber products; in pigments, dyes, and carbonless copy paper; and many other industrial applications. The PCBs used in these products were chemical mixtures made up of a variety of individual chlorinated biphenyl components, known as congeners. Most commercial PCB mixtures are known in the United States by their industrial trade names. The most common trade name is Aroclor.

Prior to the 1979 ban, PCBs entered the environment during their manufacture and use in the United States. Although no longer commercially produced in the United States, PCBs may be present in products and materials such as caulk produced before the 1979 PCB ban. Today PCBs associated with building demolition or renovation projects can still be released into the environment from illegal or improper dumping of PCB wastes; disposal of PCB-containing consumer products into municipal or other landfills not designed to handle hazardous waste and through improper containment during removal.

Since no buildings were present on the Property during site reconnaissance, further assessment of PCBs in caulk does not appear to be warranted.



8.4 INDOOR AIR QUALITY

Due to lack of buildings, no issues regarding air quality were noted.

8.5 RADON

Radon is a colorless, tasteless radioactive gas with an EPA-specified action level of 4.0 PicoCuries per liter of air (pCi/L) for residential properties. Radon gas has a very short half-life of 3.8 days. The health risk potential of radon is primarily associated with its rate of accumulation within confined areas near or in the ground, such as basements, where vapors can readily transfer to indoor air from the ground through foundation cracks or other pathways. Large, adequately ventilated rooms generally present limited risk for radon exposure. The radon concentrations in buildings and homes depend on many factors, including soil types, temperature, barometric pressure, and building construction (EPA, 1993).

Stantec reviewed regional data published by the EPA (http://www.epa.gov/radon/zonemap.html) on average indoor radon concentrations in the vicinity of the Property.

EPA Radon Zones (w/Average Measured Indoor Radon concentrations)		
Zone 1 – High (>4.0 pCi/L)	Zone 2 – Moderate (2 to 4 pCi/L)	Zone 3 – Low (<2 pCi/L)
	Yes	
Normally-occupied sub grade areas (i.e. basement apartments, offices, stores, etc.)?		
No buildings present on the Property.		

The Property is located in Zone 2 and is considered to have moderate potential for radon. To determine Property-specific radon levels a radon survey would have to be conducted. However, because the Property does not have any buildings, further investigation of indoor radon issues does not appear to be warranted.

8.6 BIOLOGICAL AGENTS AND MOLD

Mold is ubiquitous in the environment. To grow and flourish, mold requires moisture and an organic food source. As such, mold may thrive in areas of water leaks or condensation such as in HVAC systems, roof leaks, sprinkler systems, coolers, refrigeration units, sinks, bathrooms, showers, etc.

A limited visual assessment for evidence of mold-like substances or conditions conducive to mold growth was completed by Stantec as part of the Phase I ESA. Stantec's assessment was limited to observation of readily visible, accessible areas for evidence of water damage or persistent moisture. Any observations made were within the limits of Stantec's typical site reconnaissance. Unless otherwise specified, no specific efforts beyond that routine inspection were made to identify areas or conditions at high risk for having mold present.

No areas of persistent moisture or water damage were observed within the construction trailer on the Property.

8.7 INDUSTRIAL HYGIENE

Industrial hygiene is defined by the American Board of Industrial Hygiene as "…the science of protecting and enhancing the health and safety of people at work and in their communities. Health and safety hazards cover a wide range of chemical, physical, biological and ergonomic stressors". Information review and observations found no reports or evidence of hazards within the Property that caused worker illness.

Observations for potential industrial hygiene hazards were made by a Phase I Assessor during the limited site visit, and that should not be construed as a substitute for a study conducted by a Certified Industrial Hygienist (CIH). Unless otherwise specified, no specific efforts beyond a routine site visit were made to identify industrial hygiene issues.

Industrial hygiene issues including exposure to dust, hazardous waste and chemicals were identified at the Property during the site inspection. Worker's contact exposure to the above-mentioned issues should be addressed via administrative and/or engineering controls and PPE. However, Stantec makes no warranty as to the possible existence or absence of hazards at the Property.

8.8 HEALTH AND SAFETY

The topic of Health and Safety can cover a broad range of physical, chemical, behavioral, and ergonomic situations. Information review and observations found no reports or evidence of hazards within the Property that cause health or safety issues. Unless otherwise specified, no specific efforts beyond the routine site visit were made to identify potential health or safety issues.

No specific Health and Safety issues were visually identified at the Property during the site inspection. However, Stantec makes no warranty as to the possible existence or absence of Health and Safety issues at the Property.

8.9 LEAD IN DRINKING WATER

Stantec researched available data from the local water supplier to the area; no sampling for lead in tap water was conducted for this Phase I ESA. The City of Glendale tests their water system for the presence of lead and other contaminants. The City of Glendale reported their most recent measurement for lead in drinking water was conducted in 2017. The lead concentrations (90th percentile) in the City's water sources were reported to non-detect for lead, within state guidelines. A copy of the 2017 Water Quality Report can be found on the agency's website at: https://www.glendaleca.gov/home/showdocument?id=45729.

8.10 REGULATORY COMPLIANCE

Regulatory Compliance is the adherence to laws, regulations, guidelines, and specifications relevant to specific business activities, which can vary widely depending on the operations conducted. A regulatory

compliance audit is beyond the scope of work for a Phase I ESA. Information review and observations found no reports or evidence of regulatory non-compliance. Observations for potential non-compliance issues were made by a Phase I Assessor in a limited site visit, and that should not be construed as a substitute for a focused regulatory compliance audit conducted by compliance experts.

No regulatory compliance issues were visually identified at the Property during the site inspection. However, Stantec makes no warranty as to the possible existence or absence of regulatory compliance at the Property.

8.11 FLOOD ZONES

According to the Physical Setting summary portion of the EDR report, the Property is not located within a 500-year or 100-year flood plain. The nearest Surface Water is the Eagle Rock Reservoir, located south of the Property.

8.12 SEA LEVEL RISE

To evaluate if a property will be impacted by a rise in global sea levels, Stantec accessed National Oceanic and Atmospheric Administration (NOAA) Sea Level Rise (SLR) and Coastal Flooding Impacts tool available at https://coast.noaa.gov/slr/.

According to the online tool available from NOAA, the Property is not shown in a projected 1'/2' sea level rise zone.

8.13 WETLANDS

Wetlands cannot be definitively identified through visual observation alone. Defensible wetland delineations require taxonomic classification of property vegetation, an investigation into the surface and subsurface hydrology of the property, and identification of hydric soils. This level of delineation is outside of the scope or work for this assessment. However, Stantec reviewed US Fish and Wildlife Service National Wetland Inventory maps and readily available USDA Soil Survey reports. Information from these sources is summarized below.

Potential Wetlands Observed on Property: None Observed

New Development Planned for Property: Yes

Wetland Inventory Maps

Map Quadrangle Name	Pasadena
Wetlands Depicted on Property:	None depicted
Wetlands Depicted on Adjoining Properties	None depicted

Soil Survey Data

Soil Survey Report Name and Date:	STATSGO: State Soil Geographic Database
Hydric Soils Depicted in Property Vicinity:	None Depicted

Based on the above documents and the field observations, a wetland does not appear to be present at the Property.

8.14 ECOLOGICAL RESOURCES

Ecological resources can be defined as a source or supply of ecological importance from which benefit is produced or required by living organisms for sustainable, normal growth and survival. Defensible evaluation of ecological resources is outside the scope of this Phase I ESA, as a defensible ecological survey would require taxonomic classification by skilled professionals, such as biologists. Unless otherwise specified, no specific efforts beyond that routine site visit were made to identify ecological resources. If impacts to jurisdictional features including streams and/or wetlands could occur, a biological survey may be needed to evaluate and quantify the impacts to ecological resources identified.

Ecological resources are discussed in a separate report.

8.15 ENDANGERED SPECIES

Endangered species are discussed in a separate report.

8.16 CULTURAL AND HISTORIC RESOURCES

According to the National Preservation Institute, the term "cultural resource" is not defined in the National Environmental Policy Act (NEPA) or any other Federal law. However, there are several laws that consider "resources" that are "cultural" in character.

NEPA's concern is with the "human environment," defined as including the natural and physical (e.g., built) environment and the relationships of people to that environment. A thorough environmental analysis under NEPA is outside the scope for this Phase I ESA but should systematically address the "human" — social and cultural — aspects of the environment as well as those that are more "natural". In addition, a NEPA analysis should address the relationships between natural and cultural resources. Culturally valued aspects of the environment generally include historic properties, other culturally valued pieces of real property, cultural use of the biophysical environment, and such "intangible" sociocultural attributes as social cohesion, social institutions, lifeways, religious practices, and other cultural institutions. These impacts are usually analyzed either as impacts on "cultural resources," or as "social impacts," or as both — but many such impacts actually fall into the cracks between the "cultural resource" and "social impact" categories as usually defined.

Unless otherwise specified, no specific efforts beyond the routine site visit were made to identify resources of cultural or historic significance.

No cultural or historic resources were visually identified at the Property during the site inspection. However, Stantec makes no warranty as to the possible existence or absence cultural or historic significance at the Property.

8.17 PESTICIDES

No documentation of commercial on-site use of agricultural chemicals (e.g., pesticides, insecticides, fertilizers or herbicides) was discovered during this ESA. Stantec did not identify any apparent agricultural chemical processing areas, such as crop dusting airfields, bulk mixing areas; or repacking, transfer, or agricultural chemical storage areas in the aerial photographs that were reviewed during this ESA.

9.0 REFERENCES

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May 16, 2019

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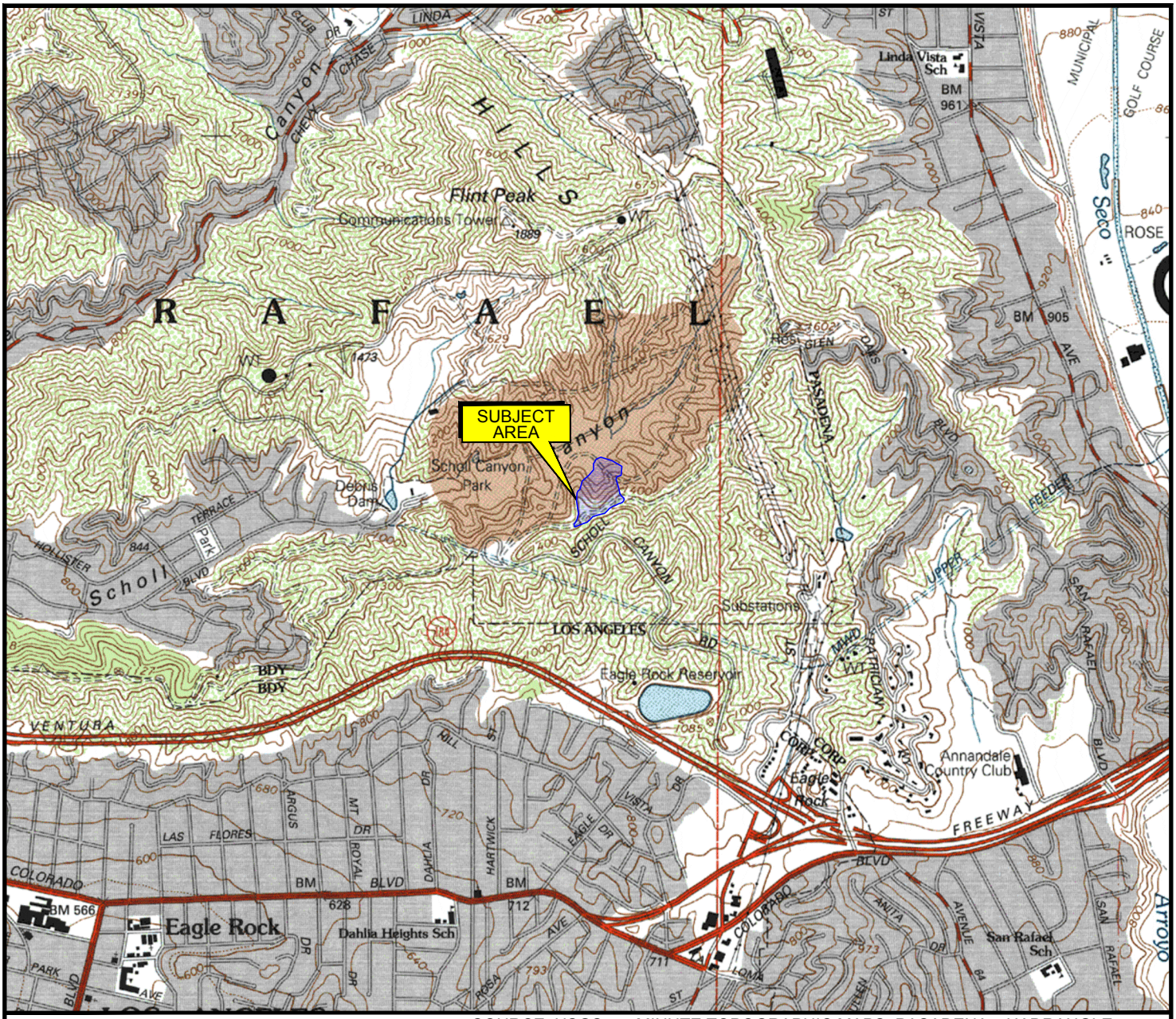
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FIGURES



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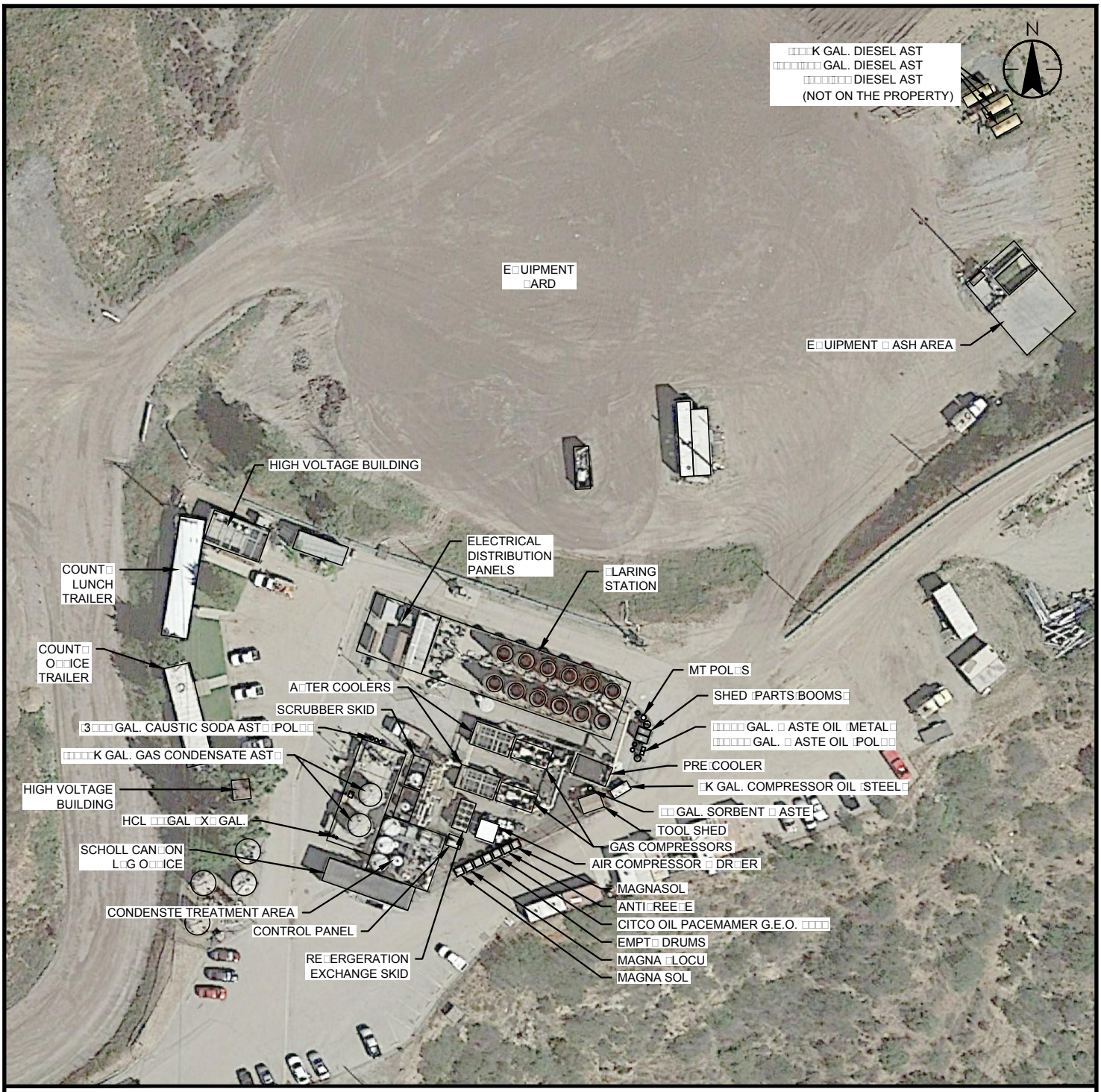
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APPENDICES

Appendix A Photographs of the Property and Vicinity



Photo #1 View of the Property parking lot and pipeline.



Photo #2 View of the Property pipeline from northwest.



Photo #3 View of the hazardous materials storage area located southern part of the Property.



Photo #4 Another view of the hazardous materials storage area.



Photo #5 View of the landfill (not part of the Property) looking east.

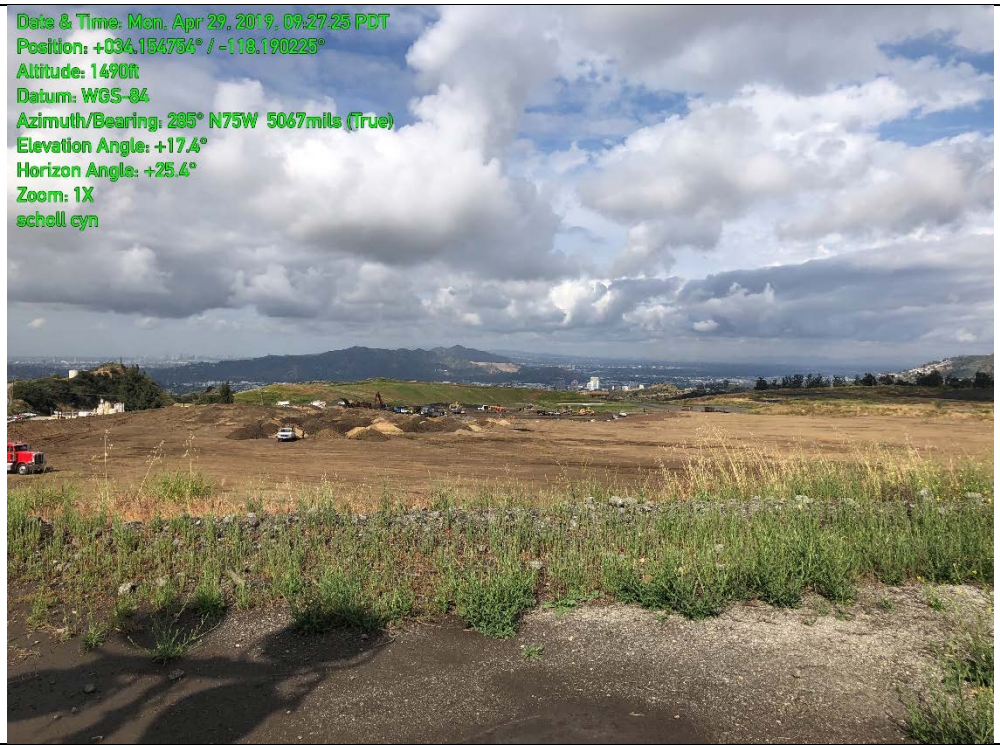


Photo #6 View of the landfill (not part of the Property) looking east-northeast.



Photo #7 View of the maintenance/equipment yard of the landfill (not part of the Property).



Photo #8 View of the three ASTs located in the maintenance/equipment yard to the east of the Property.



Photo #9 View of the Property looking north.



Photo #10 View of the flaring station observed on the Property to the south.



Photo #11 View from the Property looking southeast.



Photo #12 View of the chemical storage treatment area located south of the Property.



Photo #13 View of the electrical distribution panels located south of the Property.



Photo #14 View of the southern part of the Property looking northwest.

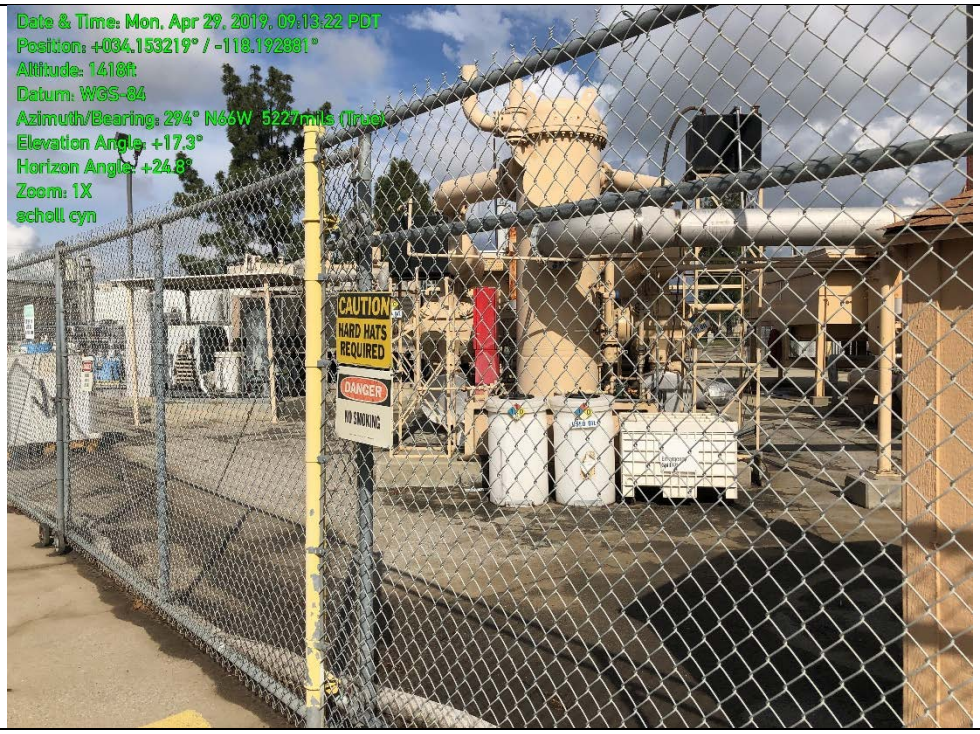


Photo #15 View of the used oil containers and emergency spill containers located south of the Property (no secondary containment noted).



Photo #16 View of some the chemicals stored in the southern area of the Property.



Photo #17 View of the gas condensate tanks on the Property.



Photo #18 View of the construction trailer present on the Property to the southeast corner.

Appendix B STANTEC RESUMES

Anuya Sawant

Phase I

Engineering Project Specialist

Anuya has four years of experience in the environmental industry, including project and task management; Phase I and Phase II environmental site assessment and remediations; hazardous material assessments; remedial investigations; remedial evaluations and installations; soil, soil vapor, and air sampling; water sampling (wastewater, groundwater, and surface water); National Environmental Policy Act (NEPA)/California Environmental Quality Act (CEQA); and workplans, proposals, and reports. Her site assessment report background includes Phase Is for complex sites including power plants, medical buildings, gas stations, etc. Her remediation background includes operating soil vapor extraction (SVE) with granular activated carbon; thermal catalytic oxidizer; and ozone sparge systems designed to target petroleum hydrocarbon and volatile organic compound impacts to groundwater, subsurface soil, and soil vapor. Anuya's site assessment background includes drilling, well abandonment and redevelopment, soil and water sampling, soil vapor sampling and indoor air/intrusion (Summa canisters and tedlars). Her regulatory compliance and NEPA/CEQA document preparation includes evaluating air quality, greenhouse gas emissions, traffic/transportation, energy, utilities, and recreational project impacts. Anuya has technical knowledge of quantifying emissions for linear (i.e. pipelines and roadways) projects using CalEEMod emission model.

EDUCATION

BS, Civil Engineering, University of Mumbai, Mumbai, India, 2008

BS, Environmental Engineering, Old Dominion University, Norfolk, Virginia, 2010

OSHA 40-Hour Health & Safety Certification HAZWOPER Standard 29 CFR 1910.120(e), Philadelphia, Pennsylvania, 2010

OSHA 8-Hour Supervisor Health & Safety Certification HAZWOPER Standard, 29 CFR 1910.120, Thousand Oaks, California, 2011

CPR/AED/First Aid, Thousand Oaks, California, 2012

OSHA 8-Hour Refresher Course Health & Safety Certification HAZWOPER Standard, 29 CFR 1910.120, Thousand Oaks, California, 2014

CPR/AED/First Aid Refresher Course, Thousand Oaks, California, 2013

MEMBERSHIPS

Member, American Society of Civil Engineers

PROJECT EXPERIENCE

ENVIRONMENTAL SITE ASSESSMENTS PHASE I, II, III

Miscellaneous sites | Los Angeles, Riverside, Orange, and Ventura Counties, California | Project Engineer

Anuya performed a limited visual site investigation, Phase I and II Environmental Site Assessments and site characterization assessments for several clients, including Los Angeles Department of Water and Power (divesture properties in Bishop, Proposed Trunkline in Los Angeles), City of Glendale (Grayson Power Plant and Schon Canyon Landfill) , medical groups, major retail tire facilities, residential developers, commercial developers, and banks. Properties included multi-story occupied and vacant buildings, vacant lots, industrial and residential properties, and automotive maintenance facilities.

ENVIRONMENTAL SITE REMEDIATION

Soil, Soil Vapor, and Groundwater Remediation | Los Angeles and Orange Counties, CA | Project Engineer

Anuya helped with permitting and operation and maintenance of soil vapor extraction, air sparge, and ozone injection systems to remediate impacted soil, soil vapor, and groundwater for property development companies (commercial) and an Orange County city. Sites included volatile organic compounds, chlorinated solvents, and hydrocarbon impacts.

Soil, Soil Vapor, and Groundwater Remediation Systems Operations and Maintenance | Los Angeles and Orange Counties, CA | Staff Engineer

Anuya conducted operation and maintenance activities on soil vapor extraction and ozone injection systems. She conducted daily/weekly field monitoring, air sampling, and monthly data collection to maintain air quality permits compliance.

California Department of Transportation (Caltrans) | Los Angeles and Ventura Counties, California | Project Engineer

Anuya performed soil sampling at various locations, including Lebec and Ojai maintenance yards and I-101 freeway in Ventura and Los Angeles Counties. She evaluated the soil for total petroleum hydrocarbons, volatile organic compounds, and metals.

Former Retail Petroleum Station Assessment and Remediation | Yorba Linda, California | Staff Engineer

Anuya is currently helping manage permitting, installation, and operation and maintenance of a soil vapor extraction and ozone sparge remediation system to redevelop a former retail petroleum station. The site is impacted with petroleum hydrocarbons and volatile organic compounds in subsurface soils, soil vapor, and groundwater. She is documenting weekly operation and maintaining thermal catalytic oxidizer granular activated carbon SVE and ozone sparge remediation system; permitting (City of Yorba Linda, WDR, and Air Quality Management District); collecting monthly soil vapor samples; collecting quarterly groundwater samples; and preparing quarterly groundwater and operation and maintenance reports and yearly progress reports submitted to the Orange County Health Care Agency and the City of Yorba Linda.

Soil and Soil Vapor Remediation | Harbor City, California | Staff Engineer

Anuya conducted weekly operation and maintenance of the soil vapor extraction system and collected soil vapor samples at a dry cleaner facility. The site consisted of volatile organic compounds, chlorinated solvents, and hydrocarbon-impacted properties. Anuya prepared quarterly operation and maintenance reports.

Target Store Assessment and Remediation | Anaheim, California | Staff Engineer

Anuya helped technically execute the remediation of a multi-million dollar project at a former Target Store facility. Source areas included an automotive service station and dry cleaner business that formerly operated at the property. Remediation activities included underground storage tank removal, soil excavation, and soil vapor extraction. Anuya composed quarterly groundwater and operation and maintenance reports; conducted weekly/daily operation and maintenance of the soil vapor extraction system with carbon vessels; and collected soil vapor samples monthly. This site received a no further action letter and was closed by the lead regulatory agency.

OIL & GAS

Tesoro (Former BP ARCO) Gas Station Workplan Reports | Project Engineer

Anuya prepared workplans and well abandonment reports for various gas station sites to expedite the remediation process and proceed towards closure.

Positional Letter Report, Tesoro (Former BP ARCO) Line 216 | Inglewood, California | Project Engineer

Anuya helped prepare a Positional Letter Report that recommended an approach, strategy, and response to a letter issued by the Los Angeles Regional Water Quality Control Board. The letter addressed environmental conditions reportedly identified along the Natural Gas Pipeline 216, located on Hollywood Park Racecourse in Inglewood, California.

Air Quality Study, Vintage Development Project | Kern County, California | Project Engineer

Anuya helped prepare a Positional Letter Report that recommended an approach, strategy, and response to a letter issued by the Los Angeles Regional Water Quality Control Board. The letter addressed environmental conditions reportedly identified along the Natural Gas Pipeline 216, located on Hollywood Park Racecourse in Inglewood, California.

Vinvale Terminal Groundwater Monitoring and Remediation | Southgate, California | Project Engineer

The project site is one of the largest fueling distribution terminals on the west coast with daily simultaneous operations. Anuya participates in the groundwater monitoring and sampling activities on a quarterly basis.

Underground Storage Tank Removal, Tesoro Refining and Marketing | Marina Del Ray, Newbury Park, Long Beach, and Santa Barbara, California | Staff Engineer

Anuya provided technical support and field support to remove and excavate an underground storage tanks at various Tesoro service stations in Marina Del Rey, Newbury Park, Long Beach, and Santa Barbara. The project removed the tank, monitored air quality in accordance with Rule 1166 Air Monitoring, collected a soil sample during UST removal/upgrades, segregated impacted soil, and backfilled the excavation pit.

BASELINE STUDIES

Occidental of Elk Hills Carbon Dioxide Enhanced Oil Recovery and Sequestration Project | Kern Counties, California | Engineering Associate

Anuya helped repair an equivalent document to an Environmental Impact Report with several technical studies to construct and operate a carbon dioxide (CO2) enhanced oil recovery (EOR) system at a 48,000-acre active oil field. The environmental document met the content and format requirements of the California Energy Commission, Department of Oil Gas and Geothermal Resources; and Kern County Planning and Community Development Department. Anuya evaluated potential environmental impacts created by the construction and operation of the CO2 EOR system (specifically for population), and if warranted, provided mitigation measures to address identified impacts.

Chevron-Branded Facility | Bakersfield, California | Project Engineer

Anuya prepared a Baseline Site Summary Report for a Chevron-Branded Facility. She prepared the summary in accordance with established Chevron Environmental Management Company (CEMC) guidelines for Property Transfer: Health, Environmental, and Safety Due Diligence Guidelines for Property Transfer for Service Stations.

MULTI-UNIT / FAMILY RESIDENTIAL

ProUCL software for statistical calculations and analysis to support Expert Report | Los Angeles, California | Project Engineer

As part of statistical calculations, Anuya evaluated the analytical data to establish the type of distributional assumptions that best fit the data. To make this determination, Anuya utilized the ProUCL 5.0 software

program provided by the USEPA and provided the upper confidence limit of the mean to help determine contribution of the site and the neighboring site to toxic metals contamination. The program allowed normality or lognormality data testing using the Shapiro-Wilk W test.

StephAnnie Roberts

Senior Project Manager/National Account Manager

CEQA LEAD

StephAnnie has 25 years of professional experience in environmental consulting. She has been involved in all aspects of regional and site-specific environmental, geohydrologic, and geotechnical investigations; she has also participated on CERCLA/SARA, and RCRA regulated projects. Within the last 15 years, StephAnnie's environmental consulting focus comprises projects involving land uses subject to discretionary agency approvals and public environmental review. She provides environmental services and leads and supports diverse teams that include project managers, biologists, environmental scientists, and planners, throughout the planning and implementation phases on projects. She works on issues analyses, project permitting, preparation of required environmental documents and supporting technical studies, and mitigation compliance. StephAnnie has experience with commercial, industrial, oil and gas, recreation, renewable energy, residential, transportation, and water.

CERTIFICATIONS & TRAINING

CPR/AED/First Aid Certification, Red Cross, Thousand Oaks, California, 2018

CEQA Workshop, California Environmental Quality Act, Los Angeles, California, 2014, 2017

Defensive Driving Training, Internal, Thousand Oaks, California, 2014, 2017

Basic Water Rescue Certification, American Red Cross, Newbury Park, California, 2010

Loss Prevention System Training Certification, Chevron, Thousand Oaks, California, 2010

29 CFR 1910.120, 8-Hour HAZWOPER Refresher Certification, OSHA, Thousand Oaks, California, 2019

29 CFR 1910.252, Fire Safety/Fire Watch Training, Agency, Thousand Oaks, California, 2009

29 CFR 1910.120, 8-Hour HAZWOPER Supervisor's Certification, OSHA, Thousand Oaks, California, 2001

29 CFR 1910.146, Confined Space Certification, South Gate, California, 2001

29 CFR 1910.120, 40-Hour HAZWOPER Certification, OHSA, Ventura, California, 1998

Drug Intervention Services of America Certification, Los Angeles, California, 2005

Refinery Safety Overview Certification, Los Angeles, California, 2005

PROJECT EXPERIENCE

AIRPORTS & AVIATION

Compliance Audits and Historical Evaluations of Seven Municipal Airports | Southern California, Washington, and Pennsylvania | 2010 | Environmental Support

StephAnnie served as a member of a project team preparing fast-tracked compliance audits and historical evaluations of seven municipal airports throughout southern California, Washington, and Pennsylvania. The project involved agency file and database research, historical document research, site facility audits to determine compliance status with appropriate regulations, and generation of summary reports aimed at limited future liability for the new operators at the airports.

ENVIRONMENTAL ASSESSMENTS

Environmental Impact Reports and Memorandums of Understanding* | Various, California | Environmental Specialist

StephAnnie has prepared EIRs and provided memorandum of understandings (MOU) project assistance with regulatory issues and permits pertaining to mining in groundwater and reclamation after mining. She has worked with U.S. Fish and Game, U.S. Fish and Wildlife, U.S. Army Corp of Engineers, and several city planning commissions and supervisor boards throughout California. All of her findings were interpreted to the client and proper remediation and reclamation was recommended.

Tier 1 Release Assessment Investigation and Report | Santa Monica, California | 2010 | Environmental Specialist

This project involved a Tier 1 release assessment investigation of a municipal drinking water well field impacted with MTBE. All work was completed under a Unilateral Administrative Order issued jointly by the Los Angeles RWQCB and USEPA. StephAnnie provided oversight of the installation of more than 242 soil borings and 14 groundwater monitoring wells totaling approximately 23,000 linear feet of drilling. She utilized innovative sampling techniques including SimulprobeTM and EncoreTM sampling devices to collect depth-discrete soil and groundwater samples, and participated in the generation of a detailed Tier 1 Release Assessment Report that totaled 136 volumes. The report included interpretation of subsurface hydrogeology utilizing geophysical logs, lithologic logs, and detailed geologic cross-sections.

** denotes projects completed with other firms*

ENVIRONMENTAL SITE REMEDIATION

Multiple ConocoPhillips Sites | Southern California | 2010 | Project Manager

StephAnnie co-managed and conducted ISOC modified Fenton's Reagent Injections for multiple ConocoPhillips sites through injection of hydrogen peroxide (H2O2) and chelated iron catalyst (EDTA) directly into the subsurface. Together, the chelated iron catalyst and hydrogen peroxide induce the generation of reactive hydroxyl radicals, creating strong oxidants. The injected and generated oxidants then react with the COCs in the subsurface. The generated radicals react with COCs to produce non-toxic by-products such as carbon dioxide and water. StephAnnie effectively remediated the dissolved-phase petroleum hydrocarbon plume at all sites and has significantly reduced the primary COCs.

100 Environmental Groundwater Regulatory Compliance | Southern California | 2010 | Project Manager

StephAnnie managed environmental groundwater regulatory compliance issues for more than 100 retail gasoline stations, dry cleaner facilities, multiple refineries, tank farms, and terminals throughout southern California via micro purge, quickie bail, and vacuum enhanced purging techniques, as well as removal of liquid phase hydrocarbons. Her responsibilities included the coordination of subcontractors and management of multiple staff personnel in performing subsurface groundwater assessment investigations, management of environmental related fieldwork, and making certain that regulatory compliance issues were adhered to. StephAnnie's additional responsibilities included collection and analyses of samples for a variety of constituents including petroleum hydrocarbons, chlorinated solvents, and natural attenuation parameters, submitting technical reports within agency deadlines, and interfacing with regulatory and client personnel.

HEALTH AND SAFETY MANAGEMENT

Office Safety and Environment Coordinator (OSEC) | Thousand Oaks, California | Ongoing | Office Safety and Environment Coordinator

StephAnnie is currently appointed as the Office Safety and Environment Coordinator (OSEC) for the Thousand Oaks Office. Her responsibilities include health and safety office and field audits, knowledge and training of OSHA regulation (for office, field, and subcontractors), organization of medical surveillance, 40-hour HAZWOPER, 8-hour Refresher, 8-hour Supervisor, CPR and First Aid courses, training of all staff and subcontractors for client specific health and safety policies and procedures, and preparation of emergency response plans for office and field.

Program Safety Manager, US West | Western United States | Program Safety Manager

StephAnnie is currently appointed as the Program Safety Manager for the US West Plains Pipeline Projects. Her responsibilities include training of staff and subcontractors for client's specific health and safety policies, health and safety field audits, knowledge and training of OSHA regulation and procedures, completing, reviewing, and/or approving Health and Safety Plans, and providing client data/statistics for ISNetworld® Compliance.

Safety Steward, Southern California | California | Safety Manager

StephAnnie managed safety for environmental groundwater and remediation regulatory compliance issues, for more than 100 retail gasoline stations, dry cleaner facilities, multiple refineries, tank farms, and terminals throughout southern California. Her responsibilities include training of staff and subcontractors for client specific health and safety policies, health and safety field audits, knowledge and training of OSHA regulation and procedures, completing, reviewing, and/or approving Health and Safety Plans, and providing client data/statistics of compliance.

POWER TRANSMISSION & DISTRIBUTION

Clearvista Wind Project Environmental Impact Report | County of Kern, California | 2010 | Environmental Specialist

StephAnnie served as a member of the project team preparing EIR for the proposed Clearvista Energy Wind Project, a 40-MW capacity wind farm, located in Kern County, east of the City of Tehachapi, in the Tehachapi Valley. The proposed project required a zone change from A (Exclusive Agriculture) to A WE (Exclusive Agriculture Wind Energy Combining).

RENEWABLE ENERGY

Scholl Canyon Landfill Power Project | Glendale, California | Environmental Task Manager

StephAnnie is serving as the assistant environmental task manager responsible for preparing technical studies and CEQA documentation for this project including the generation of 12-megawatts of electrical generating capacity from the combustion of landfill gas at the Scholl Canyon Landfill. The environmental analysis included an air quality and greenhouse gas emissions study, biological resources study, cultural resources study, Phase I Environmental Site Assessment, geotechnical study, lead and asbestos survey, noise study and preparation of an IS and MND.

SKIC 20 Solar Project | Kern County, California

StephAnnie supported field staff for a solar project, which included pre-construction biological surveys, development and provision of worker environmental awareness training, and biological monitoring during construction.

SKIC 10 Solar Project, Kern County, California

StephAnnie supported field staff for a solar project, which included pre-construction biological surveys, development and provision of worker environmental awareness training, and biological monitoring during construction.

Clearvista Wind Project Environmental Impact Report | County of Kern, California

StephAnnie assisted with the preparation of a Draft Environmental Impact Report on behalf of Kern County for Clearvista Energy Wind Project, a 40-MW capacity wind farm, located in Kern County, east of the City of Tehachapi, in the Tehachapi Valley. Specifically, Ms.

Roberts assisted with preparation of the public services and alternatives evaluation sections of the EIR.

SKIC 10 Solar Project | Kern County, California

StephAnnie supported field staff for a solar project, which included pre-construction biological surveys, development and provision of worker environmental awareness training, and biological monitoring during construction.

Oldman 2 Wind Farm, Pincher Creek | Alberta, Canada | Project Specialist

StephAnnie assisted with this project that involves obtaining California Energy Commission certification of this Canadian wind energy project in accordance with California's Renewables Portfolio Standard Eligibility program. Specifically, she assisted with preparing a data gap and sequencing analysis between the Canadian and California environmental requirements and helped develop a plan to obtain California certification on behalf of the renewable energy producer.

MINING

Environmental Impact Reports and Memorandums of Understanding* | Various, California

StephAnnie assisted with the preparation of EIRs and coordinated the completion of MOUs for project assistance with regulatory issues and permits pertaining to mining in groundwater & reclamation after mining for a variety of projects. She worked with U.S. Fish and Game, U.S. Fish and Wildlife, U.S. Army Corp of Engineers, and several city planning commissions and supervisor boards throughout California. All findings were interpreted to the client and proper reclamation was recommended.

LGT/Ditch Creek Goldmine Project, Noise Assessments | Salmon, Idaho

StephAnnie conducted a noise study for a proposed goldmine in Idaho. The scope of work included desktop and field study to identify applicable regulatory requirements, identify sensitive receptors, collect ambient noise measurements, and establish baseline conditions. and noise constraints that could affect the project.

SPILL RESPONSE

Well Blowout Spill Response Support, Emergency Response | Bakken Region, North Dakota | Assistant Safety Officer

StephAnnie served as the assistant safety officer advising incident command during response to an oil well blowout in the Bakken region of North Dakota. The spill was one of the largest in the history of North Dakota and occurred during the winter. StephAnnie was responsible for safety observations, incident and near miss investigations/reporting, trending, daily safety messages, presentations to section chiefs and contractor personnel, and implementing a safety improvement program.

Refugio Beach Oil Spill | Santa Barbara County, California

StephAnnie managed emergency response services provided to Plains Pipeline, L.P. to support the Refugio Beach Oil Spill in Santa Barbara, California. She led over 60 personnel and provided various professional services including shoreline cleanup assessment techniques, remedial excavation oversight, biological resources monitoring, cultural resources monitoring, civil engineering, geotechnical engineering, erosion control, habitat restoration planning & implementation, waste management, and compliance with multi-agency emergency permitting conditions. The emergency response operations were conducted over a 100-day period. StephAnnie wrote the regulatory compliance report on behalf of Plains Pipeline, L.P. for submittal to the US Coast Guard and EPA. StephAnnie also supported the Natural Resources Damage Assessment Case Management Team representing Plains Pipeline, L.P.

Marine Shipping Oil Spill Drill, Long Beach, California (Technical Services)

StephAnnie represented the Responsible Party and served in the Environmental Unit of the Planning Section under Unified Command during a federal and state evaluated marine fuel oil spill affecting marine waters of coastal California. StephAnnie assisted with completing a Waste Management and prepared a Source Oil Sample Collection and Fingerprinting Analysis Plan. The drill received positive feedback from the evaluating agencies.

Santa Maria Unit Oil Spill Drills, Santa Maria, California (Technical Services)

StephAnnie represented the Responsible Party and served in the Environmental Unit of the Planning Section under Unified Command during federal and state evaluated crude oil spill drills affecting marine waters of coastal California. StephAnnie assisted with completing ICS Form 232s (Resources at Risk) using the Area Contingency Plan, and Waste Management Plans. The drills received positive feedback from the evaluating agencies.

Chevron Oil Spill Drills, Bakersfield, California (Technical Services)

StephAnnie represented the Responsible Party and served in the Environmental Unit of the Planning Section under Unified Command during federal and state evaluated crude oil spill drills affecting marine waters of coastal California. StephAnnie assisted with completing ICS Form 232s (Resources at Risk) using the Area Contingency Plan, and Waste Management Plans. The drills received positive feedback from the evaluating agencies.

POWER PLANTS

Grayson Power Plant Repower Project | Environmental Support

StephAnnie is serving as the assistant environmental task manager responsible for preparing technical studies and CEQA documentation for this controversial project involving the repowering of the Grayson Power Plant in the City of Glendale. The project involves the modernization of the existing power plant including a total generating capacity of approximately 250-megawatts. The environmental analysis includes photo simulations, an air quality and greenhouse gas emissions study, biological resources study, historic resources evaluation, Phase I and II Environmental Site Assessments, hydrology study,

geotechnical study, lead and asbestos survey, noise study and preparation of an EIR. Although the City of Glendale is the CEQA Lead Agency, the EIR is being prepared consistent with the environmental review requirements of the California Energy Commission.

Huntington Beach to Catalina Island Power Cable Project, Orange and Los Angeles Counties, California (Environmental Support)

StephAnnie conducted QA/QC of the routing and critical issues analysis, project execution plan and environmental impact analysis for this project that involved a proposal to install a subsea power cable from a power generation plant in Huntington Beach to Catalina Island.

WATER

Well 21 Equipping and Pipeline Project | Orange County, California

StephAnnie managed the Initial Study and Mitigated Negative Declaration for the Yorba Linda Water District's CEQA compliance. The project evaluated the potential impacts of completing a new potable water well and installing an one-mile long water conveyance pipeline to connect the well to existing water conveyance infrastructure.

Ballona Creek/Wetlands Trash Abatement Project | Los Angeles County, California

StephAnnie is supporting preparation of an IS/MND and multi-agency environmental permitting for this project that involves construction and operation of a trash diversion and removal system by modifying a Section 408 federal levee in the Coastal Zone of Ballona Creek. The project would reduce trash flowing downstream into the ocean during storm events. The IS/MND was supported through preparation of a Jurisdictional Wetlands/Waters Delineation Report, Biological Resources Technical Report, Aquatic Resources Survey Report, air quality and cultural resources studies. Permit applications are being prepared to the U.S. Army Corps of Engineers, Regional Water Quality Control Board, California Department of Fish and Wildlife, California Coastal Commission, and Los Angeles County Flood Control.

Newport Bay Water Wheel/Trash Removal Project | Newport Beach, California

StephAnnie supported preparation of the IS/MND to meet CEQA requirements for this pioneering project that involves construction and operation of a trash removal system in the California Coastal Zone of San Diego Creek/Upper Newport Bay. The project proposes to substantially reduce the volume of trash flowing into Newport Bay and adjacent sensitive habitats/shoreline and benefit biological resources, water quality, and aesthetics. The environmental impact analysis was supported through preparation of a Jurisdictional Wetlands/Waters Delineation Report, Biological Resources Technical Report and Aquatic Resources Survey Report. Stantec prepared the IS/MND under a very compressed schedule to assist the City in securing $1.7MM in Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Prop 1) grant funding for the innovative project. Stantec's scope of work included responding to public comments and addressing concerns for potential impacts related to odors, attracting vectors such as rodents, degrading viewsheds, and entrapment of wildlife. Stantec's response to comments were integrated into a Final IS/MND that was adopted by City Council. Stantec also assisted the City with meeting public noticing requirements throughout the CEQA process.

HAZARDOUS WASTE

Oil & Gas Operations Waste Compliance Audits | Kern County, California | Project Manager

StephAnnie managed an audit of Occidental of Elk Hills, Inc.'s waste management compliance program for oil and gas operations at the Elk Hills Oilfield. The evaluation included review of environmental performance standards, participating in field audits, review of compliance documentation, and preparation of a summary and recommendations report.

Tate & Lyle, Former United Molasses Leasehold Remediation Project, Environmental Impact Assessments | Richmond, California | Document QA/QC

StephAnnie served as the document QA/QC for this project involving the remediation of a former industrial site located in the Port of Richmond and California Coastal Zone. She provided QA/QC of an Initial Study/Mitigated Negative Declaration to evaluate potential impacts resulting from remediation of this Cortese List site adjacent to the San Francisco Bay.

OIL & GAS UPSTREAM, CONVENTIONAL

Occidental of Elk Hills, Inc. CGP-2 Project | Kern County, California

StephAnnie assisted with preparation of an alternative siting analysis for a cryogenic gas plant. Four potential sites were evaluated for environmental constraints, pros/cons, and permitting requirements.

Hydraulic Fracturing Environmental Impact Study | San Joaquin Valley, California

StephAnnie assisted in the evaluation of the potential environmental impacts of an oil field exploration project located in the San Joaquin Valley considering the use of hydraulic fracturing as a well stimulation treatment. Lawsuits brought against the Division of Oil, Gas and Geothermal Resources by non-governmental organizations and surface landowners have stated that similar project reviewed by the California Environmental Quality Act are not adequate under state law.

E&B Resources Proposed Oil Production Project | Hermosa Beach, CA

StephAnnie assisted with reviewed the preparation of technical studies adequacy to support the public environmental review process for this controversial project involving an oil development within an urban, coastal community. Technical studies evaluated photo simulations, a traffic study, a geotechnical report, a phase I environmental site assessment, a Phase II environmental site assessment, and a remedial action plan.

Carbon Dioxide Enhanced Oil Recovery and Sequestration Project | Kern County, California

StephAnnie participated in this project involving preparing the equivalent of an Environmental Impact Report and extensive technical studies that meet the California Energy Commission's power plant licensing requirements. An extensive environmental analysis was prepared to evaluate potential impacts of the projected 20-year construction & operation phase of the project that includes 720 wells, 650 miles of pipelines, a gas processing plant facility, thirteen gas/fluid collection and separation stations, multiple tank batteries, a subsurface carbon dioxide storage reservoir, and permanent sequestration of carbon dioxide within an oil producing reservoir. Key environmental concerns being addressed included aesthetics, air quality, biological resources, cultural and paleontological resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, noise and hydrology and water quality.

Oilfield Shallow Groundwater Investigation Program | Kern County, California

StephAnnie provided project and field support during the implementation of an Underground Sources of Drinking Water Investigation in shallow geologic formations across the Elk Hills Oil Field. StephAnnie assisted with compliance with health and safety requirements, strategy, and deliverables. StephAnnie also supported technical materials preparation to support concurrence requests from the California State Water Resources Control Board that sections of land did not contain Underground Sources of Drinking Water and were therefore exempt from groundwater monitoring requirements. The exemption concurrences lead to well stimulation treatment insurance permits from the Division of Oil, Gas and Geothermal Resources after new regulatory requirements caused substantial industry-wide delays in permit processing.

Occidental of Elk Hills, Inc. Bears Development Project | Kern County

StephAnnie is preparing an Initial Study/Mitigated Negative Declaration for this oil and gas development project. The project includes analyzing the potential environmental impacts of 350 oil and gas wells and related infrastructure on 22 sections of land located outside the administrative boundaries of the division of oil, gas and geothermal resources. Key issues being addressed include potential impacts to agriculture, air quality, greenhouse gas emissions, hydrology and water quality, and water supply.

Occidental of Elk Hills, Inc. 11Z Development Project | Kern County, California

StephAnnie assisted in preparation of a mitigated negative declaration for this oil and gas exploration and development project. The project included analyzing the potential environmental impacts of 130 oil and gas wells, well pads, access roads, and pipelines on a section of land located outside the administrative boundaries of the Division of Oil, Gas and Geothermal Resources. Key issues addressed inclusion of impacts to sensitive wildlife species, air quality, greenhouse gas emissions, cultural resources, paleontological resources, and water quality.

Buena Vista Nose Area Appraisal Project | San Joaquin Valley, California | QA/QC

StephAnnie provided QA/QC review of an Initial Study/Mitigated Negative Declaration for this oilfield exploration and appraisal project located outside the administrative boundaries of the Division of Oil, Gas and Geothermal Resources in the Buena Vista Lakebed. Key issues addressed included potential impacts to agriculture, air quality, greenhouse gas emissions, hydrology and water quality, and water supply. As a result of Stantec's thorough analysis, the IS/MND was adopted by the Division of Oil, Gas and Geothermal Resources after minimal public comment was received.

OIL & GAS MIDSTREAM, TERMINALS

Torrance Tank Farm/Pump Station Assessment and Remediation Project, Environmental Site Assessment and Remediation, Torrance | Torrance, California

StephAnnie provided field oversight for this project that involves soil and groundwater assessment and remediation at this bulk storage and pump station facility in southern California.

OIL & GAS DOWNSTREAM, REFINERIES

Santa Maria Refinery Coke Piles Remediation Project | San Luis Obispo County, California

StephAnnie prepared a baseline environmental information and initial study necessary for the Department of Toxic Substances Control to meet the requirements of the California Environmental Quality Act. The project involved remediating nickel and vanadium affected coke piles at the Santa Maria Refinery.

OIL & GAS MIDSTREAM, PIPELINES

Metson Line Pig and Purge Activities

StephAnnie participated in pig and purge activities (CSFM classified out-of-service pipeline) for the Metson Pipeline, a 3.15 mile-long segment that consisted of 4-inch diameter pipe that formerly served as a common carrier crude oil gathering line. The lines were located, tapped at low points along the alignment to investigate and confirm the condition and contents for the pipeline and pigged and purged; which consisted of effectively cleaning of all hazardous liquids; filled with inert gas, and blinded and isolated from an active pipeline system.

Idle Pipelines Purge Verification and Compliance Project | Various Locations, California

StephAnnie provided support in program management services to ConocoPhillips that involved developing and executing a plan to verify that over 1,000 miles of idle pipelines located throughout the state of California had been properly taken out-of-service or abandoned in accordance with regulatory requirements. The project included an extensive due diligence investigation, assessing environmental liabilities, prioritizing risks, reviewing and summarizing right of way and franchise agreements, executing numerous pilot tests, preparing contractor implementation and performance standards, and forecasting program implementation costs.

Line 63 San Andreas North Motor Operated Valve Project | California | Project Manager

StephAnnie served as the project manager for environmental construction compliance for a motor operated valve installation on a crude oil pipeline adjacent to where the line crosses the San Andreas Fault. This pipeline safety device was necessary before returning the pipeline to active service in compliance with a U.S. EPA Consent Decree. The project construction compliance required construction on an access road, valve station, retaining wall, and connecting pipeline loop in the San Andreas Significant Ecological Area, under a discretionary Conditional Use Permit by Los Angeles County Department of Regional Planning and approval by the Significant Ecological Area Technical Advisory Committee. StephAnnie managed the field team that monitored for required compliance with the Conditional Use Permit, Biological Constraints Analysis Report, Biota Report, and cultural resources report requirements.

Line 63 Re-Route Activation Project, Permitting and Regulatory Compliance | California

StephAnnie assisted with management and preparation of an Initial Study Environmental Assessment/Mitigated Negative Declaration. The project involved replacing pipeline segments and conducting repairs to an out of service pipeline in compliance with a U.S. EPA Consent Decree that are necessary prior to returning the pipeline to active service. The project was subject to numerous federal, state, and local agency jurisdictions. Permitting agencies included the U.S. EPA, U.S. Forest Service (Special Use Permit), U.S. Army Corps of Engineers (Clean Water Act Section 404 Department of the Army Permit), California Regional Water Quality Control Board (Clean Water Act Section 401 Water Quality Certification), California Department of Fish and Wildlife (California Fish and Game Code Section 1602 Streambed Alteration Agreement), California Department of Water Resources (Encroachment Permit), and Los Angeles County (Conditional Use Permit). The effort required comprehensive technical analyses and studies. StephAnnie prepared the air quality, greenhouse gas emissions, noise, socioeconomics and environmental justice sections and document management services for the NEPA/CEQA documents. Ms. Roberts also prepared 299 Application packages including transportation plans, general conformity analyses and project descriptions.

7H to 9D Pipeline Project | Kern County, California

StephAnnie served as the environmental permitting and compliance co-project manager for this project. The project included natural gas, crude oil, and water pipelines installations as well as an electrical line that cross local, state, and federal jurisdictions in Kern County, California. Stantec's scope of work includes a biological resources assessment, cultural and paleontological resources study, agency permitting, and California Environmental Quality Act and National Environmental Policy Act services.

Line 63 Santa Clara River Pipeline Replacement Project | California

StephAnnie supported the environmental permitting and compliance for a project that involved replacing an approximately 2,000-foot crude oil segment pipeline. The project involved horizontal directional drilling techniques under the Santa Clara River. It also removed 650-feet of existing pipe within the riverbed and banks and 360-feet in an upland area. The project is located in the Santa Clara River Significant Ecological Area and California Audubon designated Globally Important Bird Area, and had substantial natural resources constraints, known to contain unarmored threespine stickleback, a federally- and state-listed endangered fish species.

National Account Manager | US and Canada | National Account Manager

StephAnnie is the national account manager for Plains All American Pipeline, LP, which is a K2 account for Stantec. Plains All American Pipeline, L.P. (NYSE: PAA) is a publicly traded master limited partnership that owns and operates midstream energy infrastructure and provides logistics services for crude oil, natural gas liquids and natural gas. PAA owns an extensive network of pipeline transportation, terminaling, storage and gathering assets in key crude oil and NGL producing basins and transportation corridors and at major market hubs in the United States and Canada. As the account manager, StephAnnie maintains the company's existing relationships with the client. Responsibilities include the management of the individual accounts and relationships with Plains on a project by project basis.

ELECTRICAL POWER DISTRIBUTION

Huntington Beach to Catalina Island Power Cable Project | Orange and Los Angeles County, California | Environmental Support

StephAnnie conducted QA/QC of the routing and critical issues analysis, project execution plan and environmental impact analysis for this project that involved a proposal to install a subsea power cable from a power generation plant in Huntington Beach to Catalina Island.

BICYCLE AND PEDESTRIAN PATHS

Top of the World Pathway Project | Laguna Beach, California | Environmental Task Manager

StephAnnie served as the Environmental Task Manager an Initial Study/Mitigated Negative Declaration for improvements to an existing multi-use pedestrian pathway project that connects Top of the World Drive with a fire access road within the County of Orange, Aliso and Wood Canyons Park. The project maintained the existing drainage patterns and avoided any concentrated areas with the use of an arch culvert crossing or boardwalk foot bridge. The project required the creation of two new public access easements, including a 10-foot-wide and approximately 450-foot-long easement where the path would cross private property and an additional 10-foot-wide by approximately 200-foot easement through Aliso and Wood Canyons Park to connect to the existing paved fire access road. The assessment included technical baseline analysis of air quality, biological resources, and cultural resources. The controversial project was subject

to public opposition from community members living nearby that were concerned with a potential increases in noise, traffic, fire risk, and crime. After substantial public input, the City of Laguna Beach Planning Commission adopted the Initial Study and Mitigated Negative Declaration Stantec had prepared, pursuant to the California Environmental Quality Act.

Laguna Canyon Road Pedestrian Pathway Project | Laguna Beach, California | Environmental Task Manager

StephAnnie served as the environmental task manager. She prepared an Initial Study and Mitigated Negative Declaration, and supported both biological and cultural resources studies. This project involved the construction of a pedestrian pathway linking an existing educational facility to additional parking.

SOIL AND GROUNDWATER REMEDIATION SYSTEMS

Vinvale Terminal, South Gate | California

StephAnnie participated in a detailed evaluation of subsurface hydrogeology of the largest tank farm by volume in the world; which was also a former refinery. The project consisted of determining hydrologic forces impeding the recovery of separate-phase hydrocarbons (SPH), provided oversight of a large-scale vacuum enhanced product recovery system as part of the SPH recovery effort. Innovated technology utilized included CPT, CPT/ROST, UVIF, EVS, and high resolution 3-D imaging to identify trapped SPH in subsurface stratigraphic soil horizons within the vadose and phractic zone; this increased SPH recovery efforts by 100 percent in a one-year period.

Multiple ConocoPhillips Sites, Southern California | California

StephAnnie managed and conducted ISOC modified Fenton's Reagent Injections for multiple ConocoPhillips sites through injection of hydrogen peroxide (H2O2) and chelated iron catalyst (EDTA) directly into the subsurface. Together, the chelated iron catalyst and hydrogen peroxide induce the generation of reactive hydroxyl radicals, creating strong oxidants. The injected and generated oxidants then react with the COCs in the subsurface. The generated radicals react with COCs to produce non-toxic by-products such as carbon dioxide and water. These efforts effectively remediated the dissolved-phase petroleum hydrocarbon plume at all sites and has significantly reduced the primary COCs.

Environmental Groundwater Regulatory Compliance | California

StephAnnie managed environmental groundwater regulatory compliance issues for more than 100 retail gasoline stations, dry cleaner facilities, multiple refineries, tank farms, and terminals throughout southern California via micro purge, quickie bail, and vacuum enhanced purging techniques, as well as removal of liquid phase hydrocarbons. Her responsibilities included the coordination of subcontractors and management of multiple staff personnel in performing subsurface groundwater assessment investigations, management of environmental related fieldwork, and making certain that regulatory compliance issues were adhered to. Key responsibilities included collection and analyses of samples, for a variety of constituents including petroleum hydrocarbons, chlorinated solvents, and natural attenuation parameters, submitting technical reports within agency deadlines, and interfacing with regulatory and client personnel.

Tier 1 Release Assessment Investigation and Report | Santa Monica, California

StephAnnie provided support for this project involving a Tier 1 release assessment investigation of a municipal drinking water well field impacted with MTBE. All work was completed under a Unilateral Administrative Order issued jointly by the Los Angeles RWQCB and USEPA. StephAnnie participated with the oversight of the installation of more than 242 soil borings and 14 groundwater monitoring wells totaling approximately 23,000 linear feet of drilling. Innovative sampling techniques utilized included SimulprobeTM and EncoreTM sampling devices to collect depth-discrete soil and groundwater samples, and participated in the generation of a detailed Tier 1 Release Assessment Report that totaled 136 volumes. The report included interpretation of subsurface hydrogeology utilizing geophysical logs, lithologic logs, and detailed geologic cross-sections.

GROUNDWATER

Vinvale Terminal | South Gate, California

StephAnnie participated in a detailed evaluation of subsurface hydrogeology of the largest tank farm by volume in the world; which was also a former refinery. The project consisted of determining hydrologic forces impeding the recovery of separate-phase hydrocarbons (SPH), provided oversight of a large-scale vacuum enhanced product recovery system as part of the SPH recovery effort. Innovated technology utilized included CPT, CPT/ROST, UVIF, EVS, and high resolution 3-D imaging to identify trapped SPH in subsurface stratigraphic soil horizons within the vadose and phractic zone; this increased SPH recovery efforts by 100 percent in a one-year period.

Multiple ConocoPhillips Sites | Southern California

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Tier 1 Release Assessment Investigation and Report | Santa Monica, California

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Environmental Groundwater Regulatory Compliance | Southern California

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COMMERCIAL / RETAIL DEVELOPMENT

Rialto Facility Expansion Project | Rialto, California

StephAnnie supported staff in biological studies that evaluated the potential environmental impacts associated with development of the proposed FedEx expansion project. The study included an environmental impact analysis that was used as the basis for the biological resources sections of a supporting California Environmental Quality Act (CEQA) document.

Hyatt Westlake Plaza Expansion Project | Westlake Village, California

StephAnnie supported an Air Quality and Greenhouse Gas Emissions Study that evaluated the potential environmental impacts associated with the criteria air pollutant and greenhouse gas emissions from the proposed hotel expansion project located within the Ventura County Air Pollution Control District. Construction and operation emissions were quantified using the California Emissions Estimator Model and compared to Ventura County Air Pollution Control District thresholds of significance. The study was used by the Lead Agency during environmental review to demonstrate that the project would not result in significant air quality or greenhouse gas emissions impacts.

Proposed 7-11 Convenience Store | San Diego, California

StephAnnie supported preparation of a Greenhouse Gas Emissions Study to evaluate potential climate change impacts from the construction and operation of a proposed 7-11 convenience store in the City of San Diego. Greenhouse gas emissions were estimated using the California Emissions Estimator Model and compared to screening criteria used by the City of San Diego to demonstrate the project would not substantially contribute to a climate change impact and could be found categorically exempt from California Environmental Quality Act requirements.

Proposed Walgreens Pharmacy, Air Compliance Management | Porterville, California

StephAnnie assisted in preparation of an Indirect Source Review Application to the San Joaquin Valley Air Pollution Control District to comply with rule requirements and evaluate potential air quality impacts from construction and operation of a proposed 14,550 square foot Walgreens pharmacy in the City of Porterville.

RECREATIONAL DEVELOPMENT

Park Facilities Repairs Projects | Orange County, California | Environmental Project Manager

StephAnnie served as the environmental project manager assistant for four projects that involved replacing fill into Waters of the U.S. to rebuild, improve, protect, and maintain recreationally related improvements at Orange County Parks facilities that were damaged during storm events. She supported the project lead in obtaining construction and long-term maintenance permits from the U.S. Army Corps of Engineers, California Regional Water Quality Control Board, and California Department of Fish and Wildlife.

Craig Bike Park Facility | Fullerton, California

Orange County Parks is proposing to construct, operate, and maintain the Craig Park Bike Facility in Fullerton, California. The project is proposed within Craig Regional Park, which is currently managed and operated by OC Parks under a lease agreement with the United States Army Corps of Engineers (USACE) who is the land owner related to the adjacent Fullerton Dam and flood control purposes. The project entails a mountain bike skills course facility for all ages and abilities. StephAnnie supports the environmental permitting and supporting California Environmental Quality Act (CEQA) document for the project. StephAnnie prepared the Request for Review and Approval of the Project in Consideration of the existing lease through the USACE Agreement with Orange County and assisted in the preparation of an Initial Study/Mitigated Negative Declaration.

Boxcar Bridge Repair & Bank Stabilization | Orange County, California

StephAnnie supported the environmental permitting and supporting California Environmental Quality Act (CEQA) document for the project that involved bridge protection and bank stabilization activities. StephAnnie assisted in the preparation of an Initial Study/Mitigated Negative Declaration.

2014 Irvine Ranch Open Space Donation Interim Operations Plan | Orange County, California

The 2014 Irvine Ranch Open Space Donation includes nearly 2,300 acres, adding to the current 20,000 acres previously donated by the Irvine Company. These parcel areas are adjacent to Irvine Lake and near the junction of the 91 and 241 freeways. The properties are located near existing Orange County Regional Parks and Open Space and add further acreage to the previous inventory of nearly 60,000 acres. OC Parks is in the process of preparing an Interim Operations Plan (IOP) for the 2014 Irvine Ranch Open Space Donation. Of the 2,300-acres, improvements are limited to portions of East Orange I, East Orange II, and Mountain Park properties, with the remaining properties being maintained as is, until the RRMP is completed. StephAnnie is leading the California Environmental Quality Act (CEQA) Initial Study/Mitigated Negative Declaration (IS/MND) of the Interim Operations Plan (IOP) covering portions of all three of the above properties.

RESIDENTIAL DEVELOPMENT

Plaza Mendoza Apartments Rehabilitation Project | Fresno, California | Project Manager

StephAnnie prepared a National Environmental Policy Act Environmental Assessment for this project, which included rehabilitating low-income housing in the City of Fresno. She led resource specialists, whom completed the Environmental Assessment, coordinated National Historic Preservation Act Section 106 consultation, and supported the City's Finding of No Significant Impact. She helped ensure the project was complete in less than one week, to secure over $1 million in federal funding aid for the project.

Kings Canyon Place Project | Fresno, California

StephAnnie managed the environmental permitting and compliance for this project which included development of 134 units of low-income housing. StephAnnie management a team of environmental professions in preparation of a National Environmental Policy Act Environmental Assessment for this project, which included technical studies of Phase I and II Environmental Site Assessments, arborist study, geotechnical evaluation, acoustical analysis, and Indirect Source Rule Application.

Bakersfield Apartments Project | Bakersfield, California

StephAnnie managed the environmental permitting and compliance for this project which includes development of apartment low-income housing. StephAnnie management a team of environmental professions in technical studies of Phase I and II Environmental Site Assessments, and geotechnical evaluation,

NOISE ASSESSMENTS

Top of the World Pathway Project, Laguna Beach, California

StephAnnie conducted a noise study for proposed improvements to an existing multi-use pedestrian pathway project connecting Top of the World Drive with a fire access road within the County of Orange Aliso and Wood Canyons Park. The scope of work included desktop studies to identify applicable regulatory requirements, identify sensitive receptors, compile ambient noise measurements of potential construction equipment use, and establish baseline conditions and noise constraints that could affect the project.

Idaho Gold Company, LGT/Ditch Creek Goldmine Project, Noise Assessments, Salmon, Idaho

StephAnnie conducted a noise study for a proposed goldmine in Idaho. The scope of work included desktop and field study to identify applicable regulatory requirements, identify sensitive receptors, collect ambient noise measurements, and establish baseline conditions and noise constraints that could affect the project.

Well 21 Equipping and Pipeline Project, Orange County, California

StephAnnie completed a noise technical study in support of an Initial Study/Mitigated Negative Declaration for the Yorba Linda Water District, so their project could comply with California Environmental Quality Act. The project evaluated the potential impacts of completing a new potable water well, and installing an one-mile long water conveyance pipeline to connect the well to existing water conveyance infrastructure. The technical report included desktop studies to identify applicable regulatory requirements, identify sensitive receptors, compile ambient noise measurements of potential construction equipment used, and establish baseline conditions and noise constraints that could affect the project.

Hydraulic Fracturing Environmental Impact Study, San Joaquin Valley, California

StephAnnie assisted in the evaluation of potential environmental impacts of an oil field exploration project located in the San Joaquin Valley considering the use of hydraulic fracturing as a well stimulation treatment. Lawsuits brought against the Division of Oil, Gas and Geothermal Resources by non-governmental organizations and surface landowners have stated that similar project reviewed by the California Environmental Quality Act are not adequate under state law. One key deficiency identified in the lawsuits is an inadequate or absent analyses of potential direct and indirect impacts associated with hydraulic fracturing. Stantec used site-specific data to support the environmental impact analysis whenever possible to demonstrate that the project would protect the environment. Stantec conducted a comprehensive evaluation of hydraulic fracturing induced seismicity and a noise study. The seismicity evaluation included interpreting site-specific geophysical data to identify cap rock layers and faults and determining the potential for nearby wells to act as a fluid or gas migration pathway. It was determined that project operation did not include a source with the potential to generate excessive ground borne vibration or ground borne noise levels and potential impacts would therefore be less than significant. The noise study considered project sound levels estimated using a point source attenuation model. Noise from the source was assumed to attenuate at a rate of 6dB for each doubling of distance. To determine potential noise impacts, the noise levels of these activities were estimated at the closest sensitive receptor and compared to the Kern County standard noise level of 65 dBA Ldn. The distance of each of these noise source activities to

attenuate to a noise level of 90 dBa were also calculated to evaluate potential impacts to agriculture workers. The highest noise levels associated with project operation were expected to occur from trucks used to transport production to existing processing facilities during the well testing phase and periodic well workovers. Those activities would occur intermittently during project operation and were not expected to result in a substantial permanent increase in ambient noise levels in the project vicinity.

Line 2000 Anomaly Repairs Project, Angeles National Forest, California

StephAnnie evaluated potential noise impact from use of heavy lift helicopter aerial operations. This was for proposed pipeline anomaly repairs on an active common carrier crude oil transmission pipeline located in the Angeles National Forest.

King Canyon Place Project, Fresno, California

At the request of the City of Fresno, StephAnnie prepared an Acoustical Analysis. Field collected data was used to run the acoustical model based on the Kings Canyon Place Project footprint. Reporting included a summary of the ambient noise environment at the project site, estimates of predicted noise levels at the property and nearest residential unit boundaries, an analysis of whether any applicable noise level standard would be exceeded, and identification of measures that could be considered to reduce noise levels, as necessary. Based on the noise levels estimated to be experienced by project residents, Stantec provided noise attenuation recommendations that would reduce exterior and interior noise levels below threshold levels. Construction recommendation assessment used the Sound Transmission Classification Assessment Tool (STraCAT) provided by HUD to calculate the attenuation due to wall design for interior noise. In addition, standard construction practices conforming to State Noise Insulation Standards (California Code of Regulations, Title 24) and Chapter 35 of the Uniform Building Code (UBC) were used.

Occidental of Elk Hills, Inc. 11Z Development Project, Kern County, California

StephAnnie conducted a baseline noise study to identify noise related regulations such as ordinances, policies, goals, and objectives applicable to the project; sensitive receptors located within a radius of the project footprint boundaries. Sensitive receptors were identified through a review of aerial photography, a review of publicly available documentation in the project area, and field observation. Identify existing background levels by collecting a minimum of 15-minute long day and evening/nighttime ambient noise level measurements at sensitive receptor locations near the Project. Prepare a technical report summarizing the methods used and results related to the above.

Line 63 Re-Route Activation Project, Permitting and Regulatory Compliance, Southern California

StephAnnie assisted with management and preparation of an Initial Study Environmental Assessment/Mitigated Negative Declaration. The project involved replacing pipeline segments and conducting repairs to an out of service pipeline in compliance with a U.S. EPA Consent Decree that are necessary prior to returning the pipeline to active service. StephAnnie conducted noise and vibration monitoring during construction activities to evaluate potential impact to surrounding communities, and avian and aquatic habitat within the project footprint.

Line 63 Santa Clara River Pipeline Replacement Project, California

StephAnnie conducted noise and vibration monitoring during construction activities to evaluate potential impact to surrounding communities, and avian and aquatic habitat, including but not limited to southwestern flycatcher, least bells verio, burrowing owl and unarmored threespine stickleback. The project involved replacing an approximately 2,000-foot crude oil segment pipeline, via horizontal directional drilling techniques under the Santa Clara River; as well as removal of 650-feet of existing pipe within the riverbed and banks and 360-feet in an upland area. The project was located in the Santa Clara River Significant Ecological Area and California Audubon designated Globally Important Bird Area, and had substantial natural resources constraints, it is known to contain unarmored threespine stickleback, a federally- and state-listed endangered fish species.

State Street Sewer Replacement Project | Santa Barbara, California

StephAnnie supported preparation of a noise study of proposed nighttime sewer replacement activities in support of the City of Santa Barbara issuing a Special Permit and CEQA exemption. The noise study predicted expected construction noise levels at nearby residential receptors, evaluated significance in comparison to the City of Santa Barbara's noise ordinance, recommended measures including temporary sounds wall to reduce noise, and evaluated criteria used by the City of Santa Barbara in deciding whether to allow nighttime construction to avoid conflicts with adjacent commercial operations in the city center. StephAnnie also conducted collection of the field data and provided analysis of impacts to the client.

Chevron Pipe Line Company Lost Hills Compressor Station Sound Survey

StephAnnie managed and performed third octave band and broadband ambient sound pressure levels of an operating compressor station. The survey was conducted to provide current exposure levels for construction crews during construction of a third compressor. Readings were collected at three intervals (The heights monitored corresponded with the deck height of the un-built third compressor (19" Above Ground Level (AGL)), a typical worker height standing on the third compressor deck (60"

Steven Brady PG, CEG, CHG, ENV-SP

Phase I

Senior Principal

With a career history facilitating development and redevelopment projects, Steve has over 30 years in environmental consulting, engineering, and construction. He has participated in work throughout the US, including CERCLA/SARA, RCRA, NEPA, and CEQA regulated projects. His experience includes liaison with client, client legal counsel, and regulatory agencies to achieve appropriate, defensible actions that meet goals for cost, timing, and sustainability. Technical activities include responsible charge on remedial investigations/feasibility studies; risk assessments; soil, soil gas, and groundwater studies; indoor air quality; contaminant fate and transport; and impact delineation, treatment, or removal. Other activities include watershed and wetlands studies; siting investigations, and forensic investigations.

Steve conducts independent and peer review (QA/QC) for a variety of projects, including due diligence; soil, vapor, and water studies; compliance; O&M and remedial projects; and CEQA/NEPA projects. His experience with contaminants include petroleum hydrocarbons; volatile and semi-volatile organic compounds (including pesticides and PCBs); metals; radionuclides; and others.

As the Business Center Sector Leader, Steve sets vision and direction for Southern California Environmental Services. He is part of the account management team for healthcare, coordinating environmental services nationally. Steve has worked as an expert for the California Board of Geology in determination of pass point criteria for Professional Geologist, Certified Engineering Geologist, and Hydrogeologist certifications, and is Stantec's Subject Matter Expert Technical Lead for Phase 1 ESA's.

EDUCATION

Bachelor of Arts, Architecture, University of North Carolina, Charlotte, North Carolina, 1979

Master of Science, Geology, Arizona State University, Tempe, Arizona, 1988

8-Hour Health & Safety Annual Certification Update, OSHA, Los Angeles, California, 2017

8-Hour Supervisor's Certification, OSHA, Los Angeles, California, 1990

40-Hour Health & Safety Certification (29 CFR 1910.120), OSHA, Los Angeles, California, 1989

REGISTRATIONS

Registered Geologist #50057, State of Arizona, 7/28/2009 - 9/30/2018

Certified Hydrogeologist #542, State of California, Issued 1997, Expires July 31, 2019

Certified Engineering Geologist #2000, State of California, Issued 1996, Expires July 31, 2019

Professional Geologist #6031, State of California, Issued 1994, Expires July 31, 2019

Envision™ Sustainability Professional (ENV SP) #23286, Institute for Sustainable Infrastructure, 01/31/2018

MEMBERSHIPS

Member, Association of Water Agencies of Ventura County

PROJECT EXPERIENCE

ABOVEGROUND AND UNDERGROUND STORAGE TANK INVESTIGATION

Underground Storage Tank Program Management for Major Oil Company Portfolios | Various Locations, California, Arizona, Nevada | Portfolio Manager

Steve managed regional portfolios of site assessment and remediation projects at gasoline-dispensing facilities across the Southwestern United States. He was responsible for planning and implementing projects involving UST system closure, site assessment, remediation system design, construction management, operation-and-maintenance, and risk-based corrective action analysis. Tasks included collection of soil, soil vapor, and groundwater samples during assessments, UST removal activities, and after releases have been discovered, corrective action plan preparation, agency liaison, negotiations, and reporting, and remediation oversight. The sites were located in a variety of geologic terrains ranging from fractured bedrock to alluvium, and the depth to groundwater ranged from a few feet to several hundred feet. Contaminants typically included separate-phase hydrocarbons (SPH) and dissolved-phase motor fuel constituents. Remediation technologies used to clean up the various leaking UST sites included excavation, ozone sparging, air sparging, biosparging, soil vapor extraction, bioventing, groundwater pump-and-treat, dual phase extraction, high vacuum dual phase extraction, and above-ground bioreactors (to treat higher

concentration liquid effluent).

AGRICULTURE

Agriculture Site Assessment, Monitoring, and Remedial Activities* | Santa Barbara, California | 1997 | Project Manager

Steve oversaw the soil and groundwater site assessment, quarterly groundwater monitoring, and oversight of remedial activities at an agricultural site. The site encompasses more than 60 acres, with approximately 20 acres within the coastal zone of Santa Barbara. In addition to releases from pesticide and chemical storage areas, diesel boilers, and fuel tanks, large portions of the site consisted of undocumented landfills. An assessment of soil and groundwater was performed for the site, and the extent of both soil and groundwater contamination due to releases of fuels and chemicals was determined. Calculations of groundwater gradient and rates of contaminant flow in the subsurface were performed. Remedial action plans were developed and implemented to remove landfills from the site.

Agricultural Packing Plant SWPPP Development and Compliance Project* | 1997 | Project Manager

Steve was responsible for site facility audits to evaluate potential discharge locations, development of best management practices recommendations, and development of a Storm Water Pollution Prevention Plan for submission to the lead regulatory agency.

AIRPORTS & AVIATION

John Wayne Airport Soils and Groundwater Investigation* | 1989-1994 | Project Geologist

Steve conducted characterization, delineation, and remediation of hydrocarbon and volatile organic contaminated soils and groundwater at Orange County's John Wayne Airport. His duties included development of site-specific work plans and health and safety plans; permitting, drilling and sampling soil borings; installation of groundwater monitoring wells; installation, maintenance, and monitoring of a groundwater treatment system; compilation and analysis of analytical results; and preparation of monthly and quarterly reports.

Norton Air Force Base Remedial Investigation* | San Bernardino, California | 1994 | Project Manager

Steve served as project manager for a fast-track remedial investigation supporting RCRA closure of Norton Air Force Base NPL site in San Bernardino, California. Initial tasks consisted of assessment and demolition of two hazardous material storage facility areas at the Base. Part of the DRMO, these two storage facilities received all hazardous materials generated at the Base. A site-specific work plan, chemical data quality management plan, and health and safety plan were developed and approved by the U.S. Army Corps of Engineers, U.S. Air Force, and the California EPA. His field activities consisted of wipe sampling of facility surfaces prior to demolition, demolition and salvage of building materials, drilling 33 subsurface borings, and collecting concrete core, asphalt, and subsurface materials to assess conditions at the site. Demolition of the buildings was completed in one day and salvage operations were performed concurrent with the site assessment. A report was developed detailing activities and recommendations, and certification of closure was performed as a final task.

March Air Force Base Site 17 Engineering Evaluation/Cost Analysis* | 1994 | Deputy Project Manager

Steve served as deputy project manager for an engineering evaluation/cost analysis (EE/CA) for remedial actions at March Air Force Base Site 17, an abandoned pool which was back filled with hazardous waste. His duties consisted of research, analysis, and generation of a report which includes development of scope and schedule for removal action objectives adhering to statutory limits for removal actions; identification and analysis of removal action alternatives, including effectiveness, implementability, and cost; comparative analysis of remedial alternatives; and recommendations for removal actions.

Edwards Air Force Base and Phillips Laboratory Closure* | 1994 | Project Manager

Steve managed an expedited remedial investigation under the Installation Restoration Program for closure of Edwards Air Force Base, Phillips Laboratory OU4, Sites 7 and 167, the 48 acre beryllium storage and test firing range for the Phillips Laboratory. Site 7 was used to stockpile beryllium-contaminated soils after explosions destroyed buildings on the Site. Site 167 received beryllium fallout from test firings of rocket engines. His duties included development of the work, sampling and analysis, and Health and Safety Plans, which were reviewed and approved by the U.S. Army, the U.S. Air Force, and the U.S. EPA.

March Air Force Base, Hawes Site Closure* | San Bernardino County, California | 1994 | Project Manager

Steve managed a remedial investigation under the Installation Restoration Program for closure and property transfer of March Air Force Base, Hawes Site in San Bernardino County, California. The Hawes Site consists of a former auxiliary airport and radio tower, and encompasses approximately 305 acres of federally endangered species habitat. Initial duties included an endangered species survey of the site, development of an endangered species conservation plan, and a geophysical survey of the site. The conservation plan was reviewed and approved by the U.S. Fish and Wildlife Service. Site specific work plans, sampling and analysis plans, and health and safety plans were then developed for the Site and approved by the U.S. Army Corps of Engineers, the U.S. Air Force, the U.S. EPA, the California EPA, and the Regional Water Quality Control Board. The planning documents detailed protection of endangered species and assessment of potential contamination and closure of fuel and waste oil USTs, removal of septic tanks and leach fields, removal of underground tanks, geophysical logging and closure of the onsite water supply well, removal of numerous utility vaults, demolition and removal of a storage building, removal of scrap and debris from the Site, and asbestos abatement of the bunker and bunker area.

Brownfield Investment Property Fast-Track Investigation* | Santa Monica, California | 1996 | Project Manager

Steve served as project manager for a fast-track investigation on a brownfield investment property that was formerly a portion of the original McDonnell Douglas Aircraft manufacturing facility in Santa Monica. Work plans were developed and approved by the client, property owner, and lender. Soil gas surveys and soil sampling assessments were performed to characterize the nature, levels, and potential sources of contamination at the site. The entire project was completed within three weeks and recommendations were provided to the client aimed at limiting future liability. Negotiation support was provided to assist in obtaining funding.

Former Military/Aerospace Manufacturer Remedial Oversight* | 1995 | Project Manager

Steve performed remedial oversight at a former military/aerospace manufacturer in Santa Ana, California. Extensive quantities of chlorinated solvents, metals, and fuels were released into subsurface soils and groundwater by a past military/aerospace tenant. Numerous remedial actions have been performed at the site. A summary report was developed detailing the nature and levels of contamination in the soil and groundwater aquifers, a summary of the prior assessments and remedial activities performed at the site, an opinion regarding the extent of contamination in the subsurface and different water-bearing zones, and an opinion regarding the adequacy of the former tenants proposed assessment and remedial activities. Assistance with negotiations with the tenant and the Regional Water Quality Control Boards (RWQCB) regarding site remediation was provided.

Municipal Airports Fast-Track Compliance Audits and Evaluations | Various Locations | Project Manager

Steve served as project manager for the fast-track compliance audits and historical evaluations of seven municipal airports in Southern California, Washington, and Pennsylvania. The project involved agency file and database research, historical document research, and site facility audits to determine compliance status with appropriate regulations, as well as generation of summary reports aimed at limiting future liability for the new operators at the airports.

CONDITION ASSESSMENTS

Cave Creek Groundwater Mapping and Siting* | Arizona | 1988 | Project Manager

Steve conducted mapping and siting of multiple groundwater production wells in Arizona for an assured water supply for the City of Cave Creek and in support of a proposed golf course and country club development. Well locations were selected and logging and evaluation of test boring conducted to more than 1,000-foot BGS. Screen depths were selected for the wells and oversight of well construction was completed.

Seismograph Station Siting* | 1990 | Project Manager

Steve conducted siting of multiple seismograph station arrays to locate significant, active fault segments in Central and Southern California meeting specific lithological criteria. The seismograph arrays were designed to obtain near-field seismic effects. The project involved review of numerous geologic and geotechnical reports, evaluation of data from existing seismograph arrays, field mapping and site reconnaissance, contact with property owners to obtain lease permits, and generation of a report detailing conclusions and recommendations.

Pacific Palisades Landslide and Contamination Investigation* | Los Angeles, California | 1993 | Project Manager

Steve served as the project manager for the geohydrologic and environmental portions of an investigation to evaluate landslide potential and potential soil and groundwater contamination for a proposed force main line in the Pacific Palisades for the City of Los Angeles, Geotechnical Services Division. Numerous ancient and historic landslides occur in the Pacific Palisades, many of which have activated due to the presence of high groundwater. The study required review and compilation of prior geotechnical and environmental data; geologic field mapping and surveying; geotechnical and environmental drilling, sampling, and chemical and physical analysis of soil and groundwater; review of historical and site-specific oblique, vertical, and infrared aerial photographs; data compilation and analysis; determination of groundwater sources; and map and report preparation with evaluation of alternatives and recommendations.

Methane and Leachate Collection Systems Investigation* | 1996 | Project Manager

An investigation of the methane and leachate collection systems operational at a golf and country club, on the site of a former landfill in the Santa Monica Mountains, was performed. An extensive review of available landfill and facility construction and monitoring data was conducted, as well as research on documentation available from the RWQCB, the Department of Fish & Game, and the US Army Corps of Engineers. Site and facility audits were performed to evaluate the present condition of the methane, gas condensate, and leachate collection systems. Conclusions and opinions were provided to the client concerning the operation, maintenance, and adequacy of the collection systems. Mitigative measures were recommended to the client aimed at limiting offsite migration of methane and improving water quality downgradient from the landfill.

UK and US Golf Course UST Compliance* | 1997 | Project Manager

Steve served as project manager for a compliance status summary of the underground storage tanks at 250 client-owned golf courses throughout the UK and US. The project involved review of tank data from the various courses and management/oversight of the development of a database that contained pertinent details including quantity of USTs and above ground storage tanks, installation dates, and other tank/tank appurtenance information. The database allowed for searches and sorting to determine compliance with the US-EPA UST compliance deadline.

ENVIRONMENTAL SITE ASSESSMENTS PHASE I, II, III

Phase I ESAs and Liability Evaluation | Multiple

Foundries, Southern California | 2009 | Project Manager

Steve was part of the Stantec team that completed concurrent Phase I ESAs and an overall evaluation of potential pollution liability for multiple foundries. The projects were completed during a business purchase transaction whereby the properties and their associated environmental liability would become the responsibility of the new land owner. At the time of evaluation, the foundry sites were each in various stages of environmental assessment and remediation, and under regulatory oversight by the Los Angeles Regional Water Quality Control Board (LARWQCB). The liability evaluations consisted of assessing the potential remaining environmental assessment and remediation that may be required by the LARWQCB, and development of potential costs associated with obtaining regulatory closure. Potential future environmental liabilities associated with purchasing the impacting properties and the foundry business operations were included as they might pertain to the purchase of the business and its assets and liabilities. The projects were completed during the pre-transaction due diligence period by a team of Stantec professionals across multiple offices.

Healthcare and/or Environmental Site Assessment Phase I, II, III | Various Locations, California, Oregon, and Washington | Project Manager

Steve managed numerous Phase I, Phase II, and remedial projects associated with property transfer and development for a major health care provider throughout California and the Pacific Northwest. Numerous specialized assessments have been conducted for various existing or planned hospitals, medical office buildings, and support facilities. These investigations have involved drilling and sampling of soil, soil vapor, and groundwater utilizing various techniques; installation and sampling of monitoring wells and calculated rates and direction of groundwater flow; location of contaminant sources; evaluation of facility usage, and risk assessments to document protection of human health for facility users and construction workers. Remediation of soil, soil vapor and groundwater have been performed, including underground storage tank removal, contaminated soil removal and treatment, and evaluation of best available technologies for remedial actions. Project support involved negotiations with regulatory agencies, legal counsel, and property owners.

Retail Tire Facility and/or Environmental Site Assessment Phase I, II, III | Project Manager

Steve served as project manager for numerous combined Phase I and Phase II environmental site assessments, groundwater monitoring, remedial actions, and reporting projects for a major retail tire facility. Projects generally included assessing the extent of contamination associated with hydraulic lifts, USTs, and other activities associated with operating a tire replacement facility, as well as remediating the extent of assessed contamination and negotiating cleanup levels with the local enforcement agencies.

Multiple Combined Phase I and II ESAs | Ongoing | Project Manager

Steve served as project manager for numerous combined Phase I and Phase II environmental site assessments, groundwater monitoring, remedial actions, and reporting projects for a major retail tire facility. Projects generally included assessing the extent of contamination associated with hydraulic lifts, USTs, and other activities associated with operating a tire replacement facility, as well as remediating the extent of assessed contamination and negotiating cleanup levels with the local enforcement agencies.

Seven Oaks Dam Mitigation Property Environmental Assessment* | Redlands, California | 1992 | Project Manager

Steve served as the project manager for an environmental assessment of the 64-acre Seven Oaks Dam Mitigation property in the Santa Ana River Flood Channel, Redlands. The project consisted of a Phase I level site assessment and soil gas survey. The project involved research, historic air photo analysis, site reconnaissance and mapping, installation of soil gas monitoring wells, soil-gas sampling for volatile organics, data compilation and analysis, and preparation of a report detailing activities and conclusions.

Nike Site Environmental Assessment and Closure* | Puente Hills, California | 1993 | Project Manager

Steve served as the project manager for an environmental assessment aimed at gaining site closure for a 55-acre Nike Missile Battery located in the Puente Hills of Los Angeles County. The site consisted of three areas on two separated ridge tops; the administration area and launch area (also known as the Lower Site) were on one of the ridge tops, and the control area (also known as the Upper Site) was located on an adjacent ridge top. The Nike Site contained aboveground and underground storage tanks, a vehicle maintenance shop, underground missile storage and launch facilities, aboveground missile assembly, fueling, and testing facilities, surveillance facilities, barracks, and an underground network of tunnels. His duties consisted of research, negotiations with the Cal-EPA, development of Work Plans and Health and Safety Plans, geophysical and radiation surveys, drilling and sampling soil and bedrock, and sampling for asbestos containing building materials. Steve developed reports that detailed options and recommendations for property transfer of a complex military site.

Los Angeles and Ventura Counties Property Investigations and Transfers | 1998-present | Project Manager

Steve served as project manager for commercial and industrial property transfers and litigation support in Los Angeles and Ventura Counties. Numerous specialized assessments have been conducted for various financial institutions. These investigations have involved drilling and sampling of soil and groundwater utilizing geoprobe, hydropunch, hollowstem auger, and other techniques; installation and sampling of monitoring wells and calculated rates and direction of groundwater flow; location of contaminant sources; and evaluation of facility usage, and risk assessments. Steve's team also performed the remediation of soils and groundwater which included underground storage tank removal, contaminated soil removal and treatment, and evaluation

of best available technologies for remedial actions. Project support has involved negotiations with regulatory agencies, legal counsel, and property owners.

Telecommunication Property Site Assessment* | Santa Barbara, California | 1995 | Project Manager

Steve performed a subsurface soil and groundwater site assessment of a telecommunication property in Santa Barbara. Adjacent properties had released PCE and TCE into the subsurface soils and groundwater, but contamination at the site appeared disconnected from the larger plume originating offsite. A work plan and health and safety plan were developed and approved by the client and their corporate counsel. Multiple continuous-cored geoprobe borings were drilled and soil, soil vapor, and groundwater samples collected. Through analysis of the lithology, it was shown that the subsurface consisted of an ancient nearshore, lagoonal environment transected by stream channels. Two separated plumes were shown to occur at the site, with the larger plume derived from an offsite source and the smaller plume originating from onsite operations. A health-based risk assessment was performed for the property to determining appropriate cleanup levels.

Metal Stamping and Forming Facilities Property Transfer | 1996 | Project Manager

Steve served as project manager in support of property transfer of three metal stamping and forming facilities. Two of the sites were listed as potential contributors to the contamination in the San Gabriel Valley groundwater, with the third listed by the United States Environmental Protection Agency (EPA) as within the top 16 contributors to the groundwater contamination in the Baldwin Park Operable Unit (OU). Research was performed on the individual sites and their contribution to the San Gabriel Groundwater Basin contamination; on the nature and extent of contamination in the San Gabriel Valley Groundwater Basin; on the locations and calculated contributions to the contamination in the Baldwin Park OU from other known PRPs; and on the water delivery and remediation plans for the different San Gabriel Valley OUs, and in particular, in the Baldwin Park OU. Opinions were generated regarding potential future liability for ownership of each facility, and an evaluation of the sources of contamination found in the Baldwin Park OU was developed. Determinations of legal implications and calculations of environmental liability were performed, and a range of anticipated costs associated with ownership of the properties were presented. Results were used in negotiations for the properties. Steve's team performed Facility audits at each site and provided with recommendations for equipment and process upgrades, which were aimed at limiting future releases and overall liability.

Ventura County Phase I and II Site Assessments | 1998-2001 | Project Manager

Steve managed multiple Phase I and II site assessments for coastal properties in Ventura County consisting of a power generating facility tank farm, hazardous materials storage area, agricultural, and degraded wetland areas to be acquired and restored to wetland conditions. The projects included research; soil, surface water, and groundwater sampling; assistance in property acquisition negotiations; and providing engineering geologic, hydrogeologic, and environmental and risk-based opinions ,and recommendations aimed at facilitating the property acquisition while limiting liability to the State of California. His participation on the project included oversight during tank farm and hazardous material storage area decommissioning and property restoration.

ENVIRONMENTAL SITE REMEDIATION

South Gate Tank farm Closure Reports | 2000 | Project Manager

Steve developed remedial closure reports for a multiple-owner tank farm in the City of South Gate. To facilitate development of the property, the tank farm was split into four separate parcels. Remediation of the soils was performed, with impacted soils exceeding cleanup levels excavated and transported offsite, impacted soils within cleanup levels inhumed into a constructed soil repository, and clean soils reused during regrading activities. The project was estimated by prior consultants to cost more than $9 million to complete; however, the project was finished on an expedited basis and received RWQCB closure for approximately $1 million, a considerable savings to the client. Additionally, development of the property was performed on a parcel-by-parcel basis, allowing the City's contractor to begin development in a timely manner.

HEALTHCARE

Confidential - Former NASA Industrial Facility, Hospital and MOB Redevelopment | Downey, California, US | 2000-Ongoing | Project Manager

Steve was the project manager for a combined environmental and geotechnical evaluation of a former NASA industrial plant demolition and redevelopment as a hospital and medical office building complex. The NASA facility was utilized for Gemini, Apollo, and Space Shuttle testing, and included an airfield, hazardous material storage, and cryogenic and physical testing areas. The project involved historical (Phase I) research to locate former hazardous material usage and storage areas; drilling and sampling of soil, soil vapor, and groundwater to evaluate impacts; combining the geotechnical and environmental sampling for efficiency and cost savings; development of assessment and health risk (PEA) reports for submission to the DTSC; asbestos and hazardous material abatement reports for use for demolition purposes; geotechnical reports for site grading, foundation, pile, liner design, and backfill requirements; construction oversight; and participation with client legal counsel in negotiations with state regulatory agencies. Role: Project Manager | Cost: Confidential | Dates involved: 01/2000-Ongoing

MARINE & PORT FACILITIES

Port of Los Angeles As-Needed Environmental Services* | 1993 | Project Manager

Steve served as project manager for as-needed environmental services for the Port of Los Angeles. His duties included review and compilation of data from numerous prior reports into summary reports; and environmental drilling, sampling, and monitoring well installations at the proposed Terminal Island Container

Transfer Facility (TICTF) to determine if contaminated soil occurred at hazardous levels, and the levels of volatile organic and metals contamination in the groundwater. A report detailing conclusions and recommendations was generated for the TICTF site. An additional study was performed at the Proposed Dry Bulk Handling facility to assess hydrocarbon and volatile organic contamination.

Los Angeles Harbor Department's Henry Ford Bridge Replacement Project* | 1993 | Project Manager

Steve served as project manager for a geologic, hydrologic, and contamination report for input to an EIR/EIS for the proposed Los Angeles Harbor Department's Henry Ford Bridge replacement project at the Port of Los Angeles. His duties included review of existing geologic, hydrologic, environmental data, and historical aerial photos; data compilation; seismic analysis; identification of impacts to the environment, workers, and the project; evaluation of mitigative measures; and report preparation.

Todd Pacific Shipyard Groundwater Investigation | Los Angeles, California | Field Manager and Technical Reviewer

Steve served as field manager and technical reviewer for a soil and groundwater investigation at the Todd Pacific Shipyard at the Port of Los Angeles. The Shipyard was a 109-acre ship-building and repair facility at the Port. His responsibilities included management of the field sampling program at potential contamination sources such as machine pit, sumps, clarifiers, and dry wells in the maintenance/manufacturing buildings; drilling of shallow borings with limited access rigs at the targeted source areas; and collection of numerous groundwater samples at locations where suspected groundwater contamination might exist. In addition, quality control review of the reports developed for fire department and RWQCB compliance was also conducted.

JUSTICE

INS Border Patrol Stations Remedial Investigations* | 1994 | Project Manager

Steve served as the project manager for remedial investigations at the INS Border Patrol Stations in Campo and Calexico, California. Leaking underground fuel tanks had released significant quantities of gasoline into the subsurface and groundwater at each site. Unique, complex geohydrologic conditions occur in the subsurface, with groundwater contamination at the Campo site largely following an ancient buried river channel, but overflowing the subsurface “paleo-banks” during winter high water conditions. Groundwater contamination at the Calexico site occurred within interspersed sand lenses of a thick clayey (nearshore lacustrine) formation 10 feet below ground surface, and extends under a residential area. A geoprobe sampling device and onsite mobile laboratory was used to define the aerial extent of the groundwater plumes, and groundwater monitoring wells were installed for confirmation sampling and to determine groundwater gradient. Site specific work plans, sampling and analysis plans, health and safety plans, and reports detailing conclusions and recommendations were developed and approved by the U.S. Army Corps of Engineers for each major phase of the project. Negotiations with the lead regulatory agencies were performed on behalf of the INS.

MIXED-USE

Port of San Diego Rohr Facility | Chula Vista, California, US | 2000

Steve was responsible for a detailed subsurface assessment of the Rohr facility. The intent of the assessment was to evaluate the 40-acre former aircraft part manufacturing facility for acquisition by the Port of San Diego for redevelopment into a business park and entertainment complex. The assessment identified the presence of soil, soil vapor, and groundwater impacts by petroleum hydrocarbons, VOCs, heavy metals, PCBs, and semi-volatile organic compounds. He utilized many sampling techniques to assess the limits and concentrations of contaminants in the subsurface. Ultimately, the team was able to develop a cost estimate for potential remedial action cost associated to corrective action to allow redevelopment.

OIL & GAS

Retail Petroleum Stations Assessment and Remediation | Ongoing | Project Manager

Steve managed numerous projects that involved assessment and remediation of petroleum releases at retail petroleum stations. His tasks included collection of soil, soil vapor, and groundwater samples during assessments, UST removal activities, and after releases have been discovered, corrective action plan preparation, periodic agency reporting, and remediation oversight. Remedial actions have included SVE with enhancement variations such as AS and biogac, total fluids extraction, oxygen releasing compounds, and excavation.

Ventura County Oil Fields* | 1996 | Project Manager

Steve prepared permit applications, FESOP reporting forms, storm water pollution prevention plans, storm water monitoring plans, and notices of intent for two oil fields in Ventura County. The plans involved documenting past releases, mitigative measures to control future releases, details of sampling methodology and timing of sampling events, and development of summary tables and forms for field personnel to use as documentation for sampling during storm events.

POWER TRANSMISSION & DISTRIBUTION

PG&E Former G Street Substation, Fresno, California | Fresno, California, US | 2009-2010 | Technical Support

In conjunction with the DTSC, Steve oversaw the investigation and cleanup of the site for unrestricted use. He completed a preliminary endangerment assessment (PEA) that included a human health risk assessment (HHRA) and development of site-specific cleanup goals for constituents of concern. Following the review of the PEA and feedback from DTSC, cleanup goals for lead, arsenic, PCBs, benzo(a)pyrene, and petroleum hydrocarbons in soil were approved by DTSC. Stantec prepared a removal action work (RAW) plan that recommended site-wide excavation of soils to approximately 1.5 feet to meet the cleanup goals. The DTSC approved the RAW and the excavation was

completed. During the remediation phase, Steve worked closely with DTSC staff to respond to changing field conditions. The remedial action was approved by DTSC, and the site was certified for unrestricted use. Role: Technical Support | Cost: Unknown | Dates involved: 10/2009-01/2010

RETAIL / COMMERCIAL

Dry Cleaning Facility Assessment and Audit* | 1996 | Project Manager

Steve served as project manager for the soil and groundwater assessment, facility audit, and oversight of remedial activities at an active dry cleaning facility. Releases of PCE from older dry cleaning equipment and drum storage locations were investigated and the extent of both soil and groundwater contamination due to the releases was determined. Groundwater samples were also collected from perched zones and from below the groundwater table using a hydropunch sampling tool. Calculations of attenuation factors and PCE cleanup levels were performed using the LA RWQCB's Interim Guidance for VOC Impacted Sites.

ROADWAYS

Cajalco Transportation Corridor EIR Investigation* | 1991 | Project Geologist

Steve developed the geologic portion of an EIR investigation for the proposed Cajalco Transportation Corridor. His duties included review of existing geologic and geotechnical information; review of historical and project specific vertical stereographic photographs; geologic field reconnaissance; slope stability and seismic considerations; identification of impacts and evaluation of mitigative measures; and preparation and submittal of a report and maps presenting geologic units, existing landslides, and potential constraints. In addition, preliminary environmental data was compiled and provided to the design team for evaluation of the different corridor segments.

California SR125 Corridor Site Investigation and Assessment* | 1992 | Project Manager

Steve served as project manager for a geologic/geotechnical investigation and hazardous materials assessment for the California SR 125 Corridor. The purpose of the study was to provide geologic, geotechnical, and environmental input for an EIR/EIS document consistent with Caltrans requirements to the engineering team evaluating the various alignment alternatives. The project included an environmental assessment, geologic reconnaissance, and seismic analysis of the alignment and alternatives. A contingency plan was developed for managing hazardous materials during road construction.

Foothill Transportation Corridor Geotechnical Investigation* | Orange County, California | 1992 | Project Geologist

Steve performed geologic portions of a geotechnical investigation for the proposed Foothill Transportation Corridor through in Orange County. The investigation provided geotechnical design criteria for proposed bridges, highway embankments, and appurtenant structures. Duties included coordination of services, supervision of geologic field and trench mapping, down-hole logging of borings to 175 feet below ground surface, determination of groundwater depth and gradient, compilation of data and maps, and report preparation.

TRANSIT

San Diego Mission Valley Commuter Rail Alignments and Alternatives Site Assessments* | 1993 | Project Manager

Steve served as project manager for Site Assessments on the San Diego Mission Valley East and Mission Valley West commuter rail alignments and alternatives. His duties included development of Phase I alignment reports for the projects, including detailed environmental evaluation of alternatives with recommendations, and liaison with MTDB real estate and geotechnical design staff and local regulatory agencies. Each report involved research and government/regulatory database searches, historic air photo analysis, site reconnaissance, property owner interviews, generation of alignment maps indicating problematic areas, and detailed conclusions and recommendations. Additional assignments for the MTDB included peer review of other consultant's work and management of construction monitoring services for the MTDB's Cuyamaca Street Improvements project.

Los Angeles County Metropolitan Transportation Authority (MTA) Environmental Services* | Los Angeles, California | 1994, 2013 | In-House Project Manager

Steve served as the in-house project manager for MTA environmental services. He provided coordination and management of due diligence activities for the Phase I, II, and III site assessments on SPTCo, AT&SF, UPRR, and adjacent properties, as well as individual and multiple parcel acquisitions. His duties consisted of generation of RFP scope-of-work and engineer's estimates for environmental and hydrogeologic investigations; evaluation of consultants reports and raw data; recommendations concerning liability and effects of soil and groundwater contamination on the proposed and ongoing rail line, station, and tunneling projects; recommendations for remedial actions/mitigative measures for each project; liaison with MTA staff and legal counsel; and negotiations with property owners and regulatory agencies to set project cleanup criteria for contaminated sites. A commendation was received from the MTA for the work performed on this contract. Steve also managed site assessments on more than 300 miles of MTA corridor right-of-way, as well as performed specialized assessments for individual parcels. Conclusions and recommendations provided were used for property negotiations. In addition, Steve was the response team manager for MTA Real Estate and METROLINK division of the MTA. Role: In-House Project Manager | Cost: Unknown | Dates involved: 1989-1994 and 01/1998-06/2013

Monitoring Well Abandonment and Closure Activities – Moorpark Maintenance Facility | Ventura County, California | 2008 | Project Manager and Director

Steve managed and directed monitoring well abandonment and closure activities for the Caltrans Moorpark Maintenance Facility located in Ventura County. Seven onsite groundwater monitoring wells were

abandoned in accordance with State of California Water Well Standards (Bulletins 74-81 and 74-90), by over-drilling with a hollow-stem auger to approximately 50 feet below ground surface and backfilling the boreholes with a cement/bentonite grout mixture. Following the completion of abandonment activities, he coordinated waste removal activities. All waste was properly disposed/recycled in accordance with all applicable Federal, State, and local regulations. Upon completion of all field activities, Steve prepared and submitted a Well Destruction Report to the Ventura County Department of Public Works Water Resources Division and the Los Angeles Regional Water Quality Control Board. Agency closure from the Ventura County Environmental Health Division was received for the Moorpark Maintenance Facility.

Groundwater Monitoring, Abandonment, and Closure Activities - Big Sycamore Maintenance Facility | Ventura County, California | 2008 | Project Manager

Steve managed and directed semiannual groundwater sampling and reporting for the Caltrans Big Sycamore Maintenance Facility. Groundwater sampling and reporting were required to maintain compliance with Ventura County Environmental Health Division (VCEHD) mandates. Prior to the commencement of field activities, he reviewed the County-approved work plan, prepared a site-specific health and safety plan for groundwater monitoring activities, retained a Caltrans-approved and CDOHS-accredited analytical laboratory, and provided notification to the VCEHD inspector at least 48 hours in advance of each sampling event. Upon completion of each groundwater monitoring event, Steve prepared and submitted a groundwater monitoring report to the VCEHD. Based on favorable results from groundwater monitoring activities, VCEHD recommended site closure to the Los Angeles Regional Water Quality Control Board. Additionally, Steve conducted monitoring well abandonment and closure activities for the Caltrans Big Sycamore Maintenance Facility. Eight onsite groundwater monitoring wells were abandoned in accordance with State of California Water Well Standards by over-drilling with a hollow-stem auger to approximately 35 feet below ground surface and backfilling the boreholes with a cement/bentonite grout mixture. Following the completion of abandonment activities, he coordinated waste removal activities. All waste was properly disposed/recycled in accordance with all applicable Federal, State, and local regulations. Role: Project Manager | Cost: Unknown | Dates involved: 01/2007-07/2008

Groundwater Monitoring – Ojai Maintenance Facility | Ventura County, California | 2008 | Project Manager and Director

Steve managed and directed semiannual groundwater sampling and reporting for the Caltrans Ojai Maintenance Facility located in Ventura County. Groundwater sampling and reporting were required to maintain compliance with Ventura County Environmental Health Division (VCEHD) mandates. The groundwater monitoring activities were completed in accordance with the requirements of the Ventura County Leaking Underground Fuel Tank (LUFT) Guidance Manual (Fourth Edition, April 2001). Following the completion of sampling activities Steve coordinated waste removal activities. All waste was properly disposed/recycled in accordance with all applicable Federal, State, and local regulations. Upon completion of each groundwater monitoring event, he prepared and submitted a groundwater monitoring report to the VCEHD.

Groundwater Monitoring and Assessment Activities – Ventura Maintenance Facility | Ventura, California | 2008 | Project Manager and Director

Steve managed and directed semiannual groundwater sampling and reporting for the Caltrans Ventura Maintenance Facility located in Ventura County. Groundwater sampling and reporting were required to maintain compliance with Ventura County Environmental Health Division (VCEHD) mandates. Prior to the commencement of field activities, he reviewed the County-approved work plan, prepared a site-specific health and safety plan for groundwater monitoring activities, retained a Caltrans-approved and CDOHS-accredited analytical laboratory, and provided notification to the inspector 48 hours in advance of each sampling event. Upon completion of each groundwater monitoring event, Steve prepared and submitted a groundwater monitoring report to the VCEHD.

Additional assessment required by the VCEHD included evaluation of soil and groundwater to evaluate whether released had also occurred from the waste oil tank. The scope of work was developed for the advancement of eight soil borings around the waste oil tank. Upon completion of all field activities, prepared and submitted a Waste Oil Tank Area assessment report to the VCEHD.

Limited Site Investigation and Reporting – Altadena and Newhall Maintenance Facilities | Los Angeles County, California | Project Manager

Steve managed implementation of a limited site investigation and reporting project for the Caltrans Altadena and Newhall Maintenance Facilities for the evaluation of potential impacts near the former USTs. These investigations were conducted in order to maintain compliance with County of Los Angeles Department of Public Works mandates. Steve was liaison with the lead regulatory agency, oversaw field activities and prepared subsurface investigation reports documenting field procedures, evaluating analytical results, and recommending no further action (NFA) status from the Los Angeles County Department of Public Works.

WATER

Santa Clara River Watershed Hydrogeologic and Hydrologic Evaluation* | 1995

Steve served as a member of the project team evaluating the hydrogeologic and hydrologic conditions within portions of the Santa Clara River watershed. An extensive water budget analysis was performed on individual watersheds and contributory streams to the eastern groundwater basin, as well as for the entire groundwater basin, of the Santa Clara River, to estimate volumes of available water at any portion of the Basin.

Calleguas Creek Watershed Management Planning Habitat and Recreation and Water Quality Subcommittees | 2002 | Geologic and Hydrogeologic Engineer

Steve participated as a member of the Calleguas Creek Watershed Management Planning Habitat and Recreation and Water Quality Subcommittees. He provided engineering geologic and hydrogeologic opinions and recommendations to the committees aimed at consensus for management and obtainment of numerous conflicting goals of the various stakeholders. Additionally, he served on the Calleguas Creek wetlands restoration team for the California Coastal Conservancy identifying wetlands restoration candidates in the watershed.

Calleguas Creek/Ormond Beach Wetlands | Oxnard, California | 1998-2001 | Project Manager

Steve managed multiple site assessments and risk evaluations for the acquisition of coastal and proposed wetland restoration properties in Ventura County. The properties included tank farms, hazmat storage areas, degraded wetlands, and agricultural land. These projects included oversight of tank farm decommissioning, remedial cost estimates and recommendations.

HEALTHCARE CAMPUS PLANNING AND DESIGN

National Coordinator for Environmental Services | Multiple Locations | 1998-Ongoing | Primary Liaison

As primary liaison to a major healthcare client for environmental services, Steve manages responses to client requests for environmental assistance nationwide. He also managed staffing, facilitated communication, worked with client real estate, health, safety/environmental, legal counsel (internal and external), contracts and procurement, and client project managers and teams responsible for construction, development, and redevelopment. Steve has also assisted with scoping and proposal efforts and has developed client-specific policies and procedures. He has managed project scope, schedule, and budget, directed technical and professional teams, and attended meetings and calls with client project managers, legal counsel, and environmental staff. Steve oversaw project field and office personnel, evaluated data, and developed conclusions and recommendations aimed at limiting client risk/liability. Projects included research and opinion letters, Phase I and Phase II ESA's (including soil, soil vapor, groundwater studies; ambient air and indoor air quality studies), hazmat studies (including asbestos, lead-based paint, hazardous materials inventory, and PCB's in sealants), mold and moisture intrusion studies, geotechnical studies, surveying and title research. Steve has also been responsible for remedial implementation and oversight, construction monitoring, facility equipment evaluations, regulatory consulting and liaison, and development of various opinion letters and reports supporting client projects. Role: Primary Liaison | Cost: Unknown | Dates involved: 10/1998-Present

Various Environmental Services | Multiple Locations | Project Manager

Steve has served as project manager for a variety of environmental projects for a major healthcare client. He has successfully managed project scope, schedule, and budget, overseen and directed technical and professional teams, and attended project related meetings and conference calls with client project managers, legal counsel, and environmental staff. Steve oversaw project field and office personnel, evaluated data, and developed conclusions and recommendations aimed at limiting client risk and liability. Specific projects have included research and opinion letters, Phase I and Phase II ESA's (including soil, soil vapor, groundwater studies; ambient air and indoor air quality studies), building hazmat studies (including asbestos, lead-based paint, hazardous materials inventory, and PCB's in sealants), mold and moisture intrusion studies, geotechnical studies, surveying and title research. Steve has also been responsible for remedial implementation and oversight, construction monitoring, facility equipment evaluations, regulatory consulting and liaison, and development of various opinion letters and reports supporting client projects.

ENVIRONMENTAL SITE ASSESSMENTS

California Coastal Conservancy - Former SCE/Reliant Ormond Beach Assessment, Remedial Oversight, and Wetlands Restoration Studies | Ventura County, California

Steve managed multiple site assessments and risk evaluations for the acquisition of coastal and proposed wetland restoration properties in Ventura County. The properties included tank farms, hazmat storage areas, degraded wetlands, and agricultural land. These projects included oversight of tank farm decommissioning, remedial cost estimates and recommendations.

Appendix C ENVIRONMENTAL AGENCY DATABASE SEARCH REPORT

Biogas Renewable Generation Project
3001 Scholl Canyon Road
Glendale, CA 91206

Inquiry Number: 5631793.2s
April 25, 2019

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

3001 SCHOLL CANYON ROAD
GLENDALE, CA 91206

COORDINATES

Latitude (North):	34.1548340 - 34° 9' 17.40''
Longitude (West):	118.1974440 - 118° 11' 50.79''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	389614.2
UTM Y (Meters):	3779776.5
Elevation:	1107 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5636829 PASADENA, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140515
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
3001 SCHOLL CANYON ROAD
GLENDALE, CA 91206

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	LA COUNTY SANITATION	3001 SCHOLL CANYON R	EMI		TP
A2	SCHOLL CANYON SLF	3001 SCHOLL CANYON R	FINDS		TP
A3	GLENDALE WATER & POW	3001 SCHOLL CANYON R	AST		TP
A4	SCHOLL CANYON LFG FA	3001 SCHOLL CANYON R	SWF/LF, EMI, Financial Assurance, LOS ANGELES CO....		TP
A5		3001 SCHOLL CANYON R	CHMIRS		TP
A6	SCHOLL CANYON LANDFI	3001 SCHOLL CANYON R	HAZNET		TP
A7	SHOLL CANYON LFG LTD	3001 SHOLL CANYON RD	HAZNET		TP
A8	SCHOLL CANYON LDFL	3001 SCHOLL CANYON R	RCRA-SQG, US AIRS		TP
A9	SCHOLL CANYON SANITA	3001 SCHOLL CANYON R	RGA LF		TP
A10	LA CO - SANITATION D	3001 SCHOLL CANYON R	FINDS, ECHO		TP
A11	CNTY LA SANITATION D	3001 SCHOLL CANYON R	HAZNET		TP
A12	SCHOLL CANYON LANDFI	3001 SCHOLL CANYON R	RCRA-SQG, AST, FINDS, HAZNET		TP
A13	SCHOLL CANYON LANDFI	3001 SCHOOL CANYON R	FINDS, ECHO		TP
A14	GLENDALE WATER & POW	3001 SCHOLL CANYON R	FINDS		TP
A15	SCHOLL CANYON LANDFI	3001 SCHOLL CANYON R	RCRA NonGen / NLR		TP
A16		3001 SCHOOL CANYON R	CHMIRS		TP
A17	LA CNTY SANITATION D	3001 SCHOLL CANYON R	FINDS, ECHO		TP
A18	LA COUNTY SANITATIO	3001 SCHOLL CANYON	FINDS		TP
B19	SCHOLL CANYON GOLF A	3800 EAST GLENOAKS B	WMUDS/SWAT, HIST UST	Higher	2463, 0.466, NNE
B20	SCHOLL CANYON INACTI	3800 EAST GLENOAKS D	SWF/LF	Higher	2463, 0.466, NNE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 9 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
LA COUNTY SANITATION 3001 SCHOLL CANYON R GLENDALE, CA 91206	EMI Facility Id: 45262	N/A
SCHOLL CANYON SLF 3001 SCHOLL CANYON R GLENDALE, CA 91206	FINDS Registry ID:: 110060850903	N/A
GLENDALE WATER & POW 3001 SCHOLL CANYON R GLENDALE, CA 91206	AST Database: AST, Date of Government Version: 07/06/2016	N/A
SCHOLL CANYON LFG FA 3001 SCHOLL CANYON R GLENDALE, CA 91206	SWF/LF Database: SWF/LF (SWIS), Date of Government Version: 02/11/2019 Facility ID: 19-AA-0012 Operational Status: Active Regulation Status: Permitted EMI Facility Id: 45262 Financial Assurance Database: Financial Assurance 2, Date of Government Version: 02/15/2019 SWIS No: 19-AA-0012 LOS ANGELES CO. HMS Facility ID: 033066-054816 NPDES Facility Status: Active WDS Facility Status: A Facility Id: 4 19I006193 CIWQS	N/A
3001 SCHOLL CANYON R 3001 SCHOLL CANYON R GLENDALE, CA	CHMIRS OES Incident Number: 05952	N/A
SCHOLL CANYON LANDFI 3001 SCHOLL CANYON R GLENDALE, CA 91206	HAZNET GEPAID: CAL000351379	N/A
SHOLL CANYON LFG LTD 3001 SHOLL CANYON RD GLENDALE, CA 91206	HAZNET	N/A

	GEPAID: CAL000122639	
SCHOLL CANYON LDFL 3001 SCHOLL CANYON R GLENDALE, CA 91206	RCRA-SQG EPA ID:: CA0000927426 US AIRS Database: US AIRS (AFS), Date of Government Version: 10/12/2016 EPA plant ID:: 110000781360	CA0000927426
SCHOLL CANYON SANITA 3001 SCHOLL CANYON R GLENDALE, CA	RGA LF Facility ID: 19-AA-0012	N/A
LA CO - SANITATION D 3001 SCHOLL CANYON R GLENDALE, CA 91206	FINDS Registry ID:: 110000781360 ECHO Registry ID: 110000781360	N/A
CNTY LA SANITATION D 3001 SCHOLL CANYON R GLENDALE, CA 91206	HAZNET GEPAID: CA0000927426	N/A
SCHOLL CANYON LANDFI 3001 SCHOLL CANYON R GLENDALE, CA 91206	RCRA-SQG EPA ID:: CAO000927426 AST Database: AST, Date of Government Version: 07/06/2016 FINDS Registry ID:: 110055841754 HAZNET GEPAID: CAO000927426	CAO000927426
SCHOLL CANYON LANDFI 3001 SCHOOL CANYON R GLENDALE, CA 91206	FINDS Registry ID:: 110070475494 ECHO Registry ID: 110070475494	N/A
GLENDALE WATER & POW 3001 SCHOLL CANYON R GLENDALE, CA 91206	FINDS Registry ID:: 110066349188	N/A
SCHOLL CANYON LANDFI 3001 SCHOLL CANYON R GLENDALE, CA 91206	RCRA NonGen / NLR EPA ID:: CAL000351379	CAL000351379
3001 SCHOOL CANYON R 3001 SCHOOL CANYON R GLENDALE, CA 90601	CHMIRS	N/A

EXECUTIVE SUMMARY

OES Incident Number: 1-4252

LA CNTY SANITATION D 3001 SCHOLL CANYON R GLENDALE, CA 91206	FINDS Registry ID:: 110070088100 ECHO Registry ID: 110070088100	N/A
LA COUNTY SANITATIO 3001 SCHOLL CANYON GLENDALE, CA 91206	FINDS Registry ID:: 110041127615	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

EXECUTIVE SUMMARY

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ..... Land Use Control Information System
US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROL ..... Sites with Institutional Controls

Federal ERNS list

ERNS ..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ..... State Response Sites

State- and tribal - equivalent CERCLIS

ENVIROSTOR ..... EnviroStor Database

State and tribal leaking storage tank lists

LUST ..... Geotracker's Leaking Underground Fuel Tank Report
INDIAN LUST ..... Leaking Underground Storage Tanks on Indian Land
CPS-SLIC ..... Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST ..... Underground Storage Tank Listing
UST ..... Active UST Facilities
INDIAN UST ..... Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP ..... Voluntary Cleanup Priority Listing
VCP ..... Voluntary Cleanup Program Properties

State and tribal Brownfields sites

BROWNFIELDS ..... Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY ..... Recycler Database

HAULERS Registered Waste Tire Haulers Listing
INDIAN ODI Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9 Torres Martinez Reservation Illegal Dump Site Locations
ODI Open Dump Inventory
IHS OPEN DUMPS Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

AOCONCERN Key Areas of Concerns in Los Angeles County
US HIST CDL Delisted National Clandestine Laboratory Register
HIST Cal-Sites Historical Calsites Database
SCH School Property Evaluation Program
CDL Clandestine Drug Labs
Toxic Pits Toxic Pits Cleanup Act Sites
CERS HAZ WASTE CERS HAZ WASTE
US CDL National Clandestine Laboratory Register
PFAS PFAS Contamination Site Location Listing

Local Lists of Registered Storage Tanks

SWEEPS UST SWEEPS UST Listing
HIST UST Hazardous Substance Storage Container Database
CA FID UST Facility Inventory Database
CERS TANKS California Environmental Reporting System (CERS) Tanks

Local Land Records

LIENS Environmental Liens Listing
LIENS 2 CERCLA Lien Information
DEED Deed Restriction Listing

Records of Emergency Release Reports

HMIRS Hazardous Materials Information Reporting System
LDS Land Disposal Sites Listing
MCS Military Cleanup Sites Listing
SPILLS 90 SPILLS 90 data from FirstSearch

Other Ascertainable Records

FUDS Formerly Used Defense Sites
DOD Department of Defense Sites
SCRD DRYCLEANERS State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR Financial Assurance Information
EPA WATCH LIST EPA WATCH LIST
2020 COR ACTION 2020 Corrective Action Program List
TSCA Toxic Substances Control Act
TRIS Toxic Chemical Release Inventory System
SSTS Section 7 Tracking Systems
ROD Records Of Decision
RMP Risk Management Plans
RAATS RCRA Administrative Action Tracking System
PRP Potentially Responsible Parties
PADS PCB Activity Database System
ICIS Integrated Compliance Information System

FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
UXO	Unexploded Ordnance Sites
DOCKET HWC	Hazardous Waste Compliance Docket Listing
FUELS PROGRAM	EPA Fuels Program Registered Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
ENF	Enforcement Action Listing
ICE	ICE
HIST CORTESE	Hazardous Waste & Substance Site List
HWP	EnviroStor Permitted Facilities Listing
HWT	Registered Hazardous Waste Transporter Database
MINES	Mines Site Location Listing
MWMP	Medical Waste Management Program Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
Notify 65	Proposition 65 Records
LA Co. Site Mitigation	Site Mitigation List
UIC	UIC Listing
UIC GEO	UIC GEO (GEOTRACKER)
WASTEWATER PITS	Oil Wastewater Pits Listing
MILITARY PRIV SITES	MILITARY PRIV SITES (GEOTRACKER)
PROJECT	PROJECT (GEOTRACKER)
WDR	Waste Discharge Requirements Listing
CERS	CERS
WIP	Well Investigation Program Case List
NON-CASE INFO	NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS	OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS	PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT	SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ	Well Stimulation Project (GEOTRACKER)

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto	EDR Exclusive Historical Auto Stations

EXECUTIVE SUMMARY

EDR Hist Cleaner..... EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.

A review of the SWF/LF list, as provided by EDR, has revealed that there is 1 SWF/LF site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SCHOLL CANYON INACTI	3800 EAST GLENOAKS D	NNE 1/4 - 1/2 (0.466 mi.)	B20	73

Database: LOS ANGELES CO. LF, Date of Government Version: 01/14/2019
Database: SWF/LF (SWIS), Date of Government Version: 02/11/2019
Facility ID: 19-AA-5253
Site ID: 2185
Status: Closed
Operational Status: Closed
Regulation Status: Unpermitted

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: The Waste Management Unit Database System is used for program tracking and inventory of waste management units. The source is the State Water Resources Control Board.

A review of the WMUDS/SWAT list, as provided by EDR, and dated 04/01/2000 has revealed that there is

EXECUTIVE SUMMARY

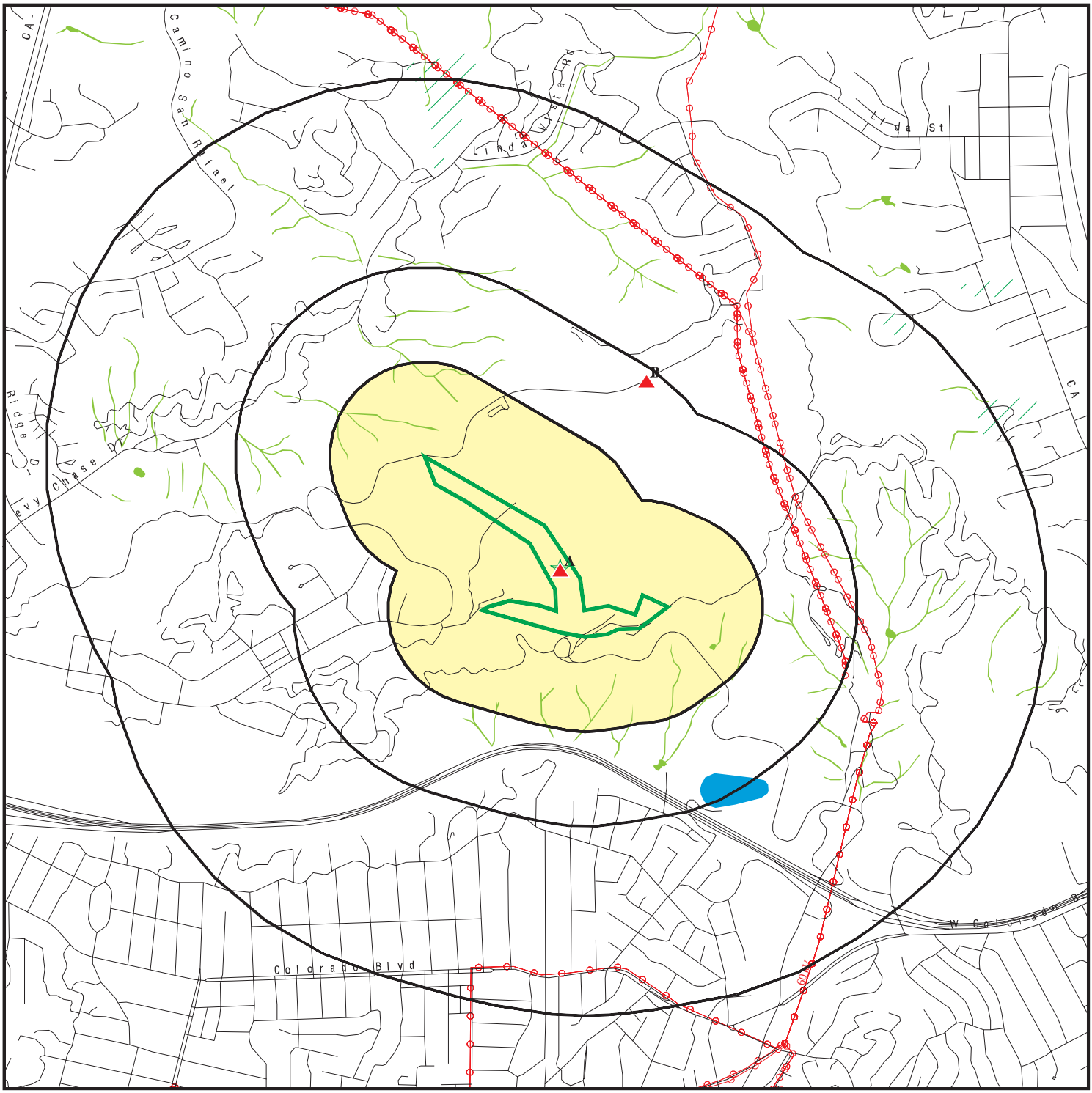
1 WMUDS/SWAT site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SCHOLL CANYON GOLF A	*3800 EAST GLENOAKS B*	*NNE 1/4 - 1/2 (0.466 mi.)*	*B19*	*72*

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 5631793.2S



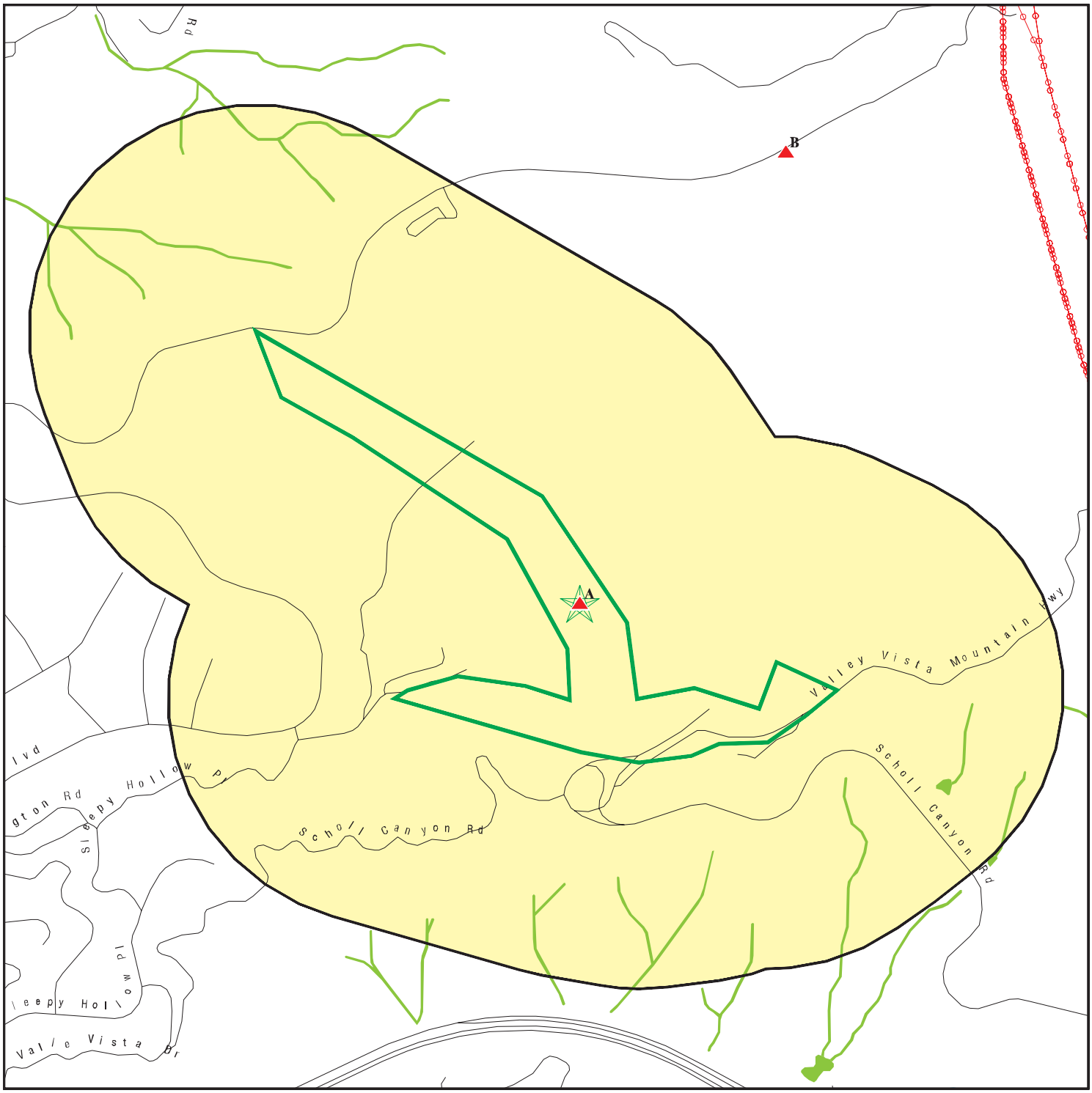
- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Biogas Renewable Generation Project ADDRESS: 3001 Scholl Canyon Road Glendale CA 91206 LAT/LONG: 34.154834 / 118.197444	CLIENT: Stantec CONTACT: Anuya Sawant Dickinson INQUIRY #: 5631793.2s DATE: April 25, 2019 7:55 am

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DETAIL MAP - 5631793.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Biogas Renewable Generation Project	CLIENT:	Stantec
ADDRESS:	3001 Scholl Canyon Road Glendale CA 91206	CONTACT:	Anuya Sawant Dickinson
LAT/LONG:	34.154834 / 118.197444	INQUIRY #:	5631793.2s
		DATE:	April 25, 2019 7:57 am

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250	2	0	0	NR	NR	NR	2
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500	1	0	0	1	NR	NR	2
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250	2	0	0	NR	NR	NR	2
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	1	NR	NR	1
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
AOCONCERN	1.000		0	0	0	0	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0
CERS TANKS	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
CHMIRS	TP	2	NR	NR	NR	NR	NR	2
LDS	TP		NR	NR	NR	NR	NR	0
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250	1	0	0	NR	NR	NR	1
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP	1	NR	NR	NR	NR	NR	1
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP	7	NR	NR	NR	NR	NR	7
ECHO	TP	3	NR	NR	NR	NR	NR	3
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	TP	2	NR	NR	NR	NR	NR	2
ENF	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP	1	NR	NR	NR	NR	NR	1
HAZNET	TP	4	NR	NR	NR	NR	NR	4
ICE	TP		NR	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
LOS ANGELES CO. HMS	TP	1	NR	NR	NR	NR	NR	1
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	TP	1	NR	NR	NR	NR	NR	1
PEST LIC	TP		NR	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
LA Co. Site Mitigation	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
UIC GEO	TP		NR	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	TP	1	NR	NR	NR	NR	NR	1
MILITARY PRIV SITES	TP		NR	NR	NR	NR	NR	0
PROJECT	TP		NR	NR	NR	NR	NR	0
WDR	TP		NR	NR	NR	NR	NR	0
CIWQS	TP	1	NR	NR	NR	NR	NR	1
CERS	TP		NR	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
NON-CASE INFO	TP		NR	NR	NR	NR	NR	0
OTHER OIL GAS	TP		NR	NR	NR	NR	NR	0
PROD WATER PONDS	TP		NR	NR	NR	NR	NR	0
SAMPLING POINT	TP		NR	NR	NR	NR	NR	0
WELL STIM PROJ	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	TP	1	NR	NR	NR	NR	NR	1
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		31	0	0	2	0	0	33

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **LA COUNTY SANITATION DIST SCHOLL CANYON** **EMI** **S108432313**
Target **3001 SCHOLL CANYON RD** **N/A**
Property **GLENDALE, CA 91206**

Site 1 of 18 in cluster A

Actual: **1107 ft.**

EMI:

Year:	2002
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers and Smllr Tons/Yr:	1

Year:	2003
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers and Smllr Tons/Yr:	1

Year:	2004
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Y
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.446831
Reactive Organic Gases Tons/Yr:	0.3
Carbon Monoxide Emissions Tons/Yr:	0.4055
NOX - Oxides of Nitrogen Tons/Yr:	2.33724
SOX - Oxides of Sulphur Tons/Yr:	0.220156
Particulate Matter Tons/Yr:	0.70275
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.7

Year:	2005

LA COUNTY SANITATION DIST SCHOLL CANYON (Continued) **S108432313**

County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.517835
Reactive Organic Gases Tons/Yr:	.3463148195
Carbon Monoxide Emissions Tons/Yr:	.24995
NOX - Oxides of Nitrogen Tons/Yr:	2.13234
SOX - Oxides of Sulphur Tons/Yr:	.29118
Particulate Matter Tons/Yr:	.654525
Part. Matter 10 Micrometers and Smllr Tons/Yr:	.6534564

Year:	2006
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.8619849782256108043
Reactive Organic Gases Tons/Yr:	.592
Carbon Monoxide Emissions Tons/Yr:	.248
NOX - Oxides of Nitrogen Tons/Yr:	2.4
SOX - Oxides of Sulphur Tons/Yr:	.439
Particulate Matter Tons/Yr:	.541
Part. Matter 10 Micrometers and Smllr Tons/Yr:	.540976

Year:	2007
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.8619849782256108043
Reactive Organic Gases Tons/Yr:	.592
Carbon Monoxide Emissions Tons/Yr:	.248
NOX - Oxides of Nitrogen Tons/Yr:	2.4
SOX - Oxides of Sulphur Tons/Yr:	.439
Particulate Matter Tons/Yr:	.541
Part. Matter 10 Micrometers and Smllr Tons/Yr:	.540976

Year:	2008
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD

LA COUNTY SANITATION DIST SCHOLL CANYON (Continued) **S108432313**

Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.1583877704038535410
Reactive Organic Gases Tons/Yr:	.083182437042
Carbon Monoxide Emissions Tons/Yr:	.0513
NOX - Oxides of Nitrogen Tons/Yr:	.8852
SOX - Oxides of Sulphur Tons/Yr:	.1231808
Particulate Matter Tons/Yr:	.256818
Part. Matter 10 Micrometers and Smllr Tons/Yr:	.25680552

Year:	2013
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.44246863129
Reactive Organic Gases Tons/Yr:	0.25637000002
Carbon Monoxide Emissions Tons/Yr:	0.13371000005
NOX - Oxides of Nitrogen Tons/Yr:	1.5110200002
SOX - Oxides of Sulphur Tons/Yr:	0.27952
Particulate Matter Tons/Yr:	0.58749000002
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.58705824002

Year:	2014
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.33197784479
Reactive Organic Gases Tons/Yr:	0.19621
Carbon Monoxide Emissions Tons/Yr:	0.32609
NOX - Oxides of Nitrogen Tons/Yr:	1.57966
SOX - Oxides of Sulphur Tons/Yr:	0.54303
Particulate Matter Tons/Yr:	0.70869
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.70831584

Year:	2016
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.21935738578
Reactive Organic Gases Tons/Yr:	0.157942
Carbon Monoxide Emissions Tons/Yr:	0.5123
NOX - Oxides of Nitrogen Tons/Yr:	2.66

LA COUNTY SANITATION DIST SCHOLL CANYON (Continued) **S108432313**

SOX - Oxides of Sulphur Tons/Yr: 0.02165193
Particulate Matter Tons/Yr: 0.130354
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0.127945504

A2 **SCHOLL CANYON SLF** **FINDS** **1017372449**
Target **3001 SCHOLL CANYON ROAD** **N/A**
Property **GLENDALE, CA 91206**

Site 2 of 18 in cluster A

Actual: **1107 ft.**

FINDS:

Registry ID: 110060850903

Environmental Interest/Information System
LANDFILL GAS (LFG) RECOVERY

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

A3 **GLENDALE WATER & POWER - SCHOLL CANYON LANDFILL GA** **AST** **A100420399**
Target **3001 SCHOLL CANYON RD** **N/A**
Property **GLENDALE, CA 91206**

Site 3 of 18 in cluster A

Actual: **1107 ft.**

AST:

Certified Unified Program Agencies:	Not reported
Owner:	City of Glendale Water and Power
Total Gallons:	Not reported
CERSID:	10459303
Facility ID:	219000-002572
Business Name:	City of Glendale Water and Power (GWP)
Phone:	(818) 548-3807
Fax:	Not reported
Mailing Address:	141 North Glendale Avenue, Level 4
Mailing Address City:	Glendale
Mailing Address State:	CA
Mailing Address Zip Code:	91206
Operator Name:	City of Glendale Water and Power
Operator Phone:	(818) 548-2107
Owner Phone:	(818) 548-3807
Owner Mail Address:	141 North Glendale Avenue, Level 4
Owner State:	CA
Owner Zip Code:	91206
Owner Country:	United States
Property Owner Name:	City of Glendale Water and Power
Property Owner Phone:	(818) 548-2107
Property Owner Mailing Address:	141 North Glendale Avenue, Level 4
Property Owner City:	Glendale
Property Owner Stat :	CA
Property Owner Zip Code:	91206
Property Owner Country:	United States
EPAID:	CAL000351379

A4 **SCHOLL CANYON LFG FACILITY** **SWF/LF** **S103650793**
Target **3001 SCHOLL CANYON RD** **EMI** **N/A**
Property **GLENDALE, CA 91206** **Financial Assurance**
LOS ANGELES CO. HMS
Site 4 of 18 in cluster A **NPDES**
WDS
Actual: **CIWQS**
1107 ft.

SWF/LF (SWIS):

Facility ID:	19-AA-0012
Lat/Long:	34.1575 / -118.19556
Owner Name:	City Of Glendale
Owner Telephone:	8185483900
Owner Address:	Not reported
Owner Address2:	613 East Broadway, Ste 200
Owner City,St,Zip:	Glendale, CA 91205
Operational Status:	Active
Operator:	County Of Los Angeles Sanitation Dist
Operator Phone:	5629084288
Operator Address:	Not reported
Operator Address2:	P.O. Box 4998
Operator City,St,Zip:	Whittier, CA 90607
Permit Date:	12/13/2011
Permit Status:	Permitted
Permitted Acreage:	$440.00
Activity:	Solid Waste Landfill
Regulation Status:	Permitted
Landuse Name:	Residential,Open Space - Irrigated,Industrial
GIS Source:	Map
Category:	Disposal
Unit Number:	01
Inspection Frequency:	Monthly
Accepted Waste:	Construction/demolition,Industrial,Inert,Manure,Mixed municipal,Tires
Closure Date:	04/01/2030
Closure Type:	Estimated
Disposal Acreage:	$314.00
SWIS Num:	19-AA-0012
Waste Discharge Requirement Num:	III
Program Type:	BOE Reporting Disposal Facility,Financial Assurance Responsibilities,Remaining Capacity Landfill
Permitted Throughput with Units:	3400
Actual Throughput with Units:	Tons/day
Permitted Capacity with Units:	58900000
Remaining Capacity:	9900000
Remaining Capacity with Units:	Cubic Yards
Lat/Long:	34.1575 / -118.19556

EMI:

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	8
Reactive Organic Gases Tons/Yr:	6

SCHOLL CANYON LFG FACILITY (Continued) **S103650793**

Carbon Monoxide Emissions Tons/Yr:	3
NOX - Oxides of Nitrogen Tons/Yr:	28
SOX - Oxides of Sulphur Tons/Yr:	5
Particulate Matter Tons/Yr:	8
Part. Matter 10 Micrometers and Smllr Tons/Yr:	8

Year:	1996
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	4
NOX - Oxides of Nitrogen Tons/Yr:	15
SOX - Oxides of Sulphur Tons/Yr:	3
Particulate Matter Tons/Yr:	3
Part. Matter 10 Micrometers and Smllr Tons/Yr:	3

Year:	1997
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	3
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	2
NOX - Oxides of Nitrogen Tons/Yr:	7
SOX - Oxides of Sulphur Tons/Yr:	1
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers and Smllr Tons/Yr:	1

Year:	1998
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	2
NOX - Oxides of Nitrogen Tons/Yr:	7
SOX - Oxides of Sulphur Tons/Yr:	1
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers and Smllr Tons/Yr:	1

SCHOLL CANYON LFG FACILITY (Continued) **S103650793**

Year:	1999
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	3
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	2
NOX - Oxides of Nitrogen Tons/Yr:	7
SOX - Oxides of Sulphur Tons/Yr:	1
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers and Smllr Tons/Yr:	1

Year:	2000
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	3
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	2
NOX - Oxides of Nitrogen Tons/Yr:	7
SOX - Oxides of Sulphur Tons/Yr:	1
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers and Smllr Tons/Yr:	1

Year:	2001
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Y
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	2009
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953

SCHOLL CANYON LFG FACILITY (Continued) **S103650793**

Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.23187333126625501
Reactive Organic Gases Tons/Yr:	0.11445518800899999
Carbon Monoxide Emissions Tons/Yr:	7.1300509999999998E-2
NOX - Oxides of Nitrogen Tons/Yr:	1.2952023500000001
SOX - Oxides of Sulphur Tons/Yr:	0.40185003549999998
Particulate Matter Tons/Yr:	0.40052016800000001
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.40050768396800002

Year:	2010
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.233954253661488
Reactive Organic Gases Tons/Yr:	0.11676039375
Carbon Monoxide Emissions Tons/Yr:	6.1311071000000002E-2
NOX - Oxides of Nitrogen Tons/Yr:	0.9556549245
SOX - Oxides of Sulphur Tons/Yr:	0.39579007454999998
Particulate Matter Tons/Yr:	0.23543035174999999
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.23541786330799999

Year:	2011
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.3361122009
Reactive Organic Gases Tons/Yr:	0.21421018939
Carbon Monoxide Emissions Tons/Yr:	0.043120515151
NOX - Oxides of Nitrogen Tons/Yr:	0.68268236868
SOX - Oxides of Sulphur Tons/Yr:	0.30978003586
Particulate Matter Tons/Yr:	0.22384016919
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.22381976513

Year:	2012
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.29456313678
Reactive Organic Gases Tons/Yr:	0.15903000021
Carbon Monoxide Emissions Tons/Yr:	0.086150000561

SCHOLL CANYON LFG FACILITY (Continued) **S103650793**

NOX - Oxides of Nitrogen Tons/Yr:	0.83713000259
SOX - Oxides of Sulphur Tons/Yr:	0.27976168
Particulate Matter Tons/Yr:	0.29612000018
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.29574632018

Year:	2015
County Code:	19
Air Basin:	SC
Facility ID:	45262
Air District Name:	SC
SIC Code:	4953
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1.1230145079
Reactive Organic Gases Tons/Yr:	0.83867856
Carbon Monoxide Emissions Tons/Yr:	1.72905423
NOX - Oxides of Nitrogen Tons/Yr:	8.7999701
SOX - Oxides of Sulphur Tons/Yr:	2.352133545
Particulate Matter Tons/Yr:	2.7079799
Part. Matter 10 Micrometers and Smllr Tons/Yr:	2.7066527024

CA Financial Assurance 2:

Region:	2
SWIS_NO:	19-AA-0012
Closure Approved:	Yes
Closure Inf Coverage Date:	12/31/2017
Closure Plan Coverage:	$13,766,368.00
Closure Plan Date:	10/01/2011
PostClose Approved:	Yes
PostClose Adequacy Date:	10/01/2011
PostClose Inf Coverage:	$60,426,239.00
PostClose Inf Coverage Date:	12/31/2017
CorActCoverage:	$408,478.00
CorActApproved:	Yes
CorAct Mec Adequacy Date:	Not reported
CorAct Inf Coverage:	$408,478.00
CorActPlanCoverage:	$403,236.00
CorAct Plan Date:	05/01/2016
Lia Coverage:	$1,000,000.00
Lia Approved:	Yes
Review:	01/10/2018
Closure Mechanism A:	TRUST FUND
Closure Mechanism B:	Not reported
Closure Coverage:	$13,181,702.00
Closure Adequacy:	Not reported
Closure Inflation Estimate:	$14,888,343.00
Post Closure Mechanism A:	TRUST FUND
Post Closure Established A:	09/11/1990
Post Closure Mechanism B:	Not reported
Post Closure Coverate:	$30,712,813.00
Post Closure Adequacy:	Not reported
Corrective Action Extablished A:	12/18/2012
Corrective Actiont Coverage:	$408,478.00
Corrective Action Approved:	Yes
Corrective Action Inflation Estimate:	$408,478.00
Corrective Action Inflationdate:	12/31/2017

SCHOLL CANYON LFG FACILITY (Continued) **S103650793**

Corrective Action Plan Estimate:	$403,236.00
Liability Mechanism A:	SELF-INS. & RISK MANAGEMENT
Liability Established A:	09/23/2016
Liability Mechanism B:	Not reported
CostAnniversary:	12/31/2013
ClosureEstablishedA:	12/31/2000
ClosureEstablishedB:	Not reported
ClosureDisbursement:	0
PostClosureEstablishedB:	Not reported
PostClosureDisbursement:	0
CorrectiveActionMechanismA:	TRUST FUND
CorrectiveActionMechanismB:	Not reported
CorrectiveActionExtablishedB:	Not reported
CorrectiveActiontDisbursement:	0
LiabilityEstablishedB:	Not reported
LiabilityAdequacy:	Not reported
Responsible Party:	U.S. Bank Corporate Trust Services
Provider:	County Sanitation Districts of Los Angel
Contact:	County Sanitation Districts of Los Angel

LOS ANGELES CO. HMS:

Region:	LA
Permit Category:	Not reported
Facility Id:	033066-054816
Facility Type:	Not reported
Facility Status:	OPEN
Area:	3D
Permit Number:	Not reported
Permit Status:	Not reported

NPDES:

Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported
Order Number:	Not reported
WDID:	4 19I006193
Regulatory Measure Type:	Industrial
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Active
Status Date:	04/22/1992
Operator Name:	Los Angeles County Sanitation Districts
Operator Address:	PO Box 4998
Operator City:	Whittier
Operator State:	California

SCHOLL CANYON LFG FACILITY (Continued) **S103650793**

Operator Zip:	90607
NPDES as of 03/2018:	
NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	4
Regulatory Measure ID:	189583
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	4 19I006193
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	04/22/1992
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Los Angeles County Sanitation Districts
Discharge Address:	PO Box 4998
Discharge City:	Whittier
Discharge State:	California
Discharge Zip:	90607
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported

SCHOLL CANYON LFG FACILITY (Continued) **S103650793**

Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	4
Regulatory Measure ID:	189583
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	4 19I006193
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	05/09/2008
Processed Date:	04/22/1992
Status:	Active
Status Date:	04/22/1992
Place Size:	440
Place Size Unit:	Acres
Contact:	Francisco Guerrero
Contact Title:	Supervising Engineer
Contact Phone:	562-908-4288
Contact Phone Ext:	2823
Contact Email:	fguerrero@lacsd.org
Operator Name:	Los Angeles County Sanitation Districts
Operator Address:	PO Box 4998
Operator City:	Whittier
Operator State:	California
Operator Zip:	90607
Operator Contact:	Robert Asgian

SCHOLL CANYON LFG FACILITY (Continued) **S103650793**

Operator Contact Title:	Not reported
Operator Contact Phone:	562-908-4288
Operator Contact Phone Ext:	6002
Operator Contact Email:	rasgian@lacsd.org
Operator Type:	Special District
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	562-699-7411
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	Verdugo Wash Reach One
Certifier:	Grace Hyde
Certifier Title:	Chief Engineer and General Manager
Certification Date:	24-APR-15
Primary Sic:	4953-Refuse Systems
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

Facility Status:	Active
NPDES Number:	CAS000001
Region:	4
Agency Number:	0
Regulatory Measure ID:	189583
Place ID:	Not reported
Order Number:	97-03-DWQ
WDID:	4 19I006193
Regulatory Measure Type:	Enrollee
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	04/22/1992
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	PO Box 4998
Discharge Name:	Los Angeles County Sanitation Districts

SCHOLL CANYON LFG FACILITY (Continued) **S103650793**

Discharge City:	Whittier
Discharge State:	California
Discharge Zip:	90607
Status:	Not reported
Status Date:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported

NPDES as of 03/2018:

NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	4
Regulatory Measure ID:	189583
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	4 19I006193
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	04/22/1992
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Los Angeles County Sanitation Districts
Discharge Address:	PO Box 4998
Discharge City:	Whittier
Discharge State:	California
Discharge Zip:	90607
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported

SCHOLL CANYON LFG FACILITY (Continued) **S103650793**

Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	4
Regulatory Measure ID:	189583
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	4 19I006193
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	05/09/2008
Processed Date:	04/22/1992
Status:	Active
Status Date:	04/22/1992
Place Size:	440
Place Size Unit:	Acres
Contact:	Francisco Guerrero
Contact Title:	Supervising Engineer

SCHOLL CANYON LFG FACILITY (Continued) **S103650793**

Contact Phone:	562-908-4288
Contact Phone Ext:	2823
Contact Email:	fguerrero@lacsd.org
Operator Name:	Los Angeles County Sanitation Districts
Operator Address:	PO Box 4998
Operator City:	Whittier
Operator State:	California
Operator Zip:	90607
Operator Contact:	Robert Asgian
Operator Contact Title:	Not reported
Operator Contact Phone:	562-908-4288
Operator Contact Phone Ext:	6002
Operator Contact Email:	rasgian@lacsd.org
Operator Type:	Special District
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	562-699-7411
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	Verdugo Wash Reach One
Certifier:	Grace Hyde
Certifier Title:	Chief Engineer and General Manager
Certification Date:	24-APR-15
Primary Sic:	4953-Refuse Systems
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported
Order Number:	Not reported

SCHOLL CANYON LFG FACILITY (Continued) **S103650793**

WDID:	4 19I022469
Regulatory Measure Type:	Industrial
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Terminated
Status Date:	06/25/2015
Operator Name:	City of Glendale Grayson Power Plant
Operator Address:	800 Air Way
Operator City:	Glendale
Operator State:	California
Operator Zip:	91201

NPDES as of 03/2018:

NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	4
Regulatory Measure ID:	401550
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	4 19I022469
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	06/05/2015
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	12/31/2009
Processed Date:	01/07/2010
Status:	Terminated
Status Date:	06/25/2015
Place Size:	10000
Place Size Unit:	Acres
Contact:	John Escudero
Contact Title:	Not reported
Contact Phone:	818-548-2148
Contact Phone Ext:	Not reported
Contact Email:	JEscudero@ci.glendale.ca.us
Operator Name:	City of Glendale Grayson Power Plant
Operator Address:	800 Air Way
Operator City:	Glendale
Operator State:	California
Operator Zip:	91201
Operator Contact:	Steven G Lins
Operator Contact Title:	Not reported

SCHOLL CANYON LFG FACILITY (Continued) **S103650793**

Operator Contact Phone:	818-548-2136
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	City/Town Agency
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	999-999-9999
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	Los Angeles River
Certifier:	John Escudero
Certifier Title:	Assist Gen Mgr
Certification Date:	13-OCT-11
Primary Sic:	4925-Mixed, Manufactured, or Liquefied Petroleum Gas Production and/or Distribution
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	CAS000001
Status:	Terminated
Agency Number:	0
Region:	4
Regulatory Measure ID:	401550
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	4 19I022469
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	01/07/2010
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	06/05/2015
Discharge Name:	City of Glendale Grayson Power Plant
Discharge Address:	800 Air Way
Discharge City:	Glendale

SCHOLL CANYON LFG FACILITY (Continued) **S103650793**

Discharge State:	California
Discharge Zip:	91201
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported

SCHOLL CANYON LFG FACILITY (Continued) **S103650793**

Tertiary Sic: Not reported

WDS:

Facility ID:	4 19I006193
Facility Type:	Other - Does not fall into the category of Municipal/Domestic, Industrial, Agricultural or Solid Waste (Class I, II or III)
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	4
Facility Telephone:	5626997315
Facility Contact:	Patrick Freemon
Agency Name:	L.A COUNTY SANITATION DIST
Agency Address:	Not reported
Agency City,St,Zip:	0
Agency Contact:	Not reported
Agency Telephone:	Not reported
Agency Type:	Private
SIC Code:	4953
SIC Code 2:	Not reported
Primary Waste Type:	Inert/Influent or Solid Wastes that do not contain soluble pollutants or organic wastes and have little adverse impact on water quality. Such wastes could cause turbidity and siltation. Uncontaminated soils, rubble and concrete are examples of this category.
Primary Waste:	STORMS
Waste Type2:	Not reported
Waste2:	Stormwater Runoff
Primary Waste Type:	Inert/Influent or Solid Wastes that do not contain soluble pollutants or organic wastes and have little adverse impact on water quality. Such wastes could cause turbidity and siltation. Uncontaminated soils, rubble and concrete are examples of this category.
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	No reclamation requirements associated with this facility.
POTW:	The POTW Does not have an approved pretreatment program. Some POTWs may have local pretreatment programs that have not been approved by the regional board and/or EPA.
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

CIWQS:

Agency: City of Glendale Grayson Power Plant

SCHOLL CANYON LFG FACILITY (Continued) **S103650793**

Agency Address:	800 Air Way, Glendale, CA 91201
Place/Project Type:	Industrial - Mixed, Manufactured, or Liquefied Petroleum Gas Production and/or Distribution
SIC/NAICS:	4925
Region:	4
Program:	INDSTW
Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water industrial
Order Number:	2014-0057-DWQ
WDID:	4 19I022469
NPDES Number:	CAS000001
Adoption Date:	Not reported
Effective Date:	01/07/2010
Termination Date:	06/05/2015
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	34.13378
Longitude:	-118.18968

Agency:	Los Angeles County Sanitation Districts
Agency Address:	PO Box 4998, Whittier, CA 90607
Place/Project Type:	Industrial - Refuse Systems
SIC/NAICS:	4953
Region:	4
Program:	INDSTW
Regulatory Measure Status:	Active
Regulatory Measure Type:	Storm water industrial
Order Number:	2014-0057-DWQ
WDID:	4 19I006193
NPDES Number:	CAS000001
Adoption Date:	Not reported
Effective Date:	04/22/1992
Termination Date:	Not reported
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	34.15177
Longitude:	-118.19774

A5
Target Property **3001 SCHOLL CANYON ROAD SCHOLL CANYON LAND FILL - FLARE STAT**
GLENDALE, CA

CHMIRS **S106390223**
N/A

Site 5 of 18 in cluster A

Actual:
1107 ft.

CHMIRS:

OES Incident Number:	05952
OES notification:	Not reported
OES Date:	1/3/1995
OES Time:	02:35:46 PM
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	YES
Waterway:	storm drain
Spill Site:	Not reported
Cleanup By:	not possible
Containment:	Not reported
What Happened:	Not reported
Type:	OTHER
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	1995
Agency:	county sanitation district la co
Incident Date:	2330/01jan95
Admin Agency:	Not reported
Amount:	unknown
Contained:	YES
Site Type:	OTHER
E Date:	Not reported
Substance:	treated ground water
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	NO

(Continued) **S106390223**

Number of Injuries:	NO
Number of Fatalities:	NO
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	security guard noticed water flowing from canyon water treatment area, possible vandelism , someone turned on a influent pump causing treatment stripper to overflow

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A6 **SCHOLL CANYON LANDFILL GAS COMPRESION PLANT** **HAZNET** **S113158342**
Target **3001 SCHOLL CANYON RD** **N/A**
Property **GLENDALE, CA 91206**

Site 6 of 18 in cluster A

Actual: **1107 ft.**

HAZNET:

Facility Name:	SCHOLL CANYON LANDFILL GAS COMPRESION PLANT
envid:	S113158342
Year:	2017
GEPAID:	CAL000351379
Contact:	MIRIAM SYKES
Telephone:	8185483807
Mailing Name:	Not reported
Mailing Address:	141 NORTH GLENDALE AVENUE, LEVEL 4
Mailing City,St,Zip:	GLENDALE, CA 912060000
Gen County:	Los Angeles
TSD EPA ID:	AZR000501510
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.7
Cat Decode:	Other organic solids
Method Decode:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	Los Angeles

envid:	S113158342
Year:	2017
GEPAID:	CAL000351379
Contact:	MIRIAM SYKES
Telephone:	8185483807
Mailing Name:	Not reported
Mailing Address:	141 NORTH GLENDALE AVENUE, LEVEL 4
Mailing City,St,Zip:	GLENDALE, CA 912060000
Gen County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery

SCHOLL CANYON LANDFILL GAS COMPRESION PLANT (Continued) **S113158342**

	(H010-H129) Or (H131-H135)
Tons:	19.8075
Cat Decode:	Unspecified oil-containing waste
Method Decode:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	Los Angeles
envid:	S113158342
Year:	2017
GEPAID:	CAL000351379
Contact:	MIRIAM SYKES
Telephone:	8185483807
Mailing Name:	Not reported
Mailing Address:	141 NORTH GLENDALE AVENUE, LEVEL 4
Mailing City,St,Zip:	GLENDALE, CA 912060000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	2.28
Cat Decode:	Waste oil and mixed oil
Method Decode:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Facility County:	Los Angeles
envid:	S113158342
Year:	2017
GEPAID:	CAL000351379
Contact:	MIRIAM SYKES
Telephone:	8185483807
Mailing Name:	Not reported
Mailing Address:	141 NORTH GLENDALE AVENUE, LEVEL 4
Mailing City,St,Zip:	GLENDALE, CA 912060000
Gen County:	Los Angeles
TSD EPA ID:	NVT330010000
TSD County:	99
Waste Category:	Polychlorinated biphenyls and material containing PCBs
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	84.82197
Cat Decode:	Polychlorinated biphenyls and material containing PCBs
Method Decode:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Facility County:	Los Angeles
envid:	S113158342
Year:	2017
GEPAID:	CAL000351379
Contact:	MIRIAM SYKES
Telephone:	8185483807
Mailing Name:	Not reported
Mailing Address:	141 NORTH GLENDALE AVENUE, LEVEL 4
Mailing City,St,Zip:	GLENDALE, CA 912060000
Gen County:	Los Angeles
TSD EPA ID:	CAD097030993

SCHOLL CANYON LANDFILL GAS COMPRESION PLANT (Continued) **S113158342**

TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.95
Cat Decode: Other organic solids
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
52 additional CA_HAZNET: record(s) in the EDR Site Report.

A7 **SHOLL CANYON LFG LTD PARTNERSHIP** **HAZNET** **S113069020**
Target **3001 SHOLL CANYON RD** **N/A**
Property **GLENDALE, CA 91206**

Site 7 of 18 in cluster A

Actual: HAZNET:
1107 ft.
Facility Name: SHOLL CANYON LFG LTD PARTNERSHIP
envid: S113069020
Year: 2009
GEPAID: CAL000122639
Contact: BOB RUSSELL
Telephone: 7813833200
Mailing Name: Not reported
Mailing Address: 13 ELM ST STE 200
Mailing City,St,Zip: COHASSET, MA 020251828
Gen County: Not reported
TSD EPA ID: NVT330010000
TSD County: Not reported
Waste Category: Unspecified aqueous solution
Disposal Method: Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons: 21
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

envid: S113069020
Year: 2009
GEPAID: CAL000122639
Contact: BOB RUSSELL
Telephone: 7813833200
Mailing Name: Not reported
Mailing Address: 13 ELM ST STE 200
Mailing City,St,Zip: COHASSET, MA 020251828
Gen County: Not reported
TSD EPA ID: NVT330010000
TSD County: Not reported
Waste Category: Other organic solids
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 3.5362
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

SHOLL CANYON LFG LTD PARTNERSHIP (Continued) **S113069020**

envid: S113069020
Year: 2009
GEPAID: CAL000122639
Contact: BOB RUSSELL
Telephone: 7813833200
Mailing Name: Not reported
Mailing Address: 13 ELM ST STE 200
Mailing City,St,Zip: COHASSET, MA 020251828
Gen County: Not reported
TSD EPA ID: CAD097030993
TSD County: Not reported
Waste Category: Unspecified sludge waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 2.1
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

envid: S113069020
Year: 2009
GEPAID: CAL000122639
Contact: BOB RUSSELL
Telephone: 7813833200
Mailing Name: Not reported
Mailing Address: 13 ELM ST STE 200
Mailing City,St,Zip: COHASSET, MA 020251828
Gen County: Not reported
TSD EPA ID: CAT080013352
TSD County: Not reported
Waste Category: Unspecified aqueous solution
Disposal Method: H139
Tons: 21
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

envid: S113069020
Year: 2009
GEPAID: CAL000122639
Contact: BOB RUSSELL
Telephone: 7813833200
Mailing Name: Not reported
Mailing Address: 13 ELM ST STE 200
Mailing City,St,Zip: COHASSET, MA 020251828
Gen County: Not reported
TSD EPA ID: CAD097030993
TSD County: Not reported
Waste Category: Other organic solids
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 1.4
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

SHOLL CANYON LFG LTD PARTNERSHIP (Continued) **S113069020**

Click this hyperlink while viewing on your computer to access
32 additional CA_HAZNET: record(s) in the EDR Site Report.

A8 Target Property **SCHOLL CANYON LDFL** **RCRA-SQG 1000978144**
3001 SCHOLL CANYON ROAD **US AIRS CA0000927426**
GLENDALE, CA 91206

Site 8 of 18 in cluster A

Actual: 1107 ft.

RCRA-SQG:

Date form received by agency:	10/12/2000
Facility name:	SCHOLL CANYON LDFL
Site name:	SCHOLL CANYON LANDFILL
Facility address:	3001 SCHOLL CANYON ROAD GLENDALE, CA 91206
EPA ID:	CA0000927426
Mailing address:	P.O. BOX 4998 WHITTIER, CA 90607
Contact:	MISCHELLE D. MISCHE
Contact address:	Not reported Not reported
Contact country:	US
Contact telephone:	562-699-7411
Telephone ext.:	2488
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	04/15/1999
Site name:	SCHOLL CANYON LANDFILL
Classification:	Large Quantity Generator

Date form received by agency:	09/01/1996
Site name:	SCHOLL CANYON LDFL

SCHOLL CANYON LDFL (Continued) **1000978144**

Classification: Small Quantity Generator

Date form received by agency: 03/29/1996
Site name: SCHOLL CANYON LANDFILL
Classification: Large Quantity Generator

Date form received by agency: 03/29/1994
Site name: SCHOOL CANYON LANDFILL
Classification: Large Quantity Generator

Violation Status: No violations found

US AIRS (AFS):
Envid: 1000978144
Region Code: 09
County Code: CA037
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
D and B Number: Not reported
Facility Site Name: LA CO - SANITATION DIST SCHOLL CANYON
Primary SIC Code: 4953
NAICS Code: 562212
Default Air Classification Code: MAJ
Facility Type of Ownership Code: DIS
Air CMS Category Code: TVM
HPV Status: Not reported

US AIRS (AFS):
Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2014-09-04 00:00:00
Activity Status Date: 2014-12-30 18:53:20
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2014-09-04 00:00:00
Activity Status Date: 2014-12-30 19:13:46
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards

SCHOLL CANYON LDFL (Continued) **1000978144**

Activity Date: 2015-09-17 00:00:00
Activity Status Date: 2015-10-14 12:56:44
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2015-09-17 00:00:00
Activity Status Date: 2015-10-14 13:01:37
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2016-09-21 00:00:00
Activity Status Date: 2016-09-29 13:55:59
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1997-09-05 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1998-10-14 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360

SCHOLL CANYON LDFL (Continued) **1000978144**

Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1999-08-04 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2003-12-05 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2004-03-23 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2004-07-06 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2005-02-01 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

SCHOLL CANYON LDFL (Continued) **1000978144**

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2005-03-29 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2006-02-02 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2006-05-03 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2006-06-21 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2006-09-12 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring

SCHOLL CANYON LDFL (Continued) **1000978144**

Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2007-02-26 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2007-08-29 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2008-01-10 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2008-02-24 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards

SCHOLL CANYON LDFL (Continued) **1000978144**

Activity Date: 2008-02-25 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2008-06-05 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2008-09-16 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2009-02-26 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2009-05-26 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360

SCHOLL CANYON LDFL (Continued) **1000978144**

Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2009-05-27 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2009-05-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2009-07-20 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2009-07-21 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2009-07-22 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

SCHOLL CANYON LDFL (Continued) **1000978144**

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2010-03-01 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2010-05-17 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2010-05-18 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2010-05-19 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2010-07-27 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring

SCHOLL CANYON LDFL (Continued) **1000978144**

Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2010-07-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2011-02-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2011-05-05 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2011-05-06 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards

SCHOLL CANYON LDFL (Continued) **1000978144**

Activity Date: 2011-05-23 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2011-05-24 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2012-02-27 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2012-02-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2012-05-08 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360

SCHOLL CANYON LDFL (Continued) **1000978144**

Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2012-06-12 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2012-06-13 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2013-02-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2013-05-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2014-02-28 00:00:00
Activity Status Date: 2014-12-30 19:09:17
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

SCHOLL CANYON LDFL (Continued) **1000978144**

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2014-05-28 00:00:00
Activity Status Date: 2014-12-30 19:12:40
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2014-09-04 00:00:00
Activity Status Date: 2014-12-30 18:53:20
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2014-09-04 00:00:00
Activity Status Date: 2014-12-30 19:13:46
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2015-02-27 00:00:00
Activity Status Date: 2015-10-14 12:57:45
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2015-05-20 00:00:00
Activity Status Date: 2015-10-14 13:00:55
Activity Group: Compliance Monitoring

SCHOLL CANYON LDFL (Continued) **1000978144**

Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2015-09-17 00:00:00
Activity Status Date: 2015-10-14 12:56:44
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2015-09-17 00:00:00
Activity Status Date: 2015-10-14 13:01:37
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2016-06-14 00:00:00
Activity Status Date: 2016-09-29 13:54:22
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2016-09-21 00:00:00
Activity Status Date: 2016-09-29 13:55:59
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Active

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits

SCHOLL CANYON LDFL (Continued) **1000978144**

Activity Date: 1998-10-14 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 1999-08-04 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2000-05-02 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2003-12-05 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2004-03-23 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360

SCHOLL CANYON LDFL (Continued) **1000978144**

Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2004-07-06 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2005-02-01 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2005-03-29 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2006-02-02 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2006-03-01 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

SCHOLL CANYON LDFL (Continued) **1000978144**

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2006-05-03 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2006-06-21 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2006-09-12 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2007-02-26 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2007-03-01 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring

SCHOLL CANYON LDFL (Continued) **1000978144**

Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2007-08-29 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2008-01-10 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2008-02-24 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2008-02-25 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits

SCHOLL CANYON LDFL (Continued) **1000978144**

Activity Date: 2008-06-05 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2008-09-16 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2009-02-26 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2009-05-26 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2009-05-27 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360

SCHOLL CANYON LDFL (Continued) **1000978144**

Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2009-05-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2009-07-20 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2009-07-21 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2009-07-22 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2010-03-01 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

SCHOLL CANYON LDFL (Continued) **1000978144**

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2010-05-17 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2010-05-18 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2010-05-19 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2010-07-27 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2010-07-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring

SCHOLL CANYON LDFL (Continued) **1000978144**

Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2011-02-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2011-05-05 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2011-05-06 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2011-05-23 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits

SCHOLL CANYON LDFL (Continued) **1000978144**

Activity Date: 2011-05-24 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2012-02-27 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2012-02-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2012-05-08 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2012-06-12 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360

SCHOLL CANYON LDFL (Continued) **1000978144**

Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2012-06-13 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2013-02-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2013-05-28 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 09
Programmatic ID: AIR CASCA00006037CC417
Facility Registry ID: 110000781360
Air Operating Status Code: OPR
Default Air Classification Code: MAJ
Air Program: Title V Permits
Activity Date: 2016-02-23 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

A9 **SCHOLL CANYON SANITARY LANDFILL** **RGA LF** **S114732488**
Target **3001 SCHOLL CANYON ROAD** **N/A**
Property **GLENDALE, CA**

Site 9 of 18 in cluster A

Actual: **1107 ft.**

RGA LF:

2012	SCHOLL CANYON SANITARY LANDFILL	3001 SCHOLL CANYON ROAD
2011	SCHOLL CANYON SANITARY LANDFILL	3001 SCHOLL CANYON ROAD
2010	SCHOLL CANYON SANITARY LANDFILL	3001 SCHOLL CANYON ROAD
2009	SCHOLL CANYON SANITARY LANDFILL	3001 SCHOLL CANYON ROAD
2008	SCHOLL CANYON SANITARY LANDFILL	3001 SCHOLL CANYON ROAD

SCHOLL CANYON SANITARY LANDFILL (Continued) **S114732488**

2007	SCHOLL CANYON SANITARY LANDFILL	3001 SCHOLL CANYON ROAD
2006	SCHOLL CANYON SANITARY LANDFILL	3001 SCHOLL CANYON ROAD
2005	SCHOLL CANYON SANITARY LANDFILL	3001 SCHOLL CANYON ROAD
2004	SCHOLL CANYON SANITARY LANDFILL	3001 SCHOLL CANYON ROAD
2003	SCHOLL CANYON SANITARY LANDFILL	3001 SCHOLL CANYON ROAD
2002	SCHOLL CANYON SANITARY LANDFILL	3001 SCHOLL CANYON ROAD
2001	SCHOLL CANYON SANITARY LANDFILL	3001 SCHOLL CANYON ROAD
2000	SCHOLL CANYON SANITARY LANDFILL	3001 SCHOLL CANYON ROAD
1999	SCHOLL CANYON SANITARY LANDFILL	3001 SCHOLL CANYON ROAD
1998	SCHOLL CANYON SANITARY LANDFILL	3001 SCHOLL CANYON ROAD
1997	SCHOLL CANYON SANITARY LANDFILL	3001 SCHOLL CANYON ROAD
1996	SCHOLL CANYON SANITARY LANDFILL	3001 SCHOLL CANYON ROAD
1995	SCHOLL CANYON SANITARY LANDFILL	3001 SCHOLL CANYON ROAD

A10 **LA CO - SANITATION DIST SCHOLL CANYON** **FINDS** **1016052728**
Target **3001 SCHOLL CANYON ROAD** **ECHO** **N/A**
Property **GLENDALE, CA 91206**

Site 10 of 18 in cluster A

Actual:
1107 ft.

FINDS:

Registry ID: 110000781360

Environmental Interest/Information System

AFS (Aerometric Information Retrieval System (AIRS) Facility Subsystem) replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aerometric Data (SAROAD). AIRS is the national repository for information concerning airborne pollution in the United States. AFS is used to track emissions and compliance data from industrial plants. AFS data are utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. AFS is undergoing a major redesign to support facility operating permits required under Title V of the Clean Air Act.

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZARDOUS WASTE BIENNIAL REPORTER

AIR MAJOR

CASWIS (California Solid Waste Integrating System). California's solid waste facility list that contains information on solid waste facilities, operations, and open and closed disposal sites throughout the state.

LA CO - SANITATION DIST SCHOLL CANYON (Continued) **1016052728**

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1016052728
Registry ID:	110000781360
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110000781360

A11 **CNTY LA SANITATION DIST/SCHOLL CNYN LDFL** **HAZNET** **S112836133**
Target **3001 SCHOLL CANYON RD** **N/A**
Property **GLENDALE, CA 91206**

Site 11 of 18 in cluster A

Actual: **1107 ft.**

HAZNET:

Facility Name:	COUNTY OF LA SANITATION DIST/SCHOLL CANYON LANDFILL
envid:	S112836133
Year:	2017
GEPAID:	CA0000927426
Contact:	DUNG KONG
Telephone:	5629084288
Mailing Name:	Not reported
Mailing Address:	PO BOX 4998
Mailing City,St,Zip:	WHITTIER, CA 906074998
Gen County:	Los Angeles
TSD EPA ID:	CAD008364432
TSD County:	Los Angeles
Waste Category:	Household waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	1.485
Cat Decode:	Household waste
Method Decode:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	Los Angeles

envid:	S112836133
Year:	2017
GEPAID:	CA0000927426
Contact:	DUNG KONG
Telephone:	5629084288
Mailing Name:	Not reported
Mailing Address:	PO BOX 4998
Mailing City,St,Zip:	WHITTIER, CA 906074998
Gen County:	Los Angeles
TSD EPA ID:	CAD008364432
TSD County:	Los Angeles
Waste Category:	Household waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	1.485
Cat Decode:	Household waste
Method Decode:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	Los Angeles

CNTY LA SANITATION DIST/SCHOLL CNYN LDFL (Continued) **S112836133**

envid: S112836133
Year: 2017
GEPAID: CA0000927426
Contact: DUNG KONG
Telephone: 5629084288
Mailing Name: Not reported
Mailing Address: PO BOX 4998
Mailing City,St,Zip: WHITTIER, CA 906074998
Gen County: Los Angeles
TSD EPA ID: NVD980895338
TSD County: 99
Waste Category: Household waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.02
Cat Decode: Household waste
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: Los Angeles

envid: S112836133
Year: 2017
GEPAID: CA0000927426
Contact: DUNG KONG
Telephone: 5629084288
Mailing Name: Not reported
Mailing Address: PO BOX 4998
Mailing City,St,Zip: WHITTIER, CA 906074998
Gen County: Los Angeles
TSD EPA ID: NVD980895338
TSD County: 99
Waste Category: Household waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.02
Cat Decode: Household waste
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: Los Angeles

envid: S112836133
Year: 2017
GEPAID: CA0000927426
Contact: DUNG KONG
Telephone: 5629084288
Mailing Name: Not reported
Mailing Address: PO BOX 4998
Mailing City,St,Zip: WHITTIER, CA 906074998
Gen County: Los Angeles
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Household waste
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.56
Cat Decode: Household waste
Method Decode: Fuel Blending Prior To Energy Recovery At Another Site
Facility County: Los Angeles

CNTY LA SANITATION DIST/SCHOLL CNYN LDFL (Continued) **S112836133**

Click this hyperlink while viewing on your computer to access
691 additional CA_HAZNET: record(s) in the EDR Site Report.

A12 Target Property **SCHOLL CANYON LANDFILL**
3001 SCHOLL CANYON RD
GLENDALE, CA 91206

RCRA-SQG 1008194708
AST CAO000927426
FINDS
HAZNET

Site 12 of 18 in cluster A

Actual: 1107 ft.

RCRA-SQG:

Date form received by agency:	02/27/2004
Facility name:	SCHOLL CANYON LANDFILL
Facility address:	3001 SCHOLL CANYON RD GLENDALE, CA 91206
EPA ID:	CAO000927426
Mailing address:	PO BOX 4998 WHITTIER, CA 90607
Contact:	MISCHELLE D MISHCE
Contact address:	Not reported Not reported
Contact country:	US
Contact telephone:	562-699-7411
Telephone ext.:	2488
Contact email:	MMISCHE@LACSD.ORG
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	SAN DIST OF LA COUNTY DIST 2
Owner/operator address:	PO BOX 4998 WHITTIER, CA 90607
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	District
Owner/Operator Type:	Owner
Owner/Op start date:	03/22/1961
Owner/Op end date:	Not reported

Owner/operator name:	SAN DIST OF LA COUNTY DIST 2
Owner/operator address:	Not reported Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	District
Owner/Operator Type:	Operator
Owner/Op start date:	03/22/1961

SCHOLL CANYON LANDFILL (Continued) **1008194708**

Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 02/27/2004
Site name: SCHOLL CANYON LANDFILL
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F004
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: CRESOLS, CRESYLIC ACID, AND NITROBENZENE; AND THE STILL BOTTOMS FROM THE RECOVERY OF THESE SOLVENTS; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

SCHOLL CANYON LANDFILL (Continued) **1008194708**

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F001
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLORETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: D013
. Waste name: LINDANE (1,2,3,4,5,6-HEXA-CHLOROCYCLOHEXANE, GAMMA ISOMER)

. Waste code: D009
. Waste name: MERCURY

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D002
. Waste name: CORROSIVE WASTE

Violation Status: No violations found

AST:

Certified Unified Program Agencies:	Not reported
Owner:	City of Glendale
Total Gallons:	Not reported
CERSID:	10190395
Facility ID:	Not reported
Business Name:	County Sanitation Districts of Los Angeles County
Phone:	(818) 243-9779
Fax:	Not reported
Mailing Address:	1955 Workman Mill Rd
Mailing Address City:	Whittier
Mailing Address State:	CA
Mailing Address Zip Code:	90601
Operator Name:	County Sanitation Districts of Los Angeles County
Operator Phone:	(562)908-4288 x4757
Owner Phone:	818-548-3300
Owner Mail Address:	141 N. Glendale Ave
Owner State:	CA
Owner Zip Code:	91206
Owner Country:	United States

SCHOLL CANYON LANDFILL (Continued) **1008194708**

Property Owner Name: City of Glendale
Property Owner Phone: 818-548-3300
Property Owner Mailing Address: 141 N. Glendale Ave
Property Owner City: Glendale
Property Owner Stat : CA
Property Owner Zip Code: 91206
Property Owner Country: United States
EPAID: CA0000927426

FINDS:

Registry ID: 110055841754

Environmental Interest/Information System
STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

HAZNET:
Facility Name: CNTY LA SANITATION DIST/SOLID WASTE
envid: 1008194708
Year: 2010
GEPAID: CAO000927426
Contact: JILEI SHAN / PROJECT ENGINEER
Telephone: 5626997411
Mailing Name: Not reported
Mailing Address: PO BOX 4998
Mailing City,St,Zip: WHITTIER, CA 906070000
Gen County: Not reported
TSD EPA ID: CAD008302903
TSD County: Not reported
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.045
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

envid: 1008194708
Year: 2010
GEPAID: CAO000927426
Contact: JILEI SHAN / PROJECT ENGINEER
Telephone: 5626997411
Mailing Name: Not reported
Mailing Address: PO BOX 4998
Mailing City,St,Zip: WHITTIER, CA 906070000
Gen County: Not reported
TSD EPA ID: CAD008302903
TSD County: Not reported
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.045
Cat Decode: Not reported
Method Decode: Not reported

SCHOLL CANYON LANDFILL (Continued) **1008194708**

Facility County: Los Angeles

envid: 1008194708
Year: 2010
GEPAID: CAO000927426
Contact: JILEI SHAN / PROJECT ENGINEER
Telephone: 5626997411
Mailing Name: Not reported
Mailing Address: PO BOX 4998
Mailing City,St,Zip: WHITTIER, CA 906070000
Gen County: Not reported
TSD EPA ID: CAD008302903
TSD County: Not reported
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.045
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

envid: 1008194708
Year: 2010
GEPAID: CAO000927426
Contact: JILEI SHAN / PROJECT ENGINEER
Telephone: 5626997411
Mailing Name: Not reported
Mailing Address: PO BOX 4998
Mailing City,St,Zip: WHITTIER, CA 906070000
Gen County: Not reported
TSD EPA ID: CAD008302903
TSD County: Not reported
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.045
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

envid: 1008194708
Year: 2010
GEPAID: CAO000927426
Contact: JILEI SHAN / PROJECT ENGINEER
Telephone: 5626997411
Mailing Name: Not reported
Mailing Address: PO BOX 4998
Mailing City,St,Zip: WHITTIER, CA 906070000
Gen County: Not reported
TSD EPA ID: CAD008302903
TSD County: Not reported
Waste Category: Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.2
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

SCHOLL CANYON LANDFILL (Continued) **1008194708**

Click this hyperlink while viewing on your computer to access
107 additional CA_HAZNET: record(s) in the EDR Site Report.

A13 **SCHOLL CANYON LANDFILL GAS COMPRESION PLANT** **FINDS** **1024687100**
Target **3001 SCHOOL CANYON RD UNIT 2** **ECHO** **N/A**
Property **GLENDALE, CA 91206**

Site 13 of 18 in cluster A

Actual:
1107 ft.

FINDS:

Registry ID: 110070475494

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access
additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1024687100
Registry ID: 110070475494
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110070475494

A14 **GLENDALE WATER & POWER - SCHOLL CANYON LANDFILL GA** **FINDS** **1023339537**
Target **3001 SCHOLL CANYON RD** **N/A**
Property **GLENDALE, CA 91206**

Site 14 of 18 in cluster A

Actual:
1107 ft.

FINDS:

Registry ID: 110066349188

Environmental Interest/Information System
STATE MASTER

Click this hyperlink while viewing on your computer to access
additional FINDS: detail in the EDR Site Report.

A15 **SCHOLL CANYON LANDFILL GAS COMPRESION PLANT** **RCRA NonGen / NLR** **1024825537**
Target **3001 SCHOLL CANYON RD UNIT 2** **CAL000351379**
Property **GLENDALE, CA 91206**

Site 15 of 18 in cluster A

Actual:
1107 ft.

RCRA NonGen / NLR:
Date form received by agency: 02/06/2018
Facility name: SCHOLL CANYON LANDFILL GAS COMPRESION PLANT
Facility address: 3001 SCHOLL CANYON RD UNIT 2
GLENDALE, CA 91206-0000
EPA ID: CAL000351379
Mailing address: NORTH GLENDALE AVE., LEVEL 4
GLENDALE, CA 91206
Contact: MIRIAM C SYKES
Contact address: NORTH GLENDALE AVE., LEVEL 4
GLENDALE, CA 91206
Contact country: US
Contact telephone: 818-548-3807
Contact email: MSYKES@GLENDALECA.GOV
EPA Region: 09
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: GLENDALE WATER & POWER DEPARTMENT
Owner/operator address: NORTH GLENDALE AVE., LEVEL 4
GLENDALE, CA 91206
Owner/operator country: US
Owner/operator telephone: 818-548-2107
Owner/operator email: SZURN@GLENDALECA.GOV
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Municipal
Owner/Operator Type: Operator
Owner/Op start date: 01/01/2010
Owner/Op end date: Not reported

Owner/operator name: CITY OF GLENDALE
Owner/operator address: 141 NORTH GLENDALE AVENUE, LEVEL 4
GLENDALE, CA 91206
Owner/operator country: Not reported
Owner/operator telephone: 818-548-2107
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Other
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: CITY OF GLENDALE
Owner/operator address: NORTH GLENDALE AVE., LEVEL 4
GLENDALE, CA 91206
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported

SCHOLL CANYON LANDFILL GAS COMPRESION PLANT (Continued) **1024825537**

Legal status: Municipal
Owner/Operator Type: Owner
Owner/Op start date: 01/01/2010
Owner/Op end date: Not reported

Owner/operator name: STEVEN MORRIS
Owner/operator address: 800 AIR WAY
GLENDALE, CA 91201
Owner/operator country: Not reported
Owner/operator telephone: 818-937-8992
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Other
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: 223
. Waste name: Unspecified oil-containing waste

. Waste code: D027
. Waste name: 1,4-DICHLOROBENZENE

Historical Generators:
Date form received by agency: 04/01/2010
Site name: SCHOLL CANYON LANDFILL GAS COMPRESION PLANT
Classification: Not a generator, verified

Violation Status: No violations found

A16 **CHMIRS** **S105673086**
Target Property **3001 SCHOOL CANYON RD.** **N/A**
GLENDALE, CA 90601

Site 16 of 18 in cluster A

Actual: **1107 ft.**

CHMIRS:

OES Incident Number:	1-4252
OES notification:	07/24/2001
OES Date:	Not reported
OES Time:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Yes
Waterway:	Verdugo Wash empties into the L.A. River
Spill Site:	Not reported
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2001
Agency:	County Sanitation Dist. Los Angeles
Incident Date:	7/24/200112:00:00 AM
Admin Agency:	Glendale Fire Department
Amount:	Not reported
Contained:	Yes
Site Type:	Other
E Date:	Not reported
Substance:	Treated Landfill Gas Condensate+ Treated Ground Water
Gallons:	6000
Unknown:	0.000000
Substance #2:	Not reported
Substance #3:	Not reported

(Continued) **S105673086**

Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	Sewer line partially clogged, it overflowed and went into a manhole. They are removing the upper 4 feet of soil from a silt basin, no other cleanup necessary, due to the non toxic nature of the release.

A17 **LA CNTY SANITATION DIST SCHOLL** **FINDS** **1023691097**
Target **3001 SCHOLL CANYON RD** **ECHO** **N/A**
Property **GLENDALE, CA 91206**

Site 17 of 18 in cluster A

Actual:
1107 ft.

FINDS:

Registry ID: 110070088100

Environmental Interest/Information System
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1023691097
Registry ID:	110070088100
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110070088100

A18 **LA COUNTY SANITATION DIST SCHOLL CANYON** **FINDS** **1014677957**
Target **3001 SCHOLL CANYON RD** **N/A**
Property **GLENDALE, CA 91206**

Site 18 of 18 in cluster A

Actual: FINDS:
1107 ft.

Registry ID: 110041127615

Environmental Interest/Information System
HAZARDOUS AIR POLLUTANT MAJOR

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

B19 **SCHOLL CANYON GOLF AND TENNIS CO** **WMUDS/SWAT** **S103319403**
NNE **3800 EAST GLENOAKS BLVD** **HIST UST** **N/A**
1/4-1/2 **GLENDALE, CA 91206**
0.466 mi.
2463 ft. **Site 1 of 2 in cluster B**

Relative: WMUDS/SWAT:
Higher

Actual:
1530 ft.

Edit Date:	19950124
Complexity:	Not reported
Primary Waste:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Base Meridian:	Not reported
NPID:	Not reported
Tonnage:	18
Regional Board ID:	60-117
Municipal Solid Waste:	False
Superorder:	False
Open To Public:	False
Waste List:	False
Agency Type:	Not reported
Agency Name:	LOS ANGELES COUNTY
Agency Department:	SANITATION DISTRICTS
Agency Address:	1955 WORKMAN MILL ROAD
Agency City,St,Zip:	WHITTIER 90607
Agency Contact:	Not reported
Agency Telephone:	Not reported
Land Owner Name:	CITY OF GLENDALE
Land Owner Address:	633 EAST BROADWAY
Land Owner City,St,Zip:	GLENDALE, CA 91206
Land Owner Contact:	KERRY MORFORD
Land Owner Phone:	Not reported
Region:	4
Facility Type:	Not reported
Facility Description:	Not reported
Facility Telephone:	Not reported
SWAT Facility Name:	SCHOLL CANYON LANDFILL
Primary SIC:	Not reported
Secondary SIC:	Not reported
Comments:	Not reported
Last Facility Editors:	JHMJHMJHM
Waste Discharge System:	False

SCHOLL CANYON GOLF AND TENNIS CO (Continued) **S103319403**

Solid Waste Assessment Test Program:	True
Toxic Pits Cleanup Act Program:	False
Resource Conservation Recovery Act:	False
Department of Defence:	False
Solid Waste Assessment Test Program:	LOS ANGELES COUNTY
Threat to Water Quality:	Not reported
Sub Chapter 15:	False
Regional Board Project Officer:	PKC
Number of WMUDS at Facility:	1
Section Range:	1N13W24NE
RCRA Facility:	Not reported
Waste Discharge Requirements:	Not reported
Self-Monitoring Rept. Frequency:	Not reported
Waste Discharge System ID:	4 190453NUR
Solid Waste Information ID:	Not reported

HIST UST:

File Number:	00027016
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00027016.pdf
Region:	Not reported
Facility ID:	Not reported
Facility Type:	Not reported
Other Type:	Not reported
Contact Name:	Not reported
Telephone:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner City,St,Zip:	Not reported
Total Tanks:	Not reported

Tank Num:	Not reported
Container Num:	Not reported
Year Installed:	Not reported
Tank Capacity:	Not reported
Tank Used for:	Not reported
Type of Fuel:	Not reported
Container Construction Thickness:	Not reported
Leak Detection:	Not reported

Click here for Geo Tracker PDF:

B20 **SCHOLL CANYON INACTIVE DISPOSAL SITE** **SWF/LF** **S111076085**
NNE **3800 EAST GLENOAKS DRIVE** **N/A**
1/4-1/2 **GLENDALE, CA 91206**
0.466 mi.
2463 ft. **Site 2 of 2 in cluster B**

Relative:
Higher

Actual:
1530 ft.

SWF/LF (SWIS):

Facility ID:	19-AA-5253
Lat/Long:	34.15355 / -118.19848
Owner Name:	City Of Glendale
Owner Telephone:	8185483900
Owner Address:	Not reported
Owner Address2:	613 East Broadway, Ste 200
Owner City,St,Zip:	Glendale, CA 91205
Operational Status:	Closed
Operator:	Not reported

SCHOLL CANYON INACTIVE DISPOSAL SITE (Continued) **S111076085**

Operator Phone: Not reported
Operator Address: Not reported
Operator Address2: Not reported
Operator City,St,Zip: Not reported
Permit Date: Not reported
Permit Status: Not reported
Permitted Acreage: Not reported
Activity: Solid Waste Disposal Site
Regulation Status: Unpermitted
Landuse Name: Rural,Residential,Commercial
GIS Source: Map
Category: Disposal
Unit Number: 01
Inspection Frequency: Quarterly
Accepted Waste: Not reported
Closure Date: 12/31/1975
Closure Type: Estimated
Disposal Acreage: Not reported
SWIS Num: 19-AA-5253
Waste Discharge Requirement Num: Not reported
Program Type: Not reported
Permitted Throughput with Units: Not reported
Actual Throughput with Units: Not reported
Permitted Capacity with Units: Not reported
Remaining Capacity: Not reported
Remaining Capacity with Units: Not reported
Lat/Long: 34.15355 / -118.19848

Facility ID: 19-AA-5253
Lat/Long: 34.15355 / -118.19848
Owner Name: City Of Glendale
Owner Telephone: 8185483200
Owner Address: Not reported
Owner Address2: 633 E. Broadway, Glendale
Owner City,St,Zip: Glendale, CA 91206
Operational Status: Closed
Operator: Not reported
Operator Phone: Not reported
Operator Address: Not reported
Operator Address2: Not reported
Operator City,St,Zip: Not reported
Permit Date: Not reported
Permit Status: Not reported
Permitted Acreage: Not reported
Activity: Solid Waste Disposal Site
Regulation Status: Unpermitted
Landuse Name: Rural,Residential,Commercial
GIS Source: Map
Category: Disposal
Unit Number: 01
Inspection Frequency: Quarterly
Accepted Waste: Not reported
Closure Date: 12/31/1975
Closure Type: Estimated
Disposal Acreage: Not reported
SWIS Num: 19-AA-5253
Waste Discharge Requirement Num: Not reported

SCHOLL CANYON INACTIVE DISPOSAL SITE (Continued) **S111076085**

Program Type: Not reported
Permitted Throughput with Units: Not reported
Actual Throughput with Units: Not reported
Permitted Capacity with Units: Not reported
Remaining Capacity: Not reported
Remaining Capacity with Units: Not reported
Lat/Long: 34.15355 / -118.19848

Facility ID: 19-AA-5253
Lat/Long: 34.15355 / -118.19848
Owner Name: City of Glendale
Owner Telephone: 8185483940
Owner Address: Not reported
Owner Address2: 633 East Boradway
Owner City,St,Zip: Glendale, CA 91206
Operational Status: Closed
Operator: Not reported
Operator Phone: Not reported
Operator Address: Not reported
Operator Address2: Not reported
Operator City,St,Zip: Not reported
Permit Date: Not reported
Permit Status: Not reported
Permitted Acreage: Not reported
Activity: Solid Waste Disposal Site
Regulation Status: Unpermitted
Landuse Name: Rural,Residential,Commercial
GIS Source: Map
Category: Disposal
Unit Number: 01
Inspection Frequency: Quarterly
Accepted Waste: Not reported
Closure Date: 12/31/1975
Closure Type: Estimated
Disposal Acreage: Not reported
SWIS Num: 19-AA-5253
Waste Discharge Requirement Num: Not reported
Program Type: Not reported
Permitted Throughput with Units: Not reported
Actual Throughput with Units: Not reported
Permitted Capacity with Units: Not reported
Remaining Capacity: Not reported
Remaining Capacity with Units: Not reported
Lat/Long: 34.15355 / -118.19848

LOS ANGELES CO. LF:
Site ID: 2185
Alt. Address: Not reported
Site Contact: Not reported
Site Contact Phone: Not reported
Site Email: Not reported
Site Website: Not reported
Site Type: Municipal Solid Waste Landfill
Site SWIS Number: 19-AA-5253
Beginning Operation Date: Not reported
Ending Operation Date: Jun-75
Local Enforcement Agency: County Public Health

SCHOLL CANYON INACTIVE DISPOSAL SITE (Continued) **S111076085**

Maximun Depth Fill(Ft):	245
Permitted Capacity:	Not reported
Present Use:	Scholl Canyon Golf Course
Remaining Capacity(Million):	Not reported
Status:	Closed
Waste Accepted:	Inert; Residential
Hours of Operation:	Not reported
Disposal Area (Acre):	68.5

Detail As Of 01/2014:

Operator Name:	County of Los Angeles Sanitation Districts
Operator Address:	1955 Workman Mill Road
Operator City/State/Zip:	Whittier, CA 90601
Operator Contact:	Willy Mejia
Operator Telephone:	(562) 699-7411x6069
Operator Email:	wmejia@lacsd.org
Owner Name:	City of Glendale
Owner Address:	633 East Broadway
Owner City/State/Zip:	Glendale, CA 91206
Owner Contact:	Not reported
Owner Telephone:	(818) 548-3200
Owner Email:	Not reported

Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/14/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 18

Source: EPA
Telephone: N/A
Last EDR Contact: 04/18/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/14/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 18

Source: EPA
Telephone: N/A
Last EDR Contact: 04/18/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/14/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 18

Source: EPA
Telephone: N/A
Last EDR Contact: 04/18/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 92

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/05/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/14/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 34

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 04/18/2019
Next Scheduled EDR Contact: 07/29/2019
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/14/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 34

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 04/18/2019
Next Scheduled EDR Contact: 07/29/2019
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/22/2019
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 41

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/07/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 01/31/2019
Date Data Arrived at EDR: 02/04/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 01/31/2019
Date Data Arrived at EDR: 02/04/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 02/04/2019
Date Data Arrived at EDR: 02/08/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 28

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 03/26/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 01/28/2019
Date Data Arrived at EDR: 01/29/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 35

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 01/28/2019
Date Data Arrived at EDR: 01/29/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 35

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/11/2019
Date Data Arrived at EDR: 02/12/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 21

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/12/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 12/11/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/13/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/12/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Varies

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases
UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/13/2019
Date Made Active in Reports: 04/03/2019
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 03/13/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 12/11/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 03/18/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/13/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 03/25/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 01/28/2019
Date Data Arrived at EDR: 01/29/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 35

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing

A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 12/20/2018
Date Data Arrived at EDR: 12/21/2018
Date Made Active in Reports: 02/28/2019
Number of Days to Update: 69

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 03/26/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/17/2018
Date Data Arrived at EDR: 12/18/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 24

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/19/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 34

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/13/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 02/09/2019
Date Data Arrived at EDR: 02/12/2019
Date Made Active in Reports: 03/27/2019
Number of Days to Update: 43

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 03/26/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/13/2019
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 02/01/2019
Next Scheduled EDR Contact: 05/13/2019
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 02/24/2019
Date Data Arrived at EDR: 02/26/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 50

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/21/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 01/28/2019
Date Data Arrived at EDR: 01/29/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 35

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/12/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 55

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Varies

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 04/11/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/24/2019
Date Data Arrived at EDR: 02/26/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 50

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/21/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Quarterly

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 02/21/2019
Date Data Arrived at EDR: 02/22/2019
Date Made Active in Reports: 04/15/2019
Number of Days to Update: 52

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/11/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Varies

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 12/04/2018
Date Data Arrived at EDR: 12/06/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 02/21/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing
Aboveground storage tank sites

Date of Government Version: 09/11/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/11/2018
Number of Days to Update: 29

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

CERS TANKS: California Environmental Reporting System (CERS) Tanks
List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 04/11/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Quarterly

CA FID UST: Facility Inventory Database
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 02/28/2019
Date Data Arrived at EDR: 03/01/2019
Date Made Active in Reports: 04/02/2019
Number of Days to Update: 32

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/14/2019
Date Made Active in Reports: 03/21/2019
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 04/18/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 03/04/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 27

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 02/08/2019
Date Data Arrived at EDR: 02/08/2019
Date Made Active in Reports: 03/21/2019
Number of Days to Update: 41

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/26/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 10/24/2018
Date Data Arrived at EDR: 01/24/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 40

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 01/24/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 04/03/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/12/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/12/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63
Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 01/31/2019
Date Data Arrived at EDR: 02/04/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 32
Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 03/26/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88
Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/08/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73
Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/08/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198
Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/22/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/20/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/24/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/14/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 18

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 04/18/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 02/01/2019
Date Data Arrived at EDR: 02/14/2019
Date Made Active in Reports: 03/21/2019
Number of Days to Update: 35

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/14/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 34
Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 04/18/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 09/14/2018
Date Data Arrived at EDR: 10/11/2018
Date Made Active in Reports: 12/07/2018
Number of Days to Update: 57
Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/10/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 04/08/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 03/07/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/02/2019
Date Data Arrived at EDR: 01/03/2019
Date Made Active in Reports: 03/15/2019
Number of Days to Update: 71

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/02/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 01/29/2019
Date Made Active in Reports: 03/21/2019
Number of Days to Update: 51

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 02/11/2019
Date Made Active in Reports: 03/21/2019
Number of Days to Update: 38

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 04/05/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/11/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/22/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/14/2019
Date Made Active in Reports: 03/21/2019
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 04/18/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 11/27/2018
Date Data Arrived at EDR: 02/27/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 33

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/01/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/01/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 03/21/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/15/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 03/15/2019
Number of Days to Update: 10

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 01/17/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 74

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 04/15/2019
Next Scheduled EDR Contact: 07/29/2019
Data Release Frequency: Varies

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 71

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 03/01/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 03/03/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 04/09/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 02/19/2019
Date Data Arrived at EDR: 02/21/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 39

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/21/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 12/20/2018
Date Data Arrived at EDR: 12/21/2018
Date Made Active in Reports: 02/28/2019
Number of Days to Update: 69

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 03/26/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 09/11/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 7

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 04/18/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing

list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 01/23/2019
Date Data Arrived at EDR: 02/26/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 34

Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 02/26/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 02/27/2019
Date Data Arrived at EDR: 02/28/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 32

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 12/13/2018
Date Data Arrived at EDR: 01/17/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 47

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Annually

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 03/19/2019
Date Data Arrived at EDR: 03/22/2019
Date Made Active in Reports: 04/09/2019
Number of Days to Update: 18

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 03/22/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Varies

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/20/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 47

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 03/22/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 11/01/2018
Date Data Arrived at EDR: 11/02/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 41

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 04/23/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 01/10/2019
Date Data Arrived at EDR: 01/23/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 41

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 02/15/2019
Date Data Arrived at EDR: 02/19/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 14

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/11/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 37

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 02/19/2019
Date Data Arrived at EDR: 02/20/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 13

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 02/20/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 02/19/2019
Date Data Arrived at EDR: 02/20/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 13

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/20/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 01/07/2019
Date Data Arrived at EDR: 01/08/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 56

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 04/09/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 34
Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 02/20/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/02/2019
Number of Days to Update: 28
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 02/11/2019
Date Data Arrived at EDR: 02/12/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 23
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/12/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 03/04/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/05/2019
Number of Days to Update: 31
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 34
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/13/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 09/19/2018
Date Data Arrived at EDR: 09/20/2018
Date Made Active in Reports: 10/19/2018
Number of Days to Update: 29
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 03/18/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 04/27/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 03/13/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35
Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 07/11/2018
Date Made Active in Reports: 09/13/2018
Number of Days to Update: 64
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 04/12/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Quarterly

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing
In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/18/2019
Number of Days to Update: 37

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 03/13/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 03/05/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/02/2019
Number of Days to Update: 28

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 04/11/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 03/25/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)

Produced water ponds sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)
Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2019
Date Data Arrived at EDR: 01/11/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 53

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 01/07/2019
Date Data Arrived at EDR: 01/08/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 59

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 04/08/2019
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 01/07/2019
Date Data Arrived at EDR: 01/08/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 58

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 04/08/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 01/24/2019
Date Data Arrived at EDR: 01/25/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 39

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 03/25/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 02/27/2019
Date Data Arrived at EDR: 02/28/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 32

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 02/14/2019
Date Data Arrived at EDR: 02/19/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 17

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 01/16/2019
Date Data Arrived at EDR: 02/05/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 28

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 02/27/2019
Date Data Arrived at EDR: 02/28/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 32

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 10/16/2018
Date Data Arrived at EDR: 10/18/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 27

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 03/29/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 12/11/2018
Date Data Arrived at EDR: 12/13/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 33

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 01/18/2019
Date Data Arrived at EDR: 01/23/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 41

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

KERN COUNTY:

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 01/28/2019
Date Data Arrived at EDR: 02/07/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 29

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 02/14/2019
Date Data Arrived at EDR: 02/19/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 14

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 02/08/2019
Date Data Arrived at EDR: 02/12/2019
Date Made Active in Reports: 03/12/2019
Number of Days to Update: 28

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 04/15/2019
Next Scheduled EDR Contact: 07/29/2019
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/17/2019
Date Data Arrived at EDR: 01/18/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 46

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 03/18/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 12/19/2018
Date Data Arrived at EDR: 01/10/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 56

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/14/2019
Date Data Arrived at EDR: 01/15/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 51

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 04/16/2019
Next Scheduled EDR Contact: 07/29/2019
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 01/15/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 51

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 04/15/2019
Next Scheduled EDR Contact: 07/29/2019
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/30/2019
Date Data Arrived at EDR: 02/01/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 34

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 04/16/2019
Next Scheduled EDR Contact: 07/29/2019
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 04/15/2019
Next Scheduled EDR Contact: 07/29/2019
Data Release Frequency: Semi-Annually

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/09/2017
Date Data Arrived at EDR: 03/10/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 54

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Annually

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 10/02/2018
Date Data Arrived at EDR: 10/05/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 28

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 02/20/2019
Date Data Arrived at EDR: 02/22/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 13

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 03/29/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/29/2018
Date Data Arrived at EDR: 08/31/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 19

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 03/18/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 02/21/2019
Date Data Arrived at EDR: 02/26/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 34

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 02/21/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 02/05/2019
Date Data Arrived at EDR: 02/07/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 26

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 04/01/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/21/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 02/21/2019
Date Data Arrived at EDR: 02/22/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 14

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/21/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 01/25/2019
Date Data Arrived at EDR: 01/29/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 35

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 01/02/2019
Date Data Arrived at EDR: 02/07/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 26
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 01/02/2019
Date Data Arrived at EDR: 02/08/2019
Date Made Active in Reports: 03/06/2019
Number of Days to Update: 26
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 01/02/2019
Date Data Arrived at EDR: 02/05/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 31
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/05/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 02/28/2019
Date Data Arrived at EDR: 03/01/2019
Date Made Active in Reports: 04/12/2019
Number of Days to Update: 42
Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 01/14/2019
Date Data Arrived at EDR: 01/18/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 46
Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 01/29/2019
Date Data Arrived at EDR: 01/31/2019
Date Made Active in Reports: 03/06/2019
Number of Days to Update: 34
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/18/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 01/29/2019
Date Data Arrived at EDR: 01/31/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 36

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/18/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/07/2018
Date Data Arrived at EDR: 01/04/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 60

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/02/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 11/07/2018
Date Data Arrived at EDR: 12/28/2018
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 67

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/02/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 11/15/2018
Date Data Arrived at EDR: 11/16/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 27

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 02/27/2019
Date Data Arrived at EDR: 02/28/2019
Date Made Active in Reports: 04/02/2019
Number of Days to Update: 33

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 02/19/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 03/04/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 04/02/2019
Number of Days to Update: 28

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 03/05/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 56

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing

A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

SAN DIEGO CO. SAM: Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

LUST SAN FRANCISCO: Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

UST SAN FRANCISCO: Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/05/2018
Date Data Arrived at EDR: 11/06/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 38

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 03/18/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 02/13/2019
Date Data Arrived at EDR: 02/15/2019
Date Made Active in Reports: 03/14/2019
Number of Days to Update: 27

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 34

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/13/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 12/13/2018
Date Data Arrived at EDR: 12/18/2018
Date Made Active in Reports: 01/23/2019
Number of Days to Update: 36

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/25/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 02/13/2019
Date Data Arrived at EDR: 02/19/2019
Date Made Active in Reports: 03/06/2019
Number of Days to Update: 15

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 02/21/2019
Next Scheduled EDR Contact: 06/10/2019
Data Release Frequency: Annually

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 01/30/2019
Date Data Arrived at EDR: 02/01/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 34

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 11/29/2018
Date Data Arrived at EDR: 12/04/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 38

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 03/05/2019
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 04/03/2019
Number of Days to Update: 27

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 12/21/2018
Date Data Arrived at EDR: 12/27/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 19

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 03/25/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/08/2019
Date Data Arrived at EDR: 01/10/2019
Date Made Active in Reports: 03/06/2019
Number of Days to Update: 55

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 04/08/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 12/11/2018
Date Data Arrived at EDR: 12/13/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 33

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 04/15/2019
Next Scheduled EDR Contact: 07/29/2019
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 02/28/2019
Date Data Arrived at EDR: 03/01/2019
Date Made Active in Reports: 04/03/2019
Number of Days to Update: 33

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 02/27/2019
Next Scheduled EDR Contact: 06/17/2019
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 12/13/2018
Date Data Arrived at EDR: 12/18/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 28

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 01/18/2019
Date Data Arrived at EDR: 01/23/2019
Date Made Active in Reports: 03/06/2019
Number of Days to Update: 42

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 12/26/2018
Date Data Arrived at EDR: 12/27/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 19

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 12/26/2018
Date Data Arrived at EDR: 01/24/2019
Date Made Active in Reports: 02/28/2019
Number of Days to Update: 35

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/23/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/29/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Annually

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/07/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Quarterly

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 12/26/2018
Date Data Arrived at EDR: 01/24/2019
Date Made Active in Reports: 03/07/2019
Number of Days to Update: 42

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 04/23/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 02/26/2019
Date Data Arrived at EDR: 03/13/2019
Date Made Active in Reports: 04/03/2019
Number of Days to Update: 21

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/13/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 12/26/2018
Date Data Arrived at EDR: 01/03/2019
Date Made Active in Reports: 01/16/2019
Number of Days to Update: 13

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 03/29/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 02/08/2019
Date Data Arrived at EDR: 02/12/2019
Date Made Active in Reports: 03/06/2019
Number of Days to Update: 22

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 02/11/2019
Date Data Arrived at EDR: 02/12/2019
Date Made Active in Reports: 03/04/2019
Number of Days to Update: 20

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/12/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 07/13/2018
Date Made Active in Reports: 08/01/2018
Number of Days to Update: 19

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/10/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 01/30/2019
Date Made Active in Reports: 02/14/2019
Number of Days to Update: 15

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 01/30/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/27/2018
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/15/2019
Next Scheduled EDR Contact: 07/29/2019
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 04/09/2018
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/19/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/15/2018
Date Made Active in Reports: 07/09/2018
Number of Days to Update: 24

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/11/2019
Next Scheduled EDR Contact: 06/24/2019
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

BIOGAS RENEWABLE GENERATION PROJECT
3001 SCHOLL CANYON ROAD
GLENDALE, CA 91206

TARGET PROPERTY COORDINATES

Latitude (North):	34.154834 - 34° 9' 17.40''
Longitude (West):	118.197444 - 118° 11' 50.80''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	389614.2
UTM Y (Meters):	3779776.5
Elevation:	1107 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5636829 PASADENA, CA
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

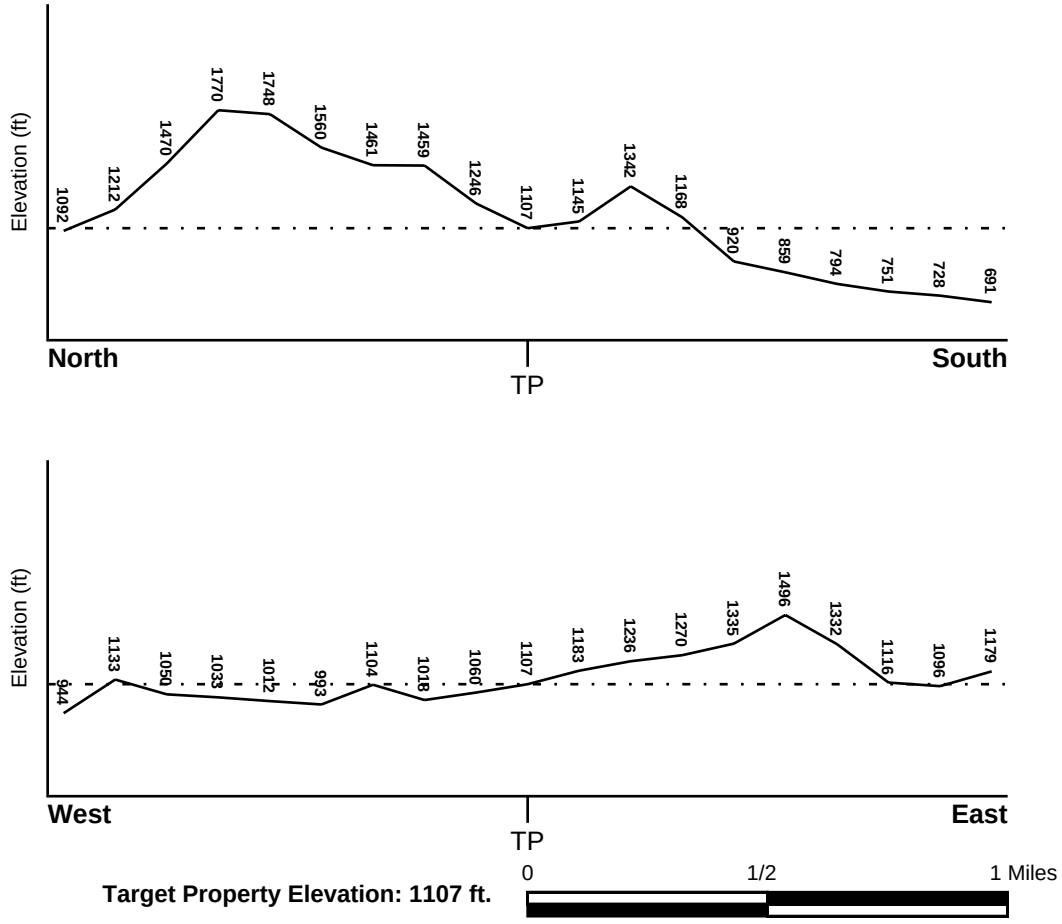
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 1107 ft.

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06037C1375F	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
Not Reported	

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
PASADENA	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT **GEOLOGIC AGE IDENTIFICATION**

Era:	Precambrian	Category:	Metamorphic Rocks
System:	Precambrian		
Series:	Orthogneiss and paragneiss		
Code:	Xm *(decoded above as Era, System & Series)*		

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	FALLBROOK
Soil Surface Texture:	sandy loam
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel:	MODERATE
Depth to Bedrock Min:	> 40 inches
Depth to Bedrock Max:	> 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	6 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 7.30 Min: 6.10
2	6 inches	12 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 7.30 Min: 6.10
3	12 inches	28 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 0.60 Min: 0.20	Max: 7.30 Min: 6.10
4	28 inches	47 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 7.30 Min: 6.10
5	47 inches	51 inches	weathered bedrock	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: coarse sandy loam
unweathered bedrock
fine sandy loam

Surficial Soil Types: coarse sandy loam
unweathered bedrock
fine sandy loam

Shallow Soil Types: sandy clay loam
clay
fine sandy loam
gravelly - loam
clay loam

Deeper Soil Types: gravelly - sandy loam
unweathered bedrock

very fine sandy loam
silty clay loam
sandy loam

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

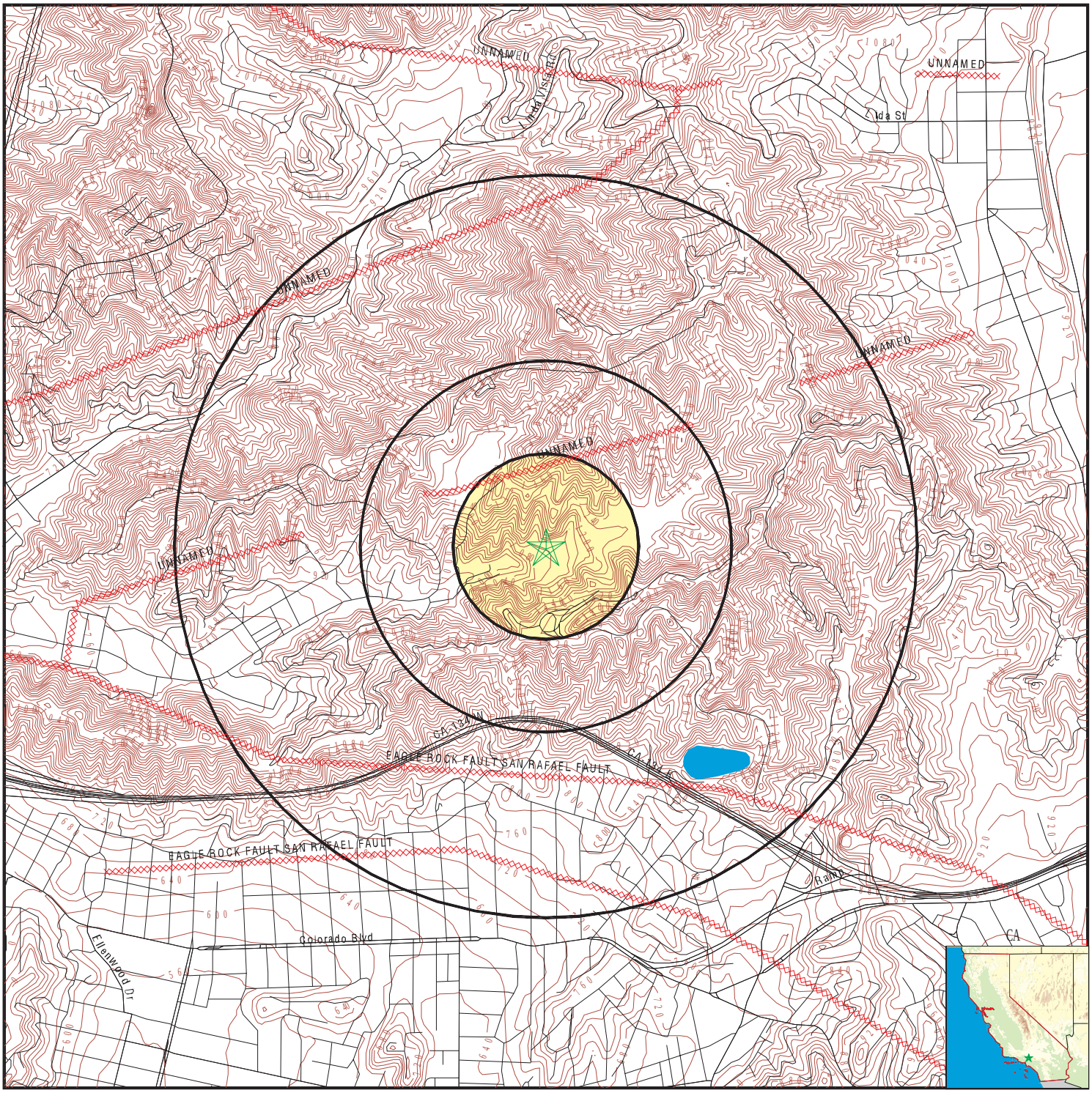
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 5631793.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	Biogas Renewable Generation Project	CLIENT:	Stantec
ADDRESS:	3001 Scholl Canyon Road Glendale CA 91206	CONTACT:	Anuya Sawant Dickinson
LAT/LONG:	34.154834 / 118.197444	INQUIRY #:	5631793.2s
		DATE:	April 25, 2019 7:57 am

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
91206	31	0

Federal EPA Radon Zone for LOS ANGELES County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for LOS ANGELES COUNTY, CA

Number of sites tested: 63

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.711 pCi/L	98%	2%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	0.933 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

California Earthquake Fault Lines
Source: California Division of Mines and Geology
The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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Appendix D AGENCY RECORDS

Department of Toxic Substances Control

Jared Blumenfeld
Secretary for
Environmental Protection

Meredith Williams, Ph.D.
Acting Director
9211 Oakdale Avenue
Chatsworth, California 91311

Gavin Newsom
Governor

April 26, 2019

Anuya Sawant-Dickinson
Stantec Consulting Services, Inc
290 Conejo Ridge Avenue
Thousand Oaks, CA 91361

VARIOUS
PR3-042419-05

Dear Anuya Sawant-Dickinson:

On April 24, 2019 the Department of Toxic Substances Control received your email dated April 24, 2019, requesting records under the Public Records Act. After a thorough review of our files, we have found that we have records pertaining to some of the site/facility referenced in your request, but not all of them. Please see below.

We have records for:

- Scholl Canyon Landfill 7721 North Figueroa Street, Los Angeles, CA 90041

We do not have records for:

- 3001 Scholl Canyon Road, Glendale, CA 91206

The records we do have are ready for your review. However, due to the Records Office's limited space and resources, I ask that you contact me at (818) 717-6522 to arrange for an appointment to review them.

We would also like to inform you about EnviroStor, a database that provides information and documents on over 5,000 DTSC cleanup sites. EnviroStor can be accessed at: http://www.envirostor.dtsc.ca.gov/public. Also, a computer is available in the Central Files of each DTSC Regional Office for use by community members to view EnviroStor.

Sincerely,

Glenn Castillo/JVT
Regional Records Coordinator

Printed on Recycled Paper

Department of Toxic Substances Control

Matthew Rodriquez
Secretary for
Environmental Protection

Barbara A. Lee, Director
9211 Oakdale Avenue
Chatsworth, California 91311

Edmund G. Brown Jr.
Governor

September 11, 2015

Ms. Anuya Sawant
Stantec Consulting Service Inc.
290 Conejo Ridge Avenue
Thousand Oaks, CA 91361

Scholl Canyon Landfill, 7721 North Figueroa Street, Los Angeles, CA 90041
PR3-090915-25

Dear Ms. Sawant:

On September 2, 2015, the Department of Toxic Substances Control received your letter dated September 2, 2015 requesting records for the above site under the Public Records Act. Although records will be ready for your review on or after September 16, 2015, due to the Records Office's limited space and resources, please contact me at (818) 717-6521 to arrange for an appointment to review the records.

We would also like to inform you about Envirostor, a database that provides information and documents on over 5,000 DTSC cleanup sites. EnviroStor can be accessed at: http://www.envirostor.dtsc.ca.gov/public. Also, a computer is available in the Central Files of each DTSC Regional Office for use by community members to view EnviroStor.

Sincerely,

for

Vivien Tutaan/cs
Regional Records Coordinator

Printed on Recycled Paper

Sept 21, 2 p.m.

Stantec

Stantec Consulting Services Inc.
290 Conejo Ridge Avenue, Thousand Oaks CA 91361

September 2, 2015
File: 2057123300

Attention: Custodian of Records
Department of Toxic Substances Control
Chatsworth Regional Office
FOIA Request

Via Facsimile (818) 717-6526

Re: Freedom of Information Act Request

Property Location: **7721 North Figueroa Street**
Los Angeles, California 90041

- Scholl canyon landfill FS, M

To Whom It May Concern:

Stantec Consulting Services Inc. (Stantec) is performing an environmental review of the above-listed Property address. As part of our assessment, I am requesting that your office provide copies of file information regarding permits, hazardous materials, waste, complaints, violations, underground or aboveground storage tanks, remedial action, and case closure documentation, or any records that indicate environmental concern at the above-referenced Property.

Please fax **(805) 230-1277** or mail the information, including a reply of no information in files, if appropriate, to **Anuya Sawant, 290 Conejo Ridge Ave., Thousand Oaks CA 91361**, or call at **(805) 341-9514** to schedule a file review appointment.

Thank you in advance for your assistance in this matter.

Sincerely,

STANTEC CONSULTING SERVICES INC.

Anuya Sawant
Project Engineering Specialist

Phone: (805) 719-9336
anuya.sawant@stantec.com

9/10/15

PR3-090915-25

DEPARTMENT OF TOXIC SUBSTANCES CONTROL
REGION 3
RECORD OF PUBLIC REVIEW

Requester:	Representing:	Date:
CHRISTOPHER MURRAY	ROY F. WESTON	11/16/93

I have read the Department's guidelines for review of public records and wish to inspect the following public record(s).

Complete Description of Record:

Name of Facility: SCHOLL CANYON LANDFILL

Address: 7724 N. FIGUEROA ST.

City: Glendale State: CA Zip: 900

NOTICE TO FILE USERS: Most of this Department's files are active files and it is possible that some materials from the files are in use by Department employees.

To be completed by Departmental Office:

Approved _____ Inspected by _____ Date _____

Disclosure of the requested record is prohibited by law:

Department Representative:	Section/Unit:	Date:
SATISH K. GULATI, OT Fileroom Coordinator	Fileroom/TSSB	

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

RECORD OF PUBLIC REVIEW

Requester:	Representing:	Date:
Dianne Franks	MDBE	10/13/92

I have read the Department's guidelines for review of public records and wish to inspect the following public record(s).

Complete Description of Record:

Name of Facility: Scholl Canyon

Address: 7721 N. Figueroa

City: Eagle Rock State: CA Zip: _____

NOTICE TO FILE USERS: Most of this Department's files are active files and it is possible that some materials from the files are in use by Department employees.

To be completed by Departmental Office:

Approved _____ Inspected by _____ Date _____

Disclosure of the requested record is prohibited by law:

_____

Department Representative:	Section/Unit:	Date:
SATISH K. GULATI, OT Fileroom Coordinator	Fileroom/TSSB	10/13/92

DEPARTMENT OF TOXIC SUBSTANCES CONTROL
Region 3
Record of Public Review

Requester	Representing	Date
J. Clements	Hygienetics, Inc	11/25/91

I have read the Department's guidelines for review of public records and wish to inspect the following public record(s).

Complete Description of Record: Scholl Landfill

Name of Facility

Address 7721 N. Figueroa

City	State	Zip
LA	CA	9

NOTICE TO FILE USERS: Most of this Department's file are active files and it is possible that some materials from the files are in use by the Department employees.

TO BE COMPLETED BY DEPARTMENTAL OFFICE ONLY

Approved	Inspected by	Date

Disclosure of the requested record is prohibited by law.

Department Representative	Section/Unit:	Date:
Cecilia Lopez Fileroom Coordinator	Fileroom/TSSB	11/25/91

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (310) 699-7411, FAX: (310) 695-6139

CHARLES W. CARRY
Chief Engineer and General Manager

January 22, 1997
File No. 31R-208.10

Mr. Jesse Huff
Director of Department of Toxic Substance Control
P. O. Box 806
Sacramento, California 95812-0806

Dear Mr. Huff:

Scholl Canyon Landfill
Monitoring Program for October - December 1996

Please find enclosed a copy of the monthly monitoring report for the Scholl Canyon Landfill prepared for the Regional Water Quality Control Board (RWQCB). The enclosed report includes information which fulfills requirements of Section 17258.20 of Title 14, California Code of Regulation. These requirements specify that detections of hazardous or PCB wastes at municipal solid waste landfills be reported to your office. The enclosed information includes the source of the waste, date, and description of hazardous wastes or PCB wastes found at the landfill.

If you have any questions about the information contained in this report, please contact me at (310) 699-7411, extension 2470.

Very truly yours,

Charles W. Carry

R. L. Huitric

Raymond L. Huitric
Research and Monitoring Section Head
Solid Waste Management Department

RLH:FS:eo

cc: Mukul Agarwal

Recycled Paper

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
WASTE INSPECTION SUMMARY REPORT TO THE
REGIONAL WATER QUALITY CONTROL BOARD

SCHOLL CANYON LANDFILL - December 1996

Unacceptable Wastes

Incident 1;

a. **Source:** (Unknown)
Date Received or Recovered: 12/16/96
b. **Description**

1] 3x1 GAL OIL-BASE PAINT	1.8 GAL	(1)	A
2] 1x1 GAL LATEX PAINT	0.4 GAL	(1)	A
3] 1x1 GAL LATEX ADHESIVE	0.2 GAL	(1)	A
4] 1x1 QT BRAKE FLUID	12.0 FL OZ	(3)	B
5] 1x16 OZ COMBAT ANT&ROACH INSTANT KILLER	1.0 OZ	(2)	C
6] 1x11 OZ AEROSOL PAINT	1.5 OZ	(2)	C

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)Consolidated Waste
10680 Silicon Ave.
Montclair, CA 91763
(3)ASBURY OIL CO.
2100 N. Alameda St.
Compton, CA 90222
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove by Asbury Oil Co. for recycling.
C remove to APTUS for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 2;

a. **Source:** (Unknown)
Date Received or Recovered: 12/07/96
b. **Description**

1] 1x5 GAL LATEX PAINT	1.0 GAL	(1)	A
2] 2x1 GAL LATEX PAINT	0.8 GAL	(1)	A
3] 1x1 QT OIL-BASE PAINT	0.5 QT	(1)	A
4] 1x16 OZ BONDO FIBERGLASS RESIN	10.0 OZ	(1)	A
5] 3x32 OZ PUMP OIL	96.0 OZ	(3)	B
6] 1x16 OZ TILEX MILDEW REMOVER	6.0 OZ	(2)	C

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)Consolidated Waste
10680 Silicon Ave.
Montclair, CA 91763
(3)ASBURY OIL CO.
2100 N. Alameda St.
Compton, CA 90222
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove by Asbury Oil Co. for recycling.
C remove to APTUS for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 3;

a. **Source:** (Unknown)
Date Received or Recovered: 12/20/96
b. **Description**

1] 1x1 GAL TURPENTINE	0.6 GAL	(1)	A
2] 1x1 QT LATEX PAINT	1.0 QT	(1)	A
3] 1x1 QT PAINT THINNER	25.0 OZ	(1)	A
4] 3x1 QT TRANSMISSION FLUID	2.0 QT	(3)	B
5] 1x1 GAL ANTIFREEZE	0.5 GAL	(1)	A
6] 2x32 OZ CHARCOAL LIGHTER FLUID	20.0 OZ	(1)	A
7] 3x3-18 OZ HAZARDOUS AEROSOL PRODUCTS	35.0 OZ	(2)	C

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)Consolidated Waste
10680 Silicon Ave.
Montclair, CA 91763
(3)ASBURY OIL CO.
2100 N. Alameda St.
Compton, CA 90222
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove by Asbury Oil Co. for recycling.
C remove to APTUS for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 4;

a. **Source:** (Unknown)
Date Received or Recovered: 12/06/96
b. **Description**

1] 6x1 GAL LATEX PAINT	3.6 GAL	(1)	A
2] 1x1 GAL OIL-BASE PAINT	0.8 GAL	(1)	A
3] 1x1 QT OIL-BASE PAINT	0.1 QT	(1)	A
4] 1x1 CUP OIL-BASE WOOD FILLER	1.0 CUP	(1)	A
5] 1x1 QT CHARCOAL LIGHTER FLUID	1.0 PT	(1)	A
6] 1x1 QT OUTBOARD MOTOR OIL	1.0 PT	(3)	B
7] 2x1 LB LUBRICANTS	1.0 LB	(3)	B
8] 1x1 GAL ORTHO FLEA-B-GON FLEA & TICK KILLER	1.0 QT	(2)	C
9] 1x1 CUP MILDEW SPRAY W/ KARATHANE	2.0 FL OZ	(2)	C
10] 1x1 QT PHOSPHORIC ACID	1.0 PT	(2)	C
11] 1x.5 GAL HR2 RUG SHAMPOO	0.5 GAL	(1)	A
12] 3x4.75-14 OZ HAZARDOUS AEROSOL PRODUCTS	14.0 OZ	(2)	C

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)Consolidated Waste
10680 Silicon Ave.
Montclair, CA 91763
(3)ASBURY OIL CO.
2100 N. Alameda St.
Compton, CA 90222

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove by Asbury Oil Co. for recycling.
C remove to APTUS for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 5;

a. **Source:** (Unknown)
Date Received or Recovered: 12/17/96

b. **Description**

1] 1x5 GAL LATEX PAINT	1.0 GAL	(1)	A
2] 1x1 GAL LATEX PAINT	0.6 GAL	(1)	A
3] 1x1 QT LATEX PAINT	0.5 QT	(1)	A
4] 1x11 OZ AEROSOL PAINT	5.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1) OSCO
1704 W. First St
Azusa, CA 91702

(2) Consolidated Waste
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to APTUS for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 6;

a. **Source:** (Unknown)
Date Received or Recovered: 12/30/96

b. **Description**

1] 3x1 GAL LATEX PAINT	1.0 GAL	(1)	A
2] 1x1 GAL TURPENTINE	0.7 GAL	(1)	A
3] 1x1 GAL NISSAN RESIN GLAZE	1.0 GAL	(1)	A
4] 1x1 PT BRAKE FLUID	0.5 PT	(3)	B
5] 1x32 OZ WINDOW CLEANER	12.0 OZ	(1)	A

c. **Name of Hauler (for removal):**
(1) OSCO
1704 W. First St
Azusa, CA 91702

(3) ASBURY OIL CO.
2100 N. Alameda St
Compton, CA 90222

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove by Asbury Oil Co. for recycling.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
WASTE INSPECTION SUMMARY REPORT TO THE
REGIONAL WATER QUALITY CONTROL BOARD

SCHOLL CANYON LANDFILL - November 1996

Unacceptable Wastes

Incident 1;

a. **Source:** (Unknown)
Date Received or Recovered: 11/11/96

b. **Description**

1] 1X5 GAL LATEX PAINT	1.0 GAL	(1)	A
2] 1X1 QT LATEX PAINT	0.2 QT	(1)	A
3] 1X1 QT OIL-BASE PAINT	1.0 QT	(1)	A
4] 1X32 OZ HOUSEHOLD CLEANER	10.0 OZ	(2)	B
5] 1X16 OZ FURNITURE WAX	8.0 OZ	(1)	A
6] 2X8-12 OZ HAZARDOUS AEROSOL PRODUCTS	8.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1) OSCO
1704 W. First St
Azusa, CA 91702

(2) Consolidated Waste
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to APTUS for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 2;

a. **Source:** (Unknown)
Date Received or Recovered: 11/07/96

b. **Description**

1] 1X5 GAL LATEX PAINT	2.0 GAL	(1)	A
2] 1X1 GAL OIL-BASE PAINT	0.5 GAL	(1)	A
3] 1X32 OZ LIGHTER FLUID	10.0 OZ	(1)	A
4] 10X1 QT USED MOTOR OIL	2.5 GAL	(3)	B

c. **Name of Hauler (for removal):**
(1) OSCO
1704 W. First St
Azusa, CA 91702

(3) ASBURY OIL CO.
2100 N. Alameda St.
Compton, CA 90222

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove by Asbury Oil Co. for recycling.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 3;

a. **Source:** (Unknown)
Date Received or Recovered: 11/05/96

b. **Description**

1] 2X1 GAL LATEX PAINT	0.5 GAL	(1)	A
2] 3X1 QT OIL-BASE PAINT	1.2 QT	(1)	A
3] 1X32 OZ WINDOW CLEANER	8.0 OZ	(1)	A
4] 1X10 OZ ENERGINE SPOT REMOVER	5.0 OZ	(1)	A
5] 1X4 OZ TURPENTINE	3.0 OZ	(1)	A
6] 1X5 OZ HEET LINIMNET	4.0 OZ	(1)	A
7] 1X8 OZ STYLING LOTION	4.0 OZ	(1)	A
8] 1X32 OZ BLEACH	15.0 OZ	(2)	B

c. **Name of Hauler (for removal):**

(1)OSCO
1704 W. First St
Azusa, CA 91702

(2)Consolidated Waste
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to APTUS for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 4;

a. **Source:** (Unknown)
Date Received or Recovered: 11/01/96

b. **Description**

1] 2X1 QT OIL-BASE PAINT	1.0 QT	(1)	A
2] 1X30 LB AUTOMOBILE BATTERY	30.0 LB	-->	B

c. **Name of Hauler (for removal):**

(1)OSCO
1704 W. First St
Azusa, CA 91702

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove for recycling to AA Batteries.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 5;

a. **Source:** (Unknown)
Date Received or Recovered: 11/14/96

b. **Description**

1] 2X1 GAL OIL-BASE PAINT	1.0 GAL	(1)	A
2] 1X1 GAL LATEX PAINT	0.3 GAL	(1)	A
3] 1X1 GAL TURPENTINE	0.8 GAL	(1)	A
4] 1X1 PT LINSEED OIL	0.5 PT	(1)	A
5] 1X8 OZ SILICONE SEALER	4.0 OZ	(1)	A
6] 5X3-22 OZ HAZARDOUS AEROSOL PRODUCTS	25.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1) OSCO
1704 W. First St
Azusa, CA 91702

(2) Consolidated Waste
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to APTUS for treatment.

e. **Districts' Action to Prevent Recurrence:**
The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 6;

a. **Source:** (Unknown)
Date Received or Recovered: 11/26/96

b. **Description**

1] 1X5 GAL LATEX PAINT	0.5 GAL	(1)	A
2] 1X2 GAL LATEX PAINT	1.0 GAL	(1)	A
3] 1X1 QT ENGINE CLEANER	10.0 OZ	(1)	A
4] 3X16-20 OZ HAZARDOUS AEROSOL PRODUCTS	30.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1) OSCO
1704 W. First St
Azusa, CA 91702

(2) Consolidated Waste
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to APTUS for treatment.

e. **Districts' Action to Prevent Recurrence:**
The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Waste Disposal Reporting November 1996 - SCHOLL CANYON LANDFILL - (Continued)

Incident 7;

a. **Source:** (Unknown)
Date Received or Recovered: 11/30/96

b. **Description**

1] 5X1 GAL OIL-BASE PAINT	3.5 GAL	(1)	A
2] 1X1 QT OIL-BASE PAINT	0.5 QT	(1)	A
3] 1X8 OZ OIL-BASE PAINT	6.0 OZ	(1)	A
4] 10X1 GAL LATEX PAINT	7.0 GAL	(1)	A
5] 1X64 OZ LATEX PAINT	40.0 OZ	(1)	A
6] 1X1 QT LATEX PAINT	0.7 QT	(1)	A
7] 1X1 QT FLOOR CLEANER	28.0 OZ	(1)	A
8] 1X2 QT CARPET CLEANER	1.0 QT	(1)	A
9] 1X3 OZ SADDLE SOAP	2.0 OZ	(1)	A
10] 5X10-24 OZ HAZARDOUS AEROSOL PRODUCTS	35.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)Consolidated Waste
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to APTUS for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 8;

a. **Source:** (Unknown)
Date Received or Recovered: 11/28/96

b. **Description**

1] 1X12 OZ CHROME POLISH	8.0 OZ	(1)	A
2] 1X22 OZ AMMONIATED CLEANER	8.0 OZ	(2)	B
3] 3X11 OZ CAULKING	33.0 OZ	(1)	A
4] 2X13 OZ AEROSOL PAINT	13.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)Consolidated Waste
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to APTUS for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 9;

a. **Source:** (Unknown)
   Date Received or Recovered: 11/23/96
b. **Description**

1] 2X1 GAL OIL-BASE PAINT	1.0 GAL	(1)	A
2] 1X16 OZ PAINT THINNER	8.0 OZ	(1)	A
3] 2X15 OZ AEROSOL PAINT	25.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
   (1)OSCO
   1704 W. First St
   Azusa, CA 91702
   (2)Consolidated Waste
   10680 Silicon Ave.
   Montclair, CA 91763
d. **Ultimate Point of Disposal:**
   A remove to the OSCO facility for treatment.
   B remove to APTUS for treatment.
e. **Districts' Action to Prevent Recurrence:**
   The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 10;

a. **Source:** (Unknown)
   Date Received or Recovered: 11/20/96
b. **Description**

1] 1X50 LB AUTOMOBILE BATTERY	50.0 LB	-->	A
2] 4X1 GAL LATEX PAINT	3.5 GAL	(1)	B
3] 1X1 PT BESTINE SOLVENT AND THINNER	4.0 FL OZ	(1)	B

c. **Name of Hauler (for removal):**
   (1)OSCO
   1704 W. First St
   Azusa, CA 91702
d. **Ultimate Point of Disposal:**
   A remove for recycling to AA Batteries.
   B remove to the OSCO facility for treatment.
e. **Districts' Action to Prevent Recurrence:**
   The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
WASTE INSPECTION SUMMARY REPORT TO THE
REGIONAL WATER QUALITY CONTROL BOARD

SCHOLL CANYON LANDFILL - October 1996

Unacceptable Wastes

Incident 1;

a. **Source:** (Unknown)
Date Received or Recovered: 10/01/96

b. **Description**

1] 1X5 GAL LATEX PAINT	5.0 GAL	(1)	A
2] 9X1 GAL LATEX PAINT	5.5 GAL	(1)	A
3] 1X1 QT LATEX PAINT	1.0 QT	(1)	A
4] 9X1 GAL OIL-BASE PAINT	5.2 GAL	(1)	A
5] 3X1 QT OIL-BASE PAINT	1.5 GAL	(1)	A
6] 1X1 QT PAINT THINNER	1.0 PT	(1)	A
7] 1X1 GAL ANTIFREEZE	1.0 GAL	(1)	A
8] 1X1 QT BRAKE FLUID	1.0 PT	(3)	B
9] 1X2 QT DETERGENT	4.0 OZ	(1)	A
10] 4X11-16 OZ HAZARDOUS AEROSOL PRODUCTS	33.0 OZ	(2)	C

c. **Name of Hauler (for removal):**

(1)OSCO
1704 W. First St
Azusa, CA 91702

(2)Consolidated Waste
10680 Silicon Ave.
Montclair, CA 91763

(3)ASBURY OIL CO.
2100 N. Alameda St.
Compton, CA 90222

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove by Asbury Oil Co. for recycling.
C remove to APTUS for treatment.

e. **Districts' Action to Prevent Recurrence:**
The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 2;

a. **Source:** (Unknown)
Date Received or Recovered: 10/14/96
b. **Description**

1] 3X1 GAL LATEX PAINT	1.4 GAL	(1)	A
2] 1X1 GAL OIL-BASE PAINT	1.0 GAL	(1)	A
3] 1X1 QT OIL-BASE PAINT	1.0 QT	(1)	A
4] 1X15 OZ WYNN'S ENGINE TUNE-UP	15.0 OZ	(1)	A
5] 1X15 OZ STP OIL TREATMENT	15.0 OZ	(3)	B
6] 1X1 QT OIL-BASE PAINT WITH LEAD	1.0 QT	(2)	C

c. **Name of Hauler (for removal):**
(1) OSCO
1704 W. First St
Azusa, CA 91702

(2) Consolidated Waste
10680 Silicon Ave.
Montclair, CA 91763

(3) ASBURY OIL CO.
2100 N. Alameda St.
Compton, CA 90222

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove by Asbury Oil Co. for recycling.
C remove to APTUS for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 3;

a. **Source:** (Unknown)
Date Received or Recovered: 10/19/96
b. **Description**

1] 11X1 GAL LATEX PAINT	7.2 GAL	(1)	A
2] 1X1 QT LATEX PAINT	0.5 QT	(1)	A
3] 4X1 GAL OIL-BASE PAINT	3.0 GAL	(1)	A
4] 2X1 QT OIL-BASE PAINT	1.0 QT	(1)	A
5] 1X1 PT OIL-BASE PAINT	0.5 PT	(1)	A
6] 5X6-16 OZ HAZARDOUS AEROSOL PRODUCTS	35.0 OZ	(2)	B
7] 1X1 PT CUTTING FLUID	1.0 PT	(1)	A
8] 1X16 OZ SHELL INSECTICIDE	6.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1) OSCO
1704 W. First St
Azusa, CA 91702

(2) Consolidated Waste
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to APTUS for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 4;

a. **Source:** (Unknown)
Date Received or Recovered: 10/11/96
b. **Description**

1] 1X5 GAL LATEX PAINT	2.0 GAL	(1)	A
2] 2X1 GAL LATEX PAINT	1.0 GAL	(1)	A
3] 1X1 GAL ANTIFREEZE	1.0 PT	(1)	A
4] 1X1 GAL WOOD FINISH	2.0 QT	(1)	A
5] 1X28 FL OZ LAMP OIL	28.0 FL OZ	(1)	A
6] 1X1 PT ALCOHOL	8.0 OZ	(1)	A
7] 1X8 OZ PETROLEUM SOLVENT	8.0 OZ	(1)	A
8] 1X8 OZ CHLORINATED SOLVENT	8.0 OZ	(1)	A
9] 2X7.5 OZ STAINLESS STEEL CLEANERS	8.0 OZ	(1)	A
10] 8X8-10 OZ HAZARDOUS AEROSOL PRODUCTS	55.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)Consolidated Waste
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to APTUS for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 5;

a. **Source:** (Unknown)
Date Received or Recovered: 10/12/96
b. **Description**

1] 1X7 GAL LATEX PAINT	3.5 GAL	(1)	A
2] 1X5 GAL PAINT THINNER	4.0 GAL	(1)	A
3] 1X1 GAL FABRIC SOFTENER	1.0 QT	(1)	A
4] 1X1 GAL FUEL	5.0 OZ	(1)	A
5] 1X1 GAL CHLOROX	1.0 PT	(2)	B
6] 1X64 FL OZ GLASS CLEANER	1.0 QT	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)Consolidated Waste
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to APTUS for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 6;

a. **Source:** (Unknown)
Date Received or Recovered: 10/26/96
b. **Description**

1] 6X1 GAL LATEX PAINT	4.0 GAL	(1)	A
2] 1X2 GAL OIL-BASE PAINT	1.0 GAL	(1)	A
3] 2X1 QT OIL-BASE PAINT	1.0 QT	(1)	A
4] 2X1 QT USED MOTOR OIL	1.0 QT	(3)	B
5] 1X8 OZ FUEL TREATMENT	8.0 OZ	(1)	A
6] 2X5-8 OZ HAZARDOUS AEROSOL PRODUCTS	10.0 OZ	(2)	C
7] 1X11 LB PASTE WAX	0.5 LB	(1)	A
8] 1X4 OZ FILM CLEANER	4.0 OZ	(1)	A
9] 1X1 GAL ROOF MASTIC W/ASBESTOS	0.5 GAL	(2)	C
10] 1X5 GAL ROOF MASTIC W/ASBESTOS	3.0 LBS	(2)	C

c. **Name of Hauler (for removal):**
(1) OSCO
1704 W. First St
Azusa, CA 91702

(2) Consolidated Waste
10680 Silicon Ave.
Montclair, CA 91763

(3) ASBURY OIL CO.
2100 N. Alameda St.
Compton, CA 90222

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove by Asbury Oil Co. for recycling.
C remove to APTUS for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 7;

a. **Source:** (Unknown)
Date Received or Recovered: 10/05/96
b. **Description**

1] 3X30 LB AUTOMOBILE BATTERIES	90.0 LB	-->	A
2] 1X5 GAL LATEX PAINT	1.0 GAL	(1)	B
3] 2X1 GAL LATEX PAINT	1.0 GAL	(1)	B
4] 3X1 GAL OIL-BASE PAINT	1.2 GAL	(1)	B
5] 1X1 QT OIL-BASE PAINT	1.0 QT	(1)	B
6] 1X22 OZ AEROSOL PAINT	20.0 OZ	(2)	C

c. **Name of Hauler (for removal):**
(1) OSCO
1704 W. First St
Azusa, CA 91702

(2) Consolidated Waste
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove for recycling to AA Batteries.
B remove to the OSCO facility for treatment.
C remove to APTUS for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

WASTEWATER RECLAMATION
SOLID WASTE MANAGEMENT

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-4998
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (310) 699-7411, FAX: (310) 695-6139

CHARLES W. CARRY
Chief Engineer and General Manager

April 28, 1994
File No. 31R-208.10

Mr. William F. Soo Hoo
Director of Department of Toxic Substance Control
P. O. Box 806
Sacramento, California 51812-0806

RECEIVED
MAY 02 1994
Department of Toxic Substances Control

Dear Mr. Soo Hoo:

Scholl Canyon Landfill
Monitoring Program for January - March 1994

Please find enclosed a copy of the monthly monitoring report for the Scholl Canyon Landfill prepared for the Regional Water Quality Control Board (RWQCB). The enclosed report includes information which fulfills requirements of Section 17528.20 of Title 14, California Code of Regulation. These requirements specify that detections of hazardous or PCB wastes at municipal solid waste landfills be reported to your office. The enclosed information includes the source of the waste, date, and description of hazardous wastes or PCB wastes found at the landfill.

If you have any questions about the information contained in this report, please contact me at (310) 699-7411, extension 3540.

Very truly yours,

Charles W. Carry

Raymond L. Huitric
Research and Monitoring Section Head
Solid Waste Management Department

RLH:FS:eo

Recycled Paper

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
WASTE INSPECTION SUMMARY REPORT TO THE
REGIONAL WATER QUALITY CONTROL BOARD

SCHOLL CANYON LANDFILL - March 1994

Unacceptable Wastes

Incident 1;

a. **Source:** (Unknown)
Date Received or Recovered: 03/05/94
b. **Description**

1] 2x5 GAL ADHESIVE	10.0 GAL	(1)	A
2] 4x1 GAL OIL BASE PAINT	2.0 GAL	(1)	A
3] 1x1 GAL LATEX PAINT	1.0 GAL	(1)	A
4] 2x1 QT OIL BASE PAINT	1.0 QT	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 2;

a. **Source:** (Unknown)
Date Received or Recovered: 03/04/94
b. **Description**

1] 4x1 GAL OIL-BASE PAINT	1.5 GAL	(1)	A
2] 4x1 QT OIL-BASE PAINT	3.0 QT	(1)	A
3] 1x1 PT OIL-BASE PAINT	1.0 PT	(1)	A
4] 1x8 OZ OIL-BASE PAINT	8.0 OZ	(1)	A
5] 2x1 GAL LATEX PAINT	1.0 GAL	(1)	A
6] 1x5 GAL MULTI-PURPOSE ADHESIVE	3.0 GAL	(1)	A
7] 1x1 QT LIGHTER FLUID	1.0 PT	(1)	A
8] 1x1 PT ENAMEL THINNER	1.0 PT	(1)	A
9] 1x1 PT LINSEED OIL	1.0 PT	(1)	A
10] 1x8 OZ CHROME POLISH	8.0 OZ	(1)	A
11] 1x1 QT GROUT & MOTOR REMOVER	1.0 PT	(2)	B
12] 2x24 AEROSOL PAINT	34.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.

Unacceptable Wastes

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 3;

a. **Source:** (Unknown)
Date Received or Recovered: 03/12/94
b. **Description**
1] 3x30 LB AUTO BATTERIES 90.0 LB --> A
c. **Name of Hauler (for removal):**
d. **Ultimate Point of Disposal:**
A remove for recycling to AA Batteries.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 4;

a. **Source:** (Unknown)
Date Received or Recovered: 03/14/94
b. **Description**
1] 1x5 GAL OIL BASE PAINT 4.5 GAL (1) A
2] 3x1 QT OIL BASE PAINT 1.5 QT (1) A
c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 5;

a. **Source:** (Unknown)
Date Received or Recovered: 03/07/94
b. **Description**
1] 1x5 GAL PLASTIC ROOF CEMENT 5.0 GAL (1) A
2] 1x1 PT OIL BASE PAINT 0.4 PT (1) A
3] 1x32 OZ COOKING OIL 16.0 OZ (1) A
4] 1x12 OZ COOKING OIL 12.0 OZ (1) A
5] 1x12 OZ AEROSOL PAINT 4.0 OZ (2) B
c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.

Unacceptable Wastes

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 6;

a. **Source:** (Unknown)
Date Received or Recovered: 03/01/94
b. **Description**

1] 1x2 GAL LATEX PAINT	0.8 GAL	(1)	A
2] 1x1 GAL OIL-BASE PAINT	0.3 GAL	(1)	A
3] 1x16 OZ LATEX PAINT	16.0 OZ	(1)	A
4] 3x11-14 OZ AEROSOL PAINT	16.0 OZ	(2)	B
5] 1x16 OZ PROPANE GAS CYLINDER	6.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 7;

a. **Source:** (Unknown)
Date Received or Recovered: 03/09/94
b. **Description**

1] 1x5 GAL LATEX PAINT	4.0 GAL	(1)	A
2] 1x3.5 GAL COLOR TILE ADHESIVE	3.5 GAL	(1)	A
3] 1x1 GAL PACIFIC ASPHALT LAP CEMENT	1.0 GAL	(1)	A
4] 1x1 GAL 200 BRAND DRY CLEANER	0.2 GAL	(1)	A
5] 1x12 OZ BLACK FLAG INSECT KILLER AEROSOL	12.0 OZ	(2)	B
6] 4x4.5-11 MISC. AEROSOL PRODUCTS	34.0 OZ	(2)	B
7] 1x12 OZ GEAR OIL	3.0 OZ	(3)	C
8] 1x7 OZ PRELL SHAMPOO	7.0 OZ	(1)	A
9] 1x3 OZ VIADENT GUM CONDITIONER	3.0 OZ	(1)	A
10] 1x5 OZ GILLETTE DRY LOOK	5.0 OZ	(1)	A
11] 1x6 OZ LILAC AFTERSHAVE	6.0 OZ	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
(3)ASBURY OIL CO.
2100 N. Alameda St.
Compton, CA 90222
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.
C remove by Asbury Oil Co. for recycling.

Unacceptable Wastes

e. **Districts' Action to Prevent Recurrence:**
The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 8;

a. **Source:** (Unknown)
Date Received or Recovered: 03/17/94

b. **Description**

1] 3X1 GAL LATEX PAINT	1.2 GAL	(1)	A
2] 1X3 QT LATEX PAINT	2.0 QT	(1)	A
3] 1X1 GAL OIL-BASE PAINT	1.0 GAL	(1)	A
4] 1X2 QT OIL-BASE PAINT	1.0 QT	(1)	A
5] 1X8 OZ OIL-BASE PAINT	6.0 OZ	(1)	A
6] 1X16 OZ STOVE FUEL	6.0 OZ	(1)	A
7] 1X4 OZ PVC CEMENT	3.0 OZ	(1)	A
8] 1X5 OZ GOOF OFF W/XYLENE	5.0 OZ	(1)	A
9] 1X8 OZ VINYL TOP DRESSING	8.0 OZ	(1)	A
10] 1X16 OZ WOOL WASH	16.0 OZ	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.

e. **Districts' Action to Prevent Recurrence:**
The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 9;

a. **Source:** (Unknown)
Date Received or Recovered: 03/19/94

b. **Description**

1] 1X30 AUTO BATTERY	30.0 LB	-->	A
2] 1X3 GAL LATEX PAINT	2.0 GAL	(1)	B
3] 1X1 QT LATEX PAINT	1.0 QT	(1)	B
4] 1X1 GAL OIL-BASE PAINT	1.0 GAL	(1)	B
5] 1X1 QT OIL-BASE PAINT	0.9 QT	(1)	B
6] 1X12 LB JOINT COMPOUND	5.0 LB	(1)	B
7] 1X22 OZ AEROSOL PAINT	8.0 OZ	(2)	C
8] 1X8 OZ HAIR CULTURE	4.0 OZ	(1)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

Unacceptable Wastes

d. **Ultimate Point of Disposal:**
A remove for recycling to AA Batteries.
B remove to the OSCO facility for treatment.
C remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 10;

a. **Source:** (Unknown)
Date Received or Recovered: 03/22/94

b. **Description**

1] 1X1 GAL LATEX ADHESIVE	0.8 GAL	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 11;

a. **Source:** (Unknown)
Date Received or Recovered: 03/11/94

b. **Description**

1] 1x1 GAL OIL BASE PAINT	0.3 GAL	(1)	A
2] 1x1 QT RUG DOCTOR STEAM CLEANER	2.0 PT	(1)	A
3] 1x22 OZ IVORY SOAP	10.0 OZ	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Unacceptable Wastes

Incident 12;

a. **Source:** (Unknown)
Date Received or Recovered: 03/23/94

b. **Description**

1] 1X4 OZ RUBBER CEMENT	3.0 OZ	(1)	A
2] 1X11 OZ AEROSOL PAINT	7.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 13;

a. **Source:** (Unknown)
Date Received or Recovered: 03/15/94

b. **Description**

1] 1X8 OZ ORTHO FUNGINEX	4.0 OZ	(2)	A

c. **Name of Hauler (for removal):**
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Unacceptable Wastes

Incident 14;

a. **Source:** (Unknown)
Date Received or Recovered: 03/30/94
b. **Description**

1] 1X1 GAL OIL-BASE PAINT	1.0 GAL	(1)	A
2] 1X1 GAL LINSEED OIL	0.4 GAL	(1)	A
3] 2X1 PT OIL	1.0 PT	(3)	B
4] 2X13 OZ AEROSOL PAINT	16.0 OZ	(2)	C
5] 1X12 OZ TARN-X	3.0 OZ	(2)	C
6] 1X16 OZ WAX	16.0 OZ	(1)	A
7] 4X2-8 OZ LOTIONS	16.0 OZ	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
(3)ASBURY OIL CO.
2100 N. Alameda St.
Compton, CA 90222
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove by Asbury Oil Co. for recycling.
C remove to ENSCO for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 15;

a. **Source:** (Unknown)
Date Received or Recovered: 03/29/94
b. **Description**

1] 2X1 GAL OIL-BASE PAINT	0.5 GAL	(1)	A
2] 1X1 GAL LATEX PAINT	0.6 GAL	(1)	A
3] 1X1 QT WAX	10.0 OZ	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Unacceptable Wastes

Incident 16;

a. **Source:** (Unknown)
Date Received or Recovered: 03/24/94
b. **Description**
1] 1X1 GAL USED OIL 1.0 GAL --> A
c. **Name of Hauler (for removal):**
d. **Ultimate Point of Disposal:**
A spilled, buried on site, can't recover.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 17;

a. **Source:** (Unknown)
Date Received or Recovered: 03/26/94
b. **Description**

1] 1X1 GAL LATEX PAINT	0.8 GAL	(1)	A
2] 3X1 QT PETROLEUM	3.0 QT	(1)	A
3] 2X12 LB JOINT COMPOUND	20.0 LB	(1)	A
4] 2X16 OZ AEROSOL PAINT	30.0 OZ	(2)	B
5] 1X1 GAL OIL	0.3 GAL	(3)	C
6] 1X16 OZ INSECTICIDE AEROSOL	16.0 OZ	(2)	B
7] 1X5 OZ INSECTICIDE AEROSOL	5.0 OZ	(2)	B
8] 1X1 PT GROUT SEALER	1.0 PT	(1)	A

c. **Name of Hauler (for removal):**

(1)OSCO 1704 W. First St Azusa, CA 91702	(2)CCD 10680 Silicon Ave. Montclair, CA 91763	(3)ASBURY OIL CO. 2100 N. Alameda St. Compton, CA 90222

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.
C remove by Asbury Oil Co. for recycling.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
WASTE INSPECTION SUMMARY REPORT TO THE
REGIONAL WATER QUALITY CONTROL BOARD

SCHOLL CANYON LANDFILL - February 1994

Unacceptable Wastes

Incident 1;

a. **Source:** (Unknown)
Date Received or Recovered: 02/15/94

b. **Description**

1] 1X1 GAL LATEX PAINT	0.2 GAL	(1)	A
2] 2X1 GAL OIL-BASE PAINT	1.5 GAL	(1)	A
3] 1X1 QT LATEX PAINT	0.5 QT	(1)	A
4] 1X1 PT OIL-BASE PAINT	0.5 PT	(1)	A
5] 1X17.5 OZ RAID ANT AND ROACH KILLER	4.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 2;

a. **Source:** (Unknown)
Date Received or Recovered: 02/10/94

b. **Description**

1] 1X2 QT AUTOMOBILE OIL	2.0 QT	(3)	A
2] 4X1 QT OIL-BASE PAINT	4.0 QT	(1)	B
3] 1X1 QT LATEX PAINT	0.2 QT	(1)	B
4] 1X4 OZ WOOD DOUGH	1.0 OZ	(1)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

(3)ASBURY OIL CO.
2100 N. Alameda St.
Compton, CA 90222

d. **Ultimate Point of Disposal:**
A remove by Asbury Oil Co. for recycling.
B remove to the OSCO facility for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Unacceptable Wastes

Incident 3;

a. **Source:** (Unknown)
Date Received or Recovered: 02/18/94
b. **Description**

1] 3x5 GAL USED OIL	15.0 GAL	(3)	A

c. **Name of Hauler (for removal):**
(3)ASBURY OIL CO.
2100 N. Alameda St.
Compton, CA 90222
d. **Ultimate Point of Disposal:**
A remove by Asbury Oil Co. for recycling.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 4;

a. **Source:** (Unknown)
Date Received or Recovered: 02/19/94
b. **Description**

1] 1X61 LB JOINT COMPOUND	5.0 LB	(2)	A
2] 1X1 GAL DRIVE-WAY COATING	0.3 GAL	(2)	A
3] 1X1 GAL LIQUID FERTILIZER	0.5 GAL	(2)	A
4] 1X2 OZ PETROLEUM DISTILLATE	2.0 OZ	(1)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove to ENSCO for treatment.
B remove to the OSCO facility for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Unacceptable Wastes

Incident 5;

a. **Source:** (Unknown)
Date Received or Recovered: 02/05/94

b. **Description**

1] 2X5 GAL JOINT COMPOUND	2.0 GAL	(1)	A
2] 1X1 GAL OIL-BASE PAINT	0.2 GAL	(1)	A
3] 1X1 QT OIL-BASE PAINT	1.0 QT	(1)	A
4] 1X8 OZ OIL-BASE PAINT	6.0 OZ	(1)	A
5] 5X1 GAL LATEX PAINT	2.3 GAL	(1)	A
6] 1X1 QT LATEX PAINT	0.3 QT	(1)	A
7] 1X16.6 OZ AEROSOL ADHESIVE	8.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 6;

a. **Source:** (Unknown)
Date Received or Recovered: 02/11/94

b. **Description**

1] 5X1 GAL OIL-BASE PAINT	3.0 GAL	(1)	A
2] 2X1 GAL LATEX PAINT	0.6 GAL	(1)	A
3] 1X1 GAL ACETONE	0.3 GAL	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Unacceptable Wastes

Incident 7;

a. **Source:** (Unknown)
Date Received or Recovered: 02/24/94

b. **Description**

1] 2x1 GAL OIL BASE PAINT	1.3 GAL	(1)	A
2] 1x1 QT OIL BASE PAINT	0.7 QT	(1)	A
3] 1x1 QT VARNISH	1.0 PT	(1)	A
4] 1x1 QT HENRY#108 LAP CEMENT	1.0 QT	(2)	B
5] 1x1 LB JOHNSON'S PASTE WAX	10.0 OZ	(1)	A
6] 1x1 GAL LATEX PAINT	0.2 GAL	(1)	A
7] 1x1 QT HENRY#204 PLASTIC ROOF CEMENT	0.1 QT	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 8;

a. **Source:** (Unknown)
Date Received or Recovered: 02/12/94

b. **Description**

1] 1X5 GAL LATEX PAINT	0.6 GAL	(1)	A
2] 5X1 GAL LATEX PAINT	3.0 GAL	(1)	A
3] 1X1 QT LATEX PAINT	1.0 QT	(1)	A
4] 3X1 GAL OIL-BASE PAINT	1.5 GAL	(1)	A
5] 2X1 QT OIL-BASE PAINT	1.3 QT	(1)	A
6] 1X4.5 OZ AEROSOL PAINT	2.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Unacceptable Wastes

Incident 9;

a. **Source:** (Unknown)
Date Received or Recovered: 02/14/94

b. **Description**

1] 2X30 LB AUTOMOTIVE BATTERIES	30.0 LB	-->	A
2] 1X5 LB TOY BATTERY	5.0 LB	-->	A
3] 1X1 GAL OIL-BASE PAINT	0.2 GAL	(1)	B
4] 1X2 QT LATEX PAINT	1.6 QT	(1)	B
5] 1X1 GAL BLEACH	0.3 GAL	(1)	B
6] 1X8 OZ OIL-BASE PAINT	6.0 OZ	(1)	B
7] 1X27 OZ FURNITURE WAX	27.0 OZ	(1)	B
8] 1X12 OZ RAID FLYING INSECT KILLER	12.0 OZ	(2)	C
9] 1X8 OZ COOKE DOUBLE DUTY GARDEN SPRAY	3.0 OZ	(2)	C
10] 1X32 OZ STAR SHINE ALL PURPOSE CLEANER	8.0 OZ	(1)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove for recycling to AA Batteries.
B remove to the OSCO facility for treatment.
C remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 10;

a. **Source:** (Unknown)
Date Received or Recovered: 02/22/94

b. **Description**

1] 3x1 GAL OIL BASE PAINT	2.0 GAL	(1)	A
2] 1x1 QT HURCO (UREATHANE)	1.0 QT	(1)	A
3] 1x1 GAL METHYL ETHYL KETONE	0.8 GAL	(1)	A
4] 1x1 GAL FLOOR WAX	0.2 GAL	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Unacceptable Wastes

Incident 11;

a. **Source:** (Unknown)
Date Received or Recovered: 02/03/94

b. **Description**

1] 1X25 LB CHLORINE CONCENTRATE	10.0 LB	(2)	A
2] 1X1 GAL LATEX PAINT	1.0 GAL	(1)	B
3] 1X1 GAL LACQUER THINNER	0.3 GAL	(1)	B
4] 1X1 QT LACQUER	0.8 QT	(1)	B
5] 1X1 QT LIQUID PLUMBER	0.5 QT	(2)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to ENSCO for treatment.
B remove to the OSCO facility for treatment.

e. **Districts' Action to Prevent Recurrence:**
The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 12;

a. **Source:** (Unknown)
Date Received or Recovered: 02/26/94

b. **Description**

1] 3x1 QT PAINT THINNER	2.0 QT	(1)	A
2] 1x16 OZ DAP 33	16.0 OZ	(1)	A
3] 1x1 PT FIBERGLASS & HARDWARE CLEANER	0.5 PT	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Waste Disposal Reporting February 1994 - SCHOLL CANYON LANDFILL - (Continued)

Unacceptable Wastes

Incident 13;

a. **Source:**
MANUEL RESENDEZ
1208 VIOLET DR.
ALHAMBRA, CA

Date Received or Recovered: 02/27/94

b. **Description**

1] 2X1 GAL OIL-BASE PAINT	1.5 GAL	(1)	A
2] 1X1 GAL LATEX PAINT	0.2 GAL	(1)	A
3] 1X1 GAL CAULKING	1.0 GAL	(1)	A
4] 2X1 GAL LINSEED OIL	1.1 GAL	(1)	A
5] 1X.5 GAL OIL-BASE PAINT	0.5 GAL	(1)	A
6] 1X7 QT OIL-BASE PAINT	5.0 QT	(1)	A
7] 1X1 QT LATEX PAINT	1.0 QT	(1)	A
8] 1X3 PT OIL-BASE PAINT	2.0 PT	(1)	A
9] 1X1 QT RED LEAD PAINT	0.8 QT	(2)	B
10] 4X16 OZ PETROLEUM DISTILLATES	64.0 OZ	(1)	A
11] 1X3 LB pH DOWN FOR SPAS	3.0 LB	(1)	A
12] 1X1 QT STAIN & SCALE DEFENSE FOR SPAS	1.0 QT	(1)	A
13] 1X1 QT CHLORINATING LIQUID	0.3 QT	(2)	B

c. **Name of Hauler (for removal):**
(1) OSCO
1704 W. First St
Azusa, CA 91702

(2) CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
– The Districts contacted the firm's officials and informed them of the hazardous waste regulations followed by an enforcement letter.

Unacceptable Wastes

Incident 14;

a. **Source:** (Unknown)
Date Received or Recovered: 02/23/94

b. **Description**

1] 1x1 LB ORTHO SEVIN GARDEN DUST	0.2 LB	(2)	A
2] 1x16 OZ AUTO ARMOR	16.0 OZ	(1)	B
3] 1x16 OZ HYDROGEN PEROXIDE	16.0 OZ	(2)	A
4] 1x19 OZ AEROSOL GLASS CLEANER	19.0 OZ	(2)	A
5] 1x14 OZ PLUMBER'S PUTTY	12.0 OZ	(2)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to ENSCO for treatment.
B remove to the OSCO facility for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 15;

a. **Source:** (Unknown)
Date Received or Recovered: 02/26/94

b. **Description**

1] 1x10 LB TRANSITE PIPE	10.0 LB	(2)	A
2] 1x1 GAL LATEX PAINT	0.3 GAL	(1)	B
3] 1x1 QT VARNISH	0.8 QT	(1)	B
4] 1x1 GAL LINSEED OIL	0.8 GAL	(1)	B
5] 1x1 GAL WOOD PRESERVATIVE	1.0 GAL	(1)	B
6] 1x1 GAL PACIFIC LIME-GO	1.0 GAL	(2)	C
7] 1x1 QT LINSEED OIL	0.5 QT	(1)	B
8] 5x7-22 OZ ASSORTED AEROSOL PRODUCTS	40.0 OZ	(2)	C
9] 1x1 PT ORTHO WEED-B-GONE	1.0 PT	(2)	C
10] 1x8 OZ SERGENT'S CAT FLEA & TICK SPRAY	6.0 OZ	(2)	C
11] 1x11 OZ RAID ANT & ROACH SPRAY	7.0 OZ	(2)	C
12] 1x12 OZ SECTROL TWO-WAY FLEA FOAM	5.0 OZ	(2)	C
13] 1x1 LB D-CON KILLS RATS & MICE (SOLID)	1.0 LB	(2)	C

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to authorized asbestos disposal facility (BKK).
B remove to the OSCO facility for treatment.
C remove to ENSCO for treatment.

Waste Disposal Reporting February 1994 - SCHOLL CANYON LANDFILL - (Continued)

Unacceptable Wastes

e. **Districts' Action to Prevent Recurrence:**
- The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
WASTE INSPECTION SUMMARY REPORT TO THE
REGIONAL WATER QUALITY CONTROL BOARD

SCHOLL CANYON LANDFILL - January 1994

Unacceptable Wastes

Incident 1;

a. **Source:** (Unknown)
Date Received or Recovered: 01/13/94
b. **Description**

1] 1X1 GAL LATEX PAINT	0.7 GAL	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 2;

a. **Source:** (Unknown)
Date Received or Recovered: 01/15/94
b. **Description**

1] 1X5 GAL WATER SEAL	5.0 GAL	(1)	A
2] 1X1 GAL LATEX PAINT	0.3 GAL	(1)	A
3] 1X1 QT LATEX PAINT	0.3 QT	(1)	A
4] 1X14.1 OZ PROPANE CYLINDER	14.1 OZ	(2)	B
5] 1X16 OZ AEROSOL LUBRICANT	12.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Unacceptable Wastes

Incident 3;

a. **Source:** (Unknown)
Date Received or Recovered: 01/03/94
b. **Description**

1] 2X1 GAL LATEX PAINT	2.0 GAL	(1)	A
2] 1X1 QT LATEX PAINT	1.0 QT	(1)	A
3] 1X1 GAL PAINT THINNER	0.3 GAL	(1)	A
4] 1X5 OZ AEROSOL PAINT	2.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 4;

a. **Source:** (Unknown)
Date Received or Recovered: 01/18/94
b. **Description**

1] 1X1 QT OIL-BASE PAINT	0.8 QT	(1)	A
2] 1X1 QT LATEX PAINT	0.8 QT	(1)	A
3] 1X1 QT WATCO OIL FINISH	1.0 QT	(1)	A
4] 1X12 OZ AEROSOL PAINT	6.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Unacceptable Wastes

Incident 5;

a. **Source:** (Unknown)
Date Received or Recovered: 01/19/94

b. **Description**

1] 2 AUTO BATTEIES	60.0 LB	-->	A
2] 1X1 GAL WATER SEAL	1.0 GAL	(1)	B
3] 2X1 QT WOOD STAIN	1.8 QT	(1)	B
4] 2X1 QT WATER SEAL	1.8 QT	(1)	B
5] 3X10 OZ WATER SEAL	20.0 OZ	(1)	B
6] 1X10 OZ AFM X158 MILDEW CONTROL	4.0 OZ	(2)	C
7] 1X10 OZ TOP DRESSING	8.0 OZ	(1)	B
8] 1X10 OZ SCALER & POLISH	10.0 OZ	(2)	C
9] 1X16 OZ LIQUID SURFACTANT	10.0 OZ	(1)	B
10] 1X16 OZ CHEMICAL BOND PAINT	16.0 OZ	(1)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove for recycling to AA Batteries.
B remove to the OSCO facility for treatment.
C remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
– The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 6;

a. **Source:** (Unknown)
Date Received or Recovered: 01/31/94

b. **Description**

1] 3X1 GAL OIL-BASE PAINT	1.5 GAL	(1)	A
2] 1X1 GAL POLYURETHANE COATING	1.0 GAL	(1)	A
2] 1X1 GAL LATEX PAINT	1.0 GAL	(1)	A
4] 1X4 GAL ADHESIVE	4.0 GAL	(1)	A
5] 1X1 GAL ADHESIVE	1.0 GAL	(1)	A
6] 1X1 GAL INSECTICIDE	1.0 GAL	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.

Unacceptable Wastes

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 7;

a. **Source:** (Unknown)
Date Received or Recovered: 01/27/94
b. **Description**

1] 1X3 GAL OIL-BASE PAINT	2.0 GAL	(1)	A
2] 1X5 GAL LATEX PAINT	5.0 GAL	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 8;

a. **Source:** (Unknown)
Date Received or Recovered: 01/08/94
b. **Description**

1] 3X1 GAL LATEX PAINT	1.2 GAL	(1)	A
2] 1X8 OZ OIL-BASE PAINT	4.0 OZ	(1)	A
3] 1X13 OZ AEROSOL PAINT	2.0 OZ	(2)	B
4] 1X1 GAL ALCOHOL STOVE FUEL	0.5 GAL	(1)	A
5] 1X1 GAL ACID CLEANER	0.6 GAL	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Waste Disposal Reporting January 1994 - SCHOLL CANYON LANDFILL - (Continued)

Unacceptable Wastes

Incident 9;

a. **Source:** (Unknown)
Date Received or Recovered: 01/25/94

b. **Description**

1] 1X1 GAL OIL-BASE PAINT	1.0 GAL	(1)	A
2] 1X1 GAL LATEX PAINT	1.0 GAL	(1)	A
3] 1X16 OZ ACID BASE SCREEN CLEANER	16.0 OZ	(2)	B
4] 1X33 OZ LIQUID FLOOR WAX	20.0 OZ	(1)	A
5] 1X6 OZ LEATHER CONDITIONER	6.0 OZ	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 10;

a. **Source:** (Unknown)
Date Received or Recovered: 01/21/94

b. **Description**

1] 1X1 QT OIL-BASE PAINT	0.5 QT	(1)	A
2] 3X6-13 OZ AEROSOL PAINT	19.0 OZ	(2)	B
3] 1X1 GAL POOL CHLORINATING LIQUID	1.0 GAL	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Waste Disposal Reporting January 1994 - SCHOLL CANYON LANDFILL - (Continued)

Unacceptable Wastes

Incident 11;

a. **Source:** (Unknown)
Date Received or Recovered: 01/20/94

b. **Description**

1] 1X5 GAL LACQUER THINNER	0.4 GAL	(1)	A
2] 1X1 GAL OIL-BASE PAINT	1.0 GAL	(1)	A
3] 1X1 GAL RUBBING COMPOUND	0.4 GAL	(1)	A
4] 1X28 OZ PINE CLEANER	12.0 OZ	(1)	A
5] 1X16 OZ HYDROGEN PEROXIDE	16.0 OZ	(2)	B
6] 1X16 OZ PLANT FOOD	16.0 OZ	(1)	A
7] 1X14 OZ SANI FLUSH TABLETS	14.0 OZ	(2)	B

c. **Name of Hauler (for removal):**

(1)OSCO
1704 W. First St
Azusa, CA 91702

(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 12;

a. **Source:**
BARGAIN WHOLESALE/99 CENT
3759 SEVILLE AVE.
VERNON, CA 90058
Date Received or Recovered: 01/06/94

b. **Description**

1] 6400X.3 OZ FINGERNAIL POLISH	15.0 GAL	-->	A
2] 166X8 OZ HAND CREMES, LOTIONS, GELS	10.0 GAL	-->	A
3] 2X7 OZ HOLIDAY FOGGER INSECTICIDE	14.0 OZ	-->	A
4] 1X16 OZ AEROSOL OVEN CLEANER	16.0 OZ	-->	A
5] 1X16 OZ AEROSOL CARPET CLEANER	16.0 OZ	-->	A
6] 3200X8 OZ FRUIT JUICES	200.0 GAL	-->	E

c. **Name of Hauler (for removal):**

d. **Ultimate Point of Disposal:**
A a producer hired Hauler to remove.
United Pumping Servives
14016 East Valley Blvd.
City of Industry, CA 91746
E producer removes per DOHS guidelines.

e. **Districts' Action to Prevent Recurrence:**
_ The Districts contacted the firm's officials and informed them of the hazardous waste regulations followed by an enforcement letter.
_ The Districts contacted the firm's officials and informed them that the waste/s is/are unacceptable at Districts' facilities followed by an enforcement letter.

Waste Disposal Reporting January 1994 - SCHOLL CANYON LANDFILL - (Continued)

Unacceptable Wastes

Incident 13;

a. **Source:** (Unknown)
   Date Received or Recovered: 01/05/94
b. **Description**

1] 2X5 GAL LATEX PAINT	3.5 GAL	(1)	A
2] 1X3.5 GAL LATEX PAINT	3.5 GAL	(1)	A
3] 4X1 GAL LATEX PAINT	1.5 GAL	(1)	A
4] 3X1 GAL OIL-BASE PAINT	1.8 GAL	(1)	A
5] 3X1 QT OIL-BASE PAINT PRODUCTS	1.6 QT	(1)	A
6] 1X1 PT OIL-BASE PAINT	0.8 PT	(1)	A
7] 1X5 GAL LAP CEMENT	2.5 GAL	(2)	B
8] 1X1 GAL ANTIFREEZE	0.3 GAL	(1)	A
9] 1X1 GAL MURIATIC ACID	0.2 GAL	(2)	C
10] 1X1 GAL SOAP	0.2 GAL	(1)	A
11] 1X1 QT PAINT THINNER	0.2 QT	(1)	A
12] 1X1 QT FABRIC SOFTENER	0.9 QT	(1)	A
13] 1X14 OZ PROPANE CYLINDER	12.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
   (1)OSCO
   1704 W. First St
   Azusa, CA 91702

   (2)CCD
   10680 Silicon Ave.
   Montclair, CA 91763
d. **Ultimate Point of Disposal:**
   A remove to the OSCO facility for treatment.
   B remove to ENSCO for treatment.
   C remove to APTECH for treatment.
e. **Districts' Action to Prevent Recurrence:**
   _ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

State of California—Health and Welfare Agency

Department of Health Services
Hazardous Materials Management Section

MEMO OF CALL

Name: John Lewis

Firm: RWQCB

Address:

Telephone No.: 620-5415

Date: 1/9/86

Time:

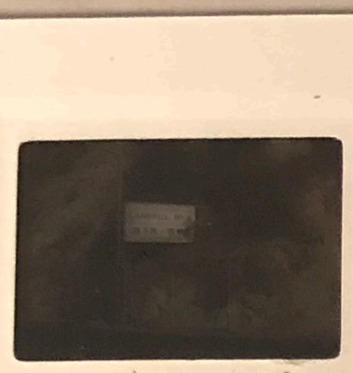
Person Taking or Making Call: Mary Osborne

Subject: Scholl Canyon

Message: I called Mr. Lewis to inquire about the activity of this site. Mr. Lewis said the site is active and has recently been studied for a leachate problem. A leachate collection system is being put into operation — not sure how far along it is.

Paul La Courreye of the ~~EPA~~ 415-974-8135 is interested in this site because of a congressional inquiry (Cranston) related to odor complaints.

I referred Paul directly to John Lewis



Scholl Dump C-II

22 NOV 80P5



Scholl Dump

17 NOV 80P5



Scholl C-II

18 NOV 80P5



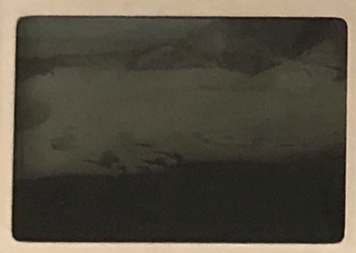
School - C II

16 NOV 80P5



School C-II

21 NOV 80P5



School C II

20 NOV 80P5



Scholl C II

19 NOV 80P5

19 NOV 80P5

II 2 11 slides



20 NOV 80P5

II 2 1 slides



21 NOV 80P5

II-2 1 slides



16 NOV 80P5

II 2 - 1 slides



18 NOV 80P5

Select C-II



17 NOV 80P5

Select Dump



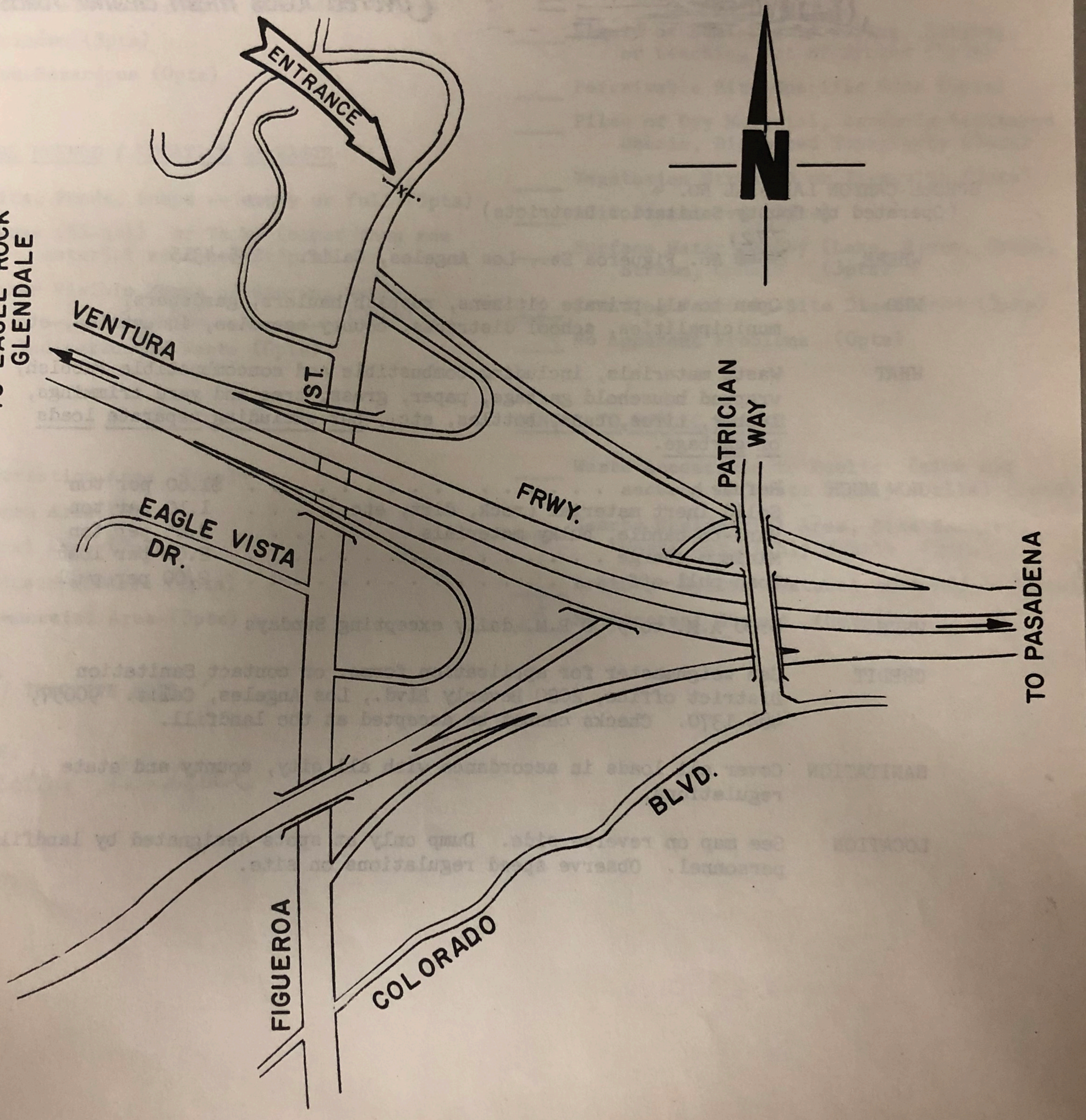
22 NOV 80P5

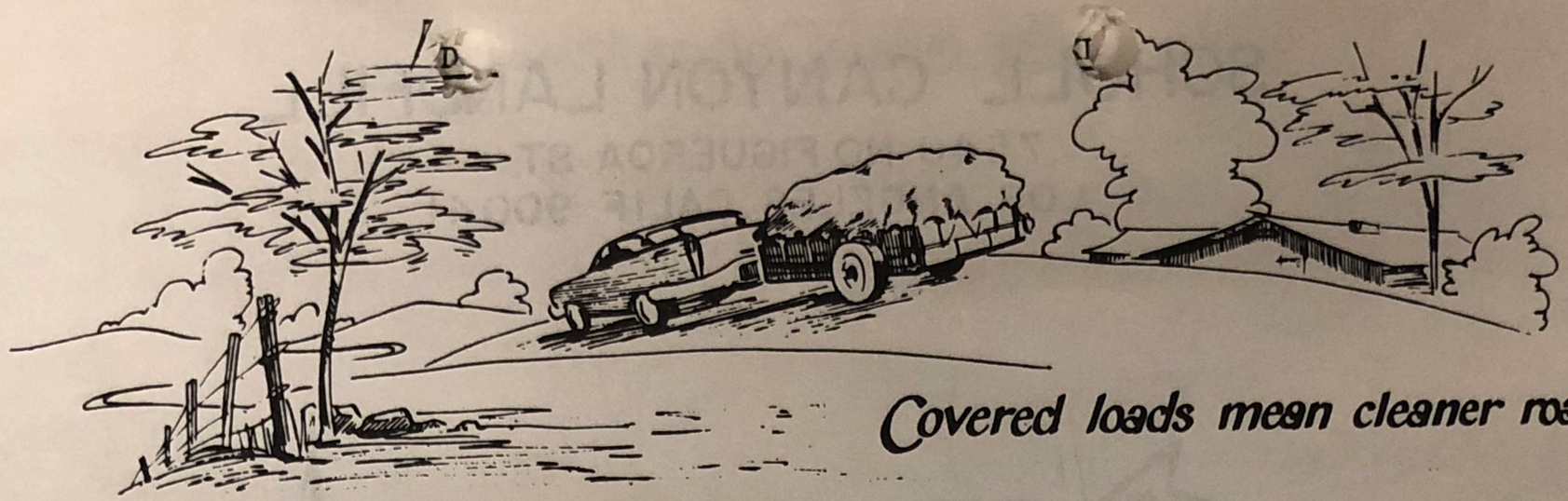
Select Dump C-II



SCHOLL CANYON LANDFILL

7546 NO. FIGUEROA ST.
LOS ANGELES, CALIF 90041





Covered loads mean cleaner roads !!

SCHOLL CANYON LANDFILL NO. 4
(Operated by County Sanitation Districts)

WHERE	~~7516~~ 7721 No. Figueroa St., Los Angeles, Calif. 245-4315
WHO	Open to all private citizens, rubbish haulers, gardeners, municipalities, school districts, county agencies, industries, etc.
WHAT	Waste materials, including combustible and noncombustible rubbish, wrapped household garbage, paper, grass, tree and yard trimmings, lumber, tires, cans, bottles, etc., but excluding separate loads of garbage.
HOW MUCH	Refuse . . . . . $1.60 per ton Solid inert material (rock, dirt, etc.). . . . 1.10 per ton Hard-to-handle, bulky materials. . . . . 2.85 per ton Minimum charge . . . . . 2.00 per load Load pull-off . . . . . 2.00 per pull
WHEN	8:00 A.M. to 5:00 P.M. daily excepting Sundays
CREDIT	See weighmaster for application forms, or contact Sanitation District office, 2020 Beverly Blvd., Los Angeles, Calif. 90057, 484-1370. Checks cannot be accepted at the landfill.
SANITATION	Cover all loads in accordance with all city, county and state regulations.
LOCATION	See map on reverse side. Dump only at spots designated by landfill personnel. Observe speed regulations on site.

OK 1/17/73
~~7/1/72~~ MCB

ABANDONED SITE PROJECT DRIVE-BY CHECKLIST

Site Name Scholl Dump

Site Address 7721 N. Figueroa

City Eagle Rock

Score

Inspectors SP/HM

Date 11/18

TYPE OF WASTE

___ Extremely Hazardous or Hazardous (5pts)

X Unknown (3pts)

___ Non-Hazardous (0pts)

DISPOSAL METHOD / LOCATION OF WASTE

___ Pits, Ponds, Sumps -- empty or full (5pts)

___ Drums (55-gal) or Tanks (other than raw material storage) (5pts)

X Other Visible Means of Storing Waste Landfill (3pts)

___ No Indication of Waste (0pts)

LOCALE

___ Recreation Area (5pts)

___ Urban Area (5pts)

X Rural Area (2pts)

___ Industrial Area (2pts)

___ Commercial Area (3pts)

ACTIVE / INACTIVE SITE

COMMENTS:
active landfill

IMMEDIATE ENVIRONMENT

___ Liquid or Semi-Liquid Oozing, Seeping, or Leaching Out of Ground (5pts)

___ Perceivable Site-Specific Odor (4pts)

___ Piles of Dry Material, Randomly Scattered Debris, Disturbed Topography (3pts)

___ Vegetation Stressed or Irregular (3pts)

___ Soil Discolored (3pts)

___ Surface Water Nearby (Lake, River, Creek, Stream, Canal) (3pts)

___ Standing Water On-Site Discolored (3pts)

X No Apparent Problems (0pts)

DANGER TO PUBLIC HEALTH

___ Waste Accessible to Public (site not secured or waste highly mobile) (5pts)

___ Nearby Residential Area, Site Secured, Waste Not Highly Mobile (3pts)

___ Drainage System (Natural, Man-Made) (3pts)

X No Apparent Danger (0pts)

John Gise

11-4-80
SM

Scholl Dump Judy's notes
Class II (privately owned)

check regional board.
ref to county agency.
North industrial unit.
no involvement in dumps-
unless storage of chemicals or gasoline
for trucks.

Fire dept. 485-5993

John Gse

RWQCB Oct, 21 1980 File # 2846 CASE No. 60-117

[redacted]

Latest inspection revealed no violations. 6/12/79

Only Class II dumping Observed, exdellent Operation 4/5/79

Site inspected To view Effects of Strike in the Landfill operation from the environmental point of view.

Small infractions were discovered but minor in nature.

trash & other debris in the Areas.

6/29/74 Exsiting Reg. may need revision. a private hauler was spotted ~~dump~~ dumping 3/4 empty barrels of oils & Solvents in the Seholl Canyon site. Licence plate # was taken.

~~7~~

INTAKE is At 800 TON A day 5/81

Operation Taking place at the N. W. end of the Canyon - No Liquids, oils, WAXES, SOAPS, Solvents or H20 Soluble Solids Strickly, CLASS II

Refer to Attached Sheet For WAste Breack down.

12/29/80

RWQCB - Oct. 21, 1980

RWQCB 10/21/80
JoAnn G.

FACILITY:

USED: 1956 - 1979

SCHULL DUMP CLASS II
7721 N. FIGUEROA also 7546 N. Figueroa
EAGLE ROCK, CA

5 hundred tons

USED BY:

PENNWALT CORPORATION
CHEM. SPECIALTIES
Los Angeles Plant
2700 So. EASTERN AVE.
COMMERCE, CA 90040

Class II Active
L.A. County Landfill

WASTE:

INORGANICS
SALTS

JoAnn G

RWQCB Oct. 21, 1980 File # M-28446 Folder #1

According To Technical reports School Canyon Landfill has been in Compliance c the Board Resolution since Jan '73
Only 1 monitoring report entered as not filed.
No visible violation marked on every inspection.

School Canyon Landfill (Glendale) off Figueroa St.
RWQCB File indicates CLASS II only

WASTEWATER RECLAMATION
SOLID WASTE MANAGEMENT

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (310) 699-7411, FAX: (310) 695-6139

CHARLES W. CARRY
Chief Engineer and General Manager

August 10, 1994
File No. 31R-208.10

RECEIVED
AUG 15 1994
Department of Toxic Substances Control

Mr. William F. Soo Hoo
Director of Department of Toxic Substance Control
P. O. Box 806
Sacramento, California 51812-0806

CAL000012959

Dear Mr. Soo Hoo:

Scholl Canyon Landfill
Monitoring Program for April - June 1994

Please find enclosed a copy of the monthly monitoring report for the Scholl Canyon Landfill prepared for the Regional Water Quality Control Board (RWQCB). The enclosed report includes information which fulfills requirements of Section 17528.20 of Title 14, California Code of Regulation. These requirements specify that detections of hazardous or PCB wastes at municipal solid waste landfills be reported to your office. The enclosed information includes the source of the waste, date, and description of hazardous wastes or PCB wastes found at the landfill.

If you have any questions about the information contained in this report, please contact me at (310) 699-7411, extension 2470.

Very truly yours,

Charles W. Carry

Raymond L. Huitric
Research and Monitoring Section Head
Solid Waste Management Department

RLH:FS:eo

Recycled Paper

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
WASTE INSPECTION SUMMARY REPORT TO THE
REGIONAL WATER QUALITY CONTROL BOARD

SCHOLL CANYON LANDFILL - June 1994

Unacceptable Wastes

Incident 1;

a. **Source:** (Unknown)
Date Received or Recovered: 06/14/94
b. **Description**

1] 1x1 QT CHARCOAL LIGHTER FLUID	1.0 PT	(1)	A
2] 1x30 LB AUTO BATTERY	30.0 LB	-->	B
3] 1x2.5 FT ASBESTOS PIPE	10.0 LB	(2)	C

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove for recycling to AA Batteries.
C remove to authorized asbestos disposal facility (BKK).
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 2;

a. **Source:** (Unknown)
Date Received or Recovered: 06/11/94
b. **Description**

1] 1x30 LB AUTO BATTERY	30.0 LB	-->	A
2] 2x1 GAL LATEX PAINT	1.2 GAL	(1)	B
3] 1x13 OZ AEROSOL PAINT	10.0 OZ	(2)	C

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove for recycling to AA Batteries.
B remove to the OSCO facility for treatment.
C remove to ENSCO for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 3;

a. **Source:** (Unknown)
Date Received or Recovered: 06/17/94

b. **Description**

1] 1X20 LB TRANSITE PIPE	20.0 LB	(2)	A
2] 1X30 LB AUTOMOTIVE BATTERY	30.0 LB	-->	B
3] 1X13 OZ PAINT	10.0 OZ	(1)	C
4] 1X16 OZ CAR WAX	12.0 OZ	(1)	C
5] 1X1 GAL LINSEED OIL	1.0 GAL	(1)	C

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to authorized asbestos disposal facility (BKK).
B remove for recycling to AA Batteries.
C remove to the OSCO facility for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 4;

a. **Source:** (Unknown)
Date Received or Recovered: 06/09/94

b. **Description**

1] 5x1 GAL LATEX PAINT	4.0 GAL	(1)	A
2] 2x1 GAL OIL BASE PAINT	0.8 GAL	(1)	A
3] 1x1 GAL PAINT THINNER	0.2 GAL	(1)	A
4] 1x1 GAL STADCO CREOSOTE	0.3 GAL	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 5;

a. **Source:** (Unknown)
Date Received or Recovered: 06/08/94

b. **Description**

1] 1X3 GAL OIL-BASE PAINT	0.8 GAL	(1)	A
2] 1X1 QT OIL-BASE PAINT	1.0 QT	(1)	A
3] 1X4 GAL LATEX PAINT	2.0 GAL	(1)	A
4] 1X2 QT LATEX PAINT	2.0 QT	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 6;

a. **Source:** (Unknown)
Date Received or Recovered: 06/06/94

b. **Description**

1] 2x1 GAL OIL BASE PAINT	1.5 GAL	(1)	A
2] 2x1 GAL LATEX PAINT	1.5 GAL	(1)	A
3] 1x32 FL OZ FILM REMOVER	32.0 FL OZ	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 7;

a. **Source:** (Unknown)
Date Received or Recovered: 06/22/94

b. **Description**

1] 3X1 GAL LATEX PAINT	2.0 GAL	(1)	A
2] 1X1 GAL OIL-BASE PAINT	1.0 GAL	(1)	A
3] 2X1 GAL OIL-BASE PAINT	0.8 GAL	(1)	A
4] 1X1 QT WATER BASE PRIMER	1.0 QT	(1)	A
5] 1X1 QT RESOLVE NON-ACID DRAIN OPENER	1.0 QT	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 8;

a. **Source:** (Unknown)
Date Received or Recovered: 06/16/94

b. **Description**

1] 1x1 GAL AER-O-SOYL SOIL CONDITIONER	0.5 GAL	(2)	A
2] 2x1 GAL LATEX PAINT	2.0 GAL	(1)	B
3] 1x1 QT 33 GLAZING COMPOUND	1.0 QT	(1)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to ENSCO for treatment.
B remove to the OSCO facility for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 9;

a. **Source:** (Unknown)
Date Received or Recovered: 06/23/94

b. **Description**

1] 1X1 GAL LATEX PAINT	1.0 GAL	(1)	A
2] 1X1 GAL ACETONE	0.5 GAL	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.

e. **Districts' Action to Prevent Recurrence:**
The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 10;

a. **Source:** (Unknown)
Date Received or Recovered: 06/20/94

b. **Description**

1] 1X1 QT OIL-BASE PAINT	3.0 QTS	(1)	A
2] 8-8-14.8 OZ ASSORTED AEROSOLS	65.0 OZ	(2)	B
3] 1X1 QT DRAIN OPENER	1.0 QT	(2)	B
4] 1X5 GAL SOAP	1.0 GAL	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 11;

a. **Source:** (Unknown)
Date Received or Recovered: 06/27/94

b. **Description**

1] 1X1 GAL OIL-BASE PAINT	1.0 GAL	(1)	A
2] 1X8 OZ SILVER POLISH	6.0 OZ	(1)	A
3] 1X2 LB TOY BATTERY	2.0 LBS	-->	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove for recycling to AA Batteries.

e. **Districts' Action to Prevent Recurrence:**
The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 12;

a. **Source:** (Unknown)
Date Received or Recovered: 06/04/94

b. **Description**

1] 2X1 GAL LATEX PAINT	2.0 GAL	(1)	A
2] 1X1 GAL OIL-BASE PAINT	0.3 GAL	(1)	A
3] 2X1 QT OIL-BASE PAINT	1.4 QT	(1)	A
4] 1X1 PT OIL-BASE PAINT	8.0 OZ	(1)	A
5] 2X1 PT POLISHES	1.0 QT	(1)	A
6] 1X7 FL OZ POLISH	3.0 FL OZ	(1)	A
7] 1X12 FL OZ AUTO BRAKE FLUID	8.0 OZ	(3)	B
8] 1X1 LB ALL PURPOSE CLEANER	14.0 OZ	(2)	C
9] 2X10-11.4 OZ ASSORTED AEROSOLS	14.0 OZ	(2)	C
10] 1X12 OZ BLACK FLAG FLEA KILLER	7.0 OZ	(2)	C
11] 1X1 PT ORTHO LIQUID SEVIN	12.0 FL OZ	(2)	C

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702

(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

(3)ASBURY OIL CO.
2100 N. Alameda St
Compton, CA 90222

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove by Asbury Oil Co. for recycling.
C remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
— The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 13;

a. **Source:** (Unknown)
Date Received or Recovered: 06/28/94

b. **Description**

1] 2X1 GAL LATEX PAINT	0.7 GAL	(1)	A
2] 1X1 GAL OIL-BASE PAINT	0.4 GAL	(1)	A
3] 2X3-12 OZ AEROSOL PAINT	10.0 OZ	(2)	B
4] 1X1 GAL GLAZING COMPOUND	0.3 GAL	(1)	A

c. **Name of Hauler (for removal):**

(1) OSCO
1704 W. First St
Azusa, CA 91702

(2) CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
— The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
WASTE INSPECTION SUMMARY REPORT TO THE
REGIONAL WATER QUALITY CONTROL BOARD

SCHOLL CANYON LANDFILL - May 1994

Unacceptable Wastes

Incident 1;

a. **Source:** (Unknown)
Date Received or Recovered: 05/31/94

b. **Description**

1] 1X4 GAL LATEX PAINT	2.0 GAL	(1)	A
2] 1X1 QT SPACKLING PASTE	1.0 QT	(1)	A
3] 3X1 GAL OIL-BASE PAINT	1.0 GAL	(1)	A
4] 5X1 QT OIL-BASE PAINT	3.0 QT	(1)	A
5] 3X8 OZ OIL-BASE PAINT	17.0 OZ	(1)	A
6] 1X4 OZ OIL-BASE PAINT	3.0 OZ	(1)	A
7] 1X1 QT METHYLENE CHLORIDE	4.0 OZ	(1)	A
8] 1X64 OZ WAX	0.5 GAL	(1)	A
9] 1X15 OZ TRANSMISSION STOP-LEAK	15.0 OZ	(1)	A
10] 1X1 LB WAX	0.4 LB	(1)	A
11] 1X15 OZ TIRE WHITE	15.0 OZ	(1)	A
12] 1X8 OZ WAX	3.0 OZ	(1)	A
13] 1X5 LB GREASE	5.0 LB	(3)	B
14] 1 AUTO BATTERY	30.0 LB	-->	C

c. **Name of Hauler (for removal):**

(1)OSCO
1704 W. First St
Azusa, CA 91702

(3)ASBURY OIL CO.
2100 N. Alameda St.
Compton, CA 90222

d. **Ultimate Point of Disposal:**

A remove to the OSCO facility for treatment.
B remove by Asbury Oil Co. for recycling.
C remove for recycling to AA Batteries.

e. **Districts' Action to Prevent Recurrence:**

_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 2;

a. **Source:** (Unknown)
Date Received or Recovered: 05/02/94

b. **Description**

1] 2X1 GAL LATEX PAINT	1.5 GAL	(1)	A
2] 1X1 PT OIL-BASE PAINT W/LEAD	0.6 PT	(2)	B
3] 4X11-14 OZ AEROSOL PRODUCTS	25.0 OZ	(2)	B
4] 1X12 OZ BRAKE FLUID	12.0 OZ	(3)	C
5] 1X30 OZ ENGINE CLEANER	20.0 OZ	(1)	A
6] 1X1 PT INSECT KILLER	0.5 PT	(2)	B

c. **Name of Hauler (for removal):**

(1) OSCO
1704 W. First St
Azusa, CA 91702

(2) CCD
10680 Silicon Ave.
Montclair, CA 91763

(3) ASBURY OIL CO.
2100 N. Alameda St.
Compton, CA 90222

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.
C remove by Asbury Oil Co. for recycling.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 3;

a. **Source:** (Unknown)
Date Received or Recovered: 05/18/94

b. **Description**

1] 1X1 GAL OIL-BASE PAINT	0.7 GAL	(1)	A
2] 1X1 GAL LATEX PAINT	0.3 GAL	(1)	A
3] 1X27 OZ WAX	25.0 OZ	(1)	A
4] 1X1 QT AQUILAWN CONCENTRATE	4.0 OZ	(2)	B
5] 1X12 OZ AEROSOL PAINT	12.0 OZ	(2)	B

c. **Name of Hauler (for removal):**

(1) OSCO
1704 W. First St
Azusa, CA 91702

(2) CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 4;

a. **Source:** (Unknown)
Date Received or Recovered: 05/20/94
b. **Description**

1] 1X5 GAL LATEX PAINT	4.0 GAL	(1)	A
2] 1X1 GAL OIL-BASE PAINT	0.3 GAL	(1)	A
3] 1X11 OZ INSECTICIDE AEROSOL	5.0 OZ	(2)	B
4] 1X1 LB INSECTICIDE AEROSOL	1.0 LB	(2)	B
5] 1X1 LB MOTH BALLS	1.0 LB	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 5;

a. **Source:** (Unknown)
Date Received or Recovered: 05/21/94
b. **Description**

1] 2X5 GAL LATEX PAINT	6.0 GAL	(1)	A
2] 2X1 GAL LATEX PAINT	1.0 GAL	(1)	A
3] 1X8 OZ LATEX PAINT	8.0 OZ	(1)	A
4] 1X1 GAL OIL-BASE PAINT	0.3 GAL	(1)	A
5] 1X1 QT CHARCOAL LIGHTER	1.0 QT	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 6;

a. **Source:** (Unknown)
Date Received or Recovered: 05/02/94

b. **Description**

1] 1x1 QT OIL BASE PAINT	1.0 QT	(1)	A
2] 1x1 QT ADHESIVE REMOVER	0.4 QT	(1)	A
3] 1x9 OZ WD-40 AEROSOL	3.0 OZ	(2)	B

c. **Name of Hauler (for removal):**

(1)OSCO
1704 W. First St
Azusa, CA 91702

(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 7;

a. **Source:**
JACK RODRIQUEZ
1302 E. SLAUSON AVE.
LOS ANGELES, CA
Date Received or Recovered: 05/31/94

b. **Description**

1] 564X12 OZ FLEA & TICK SHAMPOO	52.9 GAL	-->	A
2] 1514X12 OZ FLEA & TICK SPRAY	141.9 GAL	-->	A

c. **Name of Hauler (for removal):**

d. **Ultimate Point of Disposal:**
A a producer hired Hauler to remove.
Incident pending investigation by HAZMAT.
Hauler information will be reported next month.

e. **Districts' Action to Prevent Recurrence:**
The Districts contacted the firm's officials and informed them of the hazardous waste regulations followed by an enforcement letter.

Incident 8;

a. **Source:** (Unknown)
Date Received or Recovered: 05/30/94
b. **Description**

1] 2X8 OZ OIL-BASE PAINT	14.0 OZ	(1)	A
2] 2X10 OZ LATEX PAINT	12.0 OZ	(1)	A
3] 1X16 OZ STAINLESS STEEL CLEANER	14.0 OZ	(2)	B
4] 1X1 QT FABRIC SOFTENER	30.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 9;

a. **Source:** (Unknown)
Date Received or Recovered: 05/29/94
b. **Description**

1] 6X1 GAL LATEX PAINT	2.8 GAL	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 10;

a. **Source:** (Unknown)
Date Received or Recovered: 05/28/94

b. **Description**

1] 1X1 GAL LATEX PAINT	0.8 GAL	(1)	A
2] 4X1 GAL OIL-BASE PAINT	3.0 GAL	(1)	A
3] 4X9-12 OZ AEROSOL PRODUCTS	20.0 OZ	(2)	B
4] 2X15 OZ HAIR CONDITIONERS	25.0 OZ	(1)	A
5] 1X1 QT PLANT FOOD	30.0 OZ	(1)	A
6] 1X1 QT ACID-BASE METAL POLISH	1.0 QT	(2)	B
7] 1X4 OZ SUN TAN LOTION	4.0 OZ	(1)	A

c. **Name of Hauler (for removal):**

(1)OSCO
1704 W. First St
Azusa, CA 91702

(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 11;

a. **Source:** (Unknown)
Date Received or Recovered: 05/25/94

b. **Description**

1] 1X1 GAL LATEX PAINT	0.3 GAL	(1)	A
2] 1X1 QT OIL-BASE PAINT	0.6 QT	(1)	A
3] 1X1 GAL ANTIFREEZE	0.5 GAL	(1)	A
4] 2X13 OZ AEROSOL PAINT	18.0 OZ	(2)	B
5] 1X1 PT BRAKE FLUID	0.8 PT	(3)	C
6] 1X16 OZ LATEX PAINT	16.0 OZ	(1)	A

c. **Name of Hauler (for removal):**

(1)OSCO
1704 W. First St
Azusa, CA 91702

(2)CCD
10680 Silicon Ave.
Montclair, CA 91763

(3)ASBURY OIL CO.
2100 N. Alameda St.
Compton, CA 90222

d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.
C remove by Asbury Oil Co. for recycling.

e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 12;

a. **Source:** (Unknown)
Date Received or Recovered: 05/28/94

b. **Description**

1] 2X1 GAL LATEX PAINT	0.4 GAL	(1)	A
2] 1X1 GAL OIL-BASE PAINT	0.5 GAL	(1)	A
3] 1X1 PT LACQUER THINNER	4.0 OZ	(1)	A
4] 3X16 OZ RUBBING ALCOHOL	40.0 OZ	(1)	A
5] 1X48 OZ LISTERINE ANTISEPTIC	30.0 OZ	(1)	A
6] 6X2-16 OZ ASSORTED SOAPS AND CONDITIONERS	55.0 OZ	(1)	A
7] 1X10 LBS TRANSITE PIPE	10.0 LB	(2)	B

c. **Name of Hauler (for removal):**

(1) OSCO
1704 W. First St
Azusa, CA 91702

(2) CCD
10680 Silicon Ave.
Montclair, CA 91763

d. **Ultimate Point of Disposal:**

A remove to the OSCO facility for treatment.
B remove to authorized asbertos disposal facility (BKK).

e. **Districts' Action to Prevent Recurrence:**

_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
WASTE INSPECTION SUMMARY REPORT TO THE
REGIONAL WATER QUALITY CONTROL BOARD

SCHOLL CANYON LANDFILL - April 1994

Unacceptable Wastes

Incident 1;

a. **Source:** (Unknown)
Date Received or Recovered: 04/11/94
b. **Description**
1] 5X30 LBS AUTOMOTIVE BATTERIES 150.0 LBS --> A
c. **Name of Hauler (for removal):**
d. **Ultimate Point of Disposal:**
A remove for recycling to AA Batteries.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 2;

a. **Source:** (Unknown)
Date Received or Recovered: 04/09/94
b. **Description**

1] 5X1 GAL LATEX PAINT	3.0 GAL	(1)	A
2] 7X1 GAL OIL-BASE PAINT	5.0 GAL	(1)	A
3] 1X1 QT OIL-BASE PAINT	1.0 QT	(1)	A
4] 1X1 GAL ROOFING CEMENT	0.5 GAL	(2)	B
5] 1X1 PT LACQUER THINNER	0.5 PT	(1)	A
6] 1X1 PT PAINT THINNER	0.5 PT	(1)	A
7] 1X1 QT GEAR OIL	10.0 OZ	(3)	C
8] 1X10 FL OZ LEAF SHINE	6.0 OZ	(2)	B
9] 1X16 OZ SPRAY CLEANER	16.0 OZ	(2)	B
10] 1X50 FL OZ LAUNDRY DETERGENT	8.0 FL OZ	(1)	A
11] 1X20 LB AUTOMOTIVE BATTERY	20.0 LB	-->	D

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
(3)ASBURY OIL CO.
2100 N. Alameda St.
Compton, CA 90222
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.
C remove by Asbury Oil Co. for recycling.
D remove for recycling to AA Batteries.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 3;

a. **Source:** (Unknown)
Date Received or Recovered: 04/01/94
b. **Description**

1] 2X1 GAL OIL-BASE PAINT	1.0 GAL	(1)	A
2] 1X1 QT OIL-BASE PAINT	1.0 QT	(1)	A
3] 3X1 GAL LATEX PAINT	2.0 GAL	(1)	A
4] 2X1 QT LATEX PAINT	1.2 QT	(1)	A
5] 2X11-16 OZ ASSORTED AEROSOLS	17.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 4;

a. **Source:** (Unknown)
Date Received or Recovered: 04/13/94
b. **Description**

1] 2X10.2-10.5 AEROSOL PAINT	20.0 OZ	(2)	A
2] 1X1 QT STEAM CLEANER CONCENTRATE	10.0 OZ	(1)	B
3] 1X4.8 BUTANE FUEL	3.0 OZ	(2)	A
4] 1X1 GAL LATEX PAINT	1.0 GAL	(1)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove to ENSCO for treatment.
B remove to the OSCO facility for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 5;

a. **Source:** (Unknown)
Date Received or Recovered: 04/26/94
b. **Description**

1] 1X30 LB TRANSITE PIPE	30.0 LBS	(2)	A
2] 1X30 LB AUTOMOTIVE BATTERY	30.0 LBS	-->	B

c. **Name of Hauler (for removal):**
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove to authorized asbestos disposal facility (BKK).
B remove for recycling to AA Batteries.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 6;

a. **Source:** (Unknown)
Date Received or Recovered: 04/18/94
b. **Description**

1] 1X5 GAL LATEX PAINT	1.0 GAL	(1)	A
2] 1X1 GAL LATEX PAINT	0.5 GAL	(1)	A
3] 1X2 GAL OIL-BASE PAINT	0.7 GAL	(1)	A
4] 1X1 QT OIL-BASE PAINT	0.5 QT	(1)	A
5] 1X1 PT OIL-BASE PAINT	0.3 PT	(1)	A
6] 1X1 QT GROW POWER PLANT FOOD	1.0 QT	(2)	B
7] 1X1 QT MYSTIC FOAM RUG CLEANER	0.6 QT	(2)	B
8] 1X3.5 OZ ANTISEPTIC	2.0 OZ	(1)	A
9] 1X1 PT ORTHO PEST CONTROL	4.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 7;

a. **Source:** (Unknown)
Date Received or Recovered: 04/21/94
b. **Description**

1] 2X5 GAL LATEX PAINT	8.0 GAL	(1)	A

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Incident 8;

a. **Source:** (Unknown)
Date Received or Recovered: 04/25/94
b. **Description**

1] 1X5 GAL LATEX PAINT	2.4 GAL	(1)	A
2] 6X1 GAL LATEX PAINT	6.0 GAL	(1)	A
3] 3X1 GAL OIL-BASE PAINT	2.0 GAL	(1)	A
4] 1X1 QT OIL-BASE PAINT	0.7 QT	(1)	A
5] 1X1 GAL DEGREASER	0.2 GAL	(2)	B
6] 1X7 FL OZ DIP-IT 2 CLEANER	3.0 FL OZ	(2)	B
7] 1X8 OZ HARTZ FLEA AND TICK KILLER FOR DOGS	8.0 OZ	(2)	B
8] 3X12-18 OZ ASSORTED AEROSOLS	26.0 OZ	(2)	B

c. **Name of Hauler (for removal):**
(1)OSCO
1704 W. First St
Azusa, CA 91702
(2)CCD
10680 Silicon Ave.
Montclair, CA 91763
d. **Ultimate Point of Disposal:**
A remove to the OSCO facility for treatment.
B remove to ENSCO for treatment.
e. **Districts' Action to Prevent Recurrence:**
_ The County Health and Districts' inspectors are continuing visual inspection of refuse loads as they are deposited at the working face to intercept such loads for proper disposal.

Appendix E HISTORICAL RECORDS

Biogas Renewable Generation Project
3001 Scholl Canyon Road
Glendale, CA 91206

Inquiry Number: 5631793.5
April 25, 2019

The EDR-City Directory Abstract

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

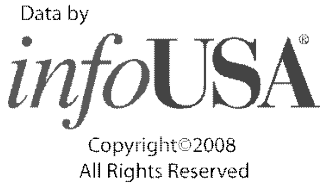
Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1920 through 2014. This report compiles information gathered in this review by geocoding the latitude and longitude of properties identified and gathering information about properties within 660 feet of the target property.

A summary of the information obtained is provided in the text of this report.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Year	Source	TP	Adjoining	Text Abstract	Source Image
2014	EDR Digital Archive	-	-	X	-
	EDR Digital Archive	X	-	X	-
2010	EDR Digital Archive	-	-	X	-
	EDR Digital Archive	X	-	X	-
2006	Haines Company	-	-	-	-
2004	Haines Company	-	-	-	-
2003	Haines & Company	-	-	-	-
2001	Haines & Company, Inc.	-	-	-	-
2000	Pacific Bell Telephone	-	-	-	-
1999	Haines Company	-	-	-	-
1996	GTE	-	-	-	-
1995	Pacific Bell	-	-	-	-

EXECUTIVE SUMMARY

Year	Source	TP	Adjoining	Text Abstract	Source Image
1992	PACIFIC BELL WHITE PAGES	-	-	-	-
1991	Pacific Bell	-	-	-	-
1990	PACIFIC BELL WHITE PAGES	-	-	-	-
1986	Pacific Bell	-	-	-	-
1985	Pacific Bell	-	-	-	-
1981	Pacific Telephone	-	-	-	-
1980	Pacific Telephone Co	-	-	-	-
1976	R.L. Polk & Co Publishers	-	-	-	-
1975	Pacific Telephone	-	-	-	-
1972	R. L. Polk & Co.	-	-	-	-
1971	R. L. Polk & Co.	-	-	-	-
1970	Pacific Telephone	-	-	-	-
1969	Pacific Telephone	-	-	-	-
1967	R. L. Polk & Co.	-	-	-	-
1966	Pacific Telephone	-	-	-	-
1965	GTE	-	-	-	-
1964	Pacific Telephone	-	-	-	-
1963	Pacific Telephone	-	-	-	-
1962	Pacific Telephone	-	-	-	-
1961	R. L. Polk & Co.	-	-	-	-
1960	Pacific Telephone	-	-	-	-
1958	Pacific Telephone	-	-	-	-
1957	Pacific Telephone	-	-	-	-
1956	Pacific Telephone	-	-	-	-
1955	R. L. Polk & Co.	-	-	-	-
1954	R. L. Polk & Co.	-	-	-	-
1952	Los Angeles Directory Co.	-	-	-	-
1951	Los Angeles Directory Co Publishers	-	-	-	-
1950	Pacific Telephone	-	-	-	-
1949	Los Angeles Directory Co.	-	-	-	-
1948	Los Angeles Directory Co.	-	-	-	-
1947	Pacific Directory Co.	-	-	-	-
1946	Southern California Telephone Co	-	-	-	-
1945	The Glendale Directory Co.	-	-	-	-
1944	R. L. Polk & Co.	-	-	-	-
1942	Los Angeles Directory Co.	-	-	-	-
1940	Los Angeles Directory Co.	-	-	-	-
1939	Los Angeles Directory Co.	-	-	-	-
1938	Los Angeles Directory Company Publishers	-	-	-	-
1937	Los Angeles Directory Co.	-	-	-	-
1936	Los Angeles Directory Co.	-	-	-	-
1935	Los Angeles Directory Co.	-	-	-	-

EXECUTIVE SUMMARY

Year	Source	TP	Adjoining	Text Abstract	Source Image
1934	Los Angeles Directory Co.	-	-	-	-
1933	Los Angeles Directory Co.	-	-	-	-
1932	Los Angeles Directory Co.	-	-	-	-
1931	Los Angeles Directory Company Publishers	-	-	-	-
1930	Los Angeles Directory Co.	-	-	-	-
1929	Los Angeles Directory Co.	-	-	-	-
1928	Los Angeles Directory Co.	-	-	-	-
1927	Los Angeles Directory Co.	-	-	-	-
1926	Los Angeles Directory Co.	-	-	-	-
1925	Los Angeles Directory Co.	-	-	-	-
1924	Los Angeles Directory Co.	-	-	-	-
1923	Los Angeles Directory Co.	-	-	-	-
1921	Los Angeles Directory Co.	-	-	-	-
1920	Los Angeles Directory Co.	-	-	-	-

EXECUTIVE SUMMARY

SELECTED ADDRESSES

The following addresses were selected by the client, for EDR to research. An "X" indicates where information was identified.

Address	*Type*	*Findings*
7721 N Figueroa St Los Angeles CA 90041	Client Entered	

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

3001 Scholl Canyon Road
Glendale, CA 91206

FINDINGS DETAIL

Target Property research detail.

N Figueroa St Los Angeles CA 90041

7721 N Figueroa St Los Angeles CA 90041

Year	*Uses*	*Source*

Scholl Canyon Rd

3001 Scholl Canyon Rd

Year	*Uses*	*Source*
2014	LANDFILL SCHOOL CANYON	EDR Digital Archive
	SANITATION DIST OF LA COUNTY	EDR Digital Archive
2010	SANITATION DIST OF LA COUNTY	EDR Digital Archive

FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

No Addresses Found

FINDINGS

TARGET PROPERTY: ADDRESS NOT IDENTIFIED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not identified in the research source.

Address Researched	Address Not Identified in Research Source
3001 Scholl Canyon Road	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

Biogas Renewable Generation Project

3001 Scholl Canyon Road

Glendale, CA 91206

Inquiry Number: 5631793.8

April 25, 2019

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

04/25/19

Site Name:

Biogas Renewable Generation
3001 Scholl Canyon Road
Glendale, CA 91206
EDR Inquiry # 5631793.8

Client Name:

Stantec
290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Contact: Anuya Sawant Dickinson

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	*Scale*	*Details*	*Source*
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
2002	1"=500'	Flight Date: June 06, 2002	USDA
1994	1"=500'	Acquisition Date: May 31, 1994	USGS/DOQQ
1989	1"=500'	Flight Date: August 22, 1989	USDA
1981	1"=500'	Flight Date: February 21, 1981	EDR Proprietary Brewster Pacific
1979	1"=500'	Flight Date: February 05, 1979	EDR Proprietary Brewster Pacific
1977	1"=500'	Flight Date: April 25, 1977	EDR Proprietary Brewster Pacific
1964	1"=500'	Flight Date: July 28, 1964	USGS
1952	1"=500'	Flight Date: July 10, 1952	USGS
1948	1"=500'	Flight Date: July 06, 1948	USGS
1938	1"=500'	Flight Date: May 06, 1938	USDA
1928	1"=500'	Flight Date: January 01, 1928	FAIR

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INQUIRY #: 5631793.8

YEAR: 2016

= 500'

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EDR


INQUIRY #: 5631793.8
YEAR: 2012
= 500'
N
EDR



INQUIRY #: 5631793.8

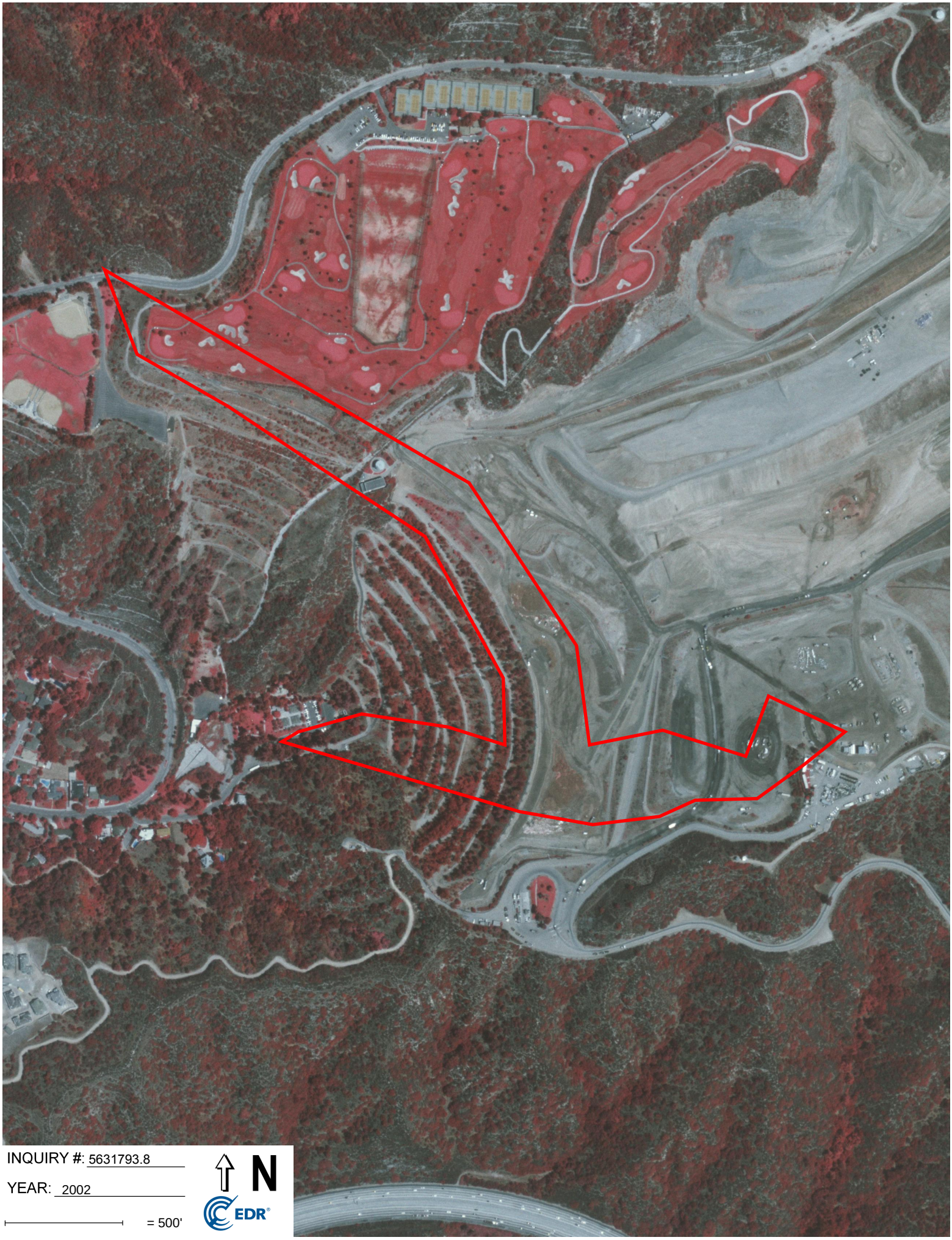
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EDR


INQUIRY #: 5631793.8
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= 500'
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EDR


INQUIRY #: 5631793.8
YEAR: 2002
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N
EDR



INQUIRY #: 5631793.8

YEAR: 1994

= 500'

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EDR



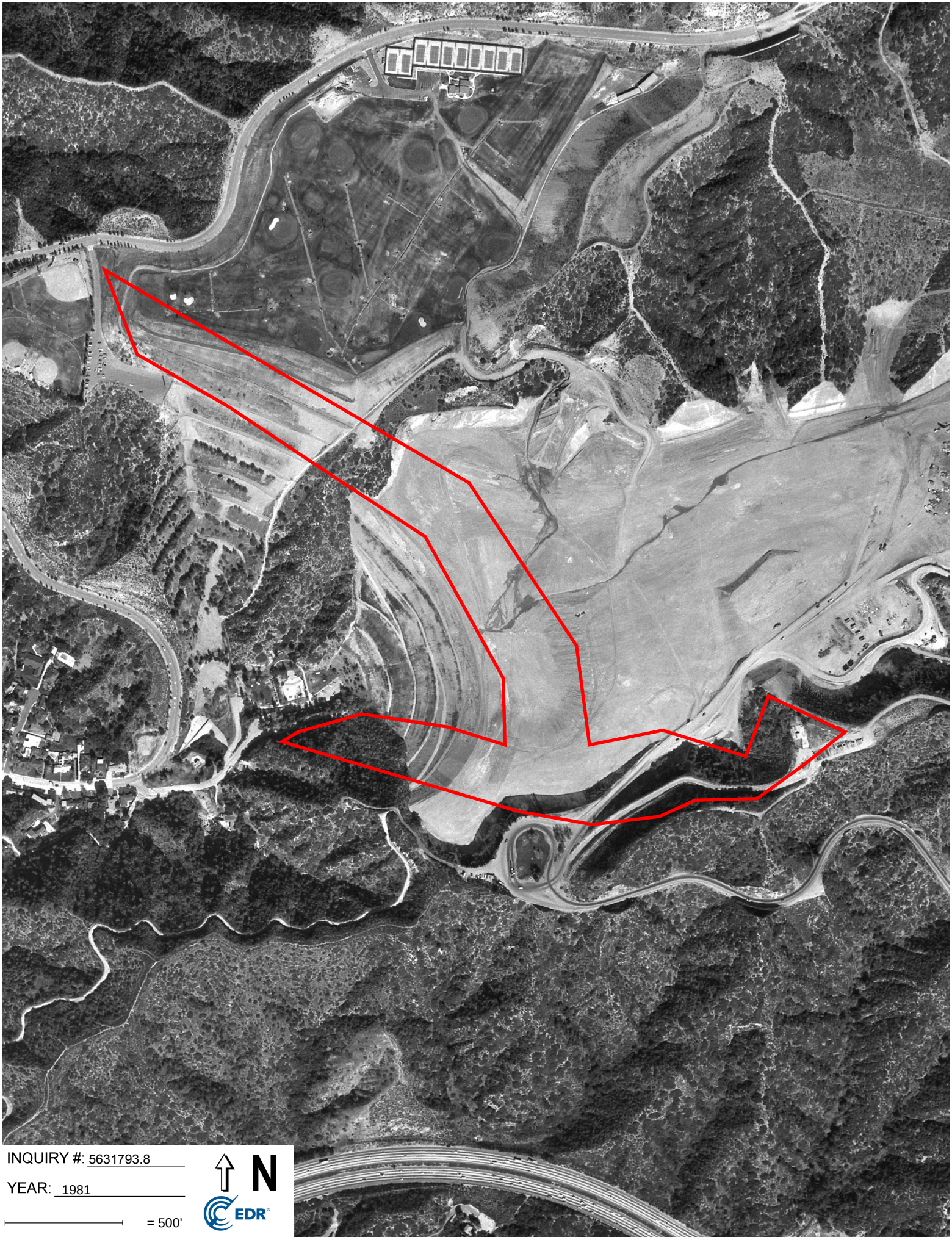
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YEAR: 1989

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EDR



INQUIRY #: 5631793.8

YEAR: 1981

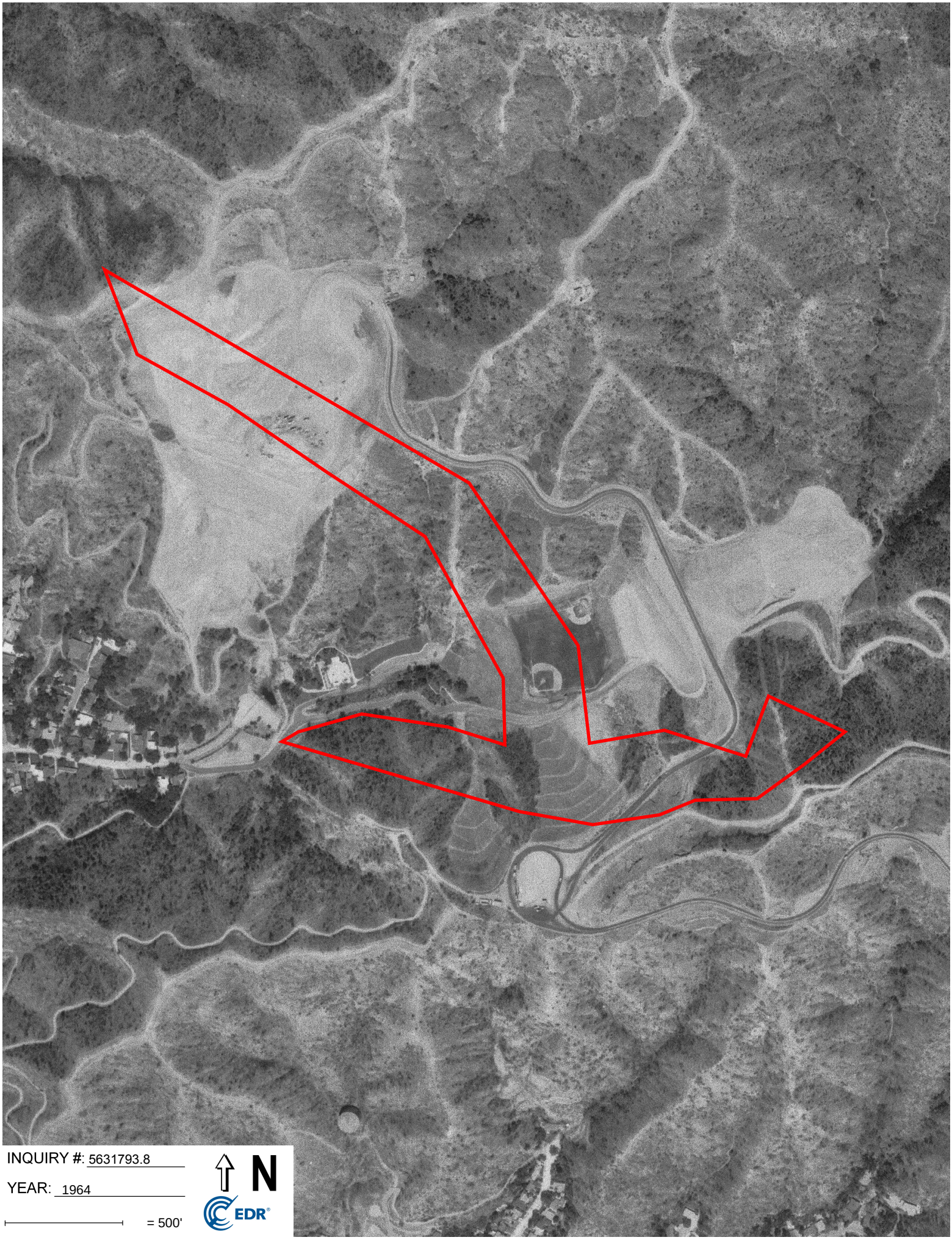
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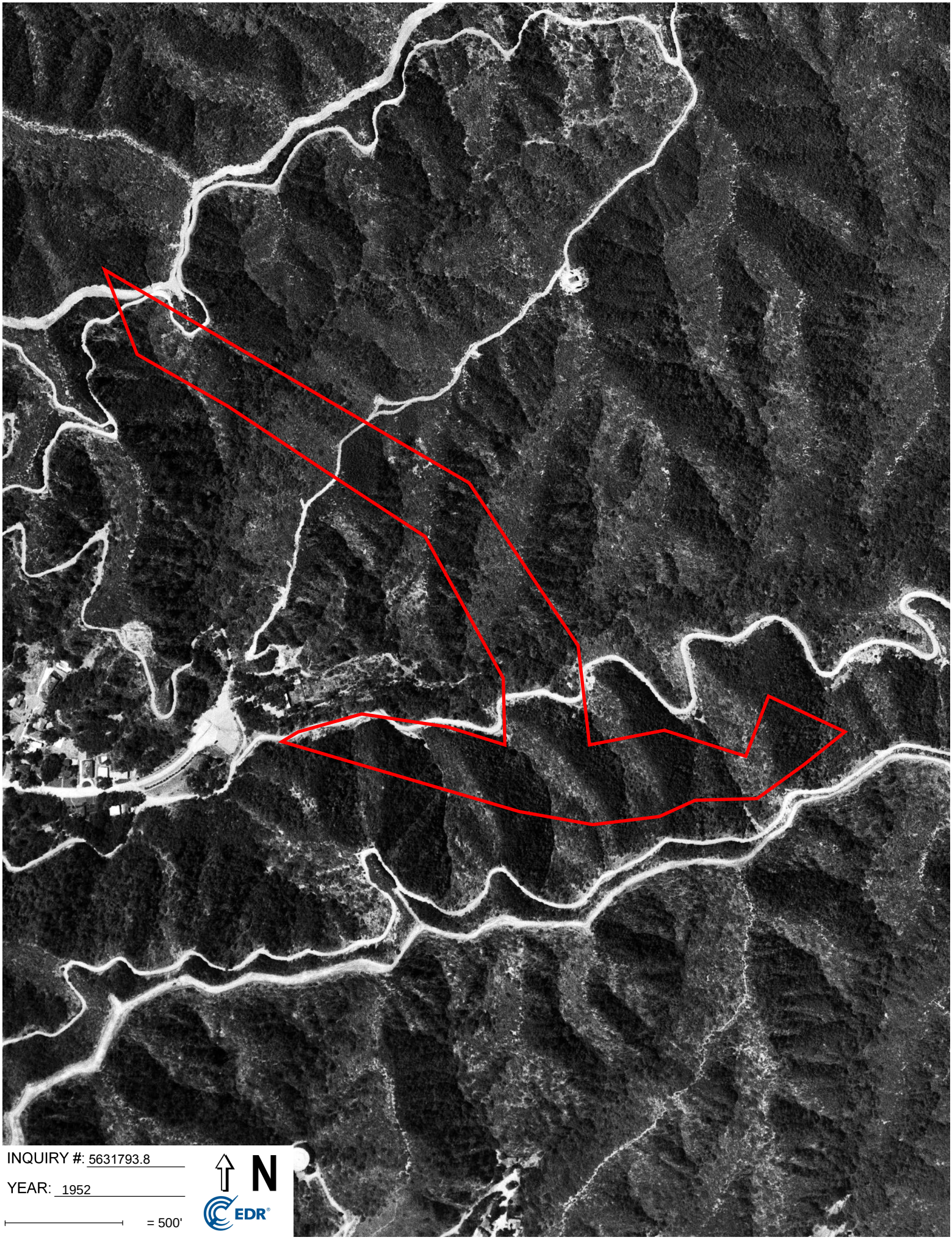
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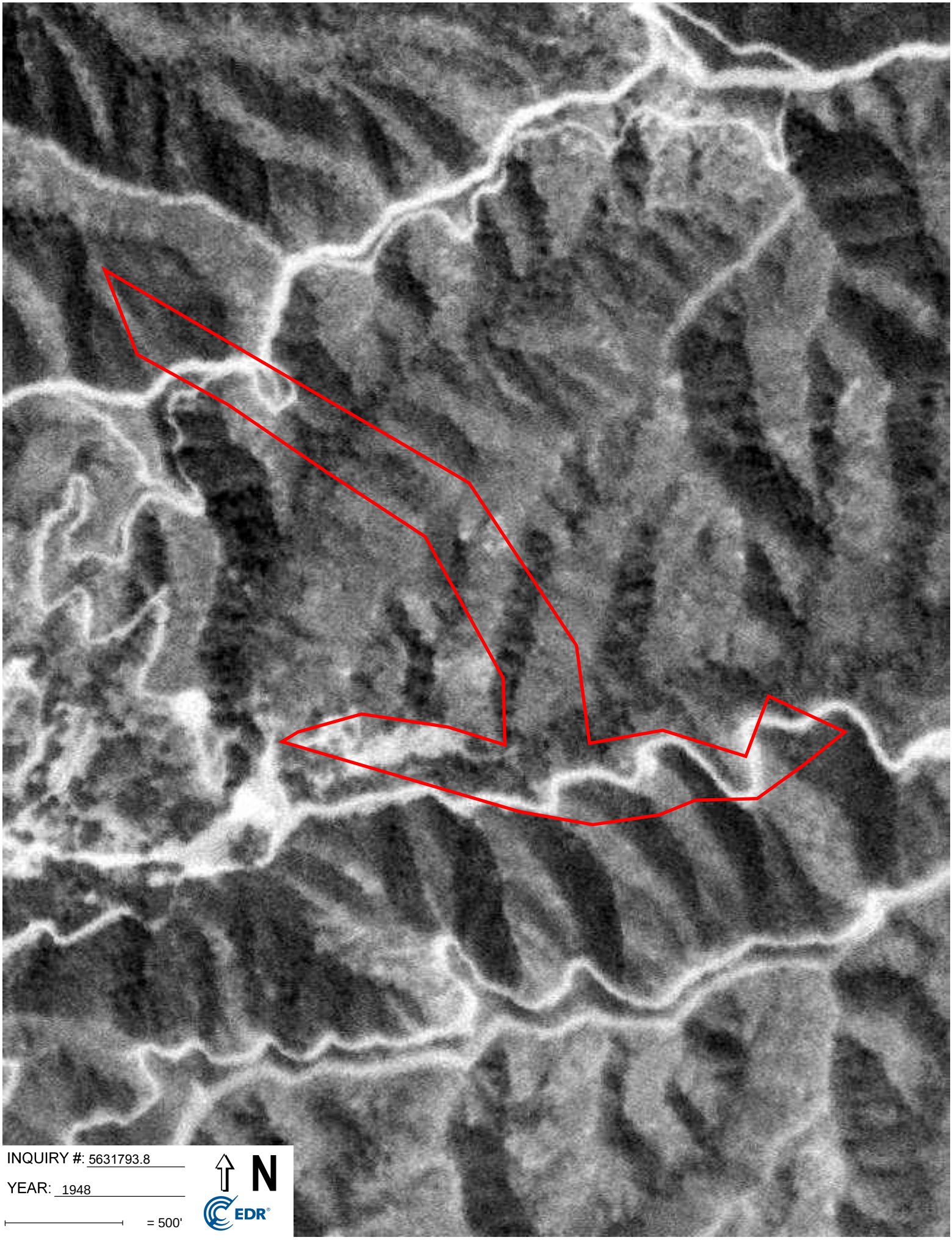
EDR


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YEAR: 1979
= 500'
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EDR


INQUIRY #: 5631793.8
YEAR: 1977
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N
EDR


INQUIRY #: 5631793.8
YEAR: 1964
= 500'
N
EDR


INQUIRY #: 5631793.8
YEAR: 1952
= 500'
N
EDR



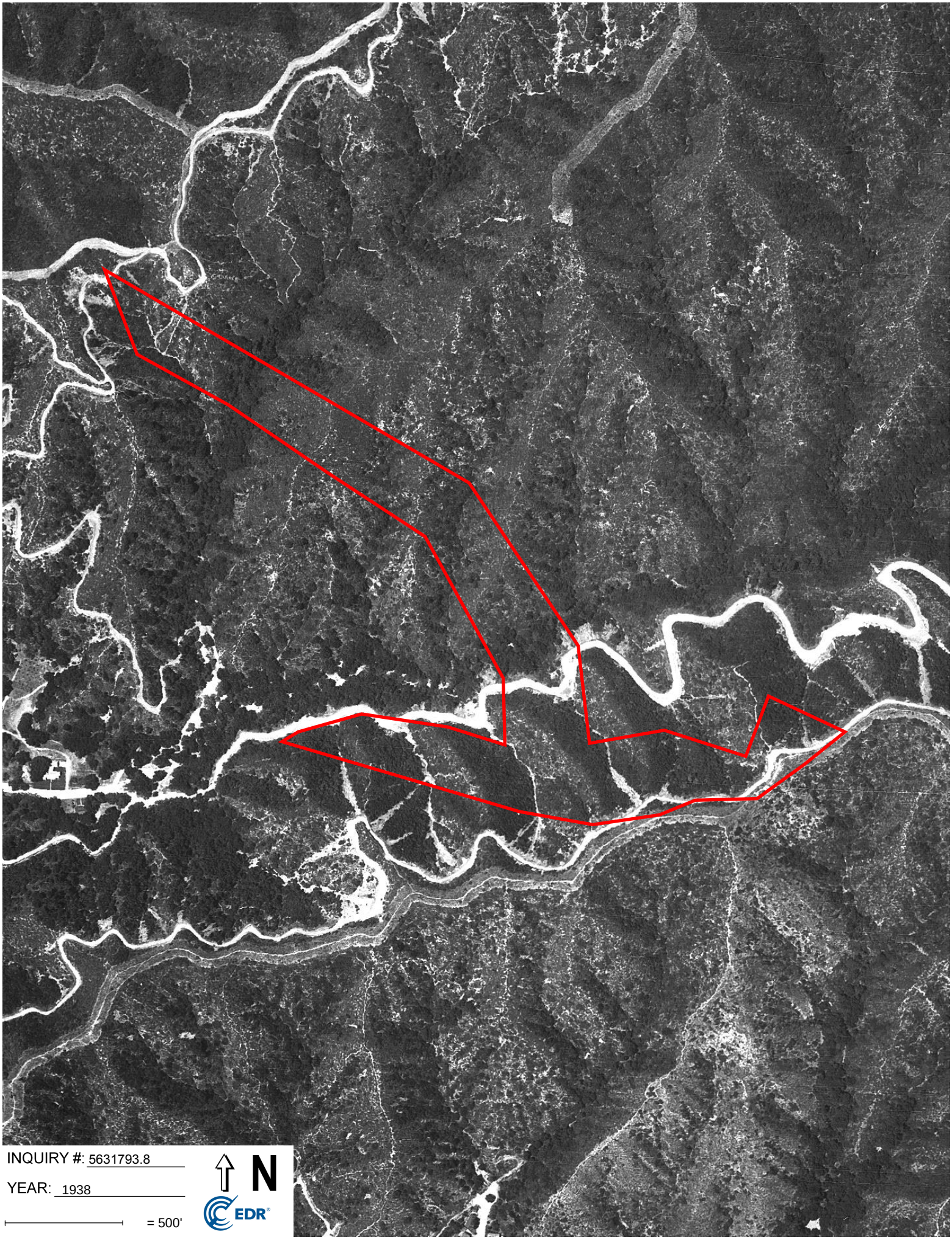
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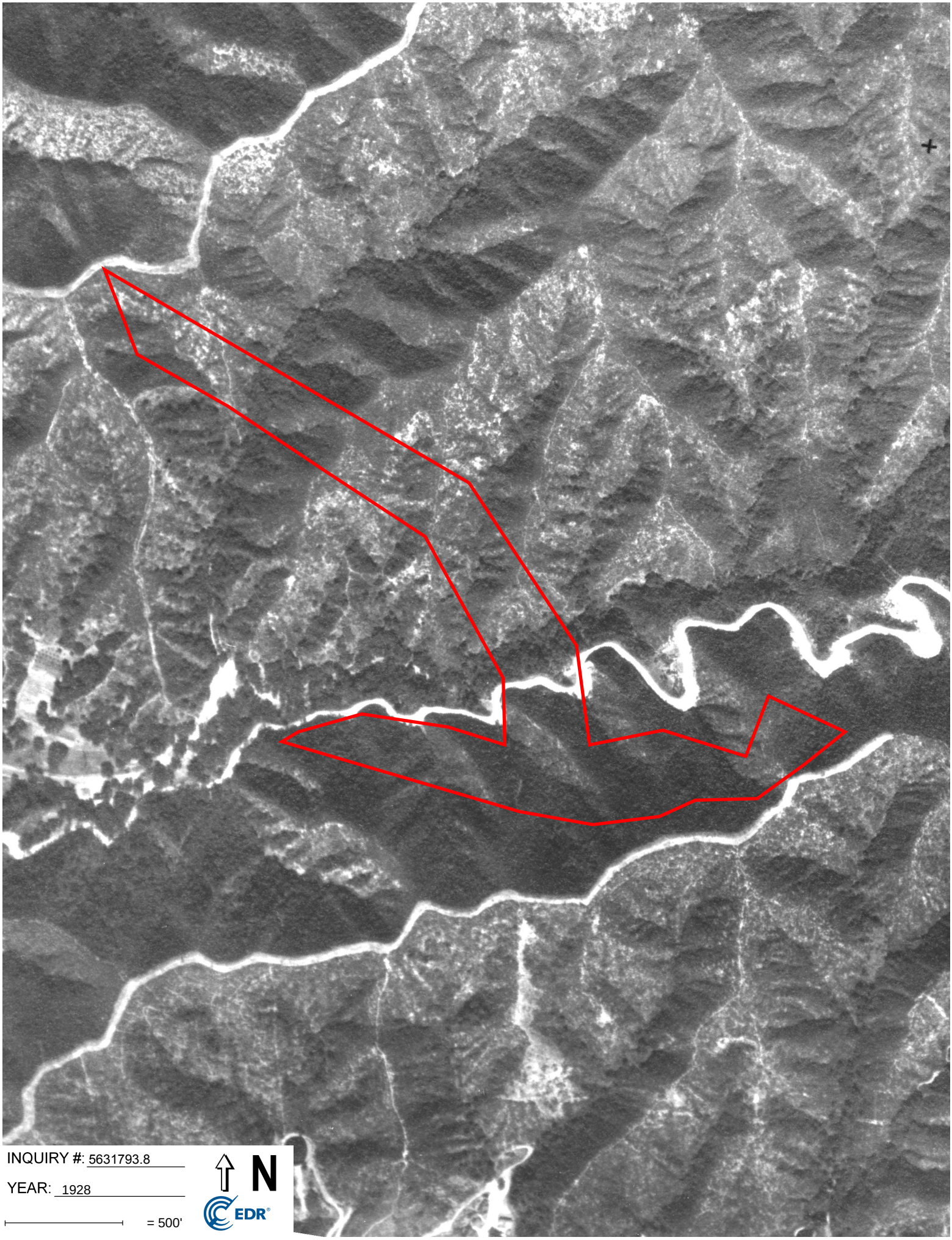
YEAR: 1948

= 500'

N

EDR


INQUIRY #: 5631793.8
YEAR: 1938
= 500'
N
EDR



INQUIRY #: 5631793.8

YEAR: 1928

= 500'

N

EDR

Biogas Renewable Generation Project
3001 Scholl Canyon Road
Glendale, CA 91206

Inquiry Number: 5631793.4
April 24, 2019

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

04/24/19

Site Name:

Biogas Renewable Generation
3001 Scholl Canyon Road
Glendale, CA 91206
EDR Inquiry # 5631793.4

Client Name:

Stantec
290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Contact: Anuya Sawant Dickinson

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Stantec were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# 185804356.300.0002
Project: Biogas Phase I

Coordinates:

Latitude:	34.154834 34° 9' 17" North
Longitude:	-118.197444 -118° 11' 51" West
UTM Zone:	Zone 11 North
UTM X Meters:	389616.69
UTM Y Meters:	3779971.53
Elevation:	1106.17' above sea level

Maps Provided:

2012	1900
1995	1896
1988	1894
1972	
1966	
1953	
1940	
1928	

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets



Pasadena
2012
7.5-minute, 24000

1995 Source Sheets



Pasadena
1995
7.5-minute, 24000
Aerial Photo Revised 1993

1988 Source Sheets



Pasadena
1988
7.5-minute, 24000
Aerial Photo Revised 1986

1972 Source Sheets



Pasadena
1972
7.5-minute, 24000
Aerial Photo Revised 1972

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1966 Source Sheets



Pasadena
1966
7.5-minute, 24000
Aerial Photo Revised 1964

1953 Source Sheets



Pasadena
1953
7.5-minute, 24000

1940 Source Sheets



Altadena
1940
7.5-minute, 24000

1928 Source Sheets



Altadena
1928
7.5-minute, 24000



Glendale
1928
7.5-minute, 24000

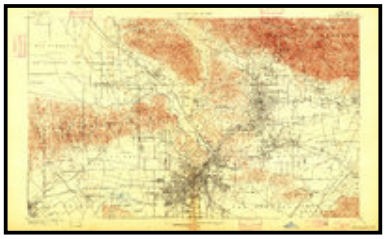
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1900 Source Sheets



Pasadena
1900
15-minute, 62500



Los Angeles
1900
15-minute, 62500

1896 Source Sheets



Pasadena
1896
15-minute, 62500

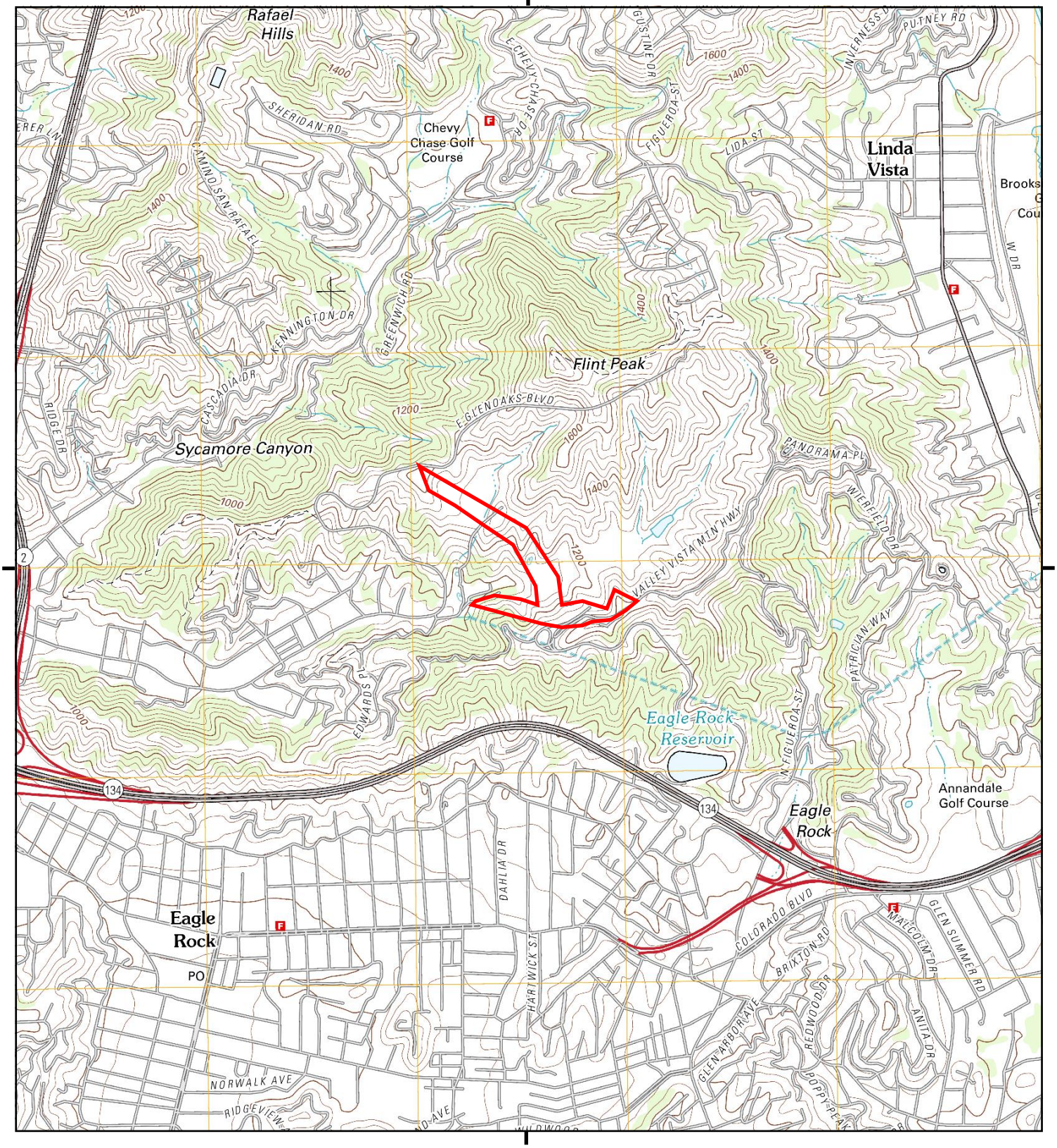
1894 Source Sheets



Los Angeles
1894
15-minute, 62500

Historical Topo Map

2012



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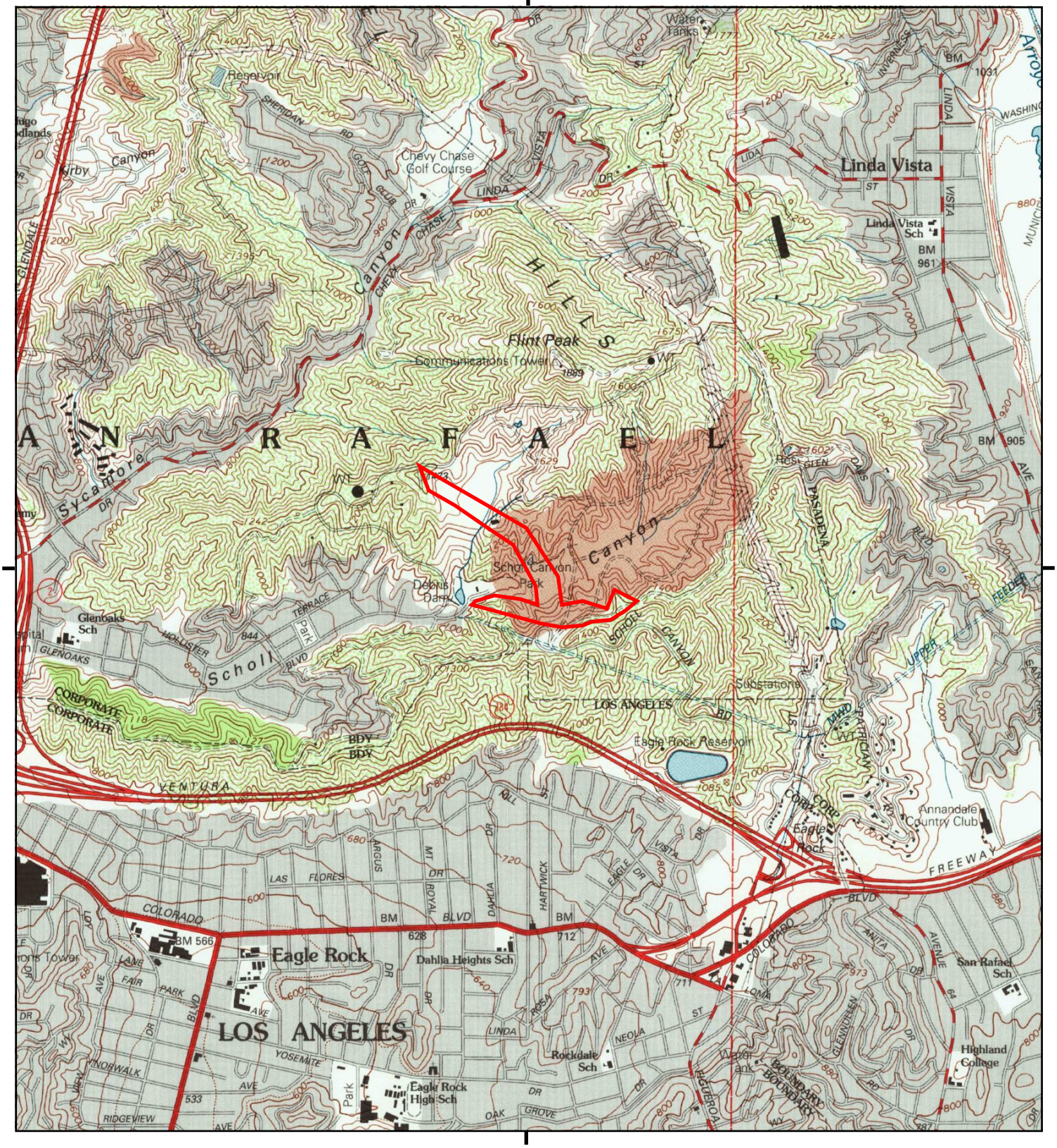
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Pasadena, 2012, 7.5-minute

SITE NAME: Biogas Renewable Generation Project
ADDRESS: 3001 Scholl Canyon Road
Glendale, CA 91206
CLIENT: Stantec

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

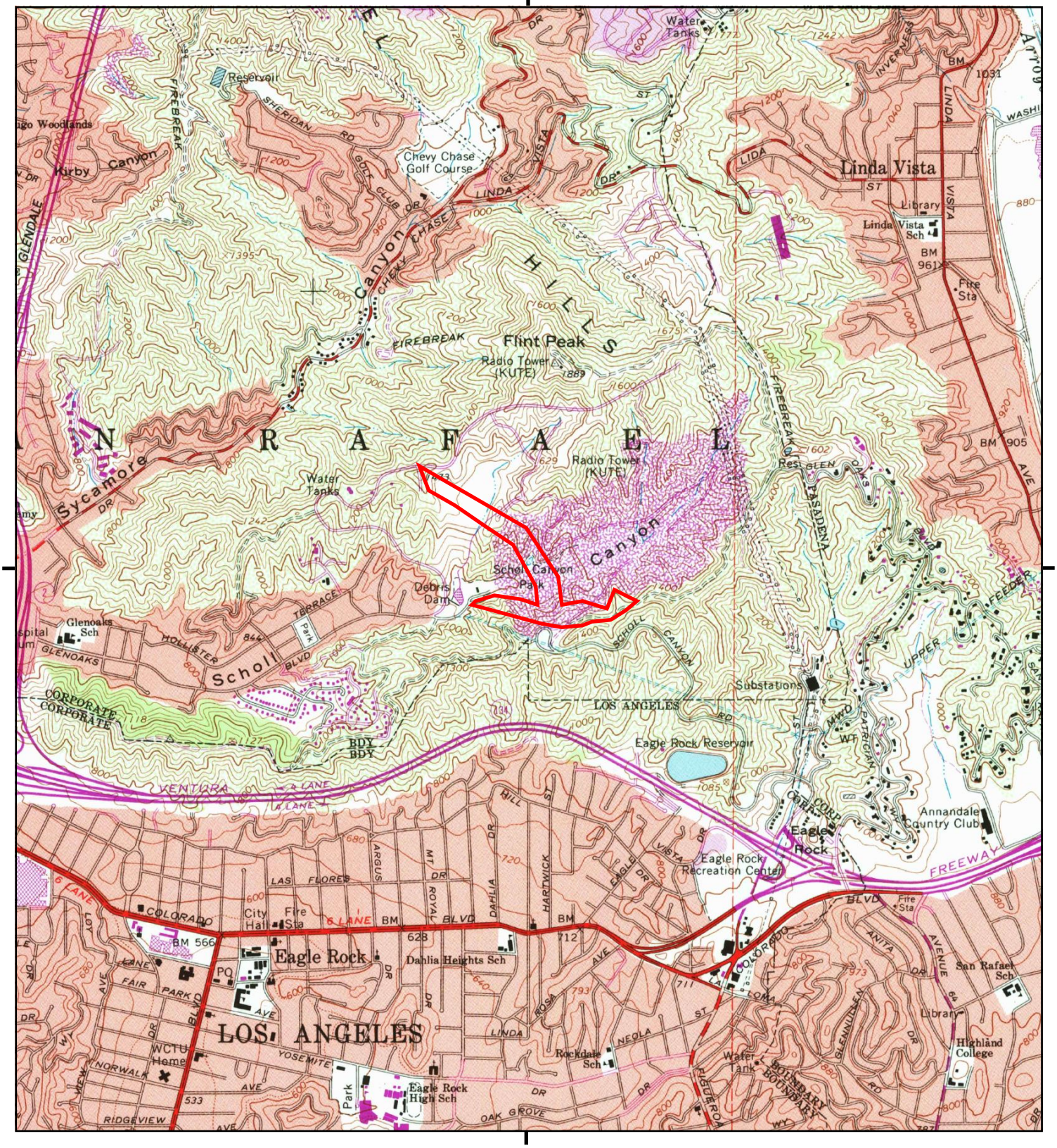
TP, Pasadena, 1995, 7.5-minute

SITE NAME: Biogas Renewable Generation Project
ADDRESS: 3001 Scholl Canyon Road
Glendale, CA 91206
CLIENT: Stantec

N

Historical Topo Map

1988



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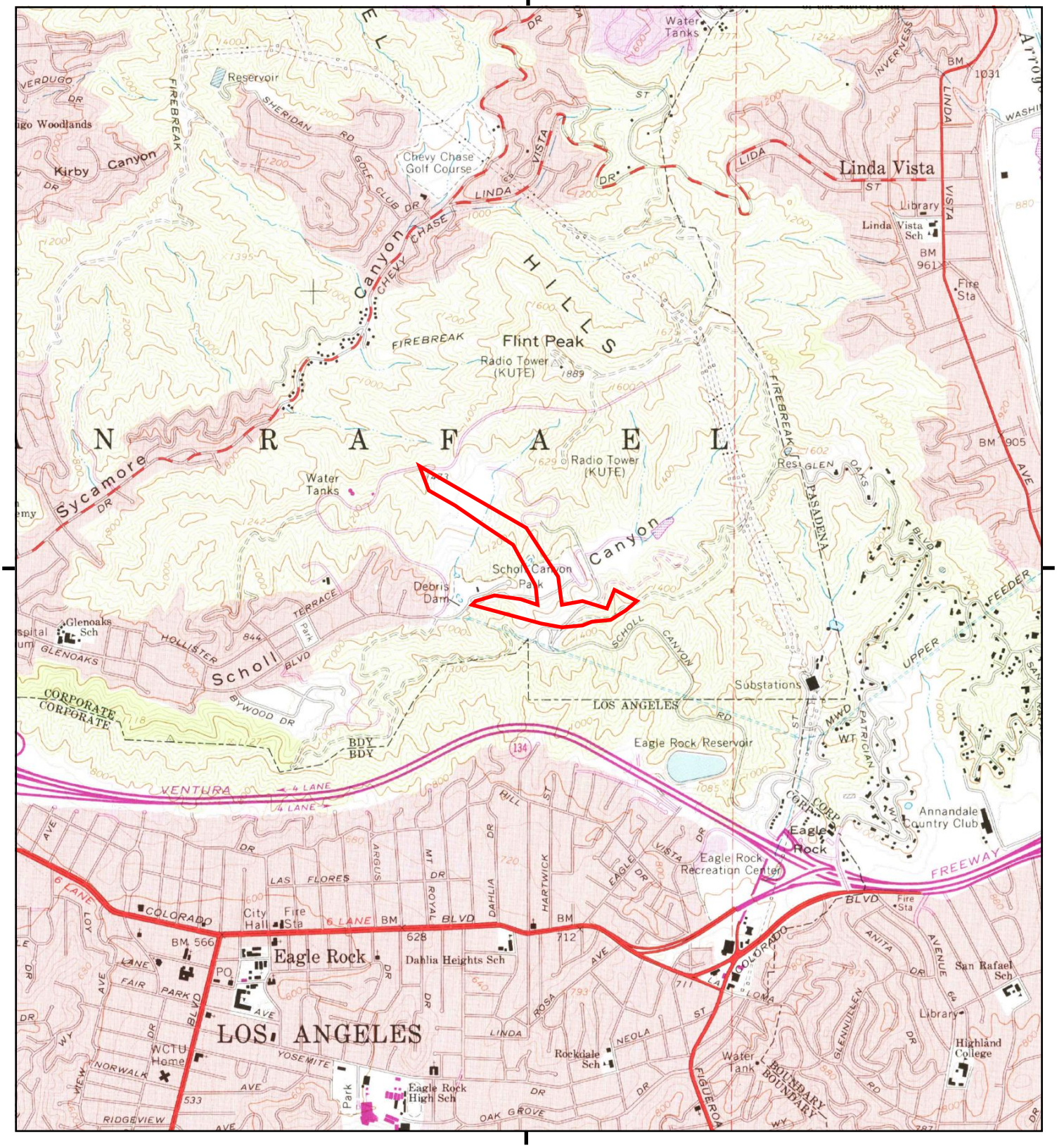
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Pasadena, 1988, 7.5-minute

SITE NAME: Biogas Renewable Generation Project
ADDRESS: 3001 Scholl Canyon Road
Glendale, CA 91206
CLIENT: Stantec

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

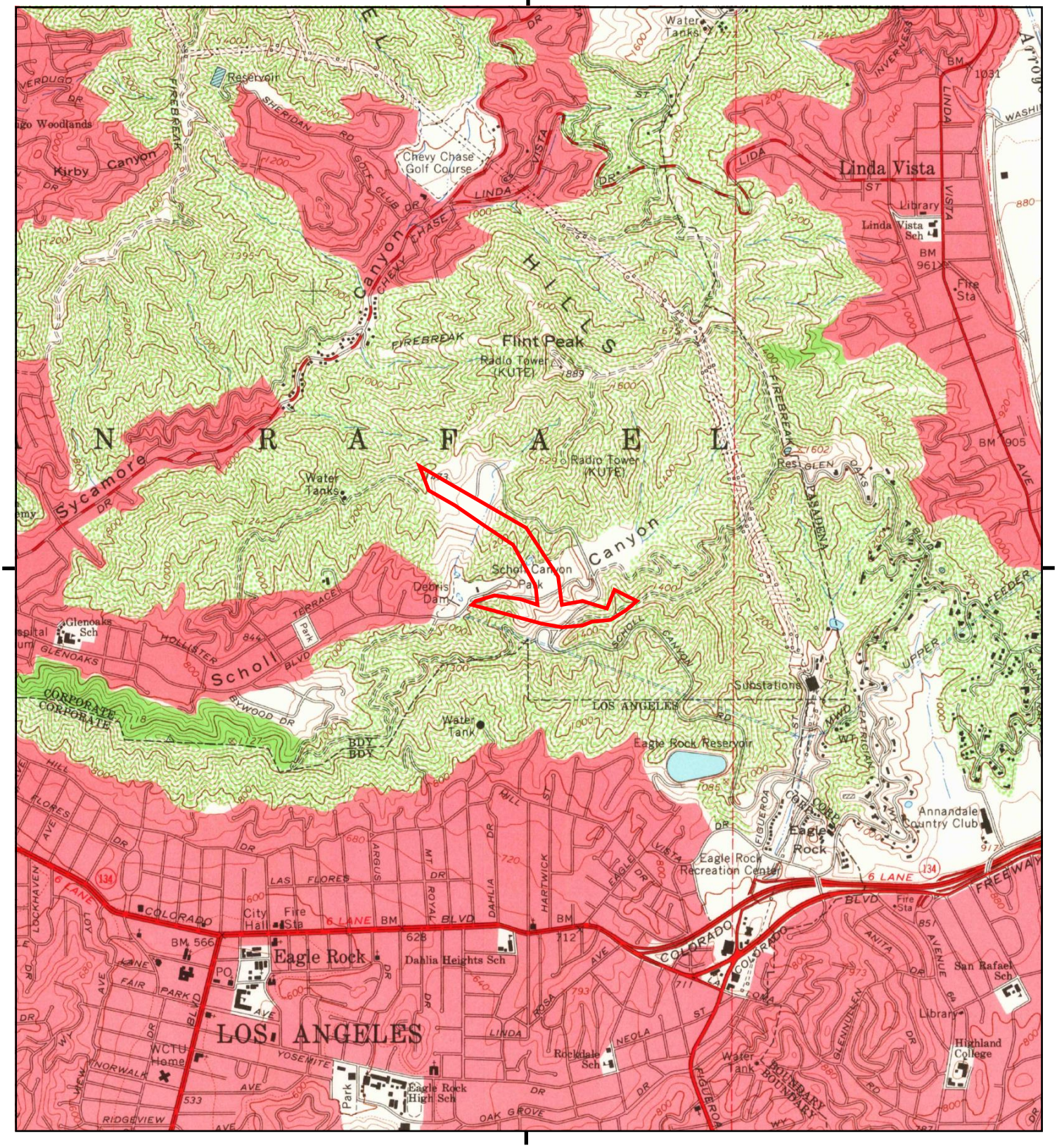
TP, Pasadena, 1972, 7.5-minute

SITE NAME: Biogas Renewable Generation Project
ADDRESS: 3001 Scholl Canyon Road
Glendale, CA 91206
CLIENT: Stantec

N

Historical Topo Map

1966



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

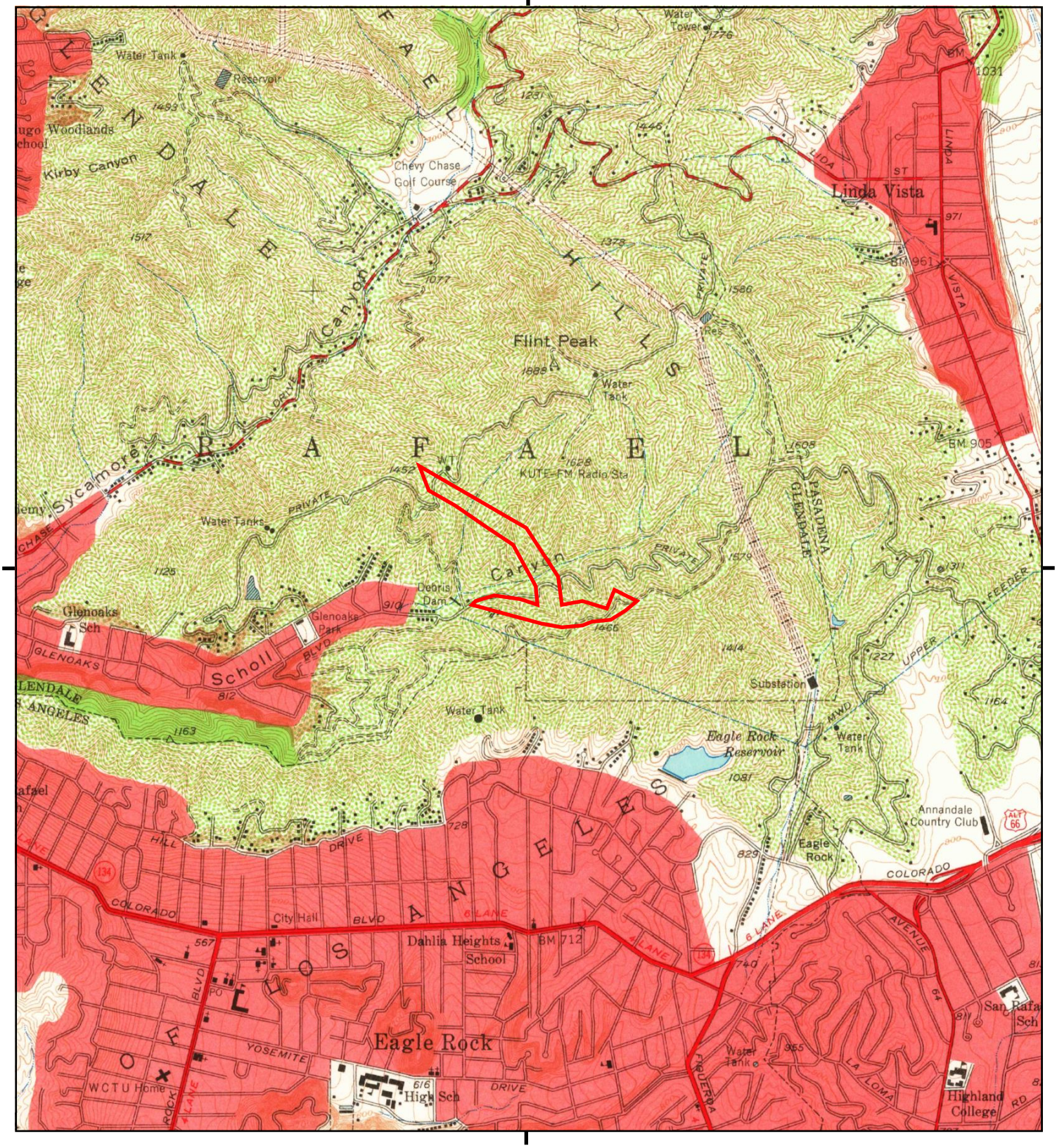
TP, Pasadena, 1966, 7.5-minute

SITE NAME: Biogas Renewable Generation Project
ADDRESS: 3001 Scholl Canyon Road
Glendale, CA 91206
CLIENT: Stantec

N

Historical Topo Map

1953



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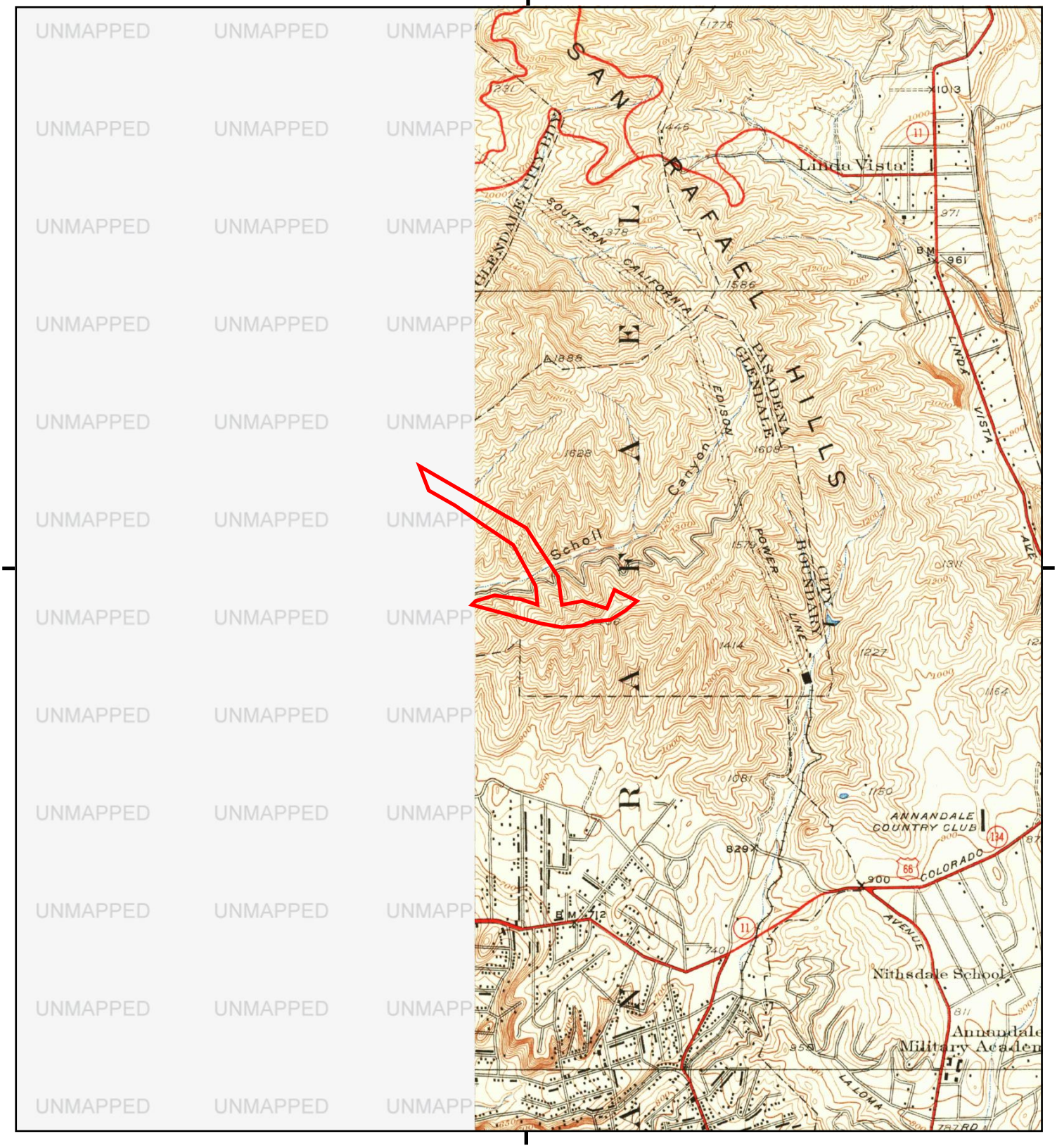
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Pasadena, 1953, 7.5-minute

SITE NAME: Biogas Renewable Generation Project
ADDRESS: 3001 Scholl Canyon Road
Glendale, CA 91206
CLIENT: Stantec

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Altadena, 1940, 7.5-minute

SITE NAME: Biogas Renewable Generation Project
ADDRESS: 3001 Scholl Canyon Road
Glendale, CA 91206
CLIENT: Stantec

N

Historical Topo Map

1928



This report includes information from the following map sheet(s).

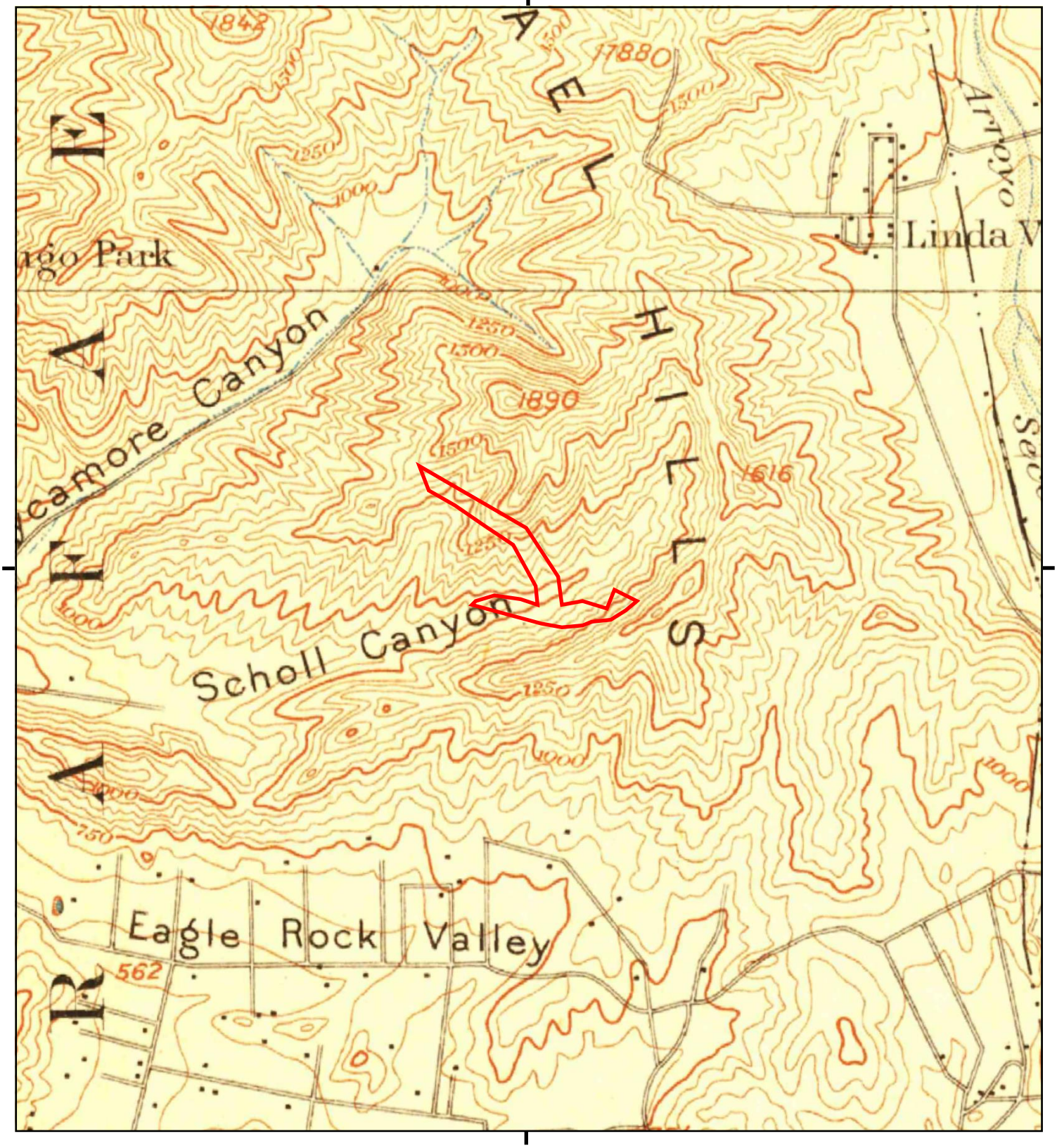
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Altadena, 1928, 7.5-minute
W, Glendale, 1928, 7.5-minute

SITE NAME: Biogas Renewable Generation Project
ADDRESS: 3001 Scholl Canyon Road
Glendale, CA 91206
CLIENT: Stantec

N



This report includes information from the following map sheet(s).

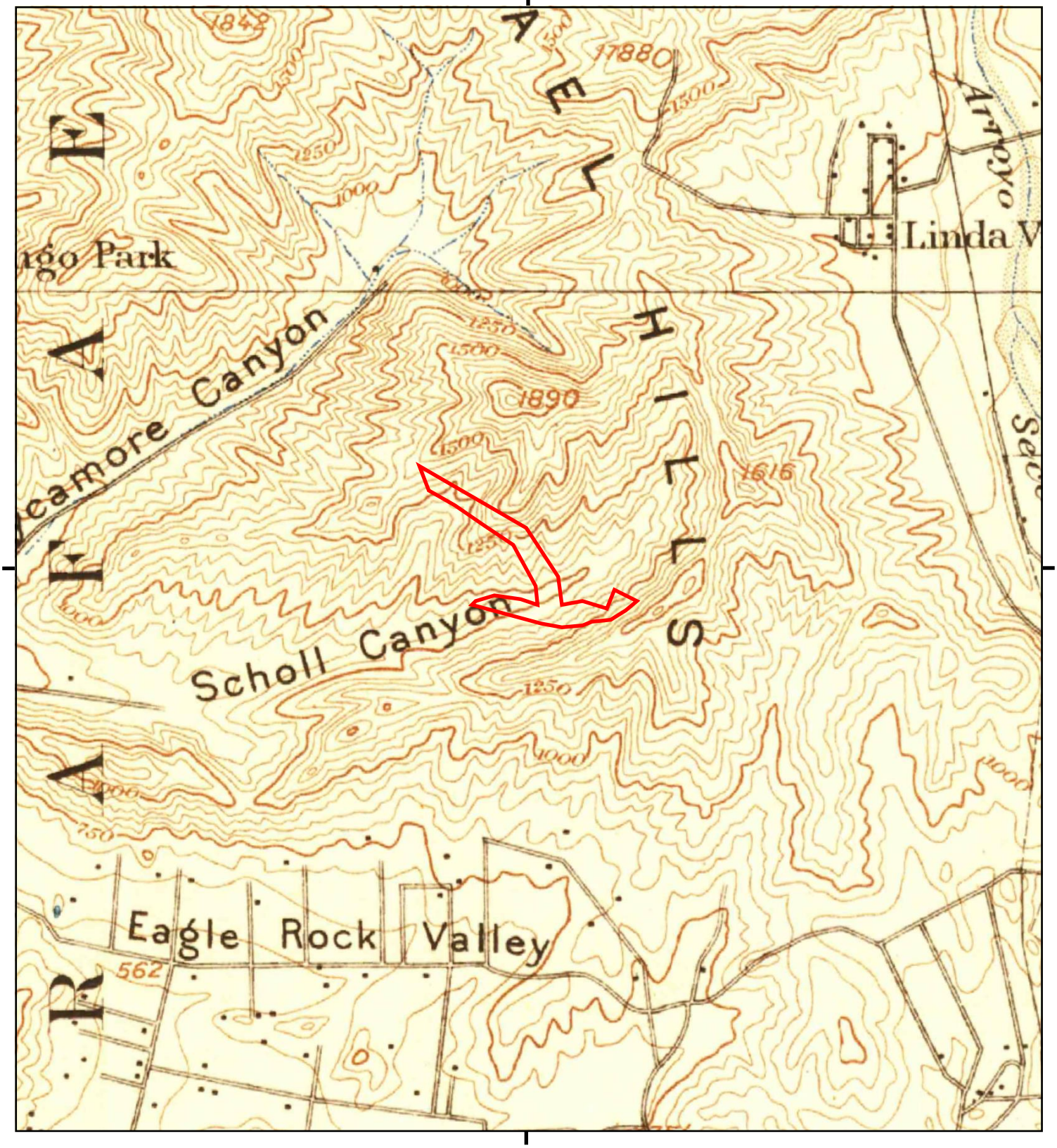
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Pasadena, 1900, 15-minute
TP, Los Angeles, 1900, 15-minute

SITE NAME: Biogas Renewable Generation Project
ADDRESS: 3001 Scholl Canyon Road
Glendale, CA 91206
CLIENT: Stantec

N



This report includes information from the following map sheet(s).

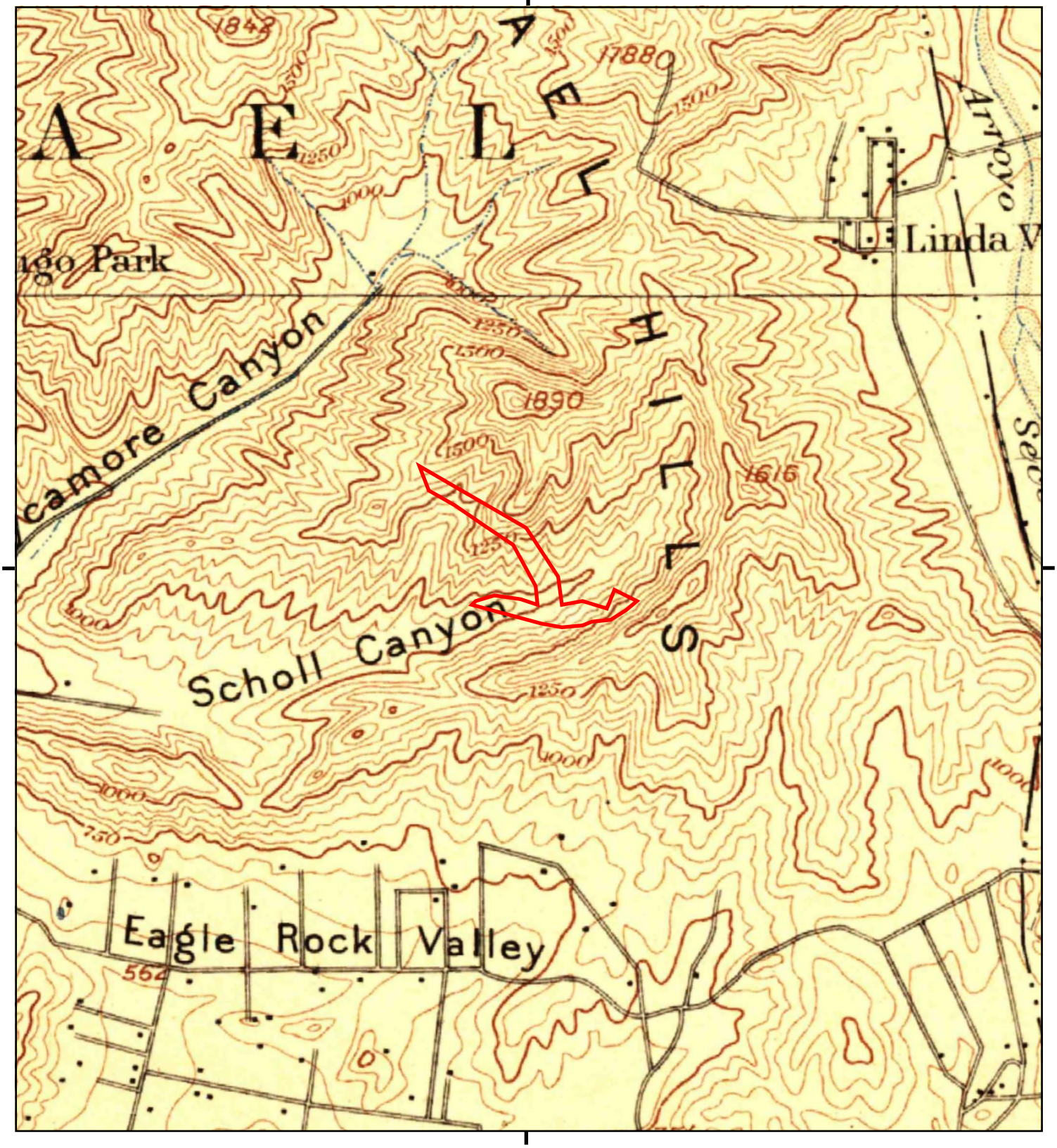
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Pasadena, 1896, 15-minute

SITE NAME: Biogas Renewable Generation Project
ADDRESS: 3001 Scholl Canyon Road
Glendale, CA 91206
CLIENT: Stantec

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Los Angeles, 1894, 15-minute

SITE NAME: Biogas Renewable Generation Project
ADDRESS: 3001 Scholl Canyon Road
Glendale, CA 91206
CLIENT: Stantec

N

Biogas Renewable Generation Project
3001 Scholl Canyon Road
Glendale, CA 91206

Inquiry Number: 5631793.3
April 24, 2019

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

04/24/19

Site Name:

Biogas Renewable Generation
3001 Scholl Canyon Road
Glendale, CA 91206
EDR Inquiry # 5631793.3

Client Name:

Stantec
290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Contact: Anuya Sawant Dickinson

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Certified Sanborn Results:

Certification # A1AB-471C-8C1E

PO # 185804356.300.0002

Project Biogas Phase I

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: A1AB-471C-8C1E

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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Appendix F INTERVIEW FORMS

Appendix H PRE-DEMOLITION ASBESTOS AND LEAD-BASED PAINT SURVEY



Stantec Consulting Services Inc.
290 Conejo Ridge Avenue, Thousand Oaks CA 91361-4971

December 18, 2015

Attention: Ms. Christine A. Godinez
City of Glendale
Principal Assistant City Attorney
613 East Broadway, Suite 220
Glendale, California 91206

Reference: Pre-Demolition Asbestos and Lead-Based Paint Survey
Biogas Renewable Generation Project
7721 N Figueroa Street, Los Angeles, CA 90041
Stantec Project no.: 2057123300

Dear Ms. Godinez:

Stantec Consulting Services Inc. (Stantec) appreciates the opportunity to provide you with the following pre-demolition asbestos-containing materials (ACM) and lead-based paint (LBP) survey report. The survey was performed at the Scholl Canyon Landfill (herein referred to as the "Property") on September 14, 2015. The Property consists of a gas gathering system, blowers, flares, gas coolers, pre-coolers, compressors, after-coolers, gas condensate collection system, air compressors, a tool shed, and an office trailer (excluded from survey). The purpose of this survey was to evaluate the equipment at the Property for the presence of ACMs and LBP that would require special handling and/or disposal in accordance with applicable federal, state, and local regulations. This report provides the survey's findings and recommendations.

BACKGROUND

At the request of the City of Glendale , Stantec performed a pre-demolition ACM and LBP survey in support of demolition that may occur at the Property. The scope of work included sampling and analysis of suspect building materials at the Property. The survey was limited to the existing gas recovery facilities at Scholl Canyon Landfill.

PROJECT PERSONNEL

The survey was performed by Mr. Jason Stagno, Senior Scientist and State of California, Division of Occupational Safety and Health (DOSH) Certified Asbestos Consultant (CAC #12-4949) and State of California, Department of Public Health (CDPH) Lead Related Construction Inspector/Risk Assessor (LRCIA #19068).

SUSPECT ASBESTOS-CONTAINING MATERIALS

Asbestos is a potential health hazard capable of causing respiratory system fibrosis and various forms of systemic cancers. Its condition, handling and disposal are regulated by federal, state, and local agencies. Materials that contain asbestos generally do not pose a health threat unless the asbestos fibers are disturbed by renovation, construction or demolition, and may then become airborne and inhaled. If the Property buildings are not going to be demolished, then written notification to employees, tenants, contractors, or purchasers of the Property in regards to the presence and location of ACMs and asbestos-containing construction materials (ACCMs) is required pursuant to the California Health and Safety Code 25915.

Reference: Pre-Demolition Asbestos and Lead-Based Paint Survey
Biogas Renewable Generation Project
7721 N Figueroa Street, Los Angeles, CA
Stantec Project no.: 2057123300

In California, asbestos exposure in construction is regulated when construction, alteration, repair, maintenance, or renovation of structures, substrates, or portions thereof contain asbestos [§1529 (a)(1)(C)]. For the purpose of this report, materials with any detectable concentration of asbestos are considered positive.

The EPA defines a homogeneous area as a surfacing material, thermal system insulation, or miscellaneous material that is uniform in color and texture. The use or application of the homogeneous area is also used to identify suspect ACMs. The EPA and DOSH define ACM as any material that contains more than one percent (by weight) of asbestos (>1%). Only one sample from a homogeneous area with an asbestos concentration >1% is required to collectively identify that material as an ACM. The EPA additionally categorizes ACM as follows:

- Category I nonfriable ACM - asbestos containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1% asbestos as determined using the PLM method.
- Category II nonfriable ACM - any material, excluding Category I nonfriable ACM, containing more than 1% asbestos as determined using the PLM method that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
- Regulated asbestos-containing material (RACM) - (a) Friable asbestos material, (b) Category I nonfriable ACM that has become friable, (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

In California, potential asbestos exposure in construction is regulated when construction, alteration, repair, maintenance, renovation or demolition of structures, substrates, or portions thereof contain asbestos [8 CCR §1529 (a)(1)(C)]. Additionally, in California, materials containing greater than one-tenth of one percent (>0.1%) asbestos by weight are regulated as ACCMs.

Sampling and Analysis

Stantec conducted a pre-demolition survey of the Property in an effort to identify suspect ACMs in general accordance with the AHERA sampling guidelines as outlined in 40 CFR Part 763. The location, condition, friability, and the potential for suspect ACMs to be potentially disturbed were assessed and documented. Bulk samples of readily accessible suspect ACMs were collected. Consistent with building demolition and renovation regulatory requirements, building material sampling was conducted regardless of the age and/or condition of the structures. A total of 31 samples were collected from 15 homogeneous areas at the Property. The samples were analyzed by Polarized Light Microscopy (PLM) in accordance with the EPA "Method for the Determination of Asbestos in Bulk Building Materials" (EPA/600/R93/116, July 1993). Analysis was performed by EMSL Analytical, Inc. located in Cinnaminson, New Jersey. This laboratory is participating in the Environmental Laboratory Accreditation Program (ELAP), the National Institute of Standards and Testing (NIST), and the National Voluntary Laboratory Accreditation Program (NVLAP). The laboratory is also accredited by the American Industrial Hygiene Association (AIHA). A summary of the laboratory analytical results are included in the table below. Table 1 in the Findings section provides more information regarding the suspect materials collected and analyzed. Laboratory analytical results and

Reference: Pre-Demolition Asbestos and Lead-Based Paint Survey
Biogas Renewable Generation Project
7721 N Figueroa Street, Los Angeles, CA
Stantec Project no.: 2057123300

bulk sample logs are provided in Attachment A; sample location map is provided in Attachment B; certifications are provided in Attachment C; and a photographic log is provided in Appendix D.

Findings

Table 1 below provides a summary of the suspect materials identified and sampled at the Property during this survey. The table includes the DOSH definition and the EPA category, as applicable.

Table 1 – Asbestos Bulk Sample Results

Sample No.	Homogeneous Area	Location of Material	Condition	Asbestos Content	Quantity Estimate	DOSH Definition	EPA Category
01A 01B 01C	Gasket, Black, Approximately 24" Diameter, Associated with Condensate Tanks	Condensate Treatment Area	Good	ND	6 LF	NA	NA
02A	Gasket, Black, Approximately 8" Diameter, Associated with Condensate Tanks	Condensate Treatment Area	Good	ND	2 LF	NA	NA
03A	Sealant, Gray, Associated with Condensate Tower	Condensate Treatment Area	Good	ND	<3 LF	NA	NA
04A	Sealant, Red, Associated with Poly Tank	Condensate Treatment Area	Good	ND	3,000 SF	NA	NA
05A	Tape/Fabric, Orange, Associated with Repaired Pipes at Motor	Condensate Treatment Area	Good	ND	<6 LF	NA	NA
06A 06B 06C	Sealant, Tan, Associated with Treatment Equipment	Condensate Treatment Area	Damaged	ND	20 LF	NA	NA
07A 07B 07C	Insulation, Green/Yellow, Associated with Aluminum Pipe Wrap	Condensate Processing Facility	Good	ND	500 SF	NA	NA
08A 08B 08C	Sealant, Gray, Associated with Aluminum Pipe Wrap	Condensate Processing Facility, Gas Compressors	Good	ND	50 LF	NA	NA

Reference: Pre-Demolition Asbestos and Lead-Based Paint Survey
Biogas Renewable Generation Project
7721 N Figueroa Street, Los Angeles, CA
Stantec Project no.: 2057123300

Table 1 – Asbestos Bulk Sample Results (continued)

Sample No.	Homogeneous Area	Location of Material	Condition	Asbestos Content	Quantity Estimate	DOSH Definition	EPA Category
09A 09B 09C	Insulation, Black	Scrubber Skid	Damaged	ND	50 SF	NA	NA
10A 10B 10C	Wrap/Tape, Black, Associated with Connections and Piping	Scrubber Skid	Damaged	ND	80 LF	NA	NA
11A	Wrap, White/Black, Associated with Gauge Fittings	Scrubber Skid	Good	ND	<3 LF	NA	NA
12A 12B 12C	Wrap, Gray, Associated with Aluminum Pipe Wrap	Gas Compressors	Damaged	ND	50 SF	NA	NA
13A	Sleeve, Beige, Fabric Associated with Valves	Gas Compressors	Good	ND	<3 LF	NA	NA
14A 14B 14C	Asphaltic Roofing, Tan, Shingle	Tool Shed	Good	ND	150 SF	NA	NA
15A	Gasket, Black, Approximately 81" Diameter, Associated with Condensate Processing Equipment	Condensate Processing Facility	Good	ND	3 LF	NA	NA

Notes and Abbreviations:
ND = Non-detect
LF = Linear feet
SF = Square feet
NA = Not applicable

Reference: Pre-Demolition Asbestos and Lead-Based Paint Survey
Biogas Renewable Generation Project
7721 N Figueroa Street, Los Angeles, CA
Stantec Project no.: 2057123300

LEAD-BASED PAINT

The State of California, Title 17, Division 1, and Chapter 8 (herein referred to as "Title 17") pertains to all public and residential buildings in California and is enforced by the CDPH. Pursuant to Title 17 and EPA regulations, lead-based paint is defined as paint or other surface coatings containing an amount of lead equal to or greater than one milligram per square centimeter (1.0 mg/cm^2) or more than half of one percent [>0.5% or 5,000 parts per million(ppm)] by weight. Title 17 also defines a lead hazard as deteriorated lead-based paint, disturbing lead-based paint or presumed lead-based paint without containment, or any other nuisances which may result in persistent or quantifiable lead exposure. Additionally, worker exposure to materials containing lead during construction work is regulated by the Federal OSHA [29 CFR 1926.62(a)] and the DOSH [8 CCR §1532.1(a)]. These regulations require worker protection during construction "…where lead or materials containing lead are present."

Lead is a potential health hazard. Its condition, handling and disposal are regulated by federal, state, and local agencies. Lead in paint generally does not pose a health threat unless the material is disturbed or sufficiently deteriorated to produce dust, which may become airborne and inhaled or ingested. Contractors working in the facility should be informed of the type and the location of lead-containing materials. Applicable Federal and DOSH regulations may apply depending on the work being performed.

Sampling and Analysis

Stantec assessed the condition of painted surfaces at the Property in general accordance with Chapter 5 of the United States, Housing and Urban Development (HUD) guidelines. Paint that is in fair and/or poor condition presents the highest risk for lead exposure. Samples of paint observed to be in fair and/or poor condition, as well as intact paint were collected from building components as a part of this survey. The definitions of paint condition are dependent on the location of the paint and component involved. Table 2 below illustrates how HUD categorizes paint condition under various circumstances.

Table 2 – HUD Categories of Paint Film Quality

	Total Area of Deteriorated Paint		
Type of Building Component	**Intact**	**Fair**	**Poor**
Exterior components with large surface areas.	Entire Surface is Intact	Less than or equal to 10 square feet.	More than 10 square feet
Interior components with large surface areas (walls, ceilings, floors, doors).	Entire Surface is Intact	Less than or equal to 2 square feet.	More than 2 square feet.
Interior and exterior components with small surface areas (window sills, baseboards, soffits, trim)	Entire Surface is Intact	Less than or equal to 10 percent of the total surface area of the component.	More than 10 percent of the total surface area of the component.

Paint chip samples were collected by removing the material using hand tools to extract representative pieces. A hard sided container was used to contain the samples of suspect material. A unique sample number was assigned to each sample.

Five bulk paint-chip samples were collected and analyzed by Flame Atomic Absorption Spectrometry following the EPA SW 846-7000B/7420 analytical protocol. The samples were submitted to EMSL Analytical, Inc. in Cinnaminson, New Jersey. This laboratory is accredited by the American Industrial Hygiene Association

Reference: Pre-Demolition Asbestos and Lead-Based Paint Survey
Biogas Renewable Generation Project
7721 N Figueroa Street, Los Angeles, CA
Stantec Project no.: 2057123300

(AIHA Lab ID 100194) under the Environmental Lead Laboratory Accreditation Program (ELLAP) as well as the CDPH Environmental Lab Accreditation Program (ELAP No. 2492) for bulk paint chip analysis. Please note, worker exposure to materials containing lead during construction related activities is regulated by the Code of Federal Regulations (CFR) Occupational Safety and Health Administration (OSHA) regulation [29 CFR 1926.62(a)] and the California Code of Regulations (CCR) DOSH regulation [8 CCR §1532.1(a)]. The Federal OSHA and the DOSH regulations require worker protection during construction "where lead containing coatings or paint is present".

Laboratory analytical results and bulk sample logs are provided in Attachment A and a sample location map is provided in Attachment B. The CDPH Lead Hazard Evaluation Report form No. 8552 was submitted to the CDPH, as required, and a copy of this form is included in Attachment E.

Findings

Table 3 below provides a summary of the paint identified and sampled at the Property during this survey.

Table 3 – Lead Paint Analytical Results

Sample Number	Sample Location	Paint Color	Substrate Material	Paint Condition	Estimated Quantity	Lead Content
P1	Secondary Containment at Condensate Treatment Area	Yellow	Concrete	Poor	200 SF	<0.026% by weight
P2	Processing Equipment at Condensate Processing Facility	Beige	Metal	Fair	5,000 SF	<0.010% by weight
P3	Small Compressor	Gray	Metal	Poor	25 SF	0.097% by weight
P4	Compressor Control Panel	Light Blue	Metal	Poor	50 SF	<0.011% by weight
P5	Condensate Tank	White	Metal	Fair	100 SF	<0.018% by weight

Notes and Abbreviations:
SF = Square Feet

RECOMMENDATIONS

Asbestos-Containing Materials

Based on the findings of this survey, no asbestos-containing materials were identified. No additional assessment/survey appears warranted at this time. It should be noted however that the asbestos survey was limited to accessible materials only and did not include underground utilities. Historically, certain concealed materials may be present within equipment (e.g. electrical wire wrapping, insulation materials, etc.) that contain asbestos, and some underground utility piping has been known to contain asbestos (e.g., Transite pipe). If demolition of the Property includes removal of on-site portions of underground utilities (storm drains, sewer, domestic water laterals, etc.), evaluation of the asbestos content of these components must be performed prior to the removal process. Suspect materials identified in these locations are assumed positive for asbestos until sampling and analysis indicates otherwise. If during the course of a renovation/demolition project suspect ACMs are discovered that are not included within this report, those materials are to be assumed positive for asbestos unless additional sampling, analysis and/or assessment indicates otherwise.

Reference: Pre-Demolition Asbestos and Lead-Based Paint Survey
Biogas Renewable Generation Project
7721 N Figueroa Street, Los Angeles, CA
Stantec Project no.: 2057123300

Lead-Based Paint

None of the paint sampled meets the definition of LBP. However, the gray paint associated with the small compressor contains concentrations of lead that would require compliance with applicable portions of OSHA 29 CFR 1926.62 (Lead – Safety and Health Regulations for Construction) and DOSH 8 CCR Section 1532.1 (Lead in Construction Standard).

LIMITATIONS

Reasonable efforts have been made by Stantec personnel to locate, sample, and/or identify suspect ACMs and LBPs associated with the Property. Onsite trailers were excluded from this survey. For any facility the existence of unique or concealed materials and debris is a possibility. In addition, sampling and laboratory analysis constraints typically hinder the investigation. Stantec does not warrant, guarantee or profess to have the ability to locate or identify all hazardous materials in a facility. The survey is limited in nature, as only full demolition of the Property will reveal all concealed conditions. Stantec cannot warrant the effectiveness or damage thereof, at any of the patches or temporary repairs performed at sampling locations. This report is intended for use in planning based on the agreed upon scope of work. This report is not intended to be a bidding document. Quantities of materials identified are estimates only and would need to be verified. If during the course of a renovation/demolition project suspect ACMs or LBPs are discovered that are not included within this report, those materials should be treated accordingly until additional sampling, analysis and/or assessment can be performed.

Additionally, the passage of time may result in a change in the environmental characteristics at the Property. This report does not warrant against future operations or conditions that could affect the recommendations made. The results, findings, conclusions and recommendations expressed in this report are based only on conditions that were observed during Stantec's survey of the Property and test results provided by EMSL. These observations are time dependent, are subject to changing site conditions, and revisions to federal, state, and local regulations. Reliance on this letter report by Third Parties (i.e., other than the City of Glendale) shall be at the Third Party's sole risk.

Reference: Pre-Demolition Asbestos and Lead-Based Paint Survey
Biogas Renewable Generation Project
7721 N Figueroa Street, Los Angeles, CA
Stantec Project no.: 2057123300

If you have any questions regarding this report or require further clarification, please do not hesitate to contact the Stantec personnel identified below.

Respectfully submitted,

STANTEC CONSULTING SERVICES INC.

Prepared and Approved by:

Jason Stagno, CAC #12-4949, LRCIA #19068
Senior Scientist
Phone: (805) 719-9392
jason.stagno@stantec.com

Reviewed by:

Michael Weber
Principal Scientist
Phone: (805) 719-9329
michael.weber@stantec.com

Reviewed by:

Steven Brady, C.E.G., C.HG.
Managing Principal Hydrogeologist
Phone: (805) 719-9325
steven.brady@stantec.com

Attachments:
A: Laboratory Analytical Results and Bulk Sample Logs
B: Sample Location Map
C: Personnel Certifications and Laboratory Accreditations
D: Photographic Log
E: CDPH Form 8552

c. Dorine Martirosian, Senior Assistant City Attorney, City of Glendale

December 18, 2015
Ms. Godinez
Reference: Pre-Demolition Asbestos and Lead-Based Paint Survey
Scholl Canyon Landfill Gas Plant
7721 N Figueroa Street, Los Angeles, CA
Stantec Project no.: 2057123300

Attachment A
Laboratory Analytical Results and Bulk Sample Logs

Confidential – Attorney Client Privileged – Attorney Work Product

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http://www.EMSL.com cinnasblab@EMSL.com

EMSL Order:	041527953
CustomerID:	32SCOE63
CustomerPO:	
ProjectID:	

Attn: **Jason Stagno**
Stantec Consulting Services Inc
290 Conejo Ridge Avenue
Thousand Oaks, CA 91361

Phone:	(805) 230-1266
Fax:	
Received:	09/16/15 12:50 PM
Analysis Date:	9/16/2015
Collected:	9/14/2015

Project: **2057123300 / Scholl Canyon Landfill, 7721 North Figueroa St., Los Angeles CA 90041 / Task M800-5S- ENV-5G**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
01A *041527953-0001*	Metal White Condensate Tank- N - Gasket- Black- 24" Diameter a/w Condensate Tank	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
		HA: 01			
01B *041527953-0002*	Metal White Condensate Tank- N - Gasket- Black- 24" Diameter a/w Condensate Tank	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
		HA: 01			
01C *041527953-0003*	Metal White Condensate Tank- S - Gasket- Black- 24" Diameter a/w Condensate Tank	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
		HA: 01			
02A *041527953-0004*	White Metal Condensate Tank- N - Gasket- Black- 8' Diameter a/w Condensate Tanks	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
		HA: 02			

Analyst(s)

Benjamin Verghese (15)
William Bradford (18)

Benjamin Ellis, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367

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			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
03A *041527953-0005*	Condensate Tower - Sealant- Gray- a/w Condensate Tower	Gray Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
		HA: 03					
04A *041527953-0006*	Condensate Treatment - Sealant- Red- a/w Poly Tank in Condensate Treatment	Red Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
		HA: 04					
05A *041527953-0007*	Motor - Tape/ Cloth- Orange- a/w Repaired Pipes @ Motors	Orange Fibrous Homogeneous	80%	Glass	20%	Non-fibrous (other)	**None Detected**
		HA: 05					
06A *041527953-0008*	Treatment Equipment - Sealant- Tan- a/w Treatment Equipment	Tan Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
		HA: 06					
06B *041527953-0009*	Treatment Equipment - Sealant- Tan- a/w Treatment Equipment	Tan Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
		HA: 06					

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Benjamin Ellis, Laboratory Manager
or other approved signatory

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
06C *041527953-0010*	Treatment Equipment - Sealant- Tan- a/w Treatment Equipment	Tan Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
			HA: 06				
07A *041527953-0011*	Condensate Processing - Insulation- Green/Yellow- a/w Aluminum Pipe Wrap	Yellow/Green Non-Fibrous Homogeneous	95%	Min. Wool	5%	Non-fibrous (other)	**None Detected**
			HA: 07				
07B *041527953-0012*	Condensate Processing - Insulation- Green/Yellow- a/w Aluminum Pipe Wrap	Yellow/Green Non-Fibrous Homogeneous	95%	Min. Wool	5%	Non-fibrous (other)	**None Detected**
			HA: 07				
07C *041527953-0013*	Condensate Processing - Insulation- Green/Yellow- a/w Aluminum Pipe Wrap	Yellow/Green Non-Fibrous Homogeneous	80%	Min. Wool	20%	Non-fibrous (other)	**None Detected**
			HA: 07				

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
08A *041527953-0014*	Condensate Processing - Sealant- Gray- a/w Aluminum Pipe Wrap	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
		HA: 08			
08B *041527953-0015*	Condensate Processing - Sealant- Gray- a/w Aluminum Pipe Wrap	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
		HA: 08			
08C *041527953-0016*	Condensate Processing - Sealant- Gray- a/w Aluminum Pipe Wrap	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
		HA: 08			
09A *041527953-0017*	Scrubber Skid - Insulation- Black- a/w Scrubber Skid	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
		HA: 09			
09B *041527953-0018*	Scrubber Skid - Insulation- Black- a/w Scrubber Skid	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
		HA: 09			
09C *041527953-0019*	Scrubber Skid - Insulation- Black- a/w Scrubber Skid	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
		HA: 09			

Analyst(s)

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
10A *041527953-0020*	Scrubber Skid - Wrap/Tape- Black- a/w Electrical Connections & Piping	Black Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
		HA: 10					
10B *041527953-0021*	Scrubber Skid - Wrap/Tape- Black- a/w Electrical Connections & Piping	Black Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
		HA: 10					
10C *041527953-0022*	Scrubber Skid - Wrap/Tape- Black- a/w Electrical Connections & Piping	Black Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
		HA: 10					
11A *041527953-0023*	Scrubber Skid-West - Wrap- White/Black- a/w Gage Fittings	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
		HA: 11					
12A *041527953-0024*	Compressor- N - Wrap- Gray- a/w Aluminum Pipe Wrap	Gray Fibrous Homogeneous	99%	Glass	1%	Non-fibrous (other)	**None Detected**
		HA: 12					

Analyst(s)

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William Bradford (18)

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			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
12B *041527953-0025*	Compressor- N - Wrap- Gray- a/w Aluminum Pipe Wrap	Gray Fibrous Homogeneous	99%	Glass	1%	Non-fibrous (other)	**None Detected**
			HA: 12				
12C *041527953-0026*	Compressor- N - Wrap- Gray- a/w Aluminum Pipe Wrap	Gray Fibrous Homogeneous	99%	Glass	1%	Non-fibrous (other)	**None Detected**
			HA: 12				
13A *041527953-0027*	South Compressor - Sleeve- Beige- Fabric a/w Valves	Beige Fibrous Homogeneous	30%	Synthetic	70%	Non-fibrous (other)	**None Detected**
			HA: 13				
14A-Shingle *041527953-0028*	Roof- South - Roofing- Tan- Asphalt Shingle	Black Fibrous Homogeneous	10%	Glass	90%	Non-fibrous (other)	**None Detected**
			HA: 14				
14A-Tar Paper *041527953-0028A*	Roof- South - Roofing- Tan- Asphalt Shingle	Black Fibrous Homogeneous	40%	Cellulose	60%	Non-fibrous (other)	**None Detected**
			HA: 14				
14B-Shingle *041527953-0029*	Roof- North - Roofing- Tan- Asphalt Shingle	Black Fibrous Homogeneous	10%	Glass	90%	Non-fibrous (other)	**None Detected**
			HA: 14				

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			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
14B-Tar Paper *041527953-0029A*	Roof- North - Roofing- Tan- Asphalt Shingle	Black Fibrous Homogeneous	40%	Cellulose	60%	Non-fibrous (other)	**None Detected**
			HA: 14				
14C-Shingle *041527953-0030*	Roof- East - Roofing- Tan- Asphalt Shingle	Tan/Black Fibrous Homogeneous	10%	Glass	90%	Non-fibrous (other)	**None Detected**
			HA: 14				
15A *041527953-0031*	Condensate Equipment - Gasket- Black- 48' Diameter a/w Condensate Equipment	Black Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
			HA: 15				

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Benjamin Ellis, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367

Initial report from 09/17/2015 08:01:27

EMSL Analytical, Inc.
200 Route 130 North

Cinnaminson, NJ 08077
PHONE: 1-800-220-3675
FAX: (856) 786-5974

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: 041527953

Company : Stantec Consulting Services Inc	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 290 Conejo Ridge Avenue	
City: Thousand Oaks **State/Province:** CA	**Zip/Postal Code:** 91361 **Country:** United States
Report To (Name): Jason Stagno	**Telephone #:** Cell# 805-630-8648
Email Address: jason.stagno@stantec.com	**Fax #:** **Purchase Order:**
Project Name/Number: 2057123300	**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail
U.S. State Samples Taken: CA	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ■ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PLM - Bulk (reporting limit)	TEM – Bulk
■ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
☐ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☐ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 9/14/15

Samplers Name: J. Stagno **Samplers Signature:**

Sample #	HA #	Sample Location	Material Description
		See attached logs	

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CINNAMINSON, NJ

Client Sample # (s): 01A - 15A **Total # of Samples:** 31

Relinquished (Client): **Date:** 9/14/15 **Time:** 1610

Received (Lab): BB Email **Date:** 9-16-15 **Time:** 1850P

Comments/Special Instructions:

32

Page 1 of 1 pages

041527953

Stantec

Asbestos Bulk Sample Log

290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Tel: (805) 230-1266
Fax: (805) 230-1277

OrderID: 041527953

Project Name: Scholl Canyon Landfill Power Project
Project #: 2057123300 Task #: M800-5S Env-5G
:

Site Name: Scholl Canyon Landfill
Site Address: 7721 North Figueroa Street
Los Angeles, CA 90041

Date: 9/14/15
Inspector: J. Stagno
S. Edblad

MATERIAL

HA#	01
Material Type:	Gasket
Color:	Black
Description:	~ 24" Diameter, Associated with Condensate tanks
Estimated Total Qty.:	6 LF

HAZARD ASSESSMENT

Friable:	Yes		(No)
Contact by Maintenance:	Low	Med	(High)
Vibration:	Low	Med	(High)
Air Movement:	Low	Med	(High)

MATERIAL LOCATIONS

Floor #	Location	Quantity Estimate	Cond.
Ext	Condensate Treatment	6 LF	G

SAMPLES

Sample #	Sample Location
01A	Metal Wh.te Condensate Tank-N
01B	-N
01C	-S
D	
E	
F	
G	

Notes:

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CLERK/AUDITOR'S OFFICE

Relinquished By: _____ Date: 9/14/15

Received By: _____ Date: _____

041527953

Stantec

Asbestos Bulk Sample Log

290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Tel: (805) 230-1266
Fax: (805) 230-1277

OrderID: 041527953

Project Name: Scholl Canyon Landfill Power Project M800-5S
Project #: 2057123300 Task #: Env-5G
:

Site Name: Scholl Canyon Landfill
Site Address: 7721 North Figueroa Street
Los Angeles, CA 90041

Date: 9/14/15
Inspector: J. Stagno
S. Edblad

MATERIAL

HA#	02
Material Type:	Gasket
Color:	Black
Description:	~8" Diameter, Associated with Condensate tanks
Estimated Total Qty.:	2 LF

HAZARD ASSESSMENT

Friable:	Yes		(No)
Contact by Maintenance:	Low	Med	(High)
Vibration:	Low	Med	(High)
Air Movement:	Low	Med	(High)

MATERIAL LOCATIONS

Floor #	Location	Quantity Estimate	Cond.
Ext	Condensate Treatment	2 LF	G

SAMPLES

Sample #	Sample Location
02 A	White Metal Condensate Tank N
B	
C	
D	
E	
F	
G	

2015 SEP 16 P 2:52

Notes:

Relinquished By: _____ Date: 9/14/15 Received By: _____ Date: _____

041527953

Stantec

Asbestos Bulk Sample Log

290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Tel: (805) 230-1266
Fax: (805) 230-1277

OrderID: 041527953

Project Name: Scholl Canyon Landfill Power Project
Project #: 2057123300 Task #: M800-5S Env-5G
:

Site Name: Scholl Canyon Landfill
Site Address: 7721 North Figueroa Street
Los Angeles, CA 90041

Date: 9/14/15
Inspector: J. Stagno
S. Edblad

MATERIAL

HA#	03
Material Type:	Sealant
Color:	Gray
Description:	Associated with Condensate Tower
Estimated Total Qty.:	< 3 LF

MATERIAL LOCATIONS

Floor #	Location	Quantity Estimate	Cond.
Ext	Condensate Tower	< 3 LF	G

SAMPLES

Sample #	Sample Location
03 A	Condensate tower
B	
C	
D	
E	
F	
G	

2015 SEP 16 P 12:52
SOUTH COAST AQMD
CHINATOWN, CA

Notes:

HAZARD ASSESSMENT

Friable:	Yes		(No)
Contact by Maintenance:	Low	Med	(High)
Vibration:	Low	Med	(High)
Air Movement:	Low	Med	(High)

Relinquished By: _____ Date: 9/14/15 Received By: _____ Date: _____

041527953

Stantec

Asbestos Bulk Sample Log

290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Tel: (805) 230-1266
Fax: (805) 230-1277

OrderID: 041527953

Project Name: Scholl Canyon Landfill Power Project
Project #: 2057123300 Task #: M800-5S Env-5G
:

Site Name: Scholl Canyon Landfill
Site Address: 7721 North Figueroa Street
Los Angeles, CA 90041

Date: 9/14/15
Inspector: J. Stagno
S. Edblad

MATERIAL

HA#	04
Material Type:	Sealant
Color:	Red
Description:	Associated with Poly tank in Condensate treatment
Estimated Total Qty.:	∠ 2 LF

HAZARD ASSESSMENT

Friable:	Yes		(No)
Contact by Maintenance:	Low	Med	(High)
Vibration:	Low	Med	(High)
Air Movement:	Low	Med	(High)

MATERIAL LOCATIONS

Floor #	Location	Quantity Estimate	Cond.
Ext	Condensate treatment	∠2LF	G

SAMPLES

Sample #	Sample Location
04 A	Condensate Treatment
B	
C	
D	
E	
F	
G	

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CINNAMINSON, N.J.
2015 SEP 16 P 12:52

Notes:

Relinquished By: _____ Date: 9/14/15

Received By: _____ Date: _____

041527953

Stantec

Asbestos Bulk Sample Log

290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Tel: (805) 230-1266
Fax: (805) 230-1277

OrderID: 041527953

Project Name: Scholl Canyon Landfill Power Project
Site Name: Scholl Canyon Landfill
Date: 9/14/15
Project #: 2057123300
Task #: M800-5S Env-5G
Site Address: 7721 North Figueroa Street
Los Angeles, CA 90041
Inspector: J. Stagno
S. Edblad

MATERIAL

HA#	OS
Material Type:	Tape/cloth
Color:	Orange
Description:	Associated with Repaired Pipes at Motors
Estimated Total Qty.:	∠6 SF

HAZARD ASSESSMENT

Friable:	Yes		(No)
Contact by Maintenance:	Low	Med	(High)
Vibration:	Low	Med	(High)
Air Movement:	Low	Med	(High)

MATERIAL LOCATIONS

Floor #	Location	Quantity Estimate	Cond.
Ext	Condensate Treatment	∠6 SF	G

SAMPLES

Sample #	Sample Location
OS A	Motor
B	
C	
D	
E	
F	
G	

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Notes:

Relinquished By: _____ Date: 9/14/15

Received By: _____ Date: _____

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Asbestos Bulk Sample Log

290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Tel: (805) 230-1266
Fax: (805) 230-1277

OrderID: 041527953

Project Name: Scholl Canyon Landfill Power Project M800-5S
Project #: 2057123300 Task #: Env-5G
:

Site Name: Scholl Canyon Landfill
Site Address: 7721 North Figueroa Street
Los Angeles, CA 90041

Date: 9/14/15
Inspector: J. Stagno
S. Edblad

MATERIAL

HA#	06
Material Type:	Sealant
Color:	Tan
Description:	Associated with Treatment Equipment
Estimated Total Qty.:	20 LF

MATERIAL LOCATIONS

Floor #	Location	Quantity Estimate	Cond.
Ext	Condensate Treatment	20 LF	D

SAMPLES

Sample #	Sample Location
06 A	Treatment Equipment
06 B	↓
06 C	
D	
E	
F	
G	

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CLERK'S OFFICE

Notes:

HAZARD ASSESSMENT

Friable:	Yes		(No)
Contact by Maintenance:	Low	Med	(High)
Vibration:	Low	Med	(High)
Air Movement:	Low	Med	(High)

Relinquished By: _____ Date: 9/14/15 Received By: _____ Date: _____

041527953

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Asbestos Bulk Sample Log

290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Tel: (805) 230-1266
Fax: (805) 230-1277

OrderID: 041527953

Project Name: Scholl Canyon Landfill Power Project M800-5S
Project #: 2057123300 Task #: Env-5G
:

Site Name: Scholl Canyon Landfill
Site Address: 7721 North Figueroa Street
Los Angeles, CA 90041

Date: 9/14/15
Inspector: J. Stagno
S. Edblad

MATERIAL

HA#	07
Material Type:	Insulation
Color:	Green/Yellow
Description:	Associated with aluminum pipe wrap
Estimated Total Qty.:	500 SF

HAZARD ASSESSMENT

Friable:	Yes		(No)
Contact by Maintenance:	(Low)	Med	High
Vibration:	Low	Med	(High)
Air Movement:	Low	(Med)	High

MATERIAL LOCATIONS

Floor #	Location	Quantity Estimate	Cond.
Ext	Aluminum Pipe	500 SF	G

SAMPLES

Sample #	Sample Location
07 A	Condensate Processing
07 B	
07 C	
D	
E	
F	
G	

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Asbestos Bulk Sample Log

290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Tel: (805) 230-1266
Fax: (805) 230-1277

OrderID: 041527953

Project Name: Scholl Canyon Landfill Power Project
Site Name: Scholl Canyon Landfill
Date: 9/14/15
Project #: 2057123300 M800-5S
Task #: Env-5G
Site Address: 7721 North Figueroa Street
Los Angeles, CA 90041
Inspector: J. Stagno
S. Edblad

MATERIAL

HA#	08
Material Type:	Sealant
Color:	Gray
Description:	Associated With Alumina Pipe Wrap
Estimated Total Qty.:	50 LF

MATERIAL LOCATIONS

Floor #	Location	Quantity Estimate	Cond.
Ext	Condensate Processing	25 LF	G
Ext	Gas Compressors	25 LF	G

SAMPLES

Sample #	Sample Location
08A	Condensate Processing
08 B	↓
08 C	
D	
E	
F	
G	

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HAZARD ASSESSMENT

Friable:	Yes		(No)
Contact by Maintenance:	Low	Med	(High)
Vibration:	Low	Med	(High)
Air Movement:	Low	Med	(High)

Notes:

Relinquished By: _____ Date: 9/14/15 Received By: _____ Date: _____

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Asbestos Bulk Sample Log

290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Tel: (805) 230-1266
Fax: (805) 230-1277

OrderID: 041527953

Project Name: Scholl Canyon Landfill Power Project
Project #: 2057123300 Task #: M800-5S Env-5G
:

Site Name: Scholl Canyon Landfill
Site Address: 7721 North Figueroa Street
Los Angeles, CA 90041

Date: 9/14/15
Inspector: J. Stagno
S. Edblad

MATERIAL

HA#	9
Material Type:	Insulation
Color:	Black
Description:	Associated with Scrubber Skid
Estimated Total Qty.:	50SF

HAZARD ASSESSMENT

Friable:	Yes		(No)
Contact by Maintenance:	Low	Med	(High)
Vibration:	Low	Med	(High)
Air Movement:	Low	Med	(High)

MATERIAL LOCATIONS

Floor #	Location	Quantity Estimate	Cond.
Ext	Scrubber Skid	50 SF	(D)

SAMPLES

Sample #	Sample Location
09 A	Scrubber Skid
09 B	↓
09 C	
D	
E	
F	
G	

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Notes:

Relinquished By: _____ Date: 9/14/15 Received By: _____ Date: _____

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Asbestos Bulk Sample Log

290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Tel: (805) 230-1266
Fax: (805) 230-1277

OrderID: 041527953

Project Name: Scholl Canyon Landfill Power Project
Site Name: Scholl Canyon Landfill
Date: 9/14/15
Project #: 2057123300
Task #: M800-5S Env-5G
Site Address: 7721 North Figueroa Street
Los Angeles, CA 90041
Inspector: J. Stagno
S. Edblad

MATERIAL

HA#	10
Material Type:	Wrap/Tape
Color:	Black
Description:	Associated with Electrical connections and Piping
Estimated Total Qty.:	80 LF

HAZARD ASSESSMENT

Friable:	Yes		(No)
Contact by Maintenance:	Low	Med	(High)
Vibration:	Low	Med	(High)
Air Movement:	Low	Med	(High)

MATERIAL LOCATIONS

Floor #	Location	Quantity Estimate	Cond.
Ext	Scrubber Skid	80 LF	D

SAMPLES

Sample #	Sample Location
10 A	Scrubber Skid
10 B	↓
10 C	↓
D	
E	
F	
G	

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Notes:

Relinquished By: _____ Date: 9/14/15
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Asbestos Bulk Sample Log

290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Tel: (805) 230-1266
Fax: (805) 230-1277

OrderID: 041527953

Project Name: Scholl Canyon Landfill Power Project M800-5S
Project #: 2057123300 Task #: Env-5G
:

Site Name: Scholl Canyon Landfill
Site Address: 7721 North Figueroa Street
Los Angeles, CA 90041

Date: 9/14/15
Inspector: J. Stagno
S. Edblad

MATERIAL

HA#	11
Material Type:	Wrap
Color:	White / Black
Description:	Associated with Gage Fitting
Estimated Total Qty.:	< 3 LF

HAZARD ASSESSMENT

Friable:	Yes		(No)
Contact by Maintenance:	Low	Med	(High)
Vibration:	Low	Med	(High)
Air Movement:	Low	Med	(High)

MATERIAL LOCATIONS

Floor #	Location	Quantity Estimate	Cond.
Ext	Scrubber skid	< 3 LF	G

SAMPLES

Sample #	Sample Location
11 A	Scrubber skid - West
B	
C	
D	
E	
F	
G	

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Notes:

Relinquished By: _____ Date: 9/14/15 Received By: _____ Date: _____

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Asbestos Bulk Sample Log

290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Tel: (805) 230-1266
Fax: (805) 230-1277

OrderID: 041527953

Project Name: Scholl Canyon Landfill Power Project
Project #: 2057123300 Task #: M800-5S Env-5G
:

Site Name: Scholl Canyon Landfill
Site Address: 7721 North Figueroa Street
Los Angeles, CA 90041

Date: 9/14/15
Inspector: J. Stagno
S. Edblad

MATERIAL

HA#	12
Material Type:	Wrap
Color:	Gray
Description:	Associated with Aluminum Pipe Wrap
Estimated Total Qty.:	50 SF

HAZARD ASSESSMENT

Friable:	Yes		(No)
Contact by Maintenance:	Low	Med	(High)
Vibration:	Low	Med	(High)
Air Movement:	Low	Med	(High)

MATERIAL LOCATIONS

Floor #	Location	Quantity Estimate	Cond.
Ext	Gas compressors	50SF	D

SAMPLES

Sample #	Sample Location
12 A	Compressor-N
12 B	
12 C	
D	
E	
F	
G	

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EMSL ANALYTICAL, INC.

Notes:

Relinquished By: _____ Date: 9/14/15 Received By: _____ Date: _____

041527953

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Asbestos Bulk Sample Log

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Project Name: Scholl Canyon Landfill Power Project M800-5S
Site Name: Scholl Canyon Landfill
Date: 9/14/15
Project #: 2057123300
Task #: Env-5G
Site Address: 7721 North Figueroa Street
Los Angeles, CA 90041
Inspector: J. Stagno
S. Edblad

MATERIAL

HA#	13
Material Type:	Sleeve
Color:	Beige
Description:	~~Cloth~~ Fabric, Associated with Valves
Estimated Total Qty.:	< 3SF

HAZARD ASSESSMENT

Friable:	Yes		(No)
Contact by Maintenance:	Low	Med	(High)
Vibration:	Low	Med	(High)
Air Movement:	Low	Med	(High)

MATERIAL LOCATIONS

Floor #	Location	Quantity Estimate	Cond.
Ext	Gas Compressors	< 3SF	G

SAMPLES

Sample #	Sample Location
13 A	South Compressors
B	
C	
D	
E	
F	
G	

2015 SEP 16 P 12:52

Notes:

Relinquished By: _____ Date: 9/14/15 Received By: _____ Date: _____

0415527953

Stantec

Asbestos Bulk Sample Log

290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Tel: (805) 230-1266
Fax: (805) 230-1277

OrderID: 0415527953

Project Name: Scholl Canyon Landfill Power Project
Site Name: Scholl Canyon Landfill
Date: 9/14/15

Project #: 2057123300 Task #: M800-5S Env-5G
Site Address: 7721 North Figueroa Street
Los Angeles, CA 90041
Inspector: J. Stagno
S. Edblad

:

MATERIAL

HA#	14
Material Type:	Roofing
Color:	Tan
Description:	Asphalt Shingle
Estimated Total Qty.:	150 SF

MATERIAL LOCATIONS

Floor #	Location	Quantity Estimate	Cond.
Roof	Tool Shed	150 SF	G

SAMPLES

Sample #	Sample Location
14 A	Roof - South
14 B	Roof - North
14 C	Roof - East
D	
E	
F	
G	

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CINNAMINSON, NJ

Notes:

HAZARD ASSESSMENT

Friable:	Yes		(No)
Contact by Maintenance:	Low	Med	(High)
Vibration:	(Low)	Med	High
Air Movement:	Low	Med	(High)

Relinquished By: _____ Date: 9/14/15 Received By: _____ Date: _____

041527953

Stantec

Asbestos Bulk Sample Log

290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Tel: (805) 230-1266
Fax: (805) 230-1277

OrderID: 041527953

Project Name: Scholl Canyon Landfill Power Project M800-5S
Project #: 2057123300 Task #: Env-5G
:

Site Name: Scholl Canyon Landfill
Site Address: 7721 North Figueroa Street
Los Angeles, CA 90041

Date: 9/14/15
Inspector: J. Stagno
S. Edblad

MATERIAL

HA#	15
Material Type:	Gasket
Color:	Black
Description:	~18" Diameter Associated with Condersate Equipment
Estimated Total Qty.:	@36 ^{3} LF

HAZARD ASSESSMENT

Friable:	Yes		(No)
Contact by Maintenance:	Low	Med	(High)
Vibration:	Low	(Med)	High
Air Movement:	Low	Med	(High)

MATERIAL LOCATIONS

Floor #	Location	Quantity Estimate	Cond.
Ext	Condersate Processing	@36 ^{3} LF	G

SAMPLES

Sample #	Sample Location
15 A	Condersate Equipment
B	
C	
D	
E	
F	
G	

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CINNAMINSON, NJ
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Notes:

Relinquished By: _____ Date: 9/14/15 Received By: _____ Date: _____

Page 15 of 15

Page 16 of 16

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 786-5974
http://www.EMSL.com cinnaminsonleadlab@emsl.com

EMSL Order:	201510948
CustomerID:	32SCOE63
CustomerPO:	
ProjectID:	

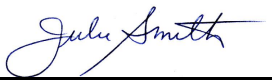
Attn: **Jason Stagno**
Stantec Consulting Services Inc
290 Conejo Ridge Avenue
Thousand Oaks, CA 91361

Phone:	(805) 230-1266
Fax:	
Received:	09/16/15 12:50 PM
Collected:	9/14/2015

Project: **2057123300, Task # M800-5S Env-5G / Scholl Canyon Landfill Power Project**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client Sample Description	*Lab ID*	*Collected*	*Analyzed*	*Lead Concentration*
P1	*201510948-0001*	9/14/2015	9/17/2015	<0.026 % wt
	Site: Condensate Treatment Area Secondary Containment			
P2	*201510948-0002*	9/14/2015	9/17/2015	<0.010 % wt
	Site: Condensate Processing Area Equipment			
P4	*201510948-0004*	9/14/2015	9/17/2015	<0.011 % wt
	Site: Compressor Area			
P5	*201510948-0005*	9/14/2015	9/17/2015	<0.018 % wt
	Site: Condensate Treatment Area Tank			



Julie Smith - Laboratory Director
NJ-NELAP Accredited:03036
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, AIHA-LAP, LLC ELLAP 100194, A2LA 2845.01

Initial report from 09/19/2015 08:11:16

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 786-5974
http://www.EMSL.com cinnaminsonleadlab@emsl.com

EMSL Order:	201512364
CustomerID:	32SCOE63
CustomerPO:	
ProjectID:	

Attn: **Jason Stagno**
Stantec Consulting Services Inc
290 Conejo Ridge Avenue
Thousand Oaks, CA 91361

Phone:	(805) 230-1266
Fax:	
Received:	10/23/15 9:50 AM
Collected:	

Project: **2057123300**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client Sample Description	*Lab ID*	*Collected*	*Analyzed*	*Lead Concentration*
P3	*201512364-0001*		10/26/2015	0.097 % wt
	Site: Small Compressor Desc: Metal / Poor / Gray			

Julie Smith - Laboratory Director
NJ-NELAP Accredited:03036
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, AIHA-LAP, LLC ELLAP 100194, A2LA 2845.01

Initial report from 10/27/2015 09:27:43

OrderID: 201512364
OrderID: 201510948

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Lead (Pb) Chain of Custody

EMSL Order ID *(Lab Use Only):* 201512364

~~201510948~~ C.O 10/23/15

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE: 1-800-220-3675
FAX: (856) 786-5974

Company: Stantec Consulting Services Inc		**EMSL-Bill to:** ☐ Different ☑ Same If Bill to is Different note instructions in Comments**	
Street: 290 Conejo Ridge Avenue		*Third Party Billing requires written authorization from third party*	
City: Thousand Oaks	**State/Province:** CA	**Zip/Postal Code:** 91361	**Country:** United States
Report To (Name): Jason Stagno		**Telephone #:** Cell# 805-630-8648	
Email Address: jason.stagno@stantec.com		**Fax #:**	**Purchase Order:**
Project Name/Number: 2057123300		**Please Provide Results:** ☐ FAX ☑ E-mail ☐ Mail	
U.S. State Samples Taken: CA		**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt	

Turnaround Time (TAT) Options* - Please Check

☐ 3 Hour | ☐ 6 Hour | ☐ 24 Hour | ☐ 48 Hour | ■ 72 Hour | ☐ 96 Hour | ☐ 1 Week | ☐ 2 Week

**Analysis completed in accordance with EMSL's Terms and Conditions located in the Price Guide*

Matrix	Method	Instrument	Reporting Limit	Check
Chips ■ % by wt. ☐ mg/cm² ☐ ppm	SW846-7000B	Flame Atomic Absorption	0.01%	☐
Air	NIOSH 7082	Flame Atomic Absorption	4 µg/filter	☐
	NIOSH 7105	Graphite Furnace AA	0.03 µg/filter	☐
	NIOSH 7300 modified	ICP-AES/ICP-MS	0.5 µg/filter	☐
Wipe* ASTM ☐ non ASTM ☐ *If no box is checked, non-ASTM Wipe is assumed	SW846-7000B	Flame Atomic Absorption	10 µg/wipe	☐
	SW846-6010B or C	ICP-AES	1.0 µg/wipe	☐
	SW846-7000B/7010	Graphite Furnace AA	0.075 µg/wipe	☐
TCLP	SW846-1311/7000B/SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	☐
	SW846-1131/SW846-6010B or C	ICP-AES	0.1 mg/L (ppm)	☐
Soil	SW846-7000B	Flame Atomic Absorption	40 mg/kg (ppm)	☐
	SW846-7010	Graphite Furnace AA	0.3 mg/kg (ppm)	☐
	SW846-6010B or C	ICP-AES	2 mg/kg (ppm)	☐
Wastewater Unpreserved ☐ Preserved with HNO_3 pH < 2 ☐	SM3111B/SW846-7000B	Flame Atomic Absorption	0.4 mg/L (ppm)	☐
	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	☐
	EPA 200.7	ICP-AES	0.020 mg/L (ppm)	☐
Drinking Water Unpreserved ☐ Preserved with HNO_3 pH < 2 ☐	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	☐
	EPA 200.8	ICP-MS	0.001 mg/L (ppm)	☐
TSP/SPM Filter	40 CFR Part 50	ICP-AES	12 µg/filter	☐
	40 CFR Part 50	Graphite Furnace AA	3.6 µg/filter	☐
Other:				☐

Name of Sampler: J. Stagno **Signature of Sampler:**

Sample #	Location	Volume/Area	Date/Time Sampled
	See attached log		

Client Sample #'s P1 - P5 **Total # of Samples:** 5

Relinquished (Client): BBeatty FEnsl **Date:** 9/14/15 **Time:** 1610

Received (Lab): **Date:** 9-16-15 **Time:** 1250p

Comments:

Rock Ridge 10/23/15 950 Am FF

Page 1 of 1 pages

201512364

Stantec

Paint Chip Sample Log

~~201510948~~ C.O 10/23/15

290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Tel: (805) 230-1266
Fax: (805) 230-1277

OrderID: 201510948

Project Name: ~~Scholl Canyon Landfill Power Project~~ M800-5S

Site Name: Scholl Canyon Landfill

Date: 9/14/15

Project #: 2057123300

Task #: Env-5G

Site Address: 7721 North Figueroa Street
Los Angeles, CA 90041

Inspector: J. Stagno
S. Edblad

	Sample Number	Room	Component	Substrate	Sample Location*	Quantity Estimate	Notes/Condition/ Paint Color
1.	P1	Ext	Secondary Containment	Concrete	Condensate Treatment Area Secondary Containment	200 SF	Poor / Yellow
2.	P2	Ext	Processing Equip.	Metal	Condensate Processing Area Equipment	5,000 SF	Fair / Beige
3.*	P3	Ext	Compressor	Metal	Small Compressor	25 SF	Poor / Gray
4.	P4	Ext	Compressor Control Panel	Metal	Compressor Area	50 SF	Poor / Light Blue
5.	P5	Ext	Condensate Tank	Metal	Condensate Treatment Area Tank	100 SF	Fair / White

* - Include sample dimensions if trying to achieve mg/cm².

Relinquished By: _____ Date: 9/14/15

Relinquished By: _____ Date: _____

Received By: Lmy Date: 9/16/15 1250

Received By: _____ Date: _____

P3 is insufficient (0.03g) cannot analyze sample ~~to~~ requires 0.05g - emailed client 9/18/15, C.O.

*received additional sample for P3 10/23/15, C.O.

Page 1 of 1

Page 3 Of 3

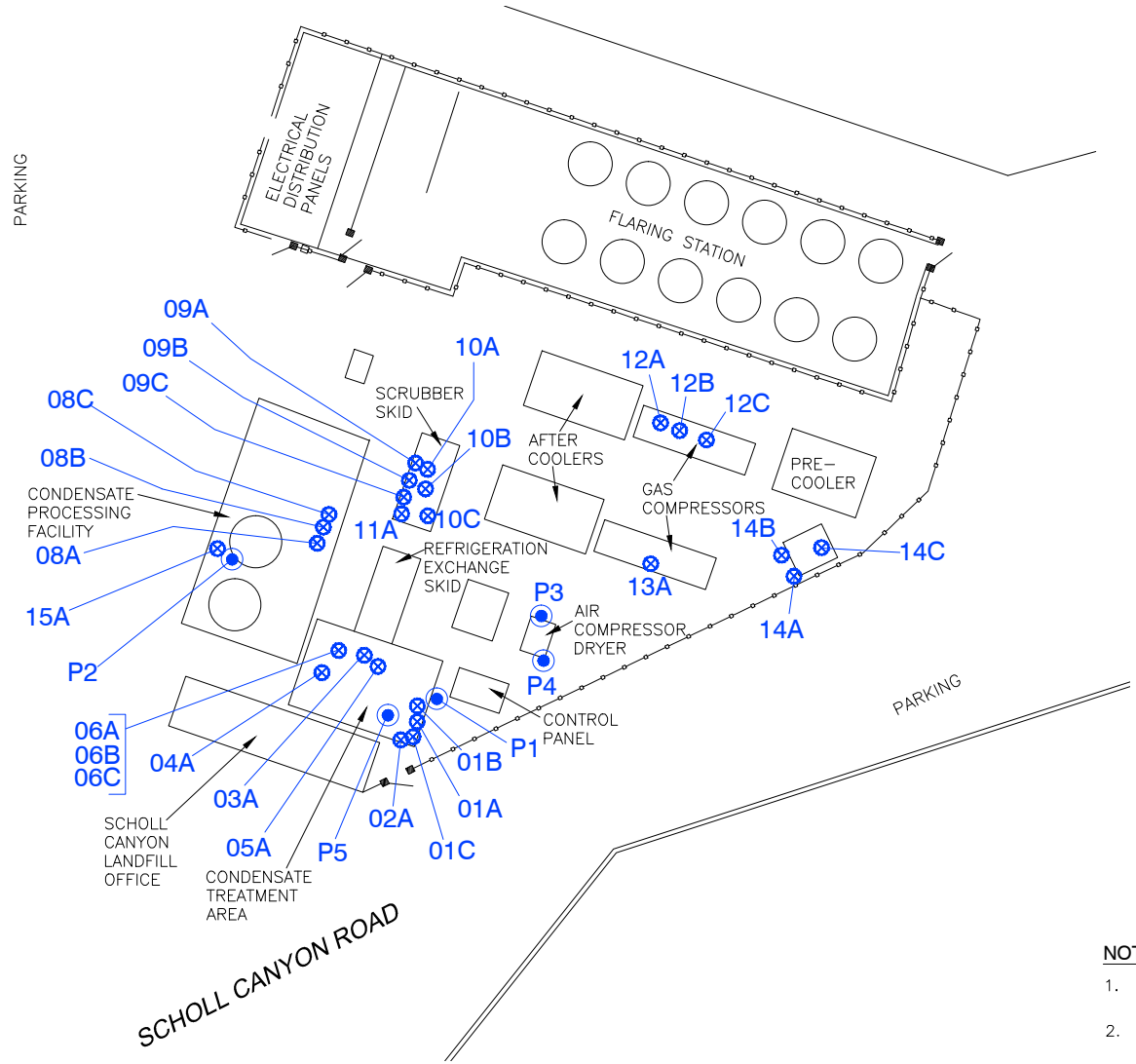
Page 2 Of 2

OrderID: 201512364

December 18, 2015
Ms. Godinez
Reference: Pre-Demolition Asbestos and Lead-Based Paint Survey
Scholl Canyon Landfill Gas Plant
7721 N Figueroa Street, Los Angeles, CA
Stantec Project no.: 2057123300

Attachment B
Sample Location Map

Confidential – Attorney Client Privileged – Attorney Work Product



N

Legend

01A ⊗ NON ASBESTOS-CONTAINING SAMPLE LOCATION

P1 ◉ PAINT CHIP SAMPLE LOCATION

Note

SAMPLES COLLECTED ON SEPTEMBER 14, 2015.

0 40 80

APPROXIMATE SCALE IN FEET

NOTES:

1. MAP REFERENCE; GOOGLE EARTH PROFESSIONAL AERIAL IMAGE, 2015.
2. COORDINATE SYSTEM; NAD 83 CALIFORNIA STATE PLANES, ZONE V (FT.).

ORIGINAL SHEET - ANSI A

November, 2015
2057123300

Stantec

9179 Aero Drive
San Diego, CA 92123
www.stantec.com

Confidential - Attorney Client Privileged - Attorney Work Product

Client/Project
Scholl Canyon Landfill Power Project
7721 N Figueroa Street
Los Angeles, CA 90041

Figure No.
1

Title
SAMPLE LOCATION MAP

December 18, 2015
Ms. Godinez
Reference: Pre-Demolition Asbestos and Lead-Based Paint Survey
Scholl Canyon Landfill Gas Plant
7721 N Figueroa Street, Los Angeles, CA
Stantec Project no.: 2057123300

Attachment C
Personnel Certifications and Laboratory Accreditations

Confidential – Attorney Client Privileged – Attorney Work Product

STATE OF CALIFORNIA Edmund G. Brown, Jr. *Governor*

DEPARTMENT OF INDUSTRIAL RELATIONS
Division of Occupational Safety and Health
Asbestos Unit
2424 Arden Way, Suite 495
Sacramento, CA 95825-2417
(916) 574-2993 Office (916) 483-0572 Fax
http://www.dir.ca.gov/dirdatabases.html actu@dir.ca.gov

209214949C **368**

November 09, 2015

Jason J Stagno

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification.

Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as an asbestos consultant or site surveillance technician.

Please contact our office at the above address, fax number or email; of any changes in your contact/mailing information within 15 days of the change.

Sincerely,

Jeff Ferrell
Senior Safety Engineer

Attachment: Certification Card

cc: File



Renewal – Card Attached (Revised 10/24/2012)

State of California Department of Public Health

Lead-Related Construction Certificate



Certificate Type: Inspector/Assessor

Expiration Date: 07/31/2016

Jason J. Stagno

ID #: 19068

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 101048-0

EMSL Analytical, Inc.

Cinnaminson, NJ

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2015-06-02 through 2016-06-30

Effective Dates

For the National Voluntary Laboratory Accreditation Program

National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Mr. Ben Ellis
Phone: 800-220-3675 Fax: 856-786-5973
Email: bellis@emsl.com
http://www.emsl.com

ASBESTOS FIBER ANALYSIS — NVLAP LAB CODE 101048-0

Bulk Asbestos Analysis

Code	*Description*
18/A01	EPA 600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code	*Description*
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

For the National Voluntary Laboratory Accreditation Program

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

Laboratory ID: 100194

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories* in the following:

LABORATORY ACCREDITATION PROGRAMS

✓	**INDUSTRIAL HYGIENE**	Accreditation Expires: 09/01/2016
✓	**ENVIRONMENTAL LEAD**	Accreditation Expires: 09/01/2016
✓	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: 09/01/2016
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPES**	Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached **Scope of Accreditation**. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2005 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached **Scope of Accreditation**. Please review the AIHA-LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

Gerald R Schultz

Gerald Schultz, CIH
Chairperson, Analytical Accreditation Board

Cheryl O. Morton

Cheryl O. Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision 14: 03/26/2014

Date Issued: 10/31/2014

AIHA Laboratory Accreditation Programs, LLC
SCOPE OF ACCREDITATION

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077

Laboratory ID: **100194**
Issue Date: 10/31/2014

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

The EPA recognizes the AIHA-LAP, LLC ELLAP program as meeting the requirements of the National Lead Laboratory Accreditation Program (NLLAP) established under Title X of the Residential Lead-Based Paint Hazard Reduction Act of 1992 and includes paint, soil and dust wipe analysis. Air analysis is not included as part of the NLLAP.

Environmental Lead Laboratory Accreditation Program (ELLAP)

Initial Accreditation Date: 01/18/1995

Field of Testing (FoT)	Method	Method Description *(for internal methods only)*
Paint	EPA SW-846 3050B	
	EPA SW-846 7000B	
Soil	EPA SW-846 3050B	
	EPA SW-846 7000B	
Settled Dust by Wipe	EPA SW-846 3050B	
	EPA SW-846 7000B	
Airborne Dust	NIOSH 7082	

A complete listing of currently accredited Environmental Lead laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

CALIFORNIA
Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

Interim

CALIFORNIA STATE

ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM

CERTIFICATE OF ENVIRONMENTAL ACCREDITATION

Is hereby granted to

EMSL Analytical Inc.

200 Route 130 North

Cinnaminson, NJ 08077

Scope of the certificate is limited to the
"Fields of Testing"
which accompany this Certificate.

Continued accredited status depends on successful completion of on-site inspection, proficiency testing studies, and payment of applicable fees.

This Certificate is granted in accordance with provisions of Section 100825, et seq. of the Health and Safety Code.

Certificate No.: **1877**

Expiration Date: **3/31/2016**

Effective Date: **4/1/2015**

Sacramento, California
subject to forfeiture or revocation

Christine Sotelo, Chief
Environmental Laboratory Accreditation Program

CALIFORNIA
Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

CALIFORNIA STATE
ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM
Accredited Fields of Testing

EMSL Analytical Inc.

200 Route 130 North
Cinnaminson, NJ 08077
Phone: (800) 220-3675

Certificate No.: 1877
Renew Date: 3/31/2016
INTERIM

Field of Testing: 102 - Inorganic Chemistry of Drinking Water

102.030	001	Bromide	EPA 300.0
102.030	003	Chloride	EPA 300.0
102.030	005	Fluoride	EPA 300.0
102.030	006	Nitrate	EPA 300.0
102.030	007	Nitrite	EPA 300.0
102.030	008	Phosphate, Ortho	EPA 300.0
102.030	010	Sulfate	EPA 300.0
102.100	001	Alkalinity	SM2320B
102.130	001	Conductivity	SM2510B
102.140	001	Total Dissolved Solids	SM2540C
102.163	001	Chlorine, Free and Total	SM4500-Cl G
102.190	001	Cyanide, Total	SM4500-CN E
102.192	001	Cyanide, amenable	SM4500-CN G
102.270	001	Surfactants	SM5540C
102.520	001	Calcium	EPA 200.7
102.520	002	Magnesium	EPA 200.7
102.520	003	Potassium	EPA 200.7
102.520	004	Silica	EPA 200.7
102.520	005	Sodium	EPA 200.7
102.520	006	Hardness (calculation)	EPA 200.7

Field of Testing: 103 - Toxic Chemical Elements of Drinking Water

103.030	001	Mercury	SM3112B
103.060	001	Aluminum	SM3120B
103.060	003	Barium	SM3120B
103.060	007	Chromium	SM3120B
103.060	009	Iron	SM3120B
103.060	011	Manganese	SM3120B
103.060	015	Silver	SM3120B
103.060	017	Zinc	SM3120B
103.130	007	Chromium	EPA 200.7
103.130	008	Copper	EPA 200.7
103.130	009	Iron	EPA 200.7
103.130	011	Manganese	EPA 200.7
103.130	015	Silver	EPA 200.7
103.130	017	Zinc	EPA 200.7
103.140	001	Aluminum	EPA 200.8
103.140	002	Antimony	EPA 200.8
103.140	003	Arsenic	EPA 200.8

As of 6/26/2015 , this list supersedes all previous lists for this certificate number.
Customers: Please verify the current accreditation standing with the State.

103.140	004	Barium	EPA 200.8
103.140	005	Beryllium	EPA 200.8
103.140	006	Cadmium	EPA 200.8
103.140	007	Chromium	EPA 200.8
103.140	008	Copper	EPA 200.8
103.140	009	Lead	EPA 200.8
103.140	010	Manganese	EPA 200.8
103.140	012	Nickel	EPA 200.8
103.140	013	Selenium	EPA 200.8
103.140	014	Silver	EPA 200.8
103.140	015	Thallium	EPA 200.8
103.140	016	Zinc	EPA 200.8
103.150	009	Lead	EPA 200.9
103.160	001	Mercury	EPA 245.1
103.300	001	Asbestos	EPA 100.1
103.301	001	Asbestos	EPA 100.2

Field of Testing: 104 - Volatile Organic Chemistry of Drinking Water

104.040	000	Volatile Organic Compounds	EPA 524.2
104.040	001	Benzene	EPA 524.2
104.040	007	n-Butylbenzene	EPA 524.2
104.040	008	sec-Butylbenzene	EPA 524.2
104.040	009	tert-Butylbenzene	EPA 524.2
104.040	010	Carbon Tetrachloride	EPA 524.2
104.040	011	Chlorobenzene	EPA 524.2
104.040	015	2-Chlorotoluene	EPA 524.2
104.040	016	4-Chlorotoluene	EPA 524.2
104.040	019	1,3-Dichlorobenzene	EPA 524.2
104.040	020	1,2-Dichlorobenzene	EPA 524.2
104.040	021	1,4-Dichlorobenzene	EPA 524.2
104.040	022	Dichlorodifluoromethane	EPA 524.2
104.040	023	1,1-Dichloroethane	EPA 524.2
104.040	024	1,2-Dichloroethane	EPA 524.2
104.040	025	1,1-Dichloroethene	EPA 524.2
104.040	026	cis-1,2-Dichloroethene	EPA 524.2
104.040	027	trans-1,2-Dichloroethene	EPA 524.2
104.040	028	Dichloromethane	EPA 524.2
104.040	029	1,2-Dichloropropane	EPA 524.2
104.040	033	cis-1,3-Dichloropropene	EPA 524.2
104.040	034	trans-1,3-Dichloropropene	EPA 524.2
104.040	035	Ethylbenzene	EPA 524.2
104.040	037	Isopropylbenzene	EPA 524.2
104.040	039	Naphthalene	EPA 524.2
104.040	041	N-propylbenzene	EPA 524.2
104.040	042	Styrene	EPA 524.2
104.040	044	1,1,2,2-Tetrachloroethane	EPA 524.2
104.040	045	Tetrachloroethene	EPA 524.2
104.040	046	Toluene	EPA 524.2

104.040	048	1,2,4-Trichlorobenzene	EPA 524.2
104.040	049	1,1,1-Trichloroethane	EPA 524.2
104.040	050	1,1,2-Trichloroethane	EPA 524.2
104.040	051	Trichloroethene	EPA 524.2
104.040	052	Trichlorofluoromethane	EPA 524.2
104.040	054	1,2,4-Trimethylbenzene	EPA 524.2
104.040	055	1,3,5-Trimethylbenzene	EPA 524.2
104.040	056	Vinyl Chloride	EPA 524.2
104.040	057	Xylenes, Total	EPA 524.2
104.045	001	Bromodichloromethane	EPA 524.2
104.045	002	Bromoform	EPA 524.2
104.045	003	Chloroform	EPA 524.2
104.045	004	Dibromochloromethane	EPA 524.2
104.045	005	Trihalomethanes	EPA 524.2
104.050	002	Methyl tert-butyl Ether (MTBE)	EPA 524.2
104.050	007	tert-Butyl Alcohol (TBA)	EPA 524.2
104.050	008	Carbon Disulfide	EPA 524.2
104.050	009	Methyl Isobutyl Ketone	EPA 524.2

Field of Testing: 109 - Toxic Chemical Elements of Wastewater

109.010	001	Aluminum	EPA 200.7
109.010	002	Antimony	EPA 200.7
109.010	003	Arsenic	EPA 200.7
109.010	004	Barium	EPA 200.7
109.010	005	Beryllium	EPA 200.7
109.010	007	Cadmium	EPA 200.7
109.010	009	Chromium	EPA 200.7
109.010	010	Cobalt	EPA 200.7
109.010	011	Copper	EPA 200.7
109.010	012	Iron	EPA 200.7
109.010	013	Lead	EPA 200.7
109.010	015	Manganese	EPA 200.7
109.010	016	Molybdenum	EPA 200.7
109.010	017	Nickel	EPA 200.7
109.010	019	Selenium	EPA 200.7
109.010	021	Silver	EPA 200.7
109.010	023	Thallium	EPA 200.7
109.010	024	Tin	EPA 200.7
109.010	026	Vanadium	EPA 200.7
109.010	027	Zinc	EPA 200.7
109.020	001	Aluminum	EPA 200.8
109.020	002	Antimony	EPA 200.8
109.020	003	Arsenic	EPA 200.8
109.020	004	Barium	EPA 200.8
109.020	005	Beryllium	EPA 200.8
109.020	006	Cadmium	EPA 200.8
109.020	007	Chromium	EPA 200.8
109.020	008	Cobalt	EPA 200.8

109.020	009	Copper	EPA 200.8
109.020	010	Lead	EPA 200.8
109.020	011	Manganese	EPA 200.8
109.020	012	Molybdenum	EPA 200.8
109.020	013	Nickel	EPA 200.8
109.020	014	Selenium	EPA 200.8
109.020	015	Silver	EPA 200.8
109.020	016	Thallium	EPA 200.8
109.020	017	Vanadium	EPA 200.8
109.020	018	Zinc	EPA 200.8
109.020	021	Iron	EPA 200.8
109.020	022	Tin	EPA 200.8
109.020	023	Titanium	EPA 200.8
109.025	010	Lead	EPA 200.9
109.190	001	Mercury	EPA 245.1
109.370	007	Gold	SM3111B
109.370	010	Lead	SM3111B
109.370	014	Palladium	SM3111B
109.370	015	Platinum	SM3111B
109.400	001	Mercury	SM3112B
109.430	001	Aluminum	SM3120B
109.430	002	Antimony	SM3120B
109.430	005	Beryllium	SM3120B
109.430	007	Cadmium	SM3120B
109.430	009	Chromium	SM3120B
109.430	010	Cobalt	SM3120B
109.430	011	Copper	SM3120B
109.430	012	Iron	SM3120B
109.430	013	Lead	SM3120B
109.430	015	Manganese	SM3120B
109.430	016	Molybdenum	SM3120B
109.430	017	Nickel	SM3120B
109.430	019	Selenium	SM3120B
109.430	021	Silver	SM3120B
109.430	024	Vanadium	SM3120B
109.430	025	Zinc	SM3120B
109.811	001	Chromium (VI)	SM3500-Cr D (18th/19th)

Field of Testing: 114 - Inorganic Chemistry of Hazardous Waste

114.010	001	Antimony	EPA 6010B
114.010	002	Arsenic	EPA 6010B
114.010	003	Barium	EPA 6010B
114.010	004	Beryllium	EPA 6010B
114.010	005	Cadmium	EPA 6010B
114.010	006	Chromium	EPA 6010B
114.010	007	Cobalt	EPA 6010B
114.010	008	Copper	EPA 6010B
114.010	009	Lead	EPA 6010B

As of 6/26/2015 , this list supersedes all previous lists for this certificate number.
Customers: Please verify the current accreditation standing with the State.

114.010	010	Molybdenum	EPA 6010B
114.010	011	Nickel	EPA 6010B
114.010	012	Selenium	EPA 6010B
114.010	013	Silver	EPA 6010B
114.010	014	Thallium	EPA 6010B
114.010	015	Vanadium	EPA 6010B
114.010	016	Zinc	EPA 6010B
114.020	001	Antimony	EPA 6020
114.020	002	Arsenic	EPA 6020
114.020	003	Barium	EPA 6020
114.020	004	Beryllium	EPA 6020
114.020	005	Cadmium	EPA 6020
114.020	006	Chromium	EPA 6020
114.020	007	Cobalt	EPA 6020
114.020	008	Copper	EPA 6020
114.020	009	Lead	EPA 6020
114.020	010	Molybdenum	EPA 6020
114.020	011	Nickel	EPA 6020
114.020	012	Selenium	EPA 6020
114.020	013	Silver	EPA 6020
114.020	014	Thallium	EPA 6020
114.020	015	Vanadium	EPA 6020
114.020	016	Zinc	EPA 6020
114.103	001	Chromium (VI)	EPA 7196A
114.130	001	Lead	EPA 7420
114.131	001	Lead	EPA 7421
114.140	001	Mercury	EPA 7470A
114.141	001	Mercury	EPA 7471A
Field of Testing: 115 - Extraction Test of Hazardous Waste			
115.020	001	Toxicity Characteristic Leaching Procedure (TCLP)	EPA 1311
115.030	001	Waste Extraction Test (WET)	CCR Chapter11, Article 5, Appendix II
Field of Testing: 116 - Volatile Organic Chemistry of Hazardous Waste			
116.010	000	EDB and DBCP	EPA 8011
116.020	030	Nonhalogenated Volatiles	EPA 8015B
116.020	031	Ethanol and Methanol	EPA 8015B
116.030	001	Gasoline-range Organics	EPA 8015B
116.080	000	Volatile Organic Compounds	EPA 8260B
116.080	120	Oxygenates	EPA 8260B
Field of Testing: 117 - Semi-volatile Organic Chemistry of Hazardous Waste			
117.010	001	Diesel-range Total Petroleum Hydrocarbons	EPA 8015B
117.110	000	Extractable Organics	EPA 8270C
117.210	000	Pesticides & PCBs	EPA 8081A
117.220	000	PCBs	EPA 8082
117.250	000	Chlorinated Herbicides	EPA 8151A
Field of Testing: 121 - Bulk Asbestos Analysis of Hazardous Waste			
121.010	001	Bulk Asbestos	EPA 600/M4-82-020

As of 6/26/2015 , this list supersedes all previous lists for this certificate number.
Customers: Please verify the current accreditation standing with the State.

December 18, 2015
Ms. Godinez
Reference: Pre-Demolition Asbestos and Lead-Based Paint Survey
Scholl Canyon Landfill Gas Plant
7721 N Figueroa Street, Los Angeles, CA
Stantec Project no.: 2057123300

Attachment D
Photographic Log

Confidential – Attorney Client Privileged – Attorney Work Product

December 18, 2015
Ms. Godinez

Reference: Pre-Demolition Asbestos and Lead-Based Paint Survey
Scholl Canyon Landfill Gas Plant
7721 N Figueroa Street, Los Angeles, CA
Stantec Project no.: 2057123300

PHOTO No. 1, September 14, 2015

View of tanks at condensate treatment area.
PHOTO No. 2, September 14, 2015

View of refrigeration exchange skid.

December 18, 2015
Ms. Godinez

Reference: Pre-Demolition Asbestos and Lead-Based Paint Survey
Scholl Canyon Landfill Gas Plant
7721 N Figueroa Street, Los Angeles, CA
Stantec Project no.: 2057123300

PHOTO No. 3, September 14, 2015

View of scrubber skid.
PHOTO No. 4, September 14, 2015

View of north gas compressor.

December 18, 2015
Ms. Godinez

Reference: Pre-Demolition Asbestos and Lead-Based Paint Survey
Scholl Canyon Landfill Gas Plant
7721 N Figueroa Street, Los Angeles, CA
Stantec Project no.: 2057123300

PHOTO No. 5, September 14, 2015

View of air compressors.
PHOTO No. 6, September 14, 2015

View of air compressor panel.

December 18, 2015
Ms. Godinez
Reference: Pre-Demolition Asbestos and Lead-Based Paint Survey
Scholl Canyon Landfill Gas Plant
7721 N Figueroa Street, Los Angeles, CA
Stantec Project no.: 2057123300

Attachment E
CDPH Form 8552

Confidential – Attorney Client Privileged – Attorney Work Product

State of California—Health and Human Services Agency

California Department of Public Health

LEAD HAZARD EVALUATION REPORT

Section 1 — Date of Lead Hazard Evaluation September 14, 2015

Section 2 — Type of Lead Hazard Evaluation (Check one box only)

☐ Lead Inspection ☐ Risk assessment ☐ Clearance Inspection ☑ Other (specify) Paint Chip Samples

Section 3 — Structure Where Lead Hazard Evaluation Was Conducted

Address [number, street, apartment (if applicable)]	City	County	Zip Code
7721 N Figueroa Street	Los Angeles	Los Angeles	90014

Construction date (year) of structure	Type of structure	Children living in structure?
Unknown	☐ Multi-unit building ☐ School or daycare ☐ Single family dwelling ☑ Other Landfill Gas Processing & Treatm	☐ Yes ☑ No ☐ Don't Know

Section 4 — Owner of Structure (if business/agency, list contact person)

Name	Telephone number
City of Glendale Water & Power	(818) 548-3300

Address [number, street, apartment (if applicable)]	City	State	Zip Code
141 N Glendale Avenue	Glendale	California	91206

Section 5 — Results of Lead Hazard Evaluation (check all that apply)

☑ No lead-based paint detected ☐ Intact lead-based paint detected ☐ Deteriorated lead-based paint detected

☐ No lead hazards detected ☐ Lead-contaminated dust found ☐ Lead-contaminated soil found ☐ Other

Section 6 — Individual Conducting Lead Hazard Evaluation

Name	Telephone number
Jason Stagno	(805) 719-9392

Address [number, street, apartment (if applicable)]	City	State	Zip Code
290 Conejo Ridge Avenue	Thousand Oaks	California	91361

CDPH certification number	Signature	Date
19068		12/14/15

Name and CDPH certification number of any other individuals conducting sampling or testing (if applicable)

Section 7 — Attachments

A. A foundation diagram or sketch of the structure indicating the specifc locations of each lead hazard or presence of lead-based paint;
B. Each testing method, device, and sampling procedure used;
C. All data collected, including quality control data, laboratory results, including laboratory name, address, and phone number.

First copy and attachments retained by inspector

Second copy and attachments retained by owner

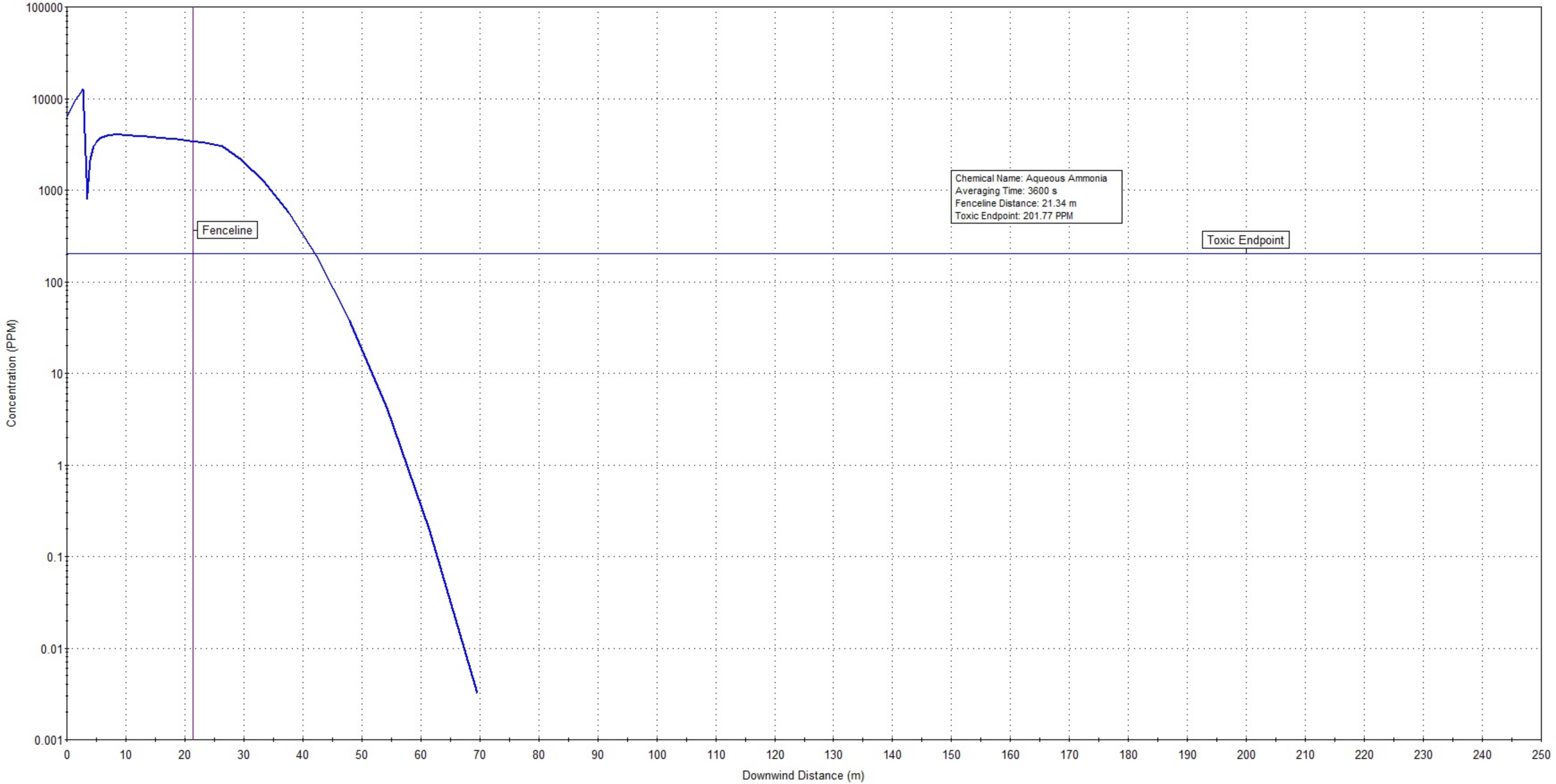
Third copy only (no attachments) mailed or faxed to:

California Department of Public Health
Childhood Lead Poisoning Prevention Branch Reports
850 Marina Bay Parkway, Building P, Third Floor
Richmond, CA 94804-6403
Fax: (510) 620-5656

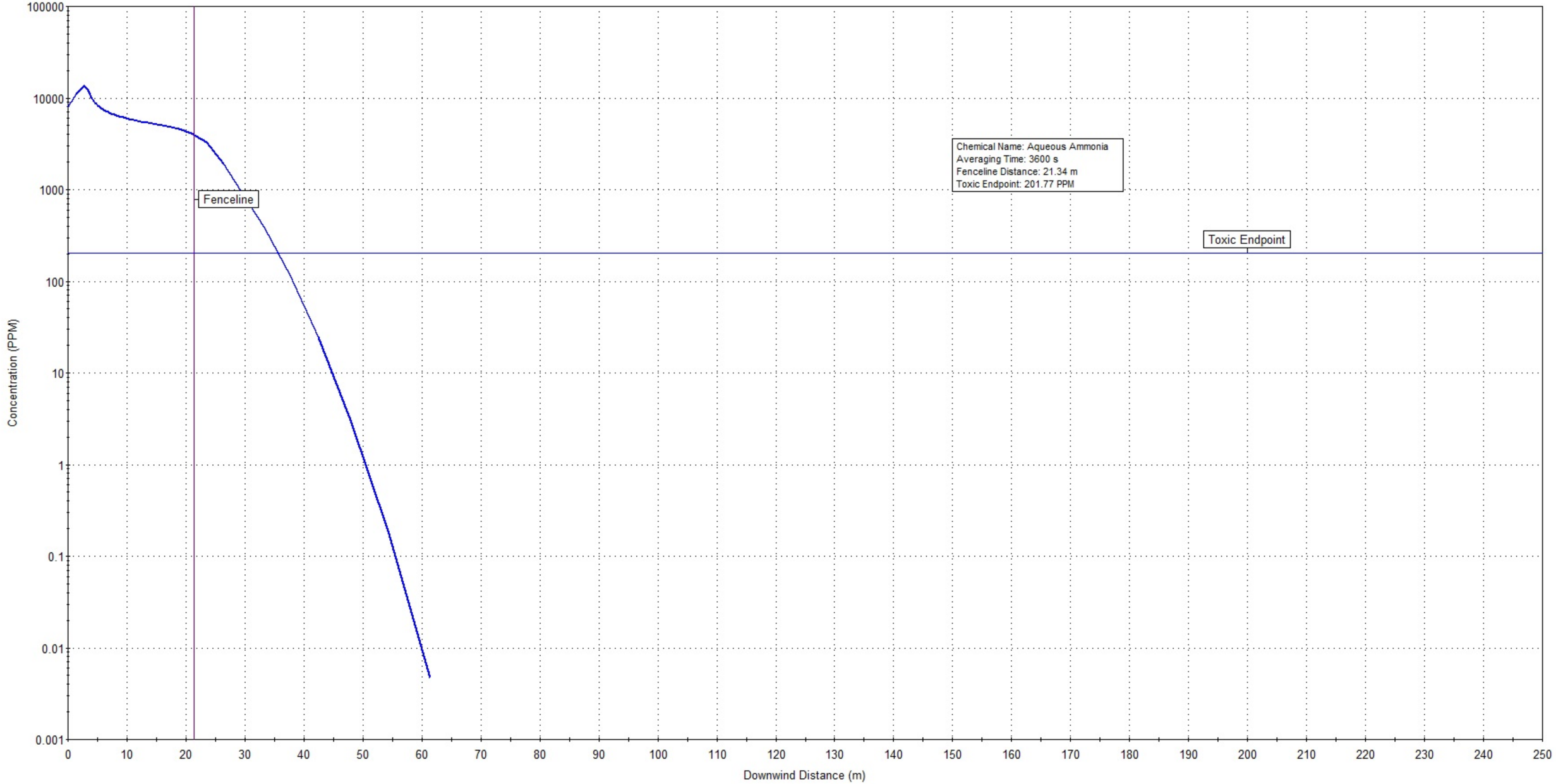
Appendix I OFF-SITE CONSEQUENCE ANALYSIS FOR AQUEOUS AMMONIA



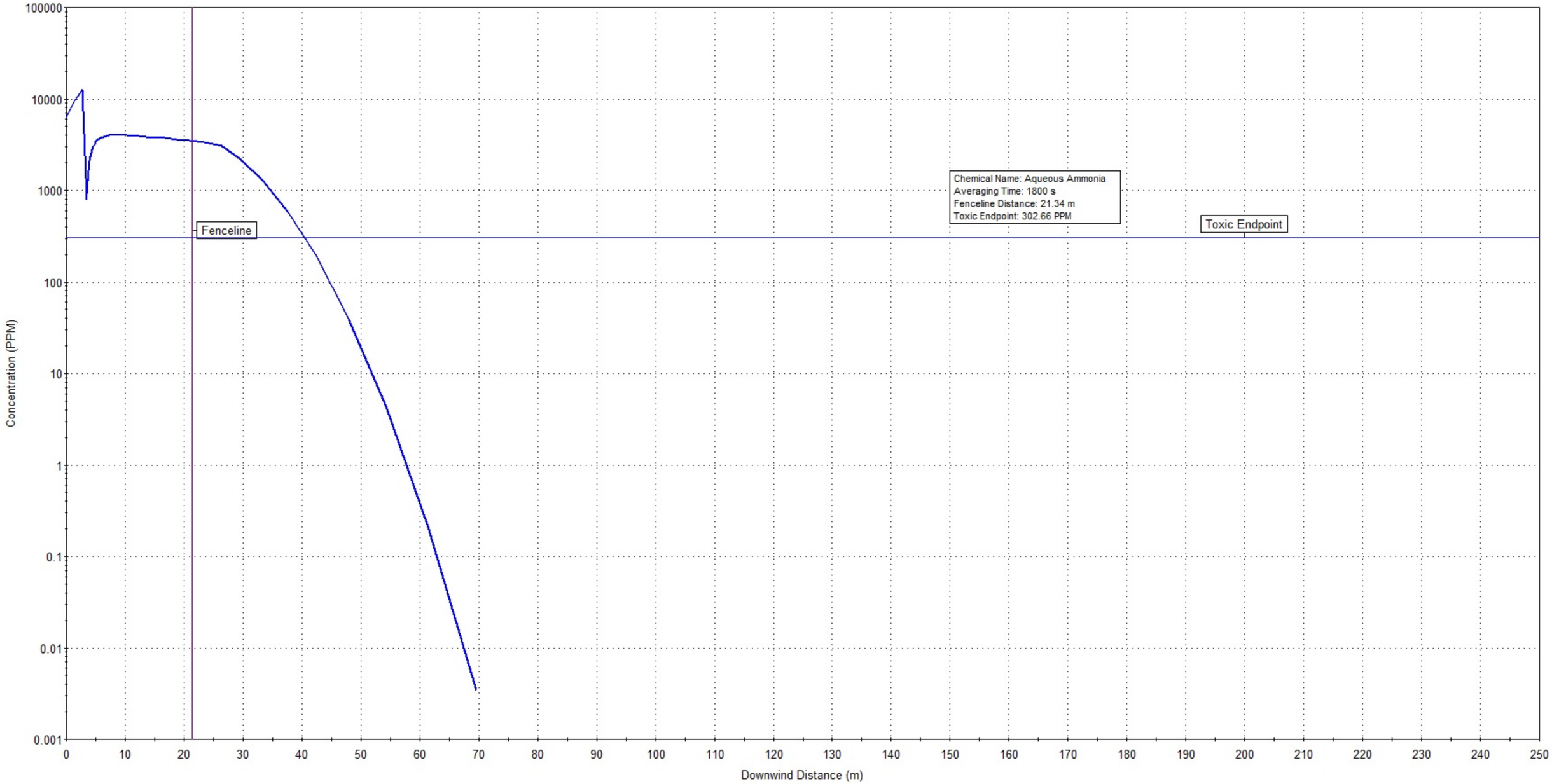
1.6 Meter Centerline Plot



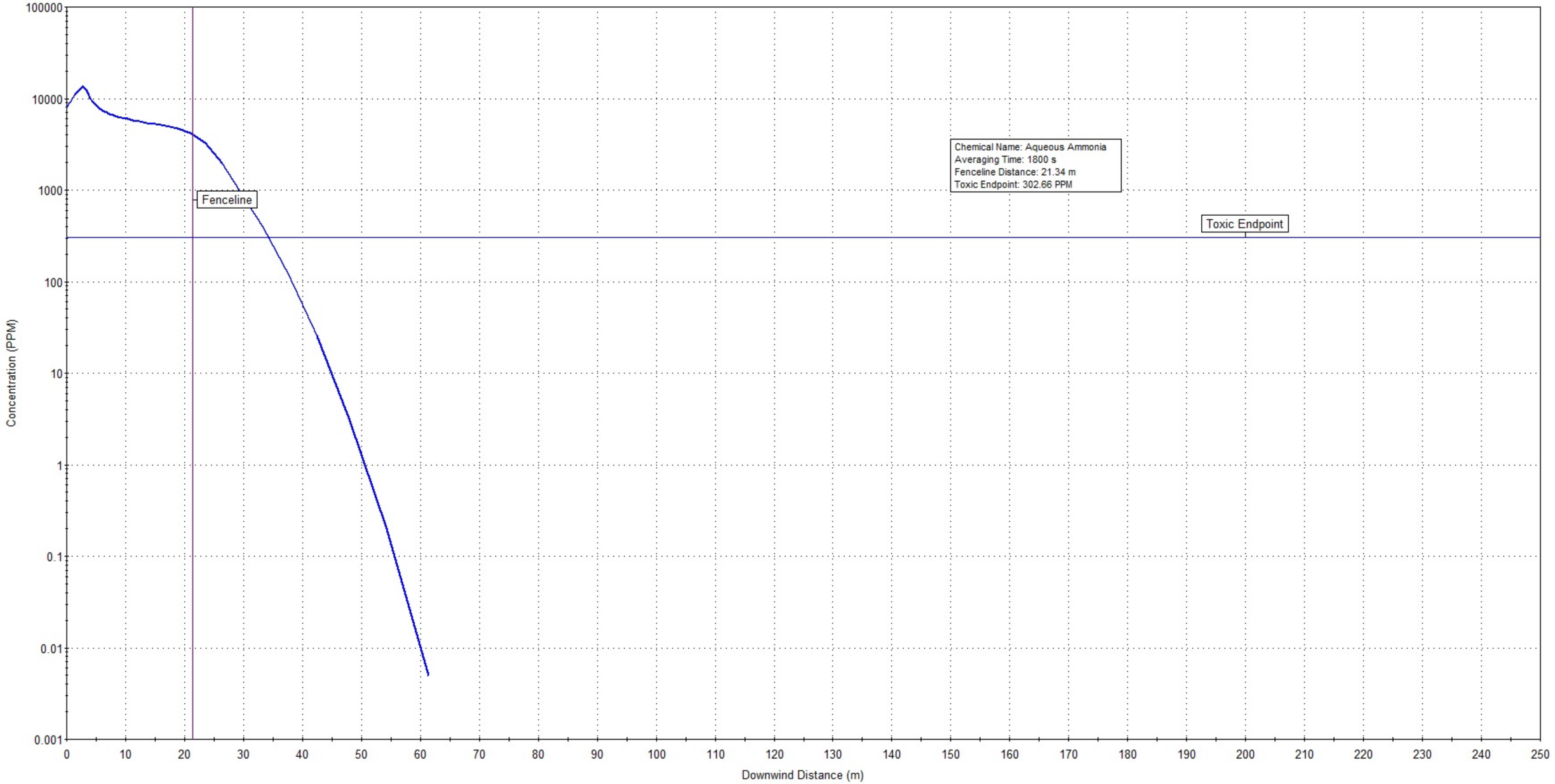
Ground Level Centerline Plot



1.6 Meter Centerline Plot



Ground Level Centerline Plot



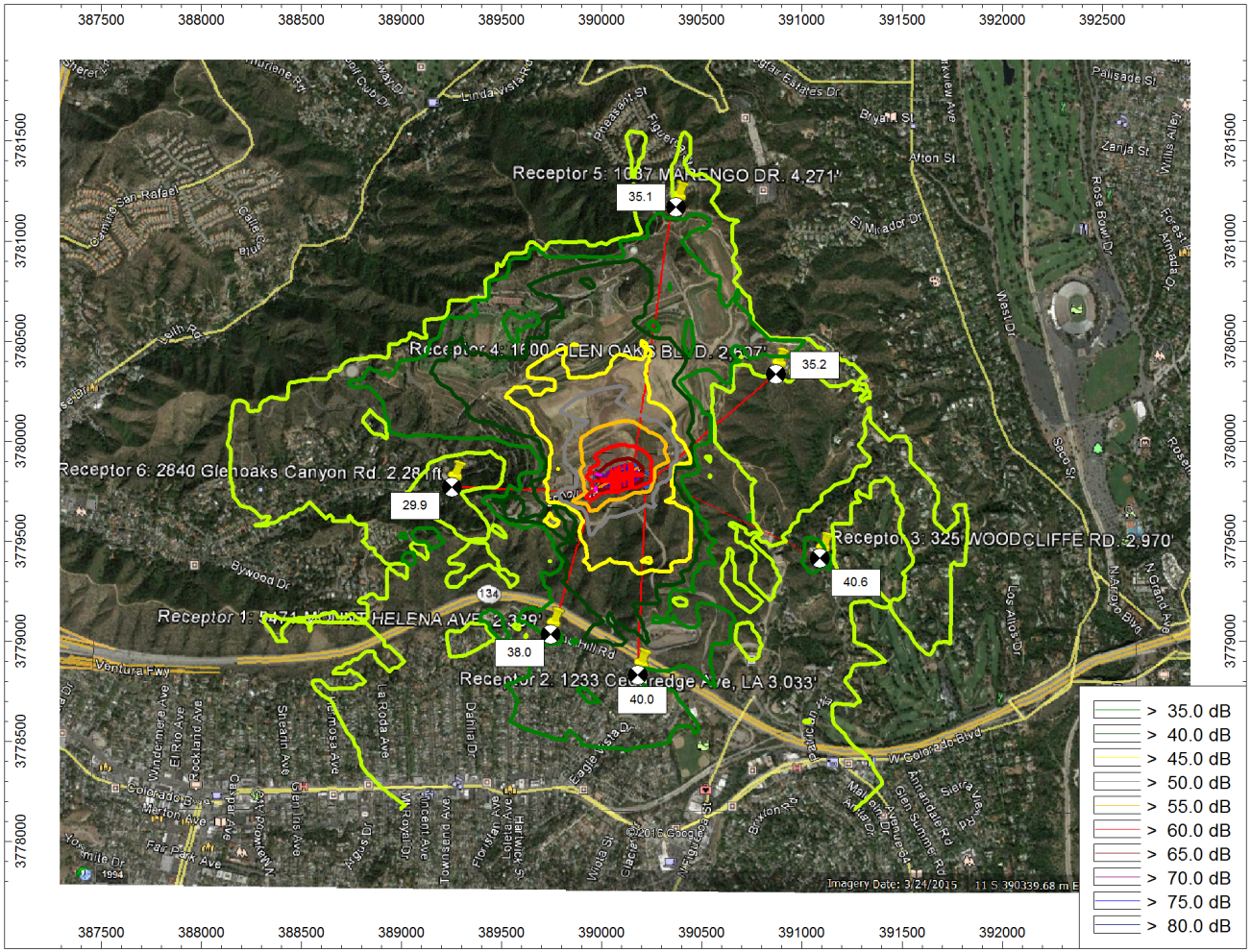
Appendix JNOISE MODELING AND DATA COLLECTION SHEETS

Biogas Renewable Generation Project - Source Information Summary

PWL Summary - 4 x Jenbacher J620 GS-16

Source	LEVELS AT OCTAVE BAND CENTER FREQUENCIES (Hz) / PWL (dB re 1 pW)									dBA	dBC	Comments, Data Origin
	31.5	63	125	250	500	1000	2000	4000	8000			
Generator Enclosure Walls (4 off)	117	116	116	105	97	96	91	92	94	**104**	**120**	Based on vendor data and enclosure with composite STC rating of 23 and NRC rating 0.85
Generator Enclosure Roof (4 off)	113	112	113	102	93	92	88	89	90	**101**	**116**	Based on vendor data and enclosure with composite STC rating of 23 and NRC rating 0.86
Generator Cooler Inlet (4 off)	107	111	108	105	102	98	93	90	87	**104**	**114**	Estimated for noise rating of 85 dBA @ 1 m
Generator Cooler Discharge (4 off)	107	110	106	103	99	95	90	86	83	**101**	**113**	Estimated for noise rating of 85 dBA @ 1 m
Engine Exhaust, 90 deg (4 off)	108	109	111	91	94	94	87	78	59	**99**	**114**	Estimated from vendor data with Hapco Supercritical Grade muffler
Engine Exhaust Muffler Case (4 off)	104	103	104	86	92	95	90	82	64	**98**	**108**	Estimated for Hapco Supercritical Grade muffler shell
Existing Landfill Vacuum Blower (2 off)	102	104	106	108	103	99	97	92	87	**105**	**112**	Estimated for 150-hp motor and 5.5" WG static pressure (90 dBA @ 1 m)
Flare Blower	104	108	105	106	99	96	93	88	80	**102**	**112**	Estimated for noise rating of 85 dBA @ 1 m
Stage 1 Landfill Gas Blower (2 off)	96	97	98	102	103	105	106	101	95	**110**	**111**	Estimated for 150-hp electrically driven, unenclosed screw or lobe compressor, noise rating: 78 dBA @ 50 feet
Stage 2 Landfill Gas Blower (2 off)	96	97	98	102	103	105	106	101	95	**110**	**111**	Estimated for 150-hp electrically driven, unenclosed screw or lobe compressor, noise rating: 78 dBA @ 50 feet
Stage 1 Blower Cooler	104	108	104	101	98	94	89	86	83	**100**	**111**	Estimated for noise rating of 85 dBA @ 1 m
Stage 2 Blower Cooler	107	111	107	104	101	97	92	89	86	**103**	**114**	Estimated from noise rating of 85 dBA @ 1 m
Chiller - Viter VSG-2101	99	105	105	121	114	105	98	91	85	**115**	**122**	Estimated based on field measurements of similar chiller, prorated for power, noise rating: 83 dBA @ 50 feet
Chiller Cooler	111	114	113	108	105	105	99	96	91	**109**	**118**	Estimated for noise rating of 85 dBA @ 1 m

Biogas Renewable Generation Project - Jenbacher Contour Plot



AMBIENT NOISE MEASUREMENT DATA SHEET

Project Name:	Scholl Canyon LA County
Project Number:	2057123300
Noise Meter Make and Type:	Bruell & Kjaer Model 2236
Microphone:	Bruel & Kjaer 1/2" Free-field Microphone
Acoustical Calibrator:	Bruel & Kjaer Model 4231
Date of Measurement:	10·21·15
Stantec Technician:	S. Roberts

Location and Description of Measurement (Receptor Location):

Receptor #1: 5471 Mount Helena Ave, LA, CA 90041
Home South of 134 Fwy. on Dead End Street

Approximate Distance from Receptor:

2,389' South of Project Site

Time Measurement Began:	1052 DAY		**Time Measurement Ended:**	1107	
Data Stored as Recorded #?:	1				
Leq:	54.0	dBA	**L90:**	51.5	dBA
MaxP:	89.0	dBC	**L75:**	—	dBA
MinL:	49.1	dBA	**L50:**	53.5	dBA
MaxL:	59.9	dBA	**L25:**	—	dBA
SEL:	83.7	dBA	**L10:**	55.5	dBA
LVN:	—	dBA			

Description of meteorological conditions (weather, wind, temperature, etc.):

Sunny, Slight breeze, 79°F

Description/sources of ambient noise:

Freeway noise, birds,

AMBIENT NOISE MEASUREMENT DATA SHEET

Project Name:	Scholl Canyon LA
Project Number:	2057123300
Noise Meter Make and Type:	Bruell & Kjaer Model 2236
Microphone:	Bruel & Kjaer 1/2" Free-field Microphone
Acoustical Calibrator:	Bruel & Kjaer Model 4231
Date of Measurement:	10.21.15
Stantec Technician:	S Roberts / K Posekian

Location and Description of Measurement (Receptor Location):

Receptor 1: 5471 Mount Helena Ave, LA 90041
Home South of 134 fwy on Dead End St.

Approximate Distance from Receptor:

2,389' South of Project Site

Time Measurement Began:	22.22 NITE		**Time Measurement Ended:**	2237	
Data Stored as Recorded #?:	7				
Leq:	56.8	dBA	**L90:**	52.5	dBA
MaxP:	92.2	dBC	**L75:**	—	dBA
MinL:	50.5	dBA	**L50:**	55.0	dBA
MaxL:	73.5	dBA	**L25:**	—	dBA
SEL:	86.6	dBA	**L10:**	58.0	dBA
LVN:	—	dBA			

Description of meteorological conditions (weather, wind, temperature, etc.):

Clear 66°F

Description/sources of ambient noise:

Freeway, local traffic, crickets, stream

AMBIENT NOISE MEASUREMENT DATA SHEET

Project Name:	Scholl Canyon — LA County
Project Number:	2057123300
Noise Meter Make and Type:	Bruell & Kjaer Model 2236
Microphone:	Bruel & Kjaer 1/2" Free-field Microphone
Acoustical Calibrator:	Bruel & Kjaer Model 4231
Date of Measurement:	10.21.15
Stantec Technician:	S. Roberts

Location and Description of Measurement (Receptor Location):

Receptor #2: 1233 Cedaredge Ave, LA, CA 90041. Home on the corner of Cedaedge Ave and Blue Hill just South of the 134 fwy

Approximate Distance from Receptor:

3,033' South of project site

Time Measurement Began:	1114 DAY		**Time Measurement Ended:**	1129	
Data Stored as Recorded #?:	2				
Leq:	65.2	dBA	**L90:**	62.0	dBA
MaxP:	94.1	dBC	**L75:**	—	dBA
MinL:	60.1	dBA	**L50:**	64.5	dBA
MaxL:	75.0	dBA	**L25:**	—	dBA
SEL:	94.9	dBA	**L10:**	67.0	dBA
LVN:	—	dBA			

Description of meteorological conditions (weather, wind, temperature, etc.):

Sunny, Slight breeze 79°F

Description/sources of ambient noise:

Freeway noise,

AMBIENT NOISE MEASUREMENT DATA SHEET

Project Name:	Scholl Canyon LA COUNTY
Project Number:	2057123300
Noise Meter Make and Type:	Bruell & Kjaer Model 2236
Microphone:	Bruel & Kjaer 1/2" Free-field Microphone
Acoustical Calibrator:	Bruel & Kjaer Model 4231
Date of Measurement:	10·21·15
Stantec Technician:	S. Roberts / K. Posekian

Location and Description of Measurement (Receptor Location):

Receptor #2: 1233 Cedaredge Ave, LA, CA. 90041. Home on the corner of Cedaredge Ave & Blue Hill
Just South of the 134 Fwy.

Approximate Distance from Receptor:

3,033' South of Project Site.

Time Measurement Began:	2243 NITE		**Time Measurement Ended:**	2258	
Data Stored as Recorded #?:	8				
Leq:	64.3	dBA	**L90:**	61.5	dBA
MaxP:	92.5	dBC	**L75:**		dBA
MinL:	59.3	dBA	**L50:**	64.0	dBA
MaxL:	69.0	dBA	**L25:**		dBA
SEL:	94.1	dBA	**L10:**	66.0	dBA
LVN:		dBA			

Description of meteorological conditions (weather, wind, temperature, etc.):

Clear; 66°F

Description/sources of ambient noise:

Local Traffic, Freeway Noise; Crickets

AMBIENT NOISE MEASUREMENT DATA SHEET

Project Name:	Scholl Canyon Pasadena
Project Number:	2057123300
Noise Meter Make and Type:	Bruell & Kjaer Model 2236
Microphone:	Bruel & Kjaer 1/2" Free-field Microphone
Acoustical Calibrator:	Bruel & Kjaer Model 4231
Date of Measurement:	10-21-15
Stantec Technician:	S. Roberts

Location and Description of Measurement (Receptor Location):

Receptor 3: corner of Patircan & LaMirada

Approximate Distance from Receptor:

2,970 North East of Project Site

Time Measurement Began:	1145 DAY		**Time Measurement Ended:**	1202	
Data Stored as Recorded #?:	3				
Leq:	54.5	dBA	**L90:**	44.0	dBA
MaxP:	93.4	dBC	**L75:**	—	dBA
MinL:	41.5	dBA	**L50:**	48.5	dBA
MaxL:	67.1	dBA	**L25:**	—	dBA
SEL:	84.2	dBA	**L10:**	59.0	dBA
LVN:		dBA			

Description of meteorological conditions (weather, wind, temperature, etc.):

Sunny, Slight Breeze 78°F

Description/sources of ambient noise:

Freeway, local traffic, trucks hauling in & out of land fill const. noise, i.e. hand tools, grinder, hammer, etc. (building house)

AMBIENT NOISE MEASUREMENT DATA SHEET

Project Name:	Scholl Canyon Pasadena
Project Number:	2057123300
Noise Meter Make and Type:	Bruell & Kjaer Model 2236
Microphone:	Bruel & Kjaer 1/2" Free-field Microphone
Acoustical Calibrator:	Bruel & Kjaer Model 4231
Date of Measurement:	10·21·15
Stantec Technician:	S. Roberts / K. Poskian

Location and Description of Measurement (Receptor Location):

Receptor 3: Corner of Patizan & La Mirada

Approximate Distance from Receptor:

2,970 North east of ~~Property~~ project site.

Time Measurement Began:	2315 NITE	**Time Measurement Ended:**	2330		
Data Stored as Recorded #?:	9				
Leq:	47.8	dBA	**L90:**	43.0	dBA
MaxP:	85.8	dBC	**L75:**	—	dBA
MinL:	41.9	dBA	**L50:**	44.0	dBA
MaxL:	64.6	dBA	**L25:**	—	dBA
SEL:	77.5	dBA	**L10:**	45.5	dBA
LVN:		dBA			

Description of meteorological conditions (weather, wind, temperature, etc.):

Clear; 66°F

Description/sources of ambient noise:

Freeway Traffic; Local Traffic; Crickets; Water Fountain; Helicopter.

AMBIENT NOISE MEASUREMENT DATA SHEET

Project Name:	Scholl Canyon Pasadena
Project Number:	2057123300
Noise Meter Make and Type:	Bruell & Kjaer Model 2236
Microphone:	Bruel & Kjaer 1/2" Free-field Microphone
Acoustical Calibrator:	Bruel & Kjaer Model 4231
Date of Measurement:	10.21.15
Stantec Technician:	S. Roberts

Location and Description of Measurement (Receptor Location):

Receptor 4: 1600 Glen Oaks Blvd, Pasadena, CA 91105

Approximate Distance from Receptor:

2,607' Northeast of Project Site

Time Measurement Began:	1219 DAY		**Time Measurement Ended:**	1234	
Data Stored as Recorded #?:	4				
Leq:	37.1	dBA	**L90:**	34.0	dBA
MaxP:	86.0	dBC	**L75:**	—	dBA
MinL:	32.8	dBA	**L50:**	36.0	dBA
MaxL:	47.0	dBA	**L25:**	—	dBA
SEL:	66.6	dBA	**L10:**	39.0	dBA
LVN:	—	dBA			

Description of meteorological conditions (weather, wind, temperature, etc.):

Sunny, Slight Breeze 81°F

Description/sources of ambient noise:

Freeway in the distance, birds, frogs

AMBIENT NOISE MEASUREMENT DATA SHEET

Project Name:	Scholl Canyon Pasadena
Project Number:	2057123300
Noise Meter Make and Type:	Bruell & Kjaer Model 2236
Microphone:	Bruel & Kjaer 1/2" Free-field Microphone
Acoustical Calibrator:	Bruel & Kjaer Model 4231
Date of Measurement:	10.21.15
Stantec Technician:	S. Roberts / K. Posekian

Location and Description of Measurement (Receptor Location):

Receptor 4: 1600 Glen Oaks Blvd, Pasadena, CA. 91105

Approximate Distance from Receptor:

2,687' Northeast of Project Site.

Time Measurement Began:	2342 NITE		**Time Measurement Ended:**	2357	
Data Stored as Recorded #?:	10				
Leq:	47.1	dBA	**L90:**	37.0	dBA
MaxP:	94.6	dBC	**L75:**		dBA
MinL:	36.3	dBA	**L50:**	38.5	dBA
MaxL:	67.2	dBA	**L25:**		dBA
SEL:	76.9	dBA	**L10:**	40.8	dBA
LVN:		dBA			

Description of meteorological conditions (weather, wind, temperature, etc.):

Clear; 66°F;

Description/sources of ambient noise:

Freeway Traffic; Local Traffic; Crickets

AMBIENT NOISE MEASUREMENT DATA SHEET

Project Name:	Scholl Canyon Glendale
Project Number:	2057123300
Noise Meter Make and Type:	Bruell & Kjaer Model 2236
Microphone:	Bruel & Kjaer 1/2" Free-field Microphone
Acoustical Calibrator:	Bruel & Kjaer Model 4231
Date of Measurement:	10.21.15
Stantec Technician:	S. Roberts

Location and Description of Measurement (Receptor Location):

Receptor 5: corner of Figueroa & Marengo Dr., Glendale @ Deadend

Approximate Distance from Receptor:

4,271' North of project site

Time Measurement Began:	13.15 DAY		**Time Measurement Ended:**	1330	
Data Stored as Recorded #?:	5				
Leq:	43.4	dBA	**L90:**	30.5	dBA
MaxP:	86.2	dBC	**L75:**	—	dBA
MinL:	29.1	dBA	**L50:**	34.0	dBA
MaxL:	62.8	dBA	**L25:**	—	dBA
SEL:	73.1	dBA	**L10:**	45.0	dBA
LVN:		dBA			

Description of meteorological conditions (weather, wind, temperature, etc.):

Sunny, Slight breeze 81°F

Description/sources of ambient noise:

Quiet neighborhood, helo circling the area. Local traffic

AMBIENT NOISE MEASUREMENT DATA SHEET

Project Name:	Scholl Canyon Glendale
Project Number:	2057123300
Noise Meter Make and Type:	Bruell & Kjaer Model 2236
Microphone:	Bruel & Kjaer 1/2" Free-field Microphone
Acoustical Calibrator:	Bruel & Kjaer Model 4231
Date of Measurement:	10.22.15
Stantec Technician:	S. Roberts / K. PoseKian

Location and Description of Measurement (Receptor Location):

Receptor 5: Corner of Figueroa & Marengo Dr., Glendale, CA. @ Deadend

Approximate Distance from Receptor:

4,271' North of Project site.

Time Measurement Began:	2420	NITE	**Time Measurement Ended:**	2435	
Data Stored as Recorded #?:	11				
Leq:	39.1	dBA	**L90:**	36.5	dBA
MaxP:	68.1	dBC	**L75:**		dBA
MinL:	35.1	dBA	**L50:**	38.5	dBA
MaxL:	46.4	dBA	**L25:**		dBA
SEL:	68.9	dBA	**L10:**	40.5	dBA
LVN:		dBA			

Description of meteorological conditions (weather, wind, temperature, etc.):

Clear; 66°F

Description/sources of ambient noise:

Local Traffic; Crickets; Train.

AMBIENT NOISE MEASUREMENT DATA SHEET

Project Name:	Scholl Canyon Glendale
Project Number:	2057123300
Noise Meter Make and Type:	Bruell & Kjaer Model 2236
Microphone:	Bruel & Kjaer 1/2" Free-field Microphone
Acoustical Calibrator:	Bruel & Kjaer Model 4231
Date of Measurement:	10.21.15
Stantec Technician:	S. Roberts

Location and Description of Measurement (Receptor Location):

Receptor 6: 2840 Glencoaks Canyon Rd, Glendale 91206 next to Park and down hill from Scholl cyn Golf + tennis club and athetic fields.

Approximate Distance from Receptor:

2,281' West of the Project Site

Time Measurement Began:	1417 DAY		**Time Measurement Ended:**	1432	
Data Stored as Recorded #?:	6				
Leq:	46.4	dBA	**L90:**	37.5	dBA
MaxP:	85.4	dBC	**L75:**	—	dBA
MinL:	35.4	dBA	**L50:**	42.5	dBA
MaxL:	63.6	dBA	**L25:**	—	dBA
SEL:	76.0	dBA	**L10:**	48.5	dBA
LVN:	—	dBA			

Description of meteorological conditions (weather, wind, temperature, etc.):

Sunny. Slight Breeze, 82°F

Description/sources of ambient noise:

birds, heavy trucks/equipment in distance

AMBIENT NOISE MEASUREMENT DATA SHEET

Project Name:	Scholl Canyon Glendale
Project Number:	2057123300
Noise Meter Make and Type:	Bruell & Kjaer Model 2236
Microphone:	Bruel & Kjaer 1/2" Free-field Microphone
Acoustical Calibrator:	Bruel & Kjaer Model 4231
Date of Measurement:	10.22.15
Stantec Technician:	S. Roberts / K. Poseklan

Location and Description of Measurement (Receptor Location):

Receptor 6: 2840 Glenoaks Canyon Rd; Glendale 91206. Next to Park & Downhill from Scholl Gyn Golf and Tennis Club and athletic fields

Approximate Distance from Receptor:

2,281' West of Project Site.

Time Measurement Began:	2453 NITE		**Time Measurement Ended:**	0108	
Data Stored as Recorded #?:	12				
Leq:	46.5	dBA	**L90:**	44.5	dBA
MaxP:	75.0	dBC	**L75:**	—	dBA
MinL:	43.5	dBA	**L50:**	45.5	dBA
MaxL:	53.5	dBA	**L25:**	—	dBA
SEL:	76.1	dBA	**L10:**	47.5	dBA
LVN:	—	dBA			

Description of meteorological conditions (weather, wind, temperature, etc.):

Clear

Description/sources of ambient noise:

Crickets; Dog Barking;

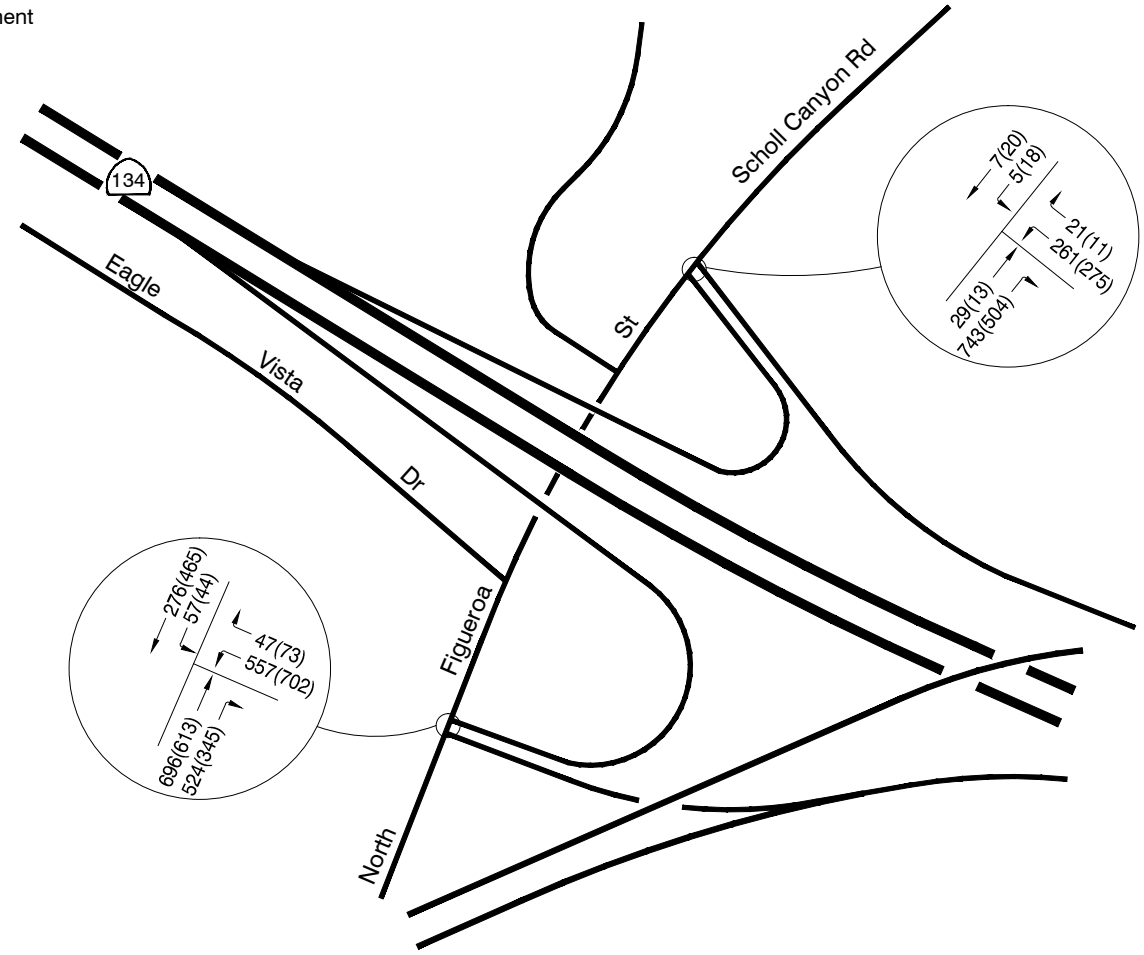
Appendix K TRAFFIC ANALYSIS

K.1 TRAFFIC ANALYSIS EXHIBIT 1

LEGEND

XX(XX) - AM(PM) Peak Hour Volume

- Traffic Movement



N.T.S.

Stantec

111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801

EXHIBIT 1

EXISTING AM AND PM PEAK HOUR VOLUMES

K.2 TRAFFIC ANALYSIS EXHIBIT 2

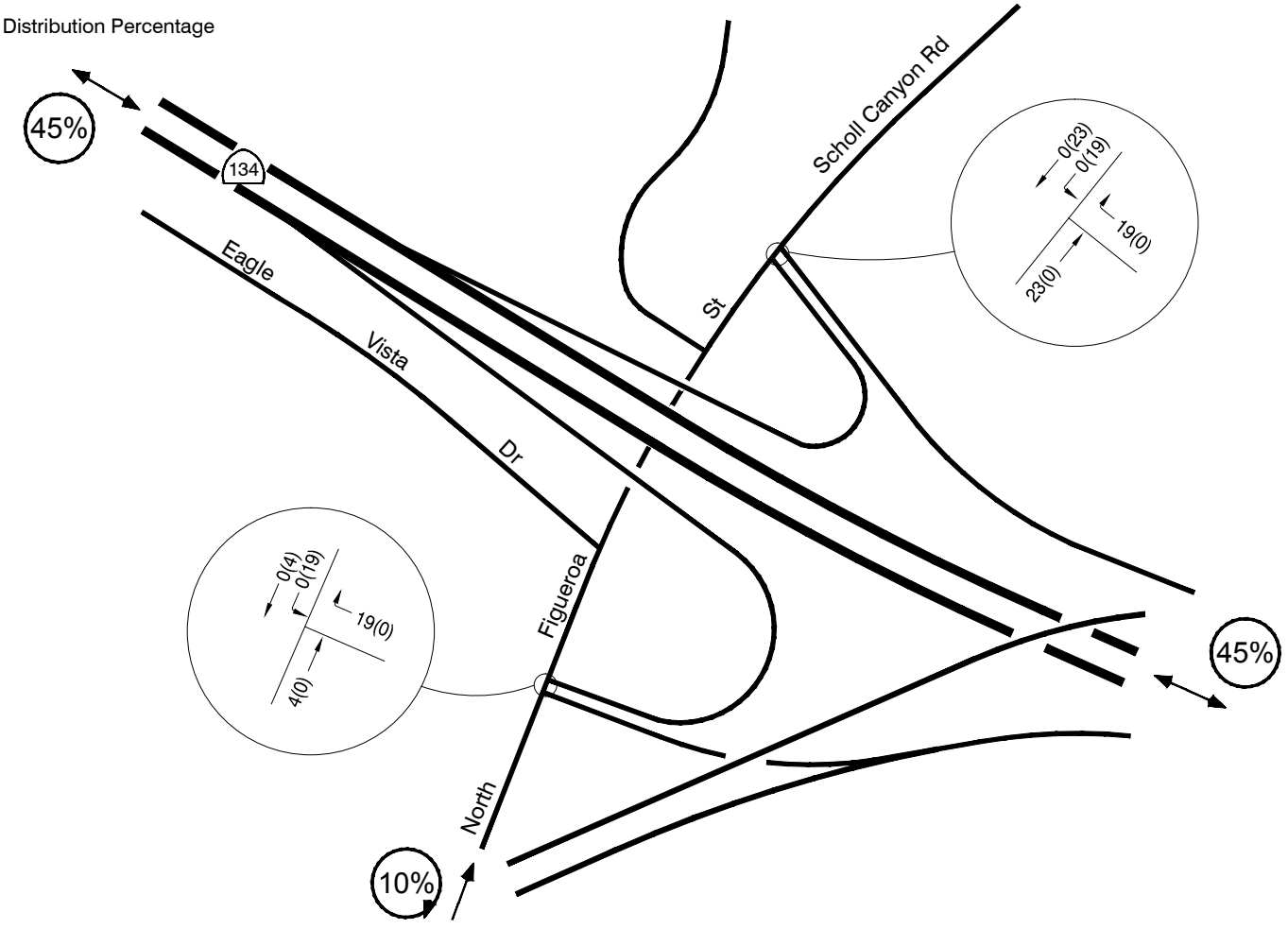


LEGEND

XX(XX) - AM(PM) Peak Hour Volume

- Traffic Movement

25% - Trip Distribution Percentage



N.T.S.

Stantec

111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801

EXHIBIT 2

PROJECT AM AND PM PEAK HOUR VOLUMES

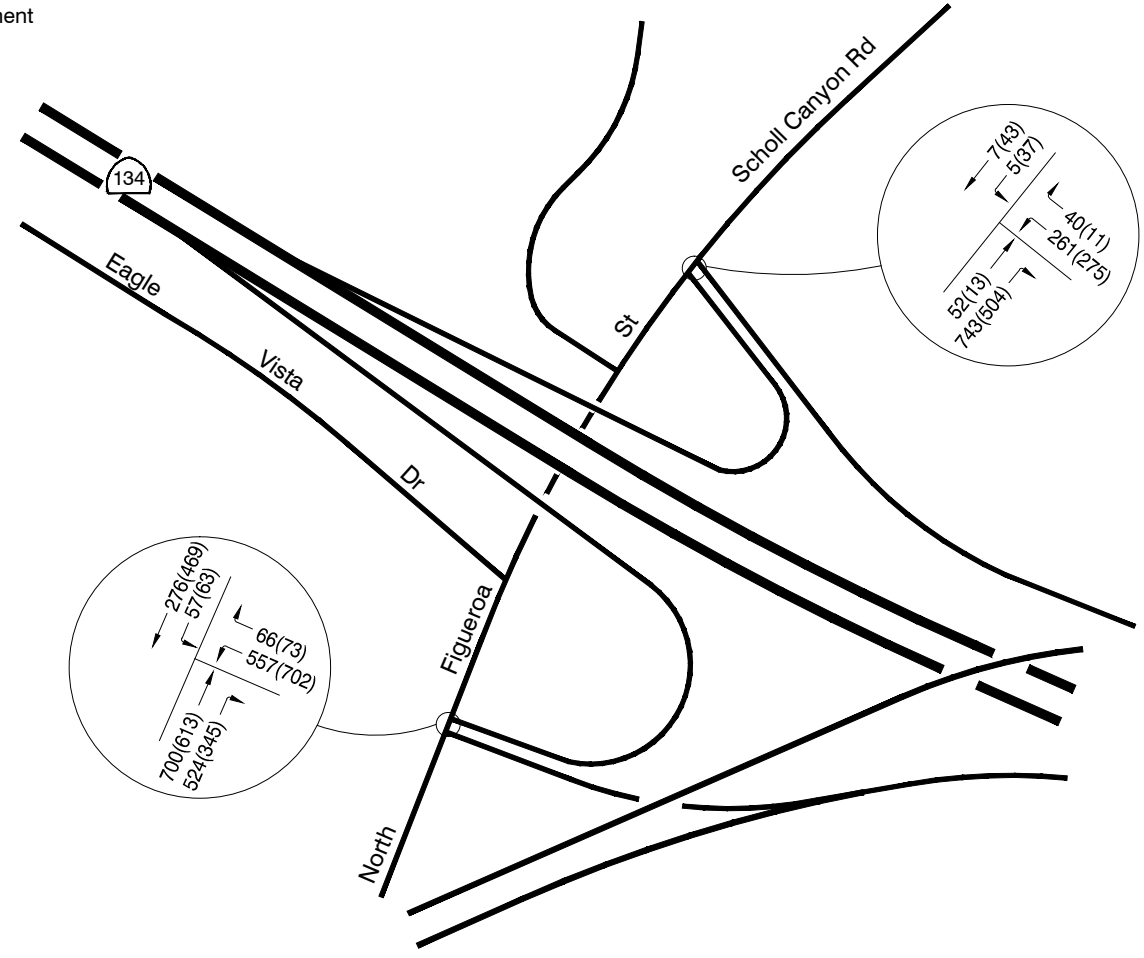
K.3 TRAFFIC ANALYSIS EXHIBIT 3



LEGEND

XX(XX) - AM(PM) Peak Hour Volume

- Traffic Movement



N.T.S.

Stantec

111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801

EXHIBIT 3

EXISTING + PROJECT
AM AND PM PEAK HOUR VOLUMES

Appendix L TRIBAL CONSULT MEMORANDUM

Meeting Notes

Assembly Bill 52 Consultation – Gabrieleño Band of Mission Indians – Kizh Nation

Biogas Renewable Generation Project / 185804356

Date/Time:	May 1, 2019 / 1:00
Place:	Covina, CA
Next Meeting:	None
Attendees:	In-person: Matthew R. Teutimez (Gabrieleño), Maurice Oillataguerre (Glendale), Erik Krause (Glendale), Dennis Joe (Glendale), Michael Weber (Stantec) Teleconference: Andrew Salas (Gabrieleño)
Absentees:	None
Distribution:	City of Glendale and Stantec attendees

Item: **Action:**

Assembly Bill 52 Tribal Cultural Resources Consultation

None

Attendees made brief introductions.

Stantec provided an overview of the Biogas Renewable Generation Project.

The Gabrieleño provided an overview of their tribe's history, cultural importance, and interest in consultation to protect tribal cultural resources.

The Gabrieleño explained that tribal cultural resources are most likely to be found along tribal trade routes, travel corridors, and water sources. The landscape, notably ridges and native vegetation are also of important value.

After further discussion and Gabrieleño review of the aforementioned features in comparison to the Biogas Renewable Generation Project, the Gabrieleño determined that the Biogas Renewable Generation Project was unlikely to adversely affect Gabrieleño tribal cultural resources and no further evaluation or mitigation was recommended.

The attendees expressed their appreciation of each other's correspondence and participation in the consultation

The meeting adjourned at approximately 2:30 PM

The foregoing is considered to be a true and accurate record of all items discussed. If any discrepancies or inconsistencies are noted, please contact the writer immediately.

Stantec Consulting Services Inc.

Michael Weber
Principal Scientist
Phone: (805) 719-9329
Email: michael.weber@stantec.com

Appendix M FIRE PROTECTION DESIGN BASIS PLAN

Glendale Fire Department
Fire Engineering Unit
633 East Broadway, Suite 101
Glendale, CA 91206-4390
Ph: (818) 548-3200 * Fax: (818) 548-3215
www.glendalefire.org

"We Help People"

General Permit

Permit No.: **FGP1805630**
Site/Event: SCHOLL CANYON BIOGAS RENEWABLE GENERATIC
Site Address: 3001 SCHOLL CANYON RD
GLENDALE CA 91206

Plan Check Engineer: Jeffrey Halpert
Entered By: Jeffrey Halpert
Applied: 07/24/2016
Issued: 03/02/2018

Description: GWP PROPOSING TO REMOVE THE EXISTING LANDFILL GAS PROCESSING PLANT AND CONSTRUCT A NEW ON-SITE POWER GENERATING PLANT USING THE LANDFILL GAS. A FIRE PROTECTION DESIGN BASIS DOCUMENT WAS PREPARED, AS REQUIRED BY THE GLENDALE FIRE DEPARTMENT, TO ESTABLISH THE FIRE / LIFE SAFETY DESIGN EXPECTATIONS AND CONDITIONS BEFORE PROJECT IS LET FOR BIDDING.

People Manager

Ind./Comp.	Name	Full Address	Phone Number	City / State Lic.
Applicant	CARL HAASE	199 S. LOS ROBLES, SUITE 810 PASADENA, CA 91101	661-478-3400	
Owner	CITY OF GLENDALE	141 N GLENDALE AVE 4TH FLOOR GLENDALE, CA 91206		

Clearance Agencies

Plan Check Status	Completion Date	Reviewed By	Department
PC Approved	03/02/2018	Jeffrey Halpert	Fire Department

Fees Balance

Account #	Units	Amount	Fees Paid
	Total fees:		
	Total fees paid:		
	Total fees due:		

Conditions

- FIRE: PLANS TO BE SUBMITTED FOR REVIEW / APPROVAL. THIRD PARTY ACCEPTABLE TO GFD TO REVIEW ALL SUBMITTALS AND MAKE RECOMMENDATION FOR APPROVAL TO ENSURE COMPLIANCE WITH THE APPROVED FIRE PROTECTION DESIGN BASIS DOCUMENT.

Signature(s)

Jeffrey Halpert
Plan Check Engineer, City of Glendale CA

March 2, 2018
Date

This permit is issued and accepted on condition that all provisions of the Glendale Fire Code and any other regulations of the City of Glendale shall be complied with. Any violation of these provisions may be grounds for revocation of this permit.

JENSEN HUGHES

One Tower Ant Plaza Drive, Suite 220
Oak Brook Terrace, IL 60181 USA
www.jensenhughes.com
O +1 630 522 3777

FGP 1805630
3001 SCHOLL CANYON ROAD

BIOGAS RENEWABLE GENERATION PROJECT FIRE PROTECTION DESIGN BASIS

GLENDALE FIRE PREVENTION BUREAU
(818) 548-4810

MAR 02 2018

APPROVED BY
SUBJECT TO FIELD INSPECTION

Prepared For

Stantec

Contractor: Stantec, Inc.
199 So. Los Robles Ave.
Suite 810
Pasadena, CA

City of Glendale Water & Power
Your Trusted Community Utility

Client: City of Glendale Water & Power
141 N. Glendale Ave.
Level 4
Glendale, CA. 91206

Revision: 4
Project #: 1DEK2D001.000
Project Name: Grayson Repowering Project
Document #: 02D001-RPT-002

	Name and Date
Preparer:	David Kipley 2018.02.07 15:55:22 -06'00'
Reviewer:	Andrew J. Wolfe 2018.02.07 17:10:30-05'00'
Review Method:	Design Review ☒ Alternate Calculation ☐
Approval:	Elizabeth A. Kleinsorg 2018.02.09 12:25:45 -08'00'

REVISION RECORD SUMMARY

Revision	Revision Summary
0	ORIGINAL ISSUE
1	Updated the document to reflect the recent facility configuration revision
2	Updated document to eliminate potable water service from fire water storage
3	Updated the document to incorporate Glendale Fire Department Comments
4	Updated the document to incorporate Glendale Fire Department Comments

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1.0 INTRODUCTION

This Design Basis Document (DBD) has been developed for the Biogas Renewable Generation project located in Glendale, CA to define the fire protection systems and features and guidance to be applied during the facility design and construction, and the existing facility demolition. JENSEN HUGHES has developed the DBD using National Fire Protection Association (NFPA) 850- 2015, *Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Converter Stations*,as a primary input, in addition to other applicable NFPA standards and the Glendale, CA adopted building code requirements.

The DBD is organized as follows:

- Scope and Purpose
- Project Goals
- Methodology
- Assumptions and Limitations
- Analysis
- Conclusions & Recommendations
- References
- Appendix A - Code Applicability Matrix
- Appendix B - Fire Risk Assessment
- Appendix C – Biogas Renewable Generation Project Conceptual Fire Protection Plan
- Appendix D – Biogas Renewable Generation Project Overall Site Plan
- Appendix E - Biogas Renewable Generation Project Water Storage Tanks Refill System Diagram

1.1 Scope & Purpose

The DBD defines the fire protection systems and features to be provided for the Biogas Renewable Generation Plant buildings/facilities. The plant areas include those systems/buildings installed within the Owners Controlled Area (OCA) as follows:

- Four simple cycle reciprocating engine units with associated generators and lube oil skids within individual unit enclosures;
- Existing Fuel Gas Flare Stack Yard Area;
- Fuel Gas Conditioning Yard Area
- Existing Switchgear Yard Area
- Office Building
- Power Distribution Center Skid
- Plant Fire Water Supply System

The DBD provides the recommended active and passive fire protection systems and features, building construction limitations, and Life Safety requirements. Alternatives to prescriptive code requirements are provided as part of the design basis and documented via the methodology cited in NFPA 850-2015, Section 4.4 and NFPA 551-2016, *Evaluation of Fire Risk Assessments* as applicable, in lieu of performance based methodology cited in the California Building Standards.

1.2 Project Goals

The goal of this project is to minimize the potential of a fire occurring at the Biogas Renewable Generation plant during demolition, construction and operation. Should a fire occur, the mitigating strategies include:

- Meet Life Safety egress requirements for plant personnel;
- Provide fire protection systems and features and processes to minimize the effects of fire exposures on critical plant structures, systems, components (SSC);
- Ensure the existing landfill gas (LFG) flare stack system remains operable during the demolition of the existing gas cleanup facility and construction of the new simple cycle unit facility.
- Ensure the existing L.A. County Sanitation District buildings remain operable and accessible during the demolition of existing gas cleanup facility and construction of the new power plant equipment.
- Ensure the required fire department access roads for the Biogas Renewable Generation plant are maintained and unobstructed during the demolition and construction phases.

2.0 METHODOLOGY AND CRITERIA

The design basis philosophy for the Biogas Renewable Generation Project fire protection systems and features and program development is detailed in Section 2.1. In order to meet this design basis, the following methodology was used:

- The applicable criteria for the fire protections systems and features, the fire protection program, and buildings were collected from NFPA code requirements, industry standards, and California Building Standards criteria. These are listed in Sections 2.2 through 2.7.
- Based on these criteria, Section 4.0 of the DBD provides the design guidance requirements.
- Section 5.0 provides the conclusions and recommendations of the assessment.

2.1 Design Basis Statement and Approach

The guidance provided in this DBD defines the minimum fire protection systems and features and programmatic requirements for minimizing the effects of a fire originating within the plant buildings/equipment on plant personnel, the public and critical plant systems. The approach for mitigating the effects of a fire within the plant include providing passive fire protection features, active fire suppression/detection systems, and the implementation of fire protection programmatic processes. An adequate balance of each of the following items should reduce the potential for affecting plant personnel, plant critical equipment, and the public.

- Ensure the required fire protection program processes are provided to prevent fires from occurring, and when required include processes to respond to an emergency.
- Provide fire suppression and detection systems where required, to rapidly detect and control/extinguish those fires that do occur and limit the damage to critical plant equipment/structures and plant personnel.
- Provide fire protection features required to protect plant personnel, critical plant equipment and the public from fires that cannot be promptly extinguished.

This approach is carried throughout this document.

2.2 Codes and Standards of Record (NFPA & Adopted 2016 California Bldg. STDs)

The general site fire water system, fire protection systems, along with the site buildings/structures should be designed, procured, and constructed in accordance with, but not limited to, the codes and standards cited below. It should be noted that the current adopted edition of the building code for Glendale is 2016 edition of the CBC, however the City of Glendale will be adopting the 2016 edition of the CBC in January, 2017. Therefore the 2016 edition of the California Building Standards has been applied for this design and the assumption that changes applied in Resolution 5892 for the 2016 edition of the CBC, will also apply for the 2016 edition of the CBC. All applicable additions of codes and standards referred to by the 2016 building code are cited below.

A. National Fire Protection Association (NFPA)10-2013, Standard for Portable Fire Extin5uishers

B. NFPA 12-2015, Standard on Carbon Dioxide Extinguishment Systems

C. NFPA 13-2016, Standard for Installation of Sprinkler Systems

D. NFPA 14-2016, Standard for Installation of Standpipe and Hose Systems

E. NFPA 22-2013, Standard for Water Tanks for Private Fire Protection

F. NFPA 24–2016, Standard for the installation of Private Fire Service Mains and their Appurtenances

G. NFPA 30-2015, Flammable and Combustible Liquids Code

H. NFPA 37-2015, Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines

I. NFPA 51B-2014, Standard for Fire Prevention During Welding, Cutting, and Other Hot Work

J. NFPA 70-2014, National Electrical Code

K. NFPA 72-2016, National Fire Alarm Signaling Systems

L. NFPA 80-2016, Standard for Fire Doors and Other Opening Protectives

M. NFPA 90A-2015, Standard for the Installation of Air-Conditioning and Ventilating Equipment

N. NFPA 551-2016, Guide for the Evaluation of Fire Risk Assessments

O. NFPA 600- 2015, Standard on Facility Fire Brigades

P. NFPA 780-2014, Standard for the Installation of Lightning Protection Systems

Q. NFPA 850-2015, Recommended Practices for Fire Protection for Electric Generating Plants and HVDC Stations.

R. NFPA 2001-2015, Standard on Clean Agent Fire Extinguishment Systems

S. Glendale Resolution 5892 Adopting California 2016 Building Standards (CBC).

   1) 2016 California Green Building Standards Code
   2) 2016 California Building Code (CBC)
   3) 2016 California Mechanical Code (CMC
   4) 2016 California Electrical Code (CEC
   5) 2016 California Plumbing Code (CPC)
   6) 2016 California Energy Code
   7) 2016 California Fire Code (CFC)

T. Institute of Electrical and Electronics Engineers (IEEE), ANSI C2-2012, National Electric Safety Code

U. Institute of Electrical and Electronics Engineers, Standard 979-2012, Guide for Substation Fire Protection

V. Underwriters Laboratory (UL) Fire Protection Equipment and Fire Resistance Directories, Latest Edition

W. Factory Mutual Research (FM) Approval Guide, Latest Edition

X. Glendale Water & Power Drawing SCPP-00-M-601, Dated 01-11-2018, Biogas Renewable Generation Conceptual Fire Protection Plan

Y. Institute of Electrical and Electronics Engineers, Standard 980-2013, Guide for Containment and Control of Spills in Substations

2.3 Fire Protection Systems (NFPA & Adopted 2016 CBC)

The codes and standards applicable to the design, procurement and installation of fire protection equipment and systems includes but is not limited to:

A. The applicable portions of the NFPA standards cited in Section 2.2.A through 2.2.H, 2.2.J thru 2.2.M, 2.2.P & 2.2.R.

B. The applicable portions of the Glendale, CA Adopted California 2016 Building Standards cited in Sections 2.2.S.2 thru 2.2.S.5 & S.7.

C. The applicable portions of the IEEE Standards cited in Sections 2.2.T & 2.2.U.

D. The applicable portions of the listing/approval guidance documents cited in Sections 2.2.V & 2.2.W.

2.4 Building Exterior Exposure Evaluation (NFPA & Adopted 2016 CBC)

The codes and standards applicable to the design, procurement and installation of fire barriers/walls/protective opening components, assemblies and systems includes but is not limited to:

A. The applicable portions of NFPA standards cited in Sections 2.2.I, 2.2.N & 2.2.Q.

B. The applicable portions of the Glendale, CA Adopted California 2016 Building Standards cited in Sections 2.2.S.2 & 2.2.S.7.

C. The applicable portions of the IEEE Standards cited in Section 2.2.U.

D. The applicable portions of the listing/approval guidance documents cited in Sections 2.2.V & 2.2.W.

2.5 Fire Protection Program and Emergency Response (NFPA & Adopted 2016 CFC)

The codes and standards applicable to the development and implementation of fire protection program and emergency response process includes but is not limited to:

A. The applicable portions of NFPA standards cited in Sections 2.2.I, 2.2.N 2.2.O & 2.2.Q.

B. The applicable portions of the Glendale, CA Adopted California 2016 Building Standards cited in Section 2.2.S.7.

C. The applicable portions of the IEEE Standards cited in Section 2.2.U.

2.6 Life Safety Evaluation (Adopted 2016 CBC)

The codes and standards applicable to the design and installation of building/structure life safety egress facilities and limitations includes but is not limited to:

A. The applicable portions of NFPA standards cited in Section 2.2.Q, however the requirements for the means of egress should apply the CBC and CFC standards requirements.

B. The applicable portions of the Glendale, CA Adopted California 2016 Building Standards cited in Section 2.2.S.2 & 2.2.S.7.

C. The applicable portions of the IEEE Standards cited in Section 2.2.U.

2.7 Demolition and Construction Fire Protection Feature Impacts (NFPA & Adopted 2016 CFC)

The codes and standards applicable to the design and support of building/structures and site required systems during the demolition of existing buildings/structures and construction of new buildings/structures includes but is not limited to:

A. The applicable portions of NFPA standards cited in Sections 2.2.F thru 2.2.H, 2.2.J, 2.2.O & 2.2.Q.

B. The applicable portions of the Glendale, CA Adopted California 2016 Building Standards cited in Section 2.2.S.2 & 2.2.S.7.

C. The applicable portions of the IEEE Standards cited in Section 2.2.T & 2.2.U.

3.0 ASSUMPTIONS

The following assumptions were used in developing the design basis:

A. The insurance broker is aware of the project and has been consulted regarding the DBD as indicated in the email message between C. Haase (Stantec) and A. Tyler (Tyler Ins.), dated 1/24/2017.

B. Loss of power generation due to a fire event at the Biogas Renewable Generation plant is not a significant concern to the City of Glendale Water & Power and the Fire Department. Fire risks are however, to be mitigated and protection of operating personnel should be provided from fire and explosion exposures (Ref. 6.0.A).

C. The design of the power plant facility is in the early stages of development with building and equipment locations to be verified. Although the generating equipment, etc., has been procured at the time of this document development, the building sizes and equipment locations are based information reflected on the Glendale Water & Power, Biogas Renewable Generation Project Conceptual Fire Protection drawing (Ref. 6.0.DD) provided in Appendix C.

D. Component cooling water should not be required for any of the reciprocating engine components since the engines use closed loop air cooled water heat exchanger systems (Ref. 6.0.B).

E. The Power Island and Major Equipment (PIME) (reciprocating engines with generators, emissions control systems, and continuous emissions monitoring systems) has been procured as one PIME contract. The reciprocating engine units will be furnished with equipment specific fire suppression/detection systems only (Ref. 6.0.CC). The suppression/detection systems should be monitored for fire alarm and trouble conditions by the plant fire alarm system. The balance of plant (BOP) equipment (e.g. power distribution center and switchgear, fuel gas compressor equipment, etc.) will be purchased by the engineering, procurement and construction (EPC) contractor. The BOP fire protection systems will be supplied by the EPC contractor

F. The California Building & Fire Code requirements will take precedence over the recommendations of NFPA 850 unless the recommended practice document provides specific hazard protection recommendations that are warranted and do not reduce the minimum requirements cited in the CBC/CFC.

G. If the implementation of passive barriers or spatial separation recommendations cannot be provided (e.g., engine units), then fire suppression system alternatives should be provided as recommended by CBC/CFC and NFPA 850-2015. If these systems are provided, the fire water supply system should be upsized to meet the requirements cited in section 4.2.1 of this document accordingly.

H. The existing 20,000 gallon storage tank currently in use will be remain in service for the domestic water service and will not interface with the new fire water system. The adjacent empty 20,000 gallon storage tank will remain but will not be used. Therefore, the domestic water system will not be addressed in this document. A new 60,000 gallon water storage tank dedicated solely for fire protection purposes will be provided and installed at an elevation of approximately 1485 ft. elevation with the plant grade elevation at approximately 1425.ft.

I. The Aqueous Ammonia tank is not located within a building.

J. JENSEN HUGHES will support Glendale Water & Power Department with the review of the facility fire protection features design for meeting this project's design basis recommendations where requested.

4.0 ANALYSIS RESULTS

This section defines the applicable fire protection system/feature/program requirements and defines how the project goals cited in Section 1.2 are being met and the design approach in Section 2.1 is being implemented.

4.1 Facility Occupancy Types

In order to ensure the new facilities and systems meet the Glendale Building Department's requirements as adopted in Resolution 5892, the occupancy classification of the individual buildings and structures needs to be defined. The following defines the occupancy classification for the new buildings, and structures associated with the Biogas Renewable Generation plant.

Building/Structure	Occupancy Classification
Individual Engine Enclosure and Cooler Units	Factory, Group F-1
Office Building	Business, Group B
LFG Compressor/Conditioning Yard Area	Miscellaneous, Group U for the yard area
Power Distribution Center (PDC) Skid	Factory, Group F-1
Aqueous Ammonia Tank Skid	Miscellaneous, Group U for the yard area
Flare Stack System and Existing Switchgear Yard Area	Miscellaneous, Group U for the yard area, (Not being modified)
LA County Sanitation District Office Bldgs.	Business, Group B (Not being modified)

4.2 Fire Protection Systems

4.2.1 Plant Fire Water Supply System

A. Fire & General Plant Water Source

1) Existing Water Storage System

An existing 20,000 gallon service water storage tank located at the top of the hill near the plant site at the approximate elevation 1440ft, currently supplies fire water and general service water to Sanitation District of Los Angeles County yard lawn sprinklers and a single bathroom service for the plant. An abandoned water tank is also located next to the functional 20,000 gallon tank however, the abandoned tank is in disrepair and is no longer functional due to leaking issues and is currently isolated from service. The existing general service water volume usage for this facility is estimated to be approximately 20 cubic feet of water per day (Ref. 6.0.B). This usage is equivalent to 150 gallons per day for non-fire water service and should be included in determining the future water supply needs. The only current fire suppression system demand consists of the two yard hydrants that would be used by the fire department and is not currently not considered in the plant water supply capacity requirements. The Sanitation District of Los Angeles County facility will remain on site however the potable water service for the site will continue to be furnished from the existing 20,000 gallon storage tank system. Therefore this demand will not be included in the site fire water volume requirements.

The existing service water storage tank receives automatic refill makeup water from a Glendale transfer pump station located at elevation 1275ft on the landfill site. The pump is rated at 200 gpm, 40 HP and supplies the makeup water from the pump to the tank via an 8 inch carbon steel pipe line (Ref. 6.0.B).

2) Fire Water Storage Recommendation

The new water storage system for meeting the demands cited in Section 4.2.2.A below, will require the following:

- Isolation of the two existing 20,000 gallon service water storage tanks for supporting service water demands only and the installation of a new Factory Mutual (FM) Approved water storage tank with a minimum capacity of 60, 000 gallons that will be dedicated to fire water service.

The existing usable 20,000 gallon service water storage tank will remain for supporting the existing the Sanitation District of Los Angeles County facility potable water service and any new potable water service required for the new Biogas Renewable Generation office facility. The existing service water storage tank will not be connected to the new fire water system.

The new fire water storage tank should have a minimum capacity of 60, 000 gallons to support the largest fire flow volume demand for a minimum of 120 minutes as discussed by CFC, Appendix B103.3 (Ref. 6.0.X.7) and NFPA 1142-2012, Chapter 4 (Ref.6.0.FF). The 2 hour duration is being applied IAW NFPA 850-2015 Section 6.2.1 (Ref. 6.0.V) and CFC Appendix B, Table B105.1 (2) for Type IIA construction under 12, 700 ft^2 area. The volume of 500 gym fire flow volume is based on NFPA 1142-2012, calculation for worst case building requirement (PDC skid) with three exposures within 50 ft. Given that the Office building on site is being provided with sprinkler protection, the building suppression/hose system demands are bounded by the 500 GPM fire flow volume required by NFPA 1142. With the code required minimum flow of 500 gpm (Ref. 6.0.FF) for a duration of 120 minutes (Ref. 6.0.X.7), the minimum tank capacity of 60,000 gallons would be needed for the fire flow water demands. Therefore, a new Factory Mutual Approved fire water tank should be provided that has a minimum water storage capacity of 60, 000 gallons. The discharge piping from the tank to the new fire hydrants should be a minimum pipe size of 8" ductile iron, cement lined, and encased pipe per NFPA 24-2016 (Ref. 6.0.I).

Reusing the existing 200 gpm refill supply system should provide the capacity to refill the new fire water storage tank within the maximum 8 hours while also simultaneously filling the existing service water tank, thus meeting the refill requirement from NFPA 850-2015, Section 6.2.6.2 (Ref. 6.0.V). The existing 8" fill line would need to be routed to the new fire water storage tank from the feed pipe for the existing service water tank. The new fire water storage tank would be designed, installed and monitored for meeting the requirements of NFPA 22-2013 (Ref.6.0.H). See the fire water tank flow diagram in Appendix E to this document.

B. Plant Fire Main System

1) Existing System Conditions

The existing fire main system primarily consists of an 8 inch OD HDPE pipe routed from the existing service water storage tank and is connected two single 2½" outlet hydrants that are installed at the site, one near the base of the hill of the service water storage tank and the other adjacent to the road near the entrance to the LFG facility (Ref. 6.0.B). The service water main piping also supplies general service water to the existing Sanitation District of Los Angeles County office buildings on site. The existing Sanitation District of Los Angeles County building service water supply will be retained as this

system is the responsibility of the county. The existing system will not interface with the new site facility fire water system discussed below.

2) New Fire Main System Configuration

A new 8 inch ductile iron, cement lined and encased fire main piping system will be routed from the new fire water storage tank discharge nozzle to the new fire main piping designed and installed at the new plant site for replacing the existing plant fire main piping system. New fire hydrants should be provided with a minimum of one 2 ½" gate valve outlet and two 4" pumper nozzle outlets each, provided with a maximum spacing of 300 ft. between hydrants. The piping should also have sectionalizing valves provided to minimize the loss of no more than one half of the yard hydrants should the piping system be damaged as required by NFPA 850-2015 and NFPA 24 (Ref.6.0.V & I).The sectional valves should be indicating type while each hydrant can be provided with an individual non-indicating type isolation valve.

4.2.2 Fire Suppression Systems

A. Building Fire Suppression Systems

The Glendale, CA. adopted version of the CBC (Ref. 6.0.X) with Section 903.2.20.1 generally indicating that all new occupancies should be provided with sprinkler protection with some exceptions. The exceptions that would not require sprinkler protection include Group B; F1 & F2; M, S1 & S2 (without motor vehicle storage or parking) and are less than 1000 ft² in total area. The selection of the occupancy type is discussed in Section 4.3.4.A below. The estimated fire suppression system types and demands are listed Table 4.2.2.A below and the basis is discussed in detail in this document.

TABLE 4.2.2.A – Estimated Suppression System Demands

Protected Area/Building	Recommended Demand (1)	Section Reference
Reciprocating Engine & CEMS Equipment Enclosures	Each engine enclosure (with CEMS) will be protected with a clean agent system designed per NFPA 2001 in lieu of a sprinkler system.	4.2.2.B
Power Distribution Center (PDC)	This building will be protected with a clean agent system designed per NFPA 2001 in lieu of a building sprinkler system.	4.2.2.A.3)
Office Building	0.15 gpm/ft2 over 1500 ft2 (in this case entire bldg. of 800 ft2) plus 250 gpm hose or approx. 410 gpm	4.2.2.A.1)

Notes: (1) Demands assume a 10% added volume for excess sprinkler discharge.

1) Office Building

The new Office Building is a Group B occupancy with a combined area of approximately 800 ft² building (See Section 4.2.4.A) and based on Section 903.2.20.1, Exception 1 automatic sprinkler protection is not required for this building. Although sprinkler system protection is not required, the Glendale Fire Department has requested that an

automatic sprinkler system be provided due to the plant being remote for fire department response and includes added risks for the responding fire fighters. Therefore, the Office Building shall be provided with a wet pipe type sprinkler system that delivers a design density of 0.15 over the entire building for meeting an Ordinary Group 1 Hazard Occupancy type per NFPA 13-2016 (Ref. 6.0.E).

Although the plant is not critical to power operations (Ref. 6.0.A), it is recommended that a building fire alarm system also be provided as discussed in Section 4.2.3.A of this document.

2) Power Distribution Center (PDC) Skid

A new PDC Skid will be provided for powering the respective reciprocating engine power plant equipment, fuel gas conditioning and the fuel gas compressors. The building would be a single story Group F-1 occupancy with the buildings having an area of approximately 400 ft^2. The PDC building will house electrical switchgear power panels for powering the unit's electrical systems, motor control centers, plant and engine control system panels, generator breakers, and misc. relay panels for the associated equipment. This equipment will control/distribute power with voltages greater than 480VAC which raise a concern of safety to operating and emergency responders to a fire within this building should sprinkler protection be provided. NFPA 13-2016 Section 22.31.2 recommends that direction spray, and/or spray impingement shielding be provided to prevent direct spray impingement on the energized equipment, which in this case would be the majority of the floor area of the building. Given the presence of electrical switchgear within this building, Glendale adopted CBC section 903.2.20, Exception 1 indicates that a sprinkler system could be substituted for a building with a building wide fire alarm system that reports alarm signals to the plant site wide fire alarm system. This detection scheme is also supported by recommendations of NFPA 850-2015, Section 8.6 as well as the provision of an automatic suppression system (e.g., clean agent, CO2 system, etc.). A clean agent suppression system designed and installed to meet NFPA 2001-2015 (Ref. 6.0.W) however, shall provide suppression protection for the equipment in this building as it is critical to the operation of the plant and the loss would cause an extended outage for returning the plant to operation as discussed by NFPA 850-2015, Section 4.3.2.

4) Yard Area Equipment

The yard area equipment should not require any automatic fire suppression/detection systems as these areas do not contain buildings or large volumes of oil. Also it is not expected that fuel gas conditioning system will generate large quantities flammable material during the conditioning process. Any unused gases will be piped to the flare stack for burning. Additional features for mitigating a fuels gas fire at the compressor units should include an approved automatic fire safe valve (via local fusible link) with remote closure actuator that can be operated remotely from the control room. The valves should be provided on the fuel supply side to each compressor as a minimum. The control and power circuits for each valve actuator should be hardened from fire exposure via the installation of 2 hour fire rated cabling in conduit or protected by embedding the control circuit conduit in concrete. If the valve actuator is pneumatically operated, the valve solenoid and associated control circuits should be remotely located from the valve location and the valve actuator should be provided as a failsafe type actuator that closes either upon loss of air or upon the fusible link operating. Manual fire protection from nearby manual suppression equipment will also be provided as discussed in Section 4.2.2.C below.

B. Equipment Specific Fire Suppression Systems

Active clean agent fire suppression and detection systems will be provided for the individual engines, generators, the Continuous Emissions Monitoring System (CEMS) equipment and lube oil pumps that will be located within a common engine enclosure. Each of the four engine enclosures will be provided with an automatic clean agent extinguishment system designed in accordance with NFPA 2001-2015. The fire panels for each engine extinguishment system should report alarms signals to the plant fire alarm system as recommended in Section 4.2.3.A of this document. Additionally, the PDC skid buildings will also be provided with clean agent suppression systems as discussed in Section 4.2.2.A.3) above.

The Engine Cooler Fans are of noncombustible construction outside in the yard and do not contain combustible fluids, so will not require sprinkler protection be installed as recommended by NFPA 850 -2015, Section 7.9.5 (Ref. 6.0.V). The potential for ethylene glycol & water solution spill and containment is addressed in Section 4.2.4.D of this document.

C. Manual Fire Fighting Systems

The Glendale, CA. adopted version of the CBC (Ref. 6.0.X) in Section 905 & 906 generally indicates that all new buildings should be provided with a manual means of protection depending on the limitations cited in the CBC/CFC sections. The occupancy type would determine whether manual hose and extinguishers are needed. The Building/Yard area manual suppression system requirements include the following:

1) Portable Fire Extinguishers

   Portable fire extinguishers should be required to be provided within each building/area as follows:

   - Engine Enclosures - 20lbs dry chemical fire extinguishers rated for Class 20A:80B: C type fires should be sized and located throughout each turbine enclosure for Extra Hazard type fires in accordance with CBC/CFC Section 906. Additionally, 20lbs CO2 extinguishers should be located near the generator end of each turbine unit. These extinguishers should be rated to 10B:C. NFPA 850-2015, Section 6.5 invokes NFPA 10 (Ref. 6.0.C) requirements and should be followed with the exception of sizing and placement of the units within the enclosure as CBC/CFC Section 906 should be followed for this criteria.
   - Office Building - 5lbs dry chemical fire extinguishers rated for Class 2A:10B: C type fires should be sized and located throughout the office area for the building for Light Hazard type fires in accordance with CBC/CFC Section 906. NFPA 850-2015, Section 6.5 invokes NFPA 10 (Ref.6.0.C) requirements and should be followed with the exception of sizing and placement of the units within the building as CBC/CFC Section 906 should be followed for this criteria.
   - Power Distribution Center Skid - 10lbs dry chemical fire extinguishers rated for Class 4A:80B: C type fires should be sized and located throughout each building for Ordinary Hazard type fires in accordance with CBC/CFC Section 906. NFPA 850-2015, Section 6.5 invokes NFPA 10 (Ref.6.0.C) and should be followed with the exception of sizing and placement of the units within the building as CBC/CFC Section 906 should be followed for this criteria. 15lbs clean agent type

extinguishers rated as 2A:10B: C in lieu of dry chemical agent for ABC type extinguishers which may impact sensitive electrical equipment as recommended by NFPA 10-2013, Section 5.5.6.

- Yard Area - Although yard areas (e.g., Electrical switchgear area, LFG compressor/conditioning area) are not specifically addressed in the CBC/CFC or NFPA 850, 20lbs dry chemical fire extinguishers rated for 20A:80B:C, Extra Hazard type fires in accordance with CBC/CFC Section 906 should be provided. NFPA 850-2015, Section 6.5 invokes NFPA 10 (Ref.6.0.C) and IEEE NESC Section 11 (Ref. 6.0.Y) should be followed where guidance by CBC/CFC is not provided.

The portable fire extinguishers shall be located within recessed or semi-recessed cabinets in accordance with Glendale Ordinance 5892, Section IA-38. Surface mounted extinguisher cabinets can be provided where building structure materials are not practical for recessed installations.

2) Hose Stations

Standpipe hose stations should be provided within each building or yard area where required as follows:

- Engine Enclosures – Class III type hose stations for this occupancy would only be required if there is a floor elevation that exceeds 30 ft. above or below the lowest level of access to the enclosure as discussed in CBC/CFC Section 905.3.1 (Ref. 6.0.X.1 & X.7). Given this is an equipment enclosure that is only one story that does not have any additional floor elevations, a standpipe hose system would not be required. CBC/CFC Section 905.2 invokes NFPA 14-2013 (Ref. 6.0.Q) for spacing and location, etc. and would not provide added provision requirements. Therefore the conclusion to not provide a standpipe system is supported by NFPA 850-2015, Section 6.4.2.1 based on the results of this DBD.
- Office Building – Class III type hose stations for this building occupancy would only be required if there is a floor elevation that exceeds 30 ft. above or below the lowest level of access to the building as discussed in CBC/CFC Section 905.3.1 (Ref. 6.0.X.1 & X.7). Given that the building should be one story and should not have and additional floor elevations, a standpipe hose system is not required. This conclusion is supported by NFPA 850-2015, Section 6.4.2.1 based on the results of this DBD.
- Power Distribution Center Skid – Class III type hose stations for this building occupancy would only be required if there is a floor elevation that exceeds 30 ft. above or below the lowest level of the fire department equipment access to the building as discussed in CBC/CFC Section 905.3.1 (Ref. 6.0.X.1 & X.7). Given the building criteria is only one story that does not have any additional floor elevations, a standpipe hose system would not be required. CBC/CFC Section 905.2 invokes NFPA 14-2016 (Ref. 6.0.H) for spacing and location, etc. and would not require the added feature.
- Yard Area – Neither the CBC nor the CFC provide guidance associated yard fire mains, hydrants, hose stations and fire extinguishers. NFPA 850-2015, Section 6.4.1.1 invokes NFPA 24 -2013 (Ref. 6.0.I) which addresses the provision of hose systems for hydrants. NFPA 24-2013, Section 8.1.1 indicates that hose should be provided if plant personnel or a fire brigade are trained to applying this equipment during a fire. Based on input from the project team (Ref. 6.0.CC), plant personnel will not be trained to perform structural or incipient firefighting

services. Therefore it is not recommended that the hose station equipment be provided at the hydrant locations.

4.2.3 Plant Fire Alarm System

A. Building Fire Alarm Systems

In reviewing CBC/CFC Section 907.2, the Office building, and the PDC Skid should not require a local fire alarm/detection system to be installed since these occupancy types do not exceed the limitations that would require detection to be added for the specific occupancy. However, due to this plant possibly being limited in staff and unattended during periods when the units are not required to operate, the Office building, PDC Skid, and the Engine Enclosure suppression systems should have the installed fire alarm systems report to a plant fire alarm system for annunciating alarm signals in the Office Building and to an offsite to a Underwriters Laboratory (UL) listed central station, in addition to transmitting signals to the Grayson Plant Control Room as directed by GWP.. The provision of the plant fire alarm system is being recommended to provide alarm signaling that would alert plant personnel and reduce the response time for the Glendale Fire Department as recommended by NFPA 850-2015, Sections 6.7.1 and 8.4. To facilitate this recommendation, local fire alarm panels for each building or enclosure would be provided for notification of plant personnel as well as releasing or monitoring a local suppression system (e.g., Engine Enclosures, etc.). The fire panels should also supervise the suppression system releasing panels (if a separate panel is provided in lieu of the building panel) as required by CBC/CFC Section 904.3.5. As requested by the Glendale Fire Department, smoke detection shall be provided with "Alarm Verification" features where allowed by NFPA 72- 2016, Section 23.8.5.4.1. Additionally, each building or equipment enclosure that contains a fire alarm panel shall be provided with a visual notification appliance device located outside the building/enclosure and located as to ensure the emergency response equipment can readily identify the building or enclosure from where the fire alarm condition is originating. Each building shall also be provided with a sign near the exterior visual notification device that identifies the building/structure easily by the GFD responding apparatus.

The new fire alarm system should be designed and installed in accordance with NFPA 72-2016 (Ref. 6.0.N) per CBC 907.2.(Ref 6.0.X. 2). The following systems should be provided for each building/area.

- Engine Enclosures – Although detection is not required for this occupancy, a local fire panel will be provided as part of the equipment supply for monitoring and actuating the clean agent system being provide with each enclosure. The suppression system fire alarm panel should transmit signals to a plant fire alarm annunciation system to be located in the Office Building. The local enclosure fire alarm panel should perform the following.
  1) Manual fire alarm service should be provided as required by CBC/CFC 907.4.2 (Ref. 6.0.X.2 & X.7).
  2) Occupant Notification should be provided as required by CBC/CFC 907.5 (Ref. 6.0.X.2 & X.7).
  3) Suppression system monitoring should be provided as required by CBC/CFC 903.4 (Ref. 6.0.X.2 & X.7).
  4) Monitor area wide detection devices to automatically alert personnel to a fire within the enclosure. The system should be provided as required by CBC/CFC 907.4 (Ref. 6.0.X.2 & X.7).

- Office Building – The fire alarm system for the building should be monitored for alarm and trouble conditions per CBC/CFC Section 904.3.5. This fire alarm panel could also act as the plant fire alarm system to annunciate alarm signals in the Office Building from other area local fire alarm panels and perform the function of the head end for the plant fire alarm system as discussed in Section 4.2.3.B below. The local building fire alarm panel functions should perform the following.
  1) Manual fire alarm service should be provided as required by CBC/CFC 907.4.2 (Ref. 6.0.X.2 & X.7).
  2) Occupant Notification should be provided as required by CBC/CFC 907.5 (Ref. 6.0.X.2 & X.7).
  3) Suppression system monitoring should be provided as required by CBC/CFC 903.4 (Ref. 6.0.X.2 & X.7).

  Also, the Office building will monitor the fire water system for the following.
  1) The fire water storage tank status required by NFPA 22-2013 (Ref. 6.0.H) should be monitored per CBC/CFC 903.4 (Ref. 6.0.X.2 & X.7).
- Power Distribution Center Skid - This skid will be provided with a local fire panel that would transmit alarms to the plant fire alarm system to be located in the control room. Spot type smoke detection system should be provided throughout each building. This protection scheme is also supported by recommendations of NFPA 850-2015, Section 8.6. A clean agent extinguishment system will be provided to mitigate the risk plant outage durations as discussed in Section 4.2.2.A.3, the extinguishment system releasing panel should be monitored by the building fire alarm panel to report alarm signals to the plant fire alarm system in the Office Building. The PDC Skid fire alarm panels should perform the following:
  1) Manual fire alarm service should be provided as required by CBC/CFC 907.4.2 (Ref. 6.0.X.2 & X.7).
  2) Occupant Notification should be provided as required by CBC/CFC 907.5 (Ref. 6.0.X.2 & X.7).
  3) Detection/suppression system monitoring should be provided as required by CBC/CFC 903.4 (Ref. 6.0.X.2 & X.7).
  4) Suppression system monitoring should be provided as required by CBC/CFC 903.4 (Ref. 6.0.X.2 & X.7).

B. Plant Fire Alarm System Network

CBC/CFC Section 907.2, indicates that certain key functions should occur for fire alarm systems required by this section. A common plant fire alarm annunciator should be provided in the Office Building to alert the plant operators to a fire event at the plant. The annunciator should be networked together with all of the local building fire alarm panels on a communication network that should allow for the annunciator to receive the all of the alarm, trouble and supervisory signals in the Office Building. The new plant fire alarm system should be designed and installed to meet NFPA 72-2016 (Ref. 6.0.N) and CBC/CFC Section 907 (Ref. 6.0.X.2 & X.7). Additionally, NFPA 850-2015, Section 6.7 recommends the following systems be provided for reporting signals to the Office Building, notifying plant personnel and alerting the Glendale Fire Department.

- A plant wide public address system should be provided for manually alerting plant personnel of an emergency. The system should include priority distinctive signally to alert the personnel of fire event as well as other emergency events.

- Two way communication between the Office Building and emergency response personnel during emergency operations.
- A means to automatically transmit a fire alarm signal to an Underwriters Laboratory (UL) listed central station, in addition to transmitting signals to the Grayson Plant Control Room as directed by GWP.

4.2.4 Passive Fire Protection Features

A. General Building Construction Based on Occupancy

The new buildings to be constructed as part of the Biogas Renewable Generation project include the Office Building, Power Distribution Center Skid. The construction requirements for each building is partially dependent on the building occupancy. In addition to the building construction requirements cited in this section, these buildings whether built onsite or prefabricated shall also meet or exceed the applicable requirements of CBC, Chapter 7A. Other issues such as building external exposures will be address as part of Section 4.3 below. The building construction for these buildings should include:

1) Office Building

This building is estimated to be a one story structure that is approximately 20ft wide by 40 ft. long, and less than 30 ft. high with a total estimated area of 800 ft^2. The building should be classified as a Group B occupancy due to this building housing the plant main control room and limited plant operating personnel offices. The building construction type assigned should be Type IIA as discussed in CBC section 602 for this building. Additionally, CBC Table 601 defines if the structure of the building should be fire rated or not. In the case of Type IIA construction, a minimum fire rating of one hour for all load bearing structural components, walls and roof systems is required for this building structure as long as CBC Table 602 Exterior Wall Separation Fire Ratings separation criteria are being met. Based on the Biogas Renewable Generation Conceptual Fire Protection Plan drawing SCPP-00-M-601 (Ref.6.0.DD), the required separation criteria between other buildings on the plant site should meet or exceed the minimum separation distance of 10 ft. Therefore the minimum one hour fire rating for all load bearing structural components, walls and roof systems will be required for this building. Additionally, this building should not house any incidental uses or other occupancies beyond Group B.

2) Power Distribution Center (PDC) Skid

This building skid is estimated to be a one story structure with an area of approximately 20 ft. wide by 40 ft. long, and less than 30 ft. high, with a total estimated area of 800 ft^2 which is acceptable with CBC Tables 504.3, 504.4 and 506.2 (Ref. 6.0.X.2). The building should be classified as a Group F-1 occupancy due to this building housing electrical switchgear equipment needed for operating the PDC plant systems. The building construction type assigned should be Type IIB as discussed in CBC section 602 for this building. Additionally, CBC Table 601 defines if the structure of the building/skid should be fire rated or not. In the case of Type IIB construction, a fire rating is not required for the building structure as long as CBC Table 602 Exterior Wall Separation Fire Ratings, Section 508.4 required Occupancy Separation criteria and Section 509 Incidental Use separation criteria are being met. Based on the Biogas Renewable Generation Conceptual Fire Protection Plan drawing SCPP-00-M-601 (Ref.6.0.DD), the required separation criteria between other buildings on the plant site should meet or exceed the minimum separation

distance of 10ft. Therefore fire rated barriers or walls should not be required for this building.

3) Yard Area Equipment Separation

Several large plant components which are needed for power generation, such as the Reciprocating Engine/Generator Enclosures, fuel gas compressor/conditioning equipment area, engine cooler fans, and the existing Flare Stack area for the plant, are located throughout the yard area and should generally maintain the minimum spatial separation from the plant buildings by 30ft indicated by CBC Table 602(Ref. 6.0.X.2). This equipment and any associated enclosures will constructed of non-combustible materials. The Biogas Renewable Generation Conceptual Fire Protection Plan drawing SCPP-00-M-601 (Ref. 6.0.DD) should provide spatial separation distances between the system components (e.g., engine enclosures, the conditioning /compressor area and the flare stack area) and the plant buildings to meet or exceed the minimum separation criteria.

B. Building Fire Area/Egress Separation

In general all of the new buildings to be constructed at the Biogas Renewable Generation plant shall meet the Means of Egress requirements of the CBC/CFC Chapter 10. (Ref. 6.0.X.2 & X.7). Based on the discussion in Section 4.2.4.A above, the occupant loading and the physical size of these buildings, they should not require more than two exits per building as outlined in CBC Table 1016.2 and Table 1021.1. Travel distances however may be affected based on equipment obstructions, etc. and would need to be addressed during the design of the buildings. As for Fire Area separation requirements, all of the other buildings should not require room/area separation. Emergency lighting and exit signage shall also be provided for egress path illumination per CBC Section 1006, 1011 respectively (Ref. 6.0.X.2) and where critical plant actions may be required as recommended by NFPA 850-2015, Section 5.6 (Ref. 6.0.V).

C. Building/Equipment Drainage and Containment

Buildings/enclosures that should require added containment and drainage systems include the Engine enclosures. Based on input from the Engine Enclosure vendor, the lube oil system will be provided with double wall containment tank and all piping will have welded connections mitigate leakage potential. Therefore, leaking of the contents from the piping systems or components will be controlled to prevent the potential for propagating a fire to adjacent equipment or contaminating the ground area outside of the enclosure. Any floor drains provided for the enclosure/buildings will meet CBC/CFC Chapter 57 (Ref. 6.0.X.2 & X.7) which addresses the control and drainage of combustible liquids and contaminants from the enclosure/building.

NFPA 850-2015, Section 5.5 also provides guidance for drainage within buildings. The building drainage systems should, in addition to having the capacity to remove the entire volume of liquid within the component or piping system, should also have the capacity to contain/drain the volume of water discharging of 500gpm flow volume from system hose lines. The drainage of water and oil will be piped to an oil/water separation system for removal manually in accordance with Title 14, Chapter 8, Used oil Recycling Program (Ref. 6.0GG).

D. Specific Equipment Separation, Containment and Drainage

There could be electrical equipment and process equipment located in the yard area that may require separation and containment criteria be defined due to inherent hazards contained within the component (e.g., fuel gas compressors, engine coolers, aqueous ammonia tank, etc.). The drainage system design and installation should meet the applicable requirements of the CPC (Ref. 6.0.X.5). The location and containment of the contents of the material within the components should be discussed further below.

1) Combustible Liquid Applications – This includes the lube oil system connected to the engines and located within each Engine Enclosure. The components should contain the oil used to lubricate the engine/generator units. This liquid should be classified as Class IIIA or IIIB type liquids as defined by NFPA 30-2012 (Ref. 6.0.J). The lubricating oil piping system is to be welded piping from each engine to the oil reservoir within the respective enclosures. The lube oil tank will be a UL Listed double wall containment tank to that can be visually inspected within each engine enclosure. Any drainage from the engine enclosures should meet Section 4.2.4.C above and route to the oil/water separator system discussed below.

   NFPA 850-2015, Section 5.5 provides guidance for drainage for the engine cooler fan containment area. The drainage system should, in addition to having the capacity to contain and remove the entire volume of the ethylene glycol & water coolant solution within the cooler fan units, should also have the capacity to drain the volume of water discharging from the 500 gpm hose lines, discharging for 10 minutes and should compensate for the largest documented 24 hour rainfall over 25 year period.

   The plant should also be provided with an oil/water separator system that may be impacted by California Health and Safety Code (HSC), Division 20, Chapter 6.11, for Certified Unified Program Agencies (CUPA) (Ref.6.0.GG) regulations as invoked by Glendale Ordinance Section 104.1.1 (Ref. 6.0.X). The drainage system should be a closed system that collects oil and water from the containment areas are proposed to have the liquids manually removed from the oil/water separation system by pumping the system contents for offsite removal as required by the HSC. The building/area containment/drainage systems should, in addition to having the capacity to contain and remove the entire volume of liquid within the component or piping system, it should also have as a minimum, the capacity to contain/drain the volume of water discharging 500 gpm flow volume from system hose lines for a minimum period of 10 minutes (per NFPA 850-2015, Section 5.5.2). Each containment should also be sized to contain not only the largest documented 24 hour rainfall over a 25 year period for drainage from yard area containments. Per the recommendation in NFPA 850-2015 Section 5.1.4.3 and CBC Table 602, the containment curb should maintain a minimum of 30ft from an adjacent building, or system structure and should be pitched away from the adjacent exposure to the containment drain sump area and piped to the site oil/water separation system.

2) Flammable Gas Applications – This area includes the LFG Compressor and Conditioning System area. This compressor area is not within an enclosure and is greater than 30 ft. from the nearest structure, the Engine Cooler Fans, or PDC Skid. The equipment in this area does not contain significant amounts of combustible materials except for limited amounts of lubricating oil within the compressors and methane LFG. Should a LFG leak occur at the piping or instruments at the compressor equipment, an automatic and remote manual shutoff system should be provided to isolate LFG to the compressor system thus reducing the risk of a significant fire or explosion per NFPA 850-2015, Section 7.2.2. All electrical equipment within the Compressor/Conditioning System area should be designed to

meet the applicable requirements of CEC (Ref. 6.0.X.4) and IEEE NESC (Ref.6.0.Y) for a potentially hazardous environment. Containment and drainage for this area should consist of standard storm drainage system would be routed to the oil/water separator system that should compensate for the largest documented 24 hour rainfall over 25 year period.

3) Hazardous Material Applications

This application includes the Aqueous Ammonia storage tank near the engine coolers. CFC Section 5001 should be applied in furnishing a hazardous material management program for the hazardous toxic/corrosive material systems in the yard area.

- Aqueous Ammonia is a toxic material for use in exhaust emissions controls process. This material will be contained within a storage tank that is proposed to be located near the plant coolers per the Biogas Renewable Generation Project plan (Ref. 6.0.EE). Given the storage tank is being proposed to be 12,000 gallons, this quantity would exceed the Maximum Allowable Quantities (MAQ) of less than 1000 pounds (approximately 7,700 gallons) limitation cited in CBC/CFC Table 5003.1.1(2). The tank will, however, follow the applicable portions of CBC/CFC Sections 5003, 5004, and 5005 shall be applied to the design and installation of the ammonia system as follows.

  a) CFC Section 5003.2 provides guidance for the design/construction of the storage tank and piping systems that should be applied. Note that CFC Section 5003.2.4.2 requires above-ground tanks to be separated from adjacent structures/systems per 6003.2 except when the tanks are located within the vaults per CFC Section 5303.16 or 5704.2.8.
  b) CFC Section 5004 provides guidance for the application of storage tanks and the design/construction requirements for spill and secondary containment control of materials stored outside within the containment system.
  c) CFC Section 5005 should be applied for the ammonia closed piping system requirements.

4.3 Exterior Exposure Evaluation

4.3.1 Existing L.A. County Sanitation Buildings/Flare Stack System Protection

The existing facilities to remain operational during construction and after the beginning of plant operation includes the L.A. County Sanitation office buildings and the Flare Stack equipment area. These facilities are generally located at the northwest corner of the plant site and should not be modified as part of this plant construction. The buildings and equipment exposure assessments include the following:

A. L.A. County Sanitation Buildings – These buildings appear to primarily be Type VB wood frame combustible construction (essentially double wide trailers as permanent buildings). The buildings will be retained onsite and used by the L.A. County staff as an assumed Group B occupancy. The majority of the buildings should be greater than the minimum distance of 30ft from any new facilities or buildings as well as the existing Flare Stack equipment area. Therefore, modifications to minimize fire exposures between the new and existing buildings and equipment is being accomplished by meeting or exceeding the separation criteria in CBC Table 602 (Ref 6.0.X.2).

No additional protection upgrades to improve the existing L.A. County structures for fire exposures are being addressed by this project as these buildings are not being altered for this project. It should be noted however, that the Glendale Fire Department has recommended that all existing structures be retrofitted with fire sprinkler systems to maximize the benefits afforded to protecting lives, property, equipment, operational continuity, and responding firefighters. This recommendation will be addressed separately from the Biogas Renewal Generation project and will need to be discussed with the L.A. County Sanitation District.

B. Flare Stack Equipment Area – This area includes primarily steel piping and components for the operation of an automatically operated landfill gas (LFG or methane gas) flare system that currently operates if the LFG demand is reduced. The flare system automatically diverts the flow of LFG from the existing facility LFG conditioning system to the flare stacks to burn the excess gas off. This automated system will remain in place during construction and after the Biogas Renewable Generation plant begins operation. The landfill site processes enough methane gas that the LFG is being developed as the primary fuel for powering the new Biogas Renewable Generation plant. The piping and flare stacks are not housed within any building and should maintain a spatial separation >30ft from the nearest building (PDC skid) and therefore would not present a structural fire exposure the adjacent buildings.

   Should a methane LFG leak occur at the piping or instruments in the Flare Stack equipment area, the flare system is provided with an automatic trip system that should isolate LFG to the flare system thus reducing the risk of a significant fire or explosion per NFPA 850-2015, Section 7.2.2. However, should a fire originate in this area occur, the nearest site building (PDC skid) exposure should be minimized given the building is greater than 30ft from the stack equipment. The electrical equipment within the flare stack area is assumed to currently meet the applicable requirements of CEC (Ref. 6.0.X.4) and IEEE NESC (ref.6.0.Y) for a potentially hazardous environment and will not require further modification. This assumption is based on the existing equipment being in place and operating for years without an issue. Since this equipment is existing and will not be impacted by this project, any improvements that may be needed for this equipment will be the responsibility of the L.A. County Sanitation District.

   Therefore no additional protection upgrades are required to improve this facilities equipment for fire exposures.

C. Yard Area Wild land Exposure Mitigation – The area surrounding the plant includes open areas that have vegetation that could present a fire exposure to the plant as well as plant operations inadvertently initiating a fire event. Although the plant site should meet the requirements of CBC/CFC Chapter 49, but as a minimum should maintain a 30ft clear area of brush/shrubs etc. beyond all plant structures, systems and buildings per IEEE 979-2012, section 5.2.1 (Ref. 6.0.Z), the Glendale Fire Department, however, has requested the site maintain a minimum clear area of brush/shrubs, etc. of 100ft.

4.3.2 New Building Separation Requirements

See section 4.2.4.A above for the minimum separation criteria and application fire rated barriers/walls needed if separation criteria is not met.

4.3.3 New Equipment Separation Requirements

See section 4.2.4.A.4) above for the minimum separation criteria and application fire rated barriers/walls needed if separation criteria is not met.

4.4 Fire Protection Emergency Response

4.4.1 Demolition Emergency Response

Planning for the demolition of the existing LFG conditioning facility will be critical in order to ensure that the appropriate electrical systems/circuits are de-energized and the associated processes are properly isolated and purged of flammable gas prior to the demolition work being implemented per CFC Chapter 33 (Ref. 6.0.X.7). Prior to the initiation of demolition, a means of communication should be established between the project supervision and fire watch personnel when hot work is being performed, along with a means of communication available between the Glendale Fire Department to ensure prompt response as required per CFC Section 3309 (Ref. 6.0.X.7). Fire watch personnel are required per CFC Section 3304.5 (Ref. 6.0.X.7) and should be trained to perform incipient brigade functions. The existing plant access roads should maintained as a minimum for the response by fire department should the need arise and should be maintained per CFC Section 3310 (Ref 6.0.X.7).

As a minimum firefighting equipment should include fire extinguisher units sized and located per CFC Section 3315. The existing service water tank could also provide temporary fire water service during the demolition and construction process until the new fire water system discussed in Section 4.2.1 of this document can be constructed and placed in service per CFC Section 3312. The upgraded fire water system should be made operational as soon as possible.

Additionally, NFPA 51B-2009 (Ref. 6.0.L) and the recommendations of NFPA 850-2015 Chapter 16 (Ref. 6.0.V) should be incorporated into the demolition fire protection program planning and implementation.

The demolition contractor shall develop a fire protection systems outage and plant access plan for submittal to the Glendale Fire Department for their review and approval, with the approval received by GWP within two weeks of issuance of the submittal, in order to the start the demolition work.

4.4.2 Construction Emergency Response

The fire protection system program, access requirements and system availability should continue once the demolition work is completed as discussed in Section 4.4.1 above and continued to be available during the construction effort through to completion in accordance with CFC Chapter 33.

The EPC contractor shall develop fire protection systems outage and plant access plan for submittal to the Glendale Fire Department for their review and approval , with the approval received by GWP within two weeks of issuance of the submittal, in order to the start the construction work.

4.4.3 Fire Department Site Access

Access to the plant for offsite fire department response is very important and is required by CFC Section 503 and Appendix D (Ref. 6.0.X.7). There should be two roadways for access to the plant site, however if two access roads cannot be provided, the required equipment turning area should be provided for the fire department equipment. The access road within the plant shall meet CFC Section 503 and shall be designed to be a minimum width of 20ft, capable of supporting the load of the heaviest fire apparatus provided by the Glendale Fire Department and routed within 150ft of all portions of the plant facilities, and shall not have approach angles greater than those required by Glendale Fire Department. The access roadway within the plant should be capable of supporting a minimum gross weight of 77,000lbs and meet AASHTO Roadside Design Guide standard, 4th Edition (Ref. 6.0.F) for heavy roadway design. The road(s)

should be unobstructed at all times during the demolition and construction phases of this project or coordination should be made with the fire department when minimal periods are needed to obstruct the plant access. Where the roadway is adjacent to fire hydrant locations. The roadway shall be expanded to a minimum of 26ft wide per CFC Appendix D, Section D103.1. The roadway shall be marked to prohibit parking or standing of vehicles as required by CFC, Appendix D, Section D103.6. A fire department turnaround road shall also be provided and shall meet CFC, Appendix D, Section D103.1, for the alternative turnaround to the Hammerhead design. Refer to Drawing SCPP-00-M601 in Appendix C to this document.

The existing road way to the north of the plant will be improved, however will have design limitations imposed due proximity of the existing landfill site that includes the limited road width of 18ft and the road will not support the minimum gross weight of 77,000lbs. Additionally no hydrants will be located outside of the new plant site. Therefore, in order to provide the required dead end access for the emergency response equipment, a new turn around road will be provided at the north end of the plant that will meet CFC Appendix D requirements.

The access gates to the plant OCA will be normally closed and secured, so the main gate on the plant west and the alternate gate at the north sides of the plant will be identified as the access points for emergency equipment if needed. All OCA perimeter access gates shall be provided with a Knox Box for GFD emergency access to the plant site. Additionally, since the site may normally not be manned, a Knox Box shall be provided for each building, enclosure and fenced area within the OCA. Knox Boxes on buildings/enclosures shall be located near the associated building signage and notification appliance provided as part of the Section 4.2.3.A of this document to help direct the GFD responding personnel to box location

Additionally, overhead power lines should not be routed over the access roads or access gates, the fuel gas system component areas, or over site buildings where possible. Where power lines must cross access roadways, IEEE NESC C2-2012, Section 23 (ref. 6.0.Y) clearance requirements, should be applied.

4.5 Life Safety Evaluation

4.5.1 Existing Building/Equipment Area Egress

The existing Flare Stack/Switchgear area and the Sanitation District of Los Angeles County office buildings shall remain accessible during the entire period of the demolition, construction and operation of the new power plant. The existing Flare Stack/Switchgear yard fence Means of Egress will not change the existing fence gates and exit discharge paths for the Flare stack/switchgear area. These exits shall remain accessible for egress from the Flare Stack area at all times during the demolition/construction period.

4.5.2 New Control Room/Office Building and PDC Skid Egress

In general all of the new buildings to be constructed at the Biogas Renewable Generation plant should meet the Means of Egress requirements of the CBC/CFC Chapter 10. (Ref. 6.0.X.2 & X.7). Based on the discussion in Section 4.2.4.A & B above, this criteria should be met.

4.5.3 Owner Controlled Area & Electrical Switchgear/ Flare Stack Area Egress

A metal fence system should be provided for the plant site areas to prevent unauthorized access. The fencing system installation should include the recommendations cited in IEEE NESC C2-2012 Sections 11 & 92; CBC/CFC Section 1023.2; and IEEE Std 979-2012, Section 5.7 as follows:

A. New Owner Controlled Area Fencing and Access

The plant site should be provided with an Owners Controlled Area (OCA) fencing system to prevent unauthorized/untrained personnel or public from entering the plant site without being escorted. Two separate access entrance access gates that are a minimum of 26ft wide for the fire department equipment access should be provided at the two plant access road entrances as recommended by IEEE Std 979-2012, Section 5.7 (Ref. 6.0.Z). Additional fenced area personnel egress gates should be provided to ensure personnel can exit areas where equipment might obstruct egress paths. As discussed in Section 4.4.3 of this report, a Knox Box shall be provided at each entrance gate to the OCA, buildings and equipment fenced areas.

The new LFG compressor/conditioning and Cooler/Emissions equipment areas will not be enclosed within a fenced area so egress from these areas will not be an issue. Equipment placement should consider clearances for equipment aisles to allow for personnel egress per IEEE NESC C2-2012, Sections 112 & 113 (minimum of 7ft headroom) and CBC/CFC Section 1023.2 (minimum of 3ft width) as well as electrical hazard clearances. Lighting in the area should also meet IEEE NESC, C2-2012, Section 11 for normal and emergency lighting requirements.

B. Existing Electrical Switchgear/Flare Stack Area Fencing and Access

A metal fence system is currently provided around the existing Electrical Switchgear and Flare Stack equipment area to prevent unwanted safety exposures to plant personnel and prevent unauthorized/untrained personnel from entering the equipment area and inadvertently operating critical equipment. The existing Flare Stack/Switchgear yard fence Means of Egress will not be changed for the existing fence gates and exit discharge paths for the Flare stack/Switchgear area. These area exits shall remain accessible for egress from the Flare Stack/Switchgear areas at all times during the demolition/construction period.

4.6 Plant Demolition and Construction Impact on Fire Protection Program

In general, the demolition of the existing LFG facility and the construction of the new power plant should require the development of administrative procedures for the fire protection/safety requirements to be implemented during the performance of the work. The procedures/program should define the responsibilities of developing the program, the training of the construction personnel in the implementation of procedures/policies, and staffing and training for personnel performing emergency response functions. As a minimum, the applicable requirements of CBC/CFC Chapter 33 (Ref. 6.0.X.2 &X.7) and the recommendations of NFPA 850-2015, Chapter 16 (Ref. 6.0.V) should be used for the development, training and implementation of a fire protection/safety program prior to start of any demolition/construction work. Also see Section 4.4 of this document for additional requirements and recommendations.

Also, coordination with the LA County site personnel shall be performed to ensure the personnel are aware of the actions needed during a site emergency and when demolition/construction activities may affect the LA County staff normal operations.

4.6.1 Sequence for Removal of Existing Fire Protection Systems

Although the schedule for the demolition of components/systems/structures has yet to be defined, a key system that should be upgraded prior at the start of the majority of the plant demolition and construction should be the site fire water supply system discussed in Section 4.2.1.A of this document. A new fire water storage tank will be installed to replace the service existing tanks. The existing yard fire main system will be replaced as part of the new fire water supply system installation. The new fire water system should be installed as early as possible in the construction process and remain in service during construction and plant operation to

provide fire water to the plant site. The existing service water tank will remain to support the existing L.A. County buildings and new office building potable water requirements. Therefore coordination for the removal for the fire water service from the existing tank will be required to ensure fire water service is provided during demolition, construction and operation. The new fire water system shall be verified operable via flow inspections and functional testing per NFPA 25-2014, Chapters 7 & 9 (Ref. 6.0.G).

All work should be performed safely in accordance with the site procedures and safety program along with maintaining the required emergency response access to all areas of the plant including equipment laydown areas, etc. As existing structures/systems/components are being demolished, the minimum type and quantity of fire extinguishers should also be located as required by NFPA 10-2013 and required hot work procedures implemented per NFPA 51B-2014 (Ref. 6.0.L).

4.6.2 Sequence for Placing New Fire Protection Systems into Service

As discussed in Section 4.6.1 above, the new fire water supply system should replace the existing fire water system early in the project. The new fire main system should be provided with required fire hydrants with isolation valves. Should new building(s) require water based suppression systems to be installed, the water storage capacity and the supply pressure would need to be evaluated for meeting the demand(s). Indicating type isolation valves should be provided for every building being provided with a water based suppression system. The building isolation points should tie in to the fire water supply piping for the associated building water based suppression system(s) and should be located no closer than 40 ft. from the building being supplied per NFPA 24-2013, Section 6.2.11 (Ref. 6.0.I). As new buildings are constructed, the minimum type and quantity of fire extinguishers should also be located as required by NFPA 10-2013 and required fire barriers/walls should be installed as a priority.

Once the building is constructed, the required automatic fire suppression and detection systems should be installed and tested in accordance with the applicable NFPA standard and prepared for turnover to GWP for operation.

4.6.3 Communication during Demolition, Construction and Turnover

Communication during the construction process should include onsite two way radio communication, an onsite paging system for the construction area to alert site personnel of fire or personnel injury emergencies and a means (i.e., telephone service) to report emergency to the Glendale Fire Department.

4.6.4 Existing Facility and Personnel Egress Protection during Demolition & Construction

The minimum egress exits and exit discharge pathways should remain unobstructed during demolition & construction. If there are periods when exits would be blocked, planning for alternative exits should be provided and all applicable personnel should be trained on the change in exits. Exits from the existing Flare Stack area should remain operable at all times. If exits need to be obstructed, the plant personnel should be trained on the change in exits, and alternative actions that would need to be taken to exit the area safely.

4.6.5 Emergency Plan Coordination with Glendale Fire Department during Demolition/Construction/Turnover

Emergency planning as discussed in the applicable portions of CFC Chapter 4 (Ref.6.0.X.7) should be developed prior to the start of any work. Once an approved program is in place, all personnel should be trained to understand their roles and responsibilities in the event of an emergency. This document should be a living document for use throughout the life of the

demolition/construction and during plant operation. Just as important is the means for communicating with the Glendale Fire Department, for alerting them to an emergency, and assisting them once they arrive onsite to guide them to the emergency and provide critical information outlining the stability of buildings/structures being demolished/constructed. Additionally, ongoing construction status meetings/conference calls should be performed on a weekly basis with designated fire department representative(s) to help fire department plan for a fire or personnel injury emergency response to the site during the construction phase.

5.0 CONCLUSIONS & RECOMMENDATIONS

Results of the analysis provided in Section 4.0 provides the design basis for the Biogas Renewable Generation Plant project fire protection program and systems and features. Section 5.1 discusses the general fire protection features guidance cited in Section 4.0 while Section 5.2 through 5.4 discusses the key issues that should need attention during the project design and implementation phases include:

5.1 General Guidance Conclusions Cited in Section 4.0

The general guidance discussed in Section 4.0 includes the following:

A. Fire Water System
   A new fire water system will need to replace the existing system for the plant site in order to meet the CBC/CFC requirements for site fire flow and hydrant placement. The existing fire water storage will need to be increased in volume in order to meet the minimum fire flow water demands.
B. Fire Protection Systems
   The new buildings to be constructed on site will not be required to have an automatic sprinkler system due to area limitation as allowed by Glendale Ordinance 5892. It is recommended that the buildings and critical equipment (i.e., Engine Enclosures, PDC) be provided with specific equipment suppression systems that report to a plant wide fire alarm system. All of the site buildings should also be provided with building wide fire alarm systems that report alarm conditions to the plant control room as well as to an offsite central station, in addition to transmitting signals to the Grayson Plant Control Room as directed by GWP.
C. Exposure Protection
   Fire barriers/walls should not be required for the new buildings if the spatial separation criteria cited in CBC Table 602 are being met.
D. Emergency Response
   See discussion in Section 5.2 thru 5.4 below
E. Life Safety
   The new buildings and yard areas should meet the applicable requirements of CBC/CFC for building egress and IEEE NESC C2-2012 and CBC/CFC for yard area equipment access and fencing.

5.2 Preparation and Implementation of Demolition, Construction and Emergency Planning

The development and execution of plans for the demolition of the existing LFG facility and the construction of the new power plant buildings/equipment areas should help mitigate the potential for injury to plant and construction personnel. Additionally, planning should mitigate the potential for unwanted damage to the Flare Stack equipment. Ongoing communication with the Glendale Fire Department should also help in ensure emergency response personnel should be aware of the fire protection equipment that might be out of service and the stability of structures/equipment during demolition and construction phases. This information should be helpful in identifying a possible change in tactical approach or access to areas/hazards by the fire department due to changes in construction site status.

5.3 Fire Risks during Demolition, Construction and Operation

Key fire risks issues have been addressed in detail in Appendix B to this document. Implementation of the recommendations cited should aid in mitigating the risk from fire damage. Installation, testing and maintenance of the new systems and features should ensure that the systems operate as intended should a fire occur.

5.4 Maintain Operations and Access to the Flare Stack Equipment

The existing Flare Stack system area must remain operational and accessible throughout the demolition and construction phases of this work. Coordination, communication and planning must be implemented to ensure that a minimum of two means of egress and equipment access are available for the Flare Stack fenced area. Additionally, coordination for existing facility service outages should also need to be planned as part of the construction effort.

6.0 REFERENCES

The following references were used in the development of this document:

A. Jensen Hughes Kick off meeting agenda/notes dated 4/27/2016.

B. Biogas Renewable Generation Project Data Input dated 5/23/2016.

C. National Fire Protection Association (NFPA)10-2013, Standard for Portable Fire Extinguishers

D. NFPA 12-2011, Standard on Carbon Dioxide Extinguishment Systems

E. NFPA 13-2016, Standard for Installation of Sprinkler Systems

F. American Association of State Highway and Transportation Officials (AASHTO) Roadside Design Guide, 4th Edition, Dated 2011

G. NFPA 25-2014, Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems

H. NFPA 22-2013, Standard for Water Tanks for Private Fire Protection

I. NFPA 24–2016, Standard for the installation of Private Fire Service Mains and their Appurtenances

J. NFPA 30-2015, Flammable and Combustible Liquids Code

K. NFPA 37-2015, Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines

L. NFPA 51B-2014, Standard for Fire Prevention During Welding, Cutting, and Other Hot Work

M. NFPA 70-2014, National Electrical Code

N. NFPA 72-2016, National Fire Alarm Signaling Systems

O. NFPA 80-2018, Standard for Fire Doors and Other Opening Protectives

P. NFPA 90A-2015, Standard for the Installation of Air-Conditioning and Ventilating Equipment

Q. NFPA 14-2016, Standard for Installation of Standpipe and Hose Systems

R. Not Used

S. NFPA 551-2016, Guide for the Evaluation of Fire Risk Assessments

T. NFPA 600- 2015, Standard on Facility Fire Brigades

U. NFPA 780-2014, Standard for the Installation of Lightning Protection Systems

V. NFPA 850-2015, Recommended Practices for Fire Protection for Electric Generating Plants and HVDC Stations.

W. NFPA 2001-2015, Standard on Clean Agent Fire Extinguishment Systems

X. Glendale Resolution 5892Adopting California 2016 Building Standards (CBC).

   1) Not Used

   2) 2016 California Building Code (CBC)

   3) 2016California Mechanical Code (CMC)

4) 2016 California Electrical Code (CEC)

5) 2016 California Plumbing Code (CPC)

6) Not Used

7) 2016 California Fire Code (CFC)

Y. Institute of Electrical and Electronics Engineers (IEEE), ANSI C2-2012, National Electric Safety Code

Z. Institute of Electrical and Electronics Engineers (IEEE), Standard 979-2012, Guide for Substation Fire Protection

AA. Underwriters Laboratory (UL) Fire Protection Equipment and Fire Resistance Directories, Latest Edition

BB. Factory Mutual Research (FM) Approval Guide, Latest Edition

CC. Stantec comments on draft document 02D001-RPT-002, 6/27/2016

DD. Glendale Water & Power Drawing SCPP-00-M-601, Dated 01-11-2018 Biogas Renewable Generation Conceptual Fire Protection Plan

EE. Society of Fire Protection Engineers Handbook, 4th Edition

FF. NFPA 1142-2012, Standard on Water Supplies for Suburban and Rural Fire Fighting

GG. California EPA Unified Program (CUPA), California Health and Safety Code, Division 20, Miscellaneous Health and Safety Provisions, Chapter 6.11.

A. APPENDIX A – APPLICABILITY MATRIX

The table in this section identifies the applicable code requirements associated with each building as discussed in this document.

Applicable Code(s)	Engine Enclosure	Office Building	Water Storage Tank, Fire Main	PDC Skid	LFG Compressor/ Conditioning Yard Area	Existing Electrical Equipment Area
California Bldg. Code	X	X	X	X		
California Fire Code	X	X	X	X	X	X
California Electrical Code	X	X	X	X	X	X
California Mechanical Code	X	X		X		
California Plumbing Code	X	X	X	X	X	
California Energy Code		X		X		
NFPA 10-2013	X	X	X	X	X	X
NFPA 13-2016		X				
NFPA 22-2016			X			
NFPA 24-2016			X			
NFPA 30-2015	X					
NFPA 37-2015	X				X	
NFPA 70-2014	X	X	X	X	X	X
NFPA 72-2016	X	X	X	X		
NFPA 80-2016		X(4)		X(4)		
NFPA 90A-2015		X(4)		X(4)		
NFPA 780-2014	X	X	X	X	X	X
NFPA 850-2015	X	X	X	X	X	X
NFPA 2001-2015	X(2&3)			X(2)		
IEEE C2-2012	X			X	X	X
IEEE 979-2012				X		X

NOTES:

1) All California Building Standards- 2016 Edition as adopted by Glendale City Resolution 5892.

2) This Equipment assumed to be provided by either the PIME equipment vendor or EPC Contractor under separate contract.

3) NFPA 37, recommends either Clean Agent, CO2 or water mist type suppression systems be applied for engine enclosures.

4) Where fire walls or barriers are provided, this standard could apply. .

B. APPENDIX B – FIRE RISK ASSESSMENTS

B.1. Fire Risk Assessments

Qualitative fire risk assessments were performed for known areas of facility fire risks to analyze their potential impact and to define mitigating strategies. Five potential risks were identified as having a significant impact on plant operations and personnel safety.

Generally methods that should be considered for mitigating and dealing with risks include one or more of the following:

- Development of Pre-Fire Plans and training for both plant personnel and the Glendale Fire Department for their roles and responsibilities;
- Maintenance and testing of fire protection systems and features (systems, passive barriers, etc.) in accordance with the applicable NFPA standards to ensure the systems are available when needed;
- Maintenance and testing of plant equipment to ensure their safety functions operate when needed or testing of systems to help identify when failures are imminent (e.g., Flare Stack system automatic shutdown function).

B.2. Fuel Gas Pipeline Explosion

The source of fuel for the new Biogas Renewable Generation plant is proposed to be the landfill methane gas generated and piped from the exiting Flare Stack area to the Landfill Gas (LFG) conditioning/compressor area and ultimately to the new reciprocating engine units to be located in the new Engine Building. Landfill gas should flow from the Flare Stack area to the Compressor/Condition area at approximately 25 inches of water column (approx. 1 psi). Once the LFG is conditioned it is piped to the four reciprocating engines located in the Engine Building at the required pressure need for engine operation. This pressure should be defined once the equipment is selected. The discussion in this section is based on previous experience and not specific equipment requirements. This is due the plant equipment and design requirements not being defined at this time. This issue should be addressed once the equipment design requirements have been identified.

A methane gas pipeline explosion is the risk that would have the most severe outcome and a hydrocarbon fireball is a complex occurrence. Once the vapor cloud reaches an ignition source, the vapor cloud would ignite, followed by a sustained hydrocarbon fire until the gas supply is isolated. To calculate the size and heat output of a methane gas fireball, certain assumptions must be made. First, it is assumed that the gas release and resulting fireball is approximately spherical. Second, it is assumed that once released, it would take the vapor cloud approximately 15 seconds to contact an ignition source. This is an assumption that provides a conservative estimate on the size and impact of the fireball. After 15 seconds, the total mass of gas released would be based on the total failure of the pipe to be installed and the pressure at which the LFG needs to be delivered.

However, using the spherical fireball model described in Chapter 3-10 of the SFPE Handbook, 4th edition (Ref. 6.0.EE), a fireball containing an assumed mass of 43 kg of methane gas, based on previous plant experience, would produce a fireball of approximately 20 m in diameter. An object 10 m from the edge of the fireball (20 m from the center of the fireball) would experience a radiant heat flux of approximately 90 kW/m2.

IEEE 979, Guide for Substation Fire Protection, 2012 edition (Ref. 6.0.Z), provides information on the impacts of various levels of radiant heat exposure. The IEEE 979 Table B.3 is reproduced below as Table B-1. Using the same spherical fireball approximation described above, all equipment within 32 m would experience an assumed radiant heat flux of

approximately 35 kW/m2 would be severe enough to cause failure, and all personnel within approximately 60 m radius would be exposed to an estimated heat flux of 5 kW/m2 to cause skin burns.

Following the fireball, a large hydrocarbon fire would be expected to occur rupturing the LFG pipe until the gas flow is secured.

A methane gas pipeline explosion and resulting fire would likely result in a complete loss of the systems at the generating plant and potentially cause serious injury or death of personnel, particularly those near the fireball. Therefore the emergency planning should identify the specific actions required to minimize the effects of a methane gas leak by isolating the gas source at a key supply valve as quickly as possible. As a prevention method, proper inspections and maintenance of the Flare Stack system and the future tie in to the compressor/conditioning area equipment should be included inspection/maintenance process.

Impact of radiant heat flux	Heat flux (kW/m^2)
Sufficient to cause damage to process equipment	37.5
Equipment failure	35
Damage to unprotected metal	30
Spontaneous ignition of wood	25
Cable insulation degrades	20
Pilot ignition of wood	12.5
Plastic melts	12.5
Pain threshold reached after 8 s Second-degree burns after 20 s	9.5
Possible failure of ceramic bushings	5
Skin burns	5

Table B-1 – Impact of Radiant Heat Flux (Reproduced from IEEE 979 Table B.3)

As indicated in Section 4.2.4.D.2 of this document, if the following design features are implemented, the effects of a fuel gas system failure should be reduced.

- An automatic and remote manual shutoff system should be provided to isolate LFG to the compressor system to reducing the risk of a significant fire or explosion per NFPA 850-2015, Section 7.2.2.
- All electrical equipment within this area should be designed to meet the applicable requirements of CEC (Ref. 6.0.X.4) and IEEE NESC (ref.6.0.Y) for a potentially hazardous environment

B.3. Engine Unit Fire and Explosion

This power plant design should include potentially four LFG (methane gas) fueled reciprocation engines to drive the generator units. These units are proposed to be located side by side within individual engine enclosures.

An engine fire and potential explosion event could result in several hazards. The first is a potential release of fuel, which could create a fireball and subsequent pressure wave. A second could include the expulsion of high velocity shrapnel from the affected engine due to the effects

of the fuel gas fireball and pressure wave. Another hazard could be a resulting fire, either from the LFG fuel, or from the release of lube oil due to damage cause to oil lines, etc.

Given the placement of the four engines, flying shrapnel from a failed engine could directly impact an adjacent engine, rendering both engines inoperable. Although not an NFPA 850-2015 or CBC/CFC requirement, the effects of an explosion could be mitigated by providing a blast resistant wall between each engine generator to block the path of the expelled shrapnel. The additional protection provided by the wall is considered an industry "best practice" that can ensure business continuity in the event of an engine failure, but is not a requirement.

B.4. Fire Inside Buildings

A fire inside a building is assumed to be the most likely of these scenarios. A fire could occur due to many possible scenarios. Ignition sources could include, but are not limited to, electrical equipment failure, electrical arcing of cabling, or hot-work performed inside a building. Combustibles could include, but are not limited to the following:

- Class A items (e.g. paper, cardboard, cable insulation, plastics, etc.) found in the Control Room/Office Building and the Power Distribution Center (PDC) Building,
- Class B flammable or combustible liquids in the engine enclosures or ancillary skid units (e.g., lube oil skid),
- Other Class C items such as electrical equipment containing plastics and cable insulation, found in the Office Building and PDC Skid.

The control of a fire within a building or structure has been addressed by installing a fixed automatic suppression system (e.g., Engine Enclosures, PDC), providing detection for early warning throughout each structure, implementing the use of automatic isolation control of the fuel gas systems and the provision of spatial separation to aid in mitigating the effects of a fire event as recommended by NFPA 850-2015 or the CBC/CFC as discussed in Section 4.0 of this document.

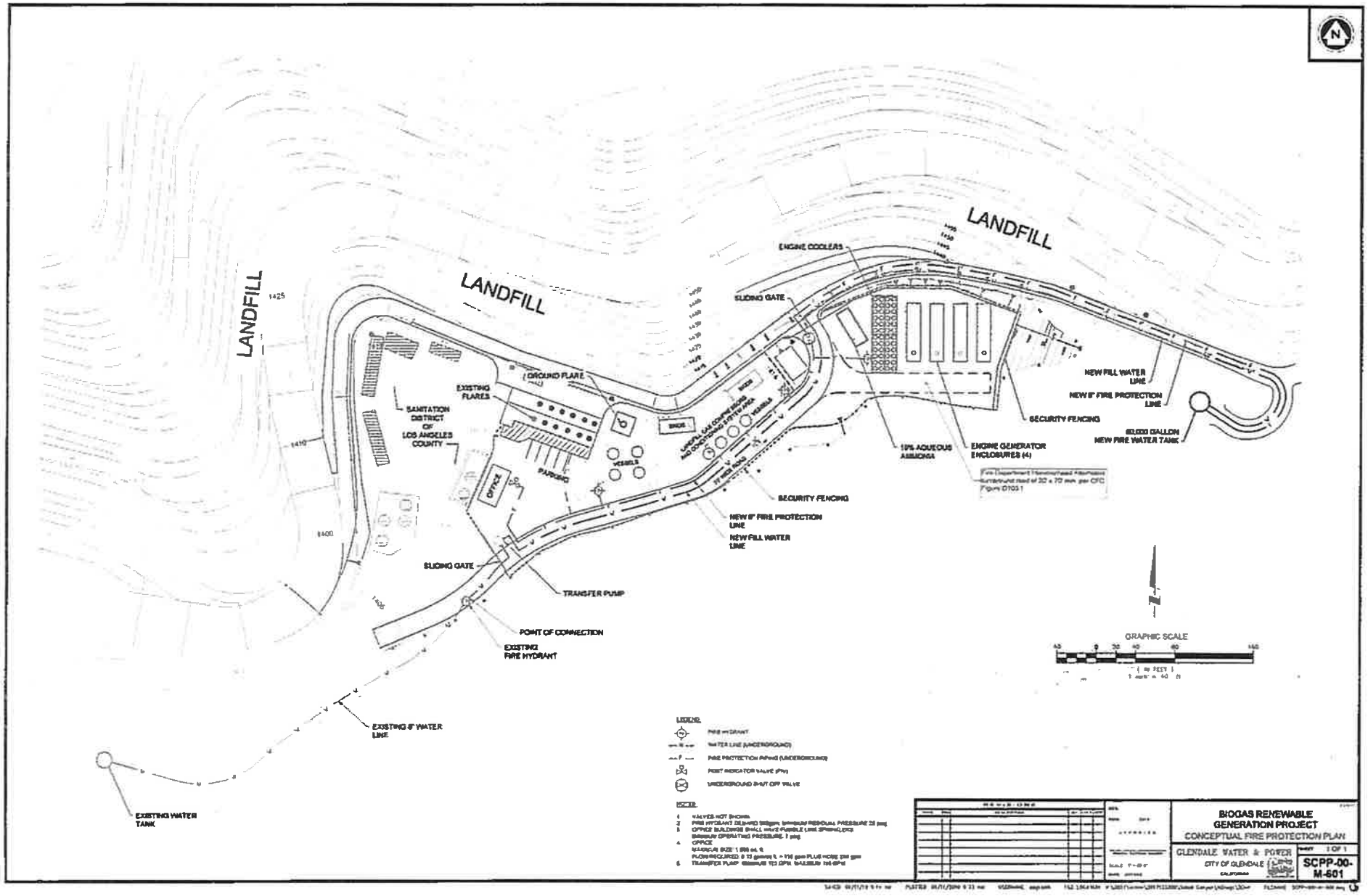
B.5. Fires Initiated during the Demolition/Construction Phases

The potential for a fire to occur during the demolition phase of the existing LFG conditioning facility, the Sanitation District of Los Angeles County buildings, and the construction of the new plant is likely due to the potential for hot grinding particles or welding slag inadvertently dropping into and igniting combustible materials (i.e., paper cardboard, oil soaked rags, etc.) located below or adjacent to the work area. To minimize the potential for fire propagation, project planning should include the implementation of fire watch staff for all hot work and the adherence to hot work processes per NFPA 51B-2012 and CFC, Chapter 33. Good fire safety training and meetings with the construction staff and project supervision should also help the construction team to properly prepare for hot work and what to do if a fire should occur. Additionally, certain fire protection systems and features should be available or actions taken as follows:

- Incipient firefighting equipment and staff trained in the use of the equipment should be available in the area of hot work.
- Planning and implementation should include ensuring the means of egress and fire department equipment access paths are always unobstructed.
- Proper storage, care and use of class A combustibles, combustible/flammable liquids to prevent this material from being exposed to areas implementing hot works, etc.
- Constant planning and communication with the Glendale Fire Department to alert them to access or equipment outage issues during the demolition/construction phases.

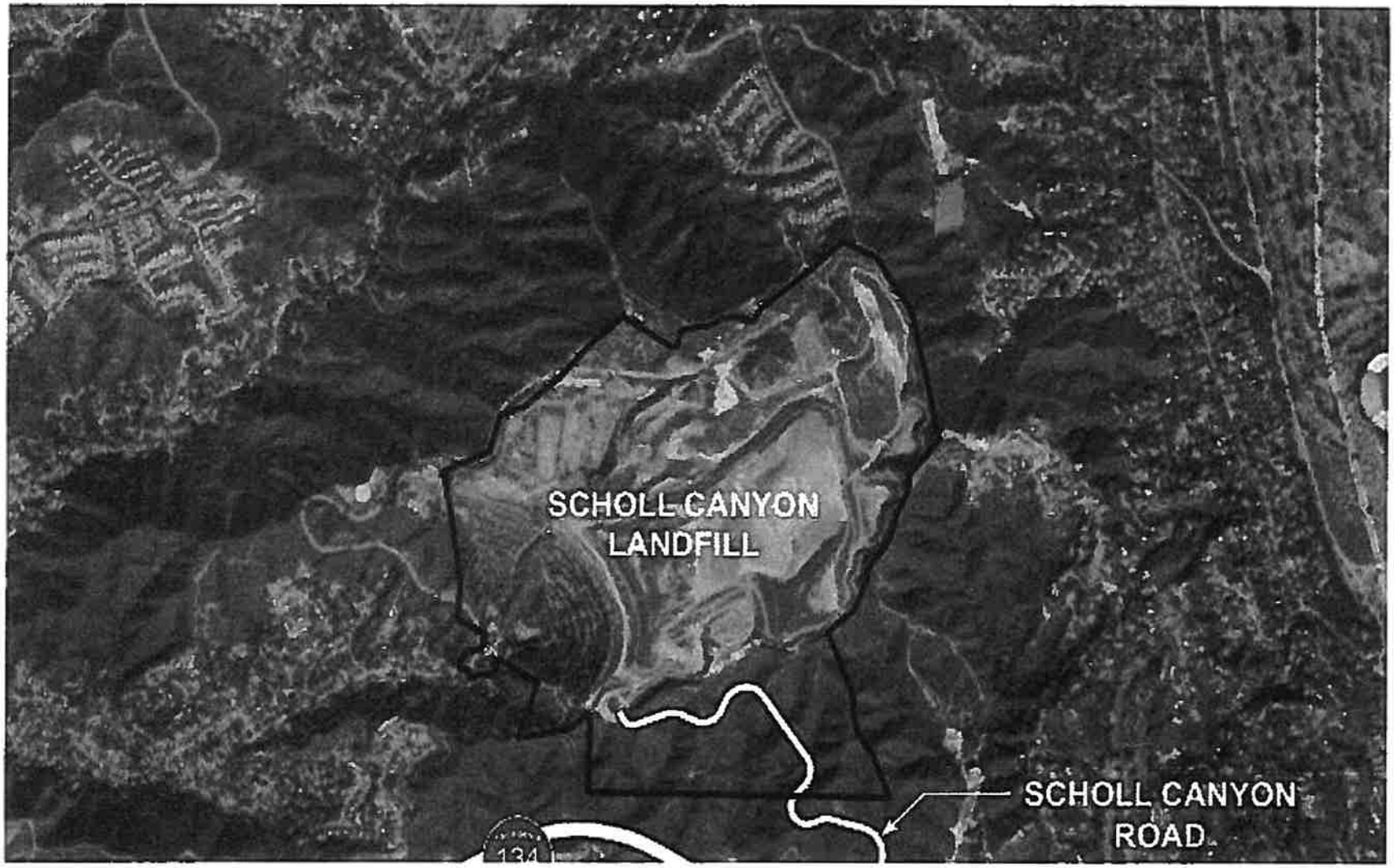
C. APPENDIX C – BIOGAS RENEWABLE GENERATION PROJECT CONCEPTUAL FIRE PROTECTION PLAN

SCHOLL CAYNON LANDFILL
7721 N Figueroa St, Los Angeles, CA 90041

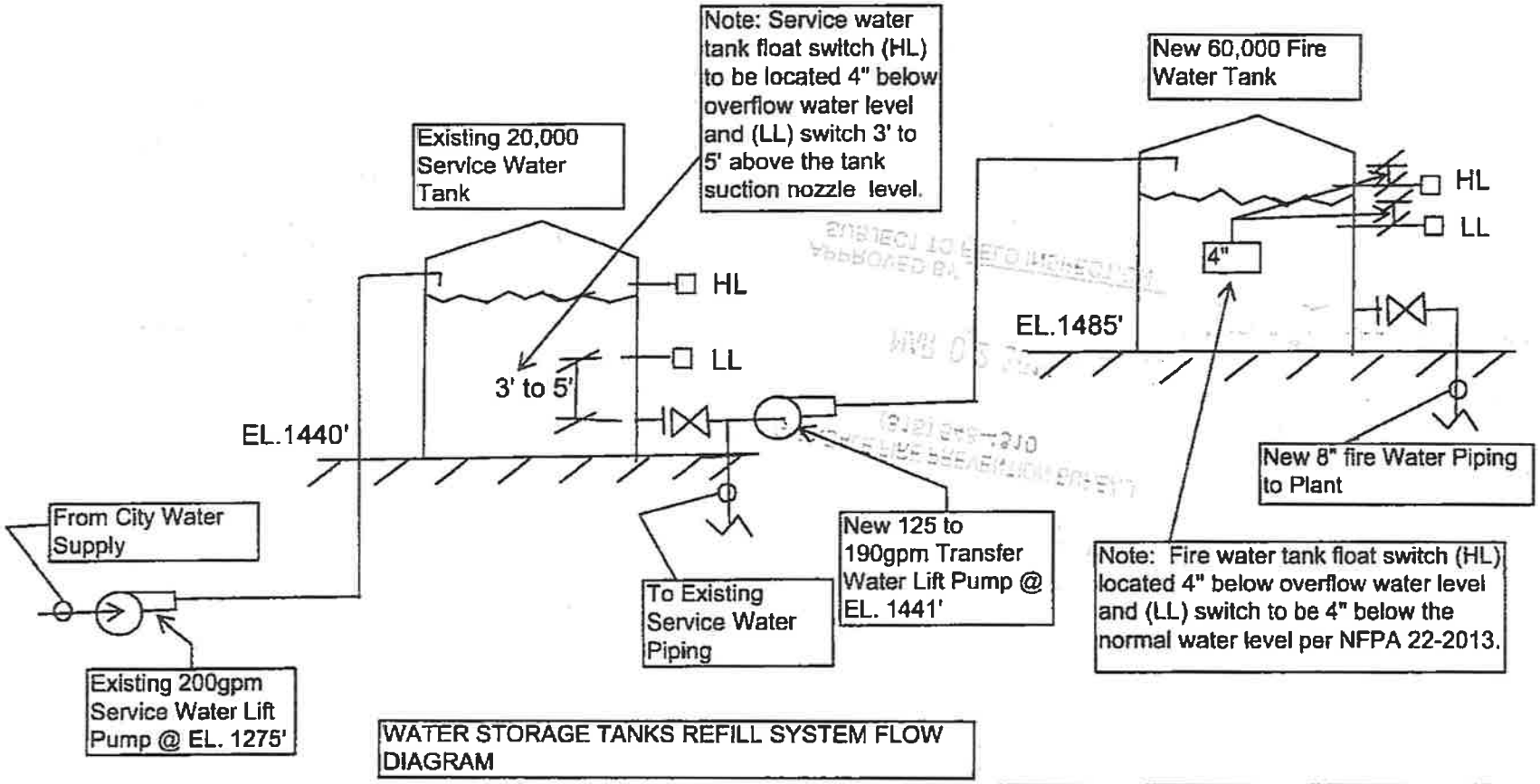

LANDFILL
LANDFILL
LANDFILL
1425
1410
1400
ENGINE COOLERS
SLIDING GATE
GROUND FLARE
EXISTING FLARES
SANITATION DISTRICT OF LOS ANGELES COUNTY
OFFICE
PARKING
VESSELS
SKIDS
LANDFILL GAS CONDENSATE AND CONDENSATE DISPOSAL AREA
75 HDPE TANKS
19% AQUEOUS AMMONIA
ENGINE GENERATOR ENCLOSURES (4)
SECURITY FENCING
NEW FILL WATER LINE
NEW 8" FIRE PROTECTION LINE
60,000 GALLON NEW FIRE WATER TANK
SECURITY FENCING
NEW 8" FIRE PROTECTION LINE
NEW FILL WATER LINE
SLIDING GATE
TRANSFER PUMP
POINT OF CONNECTION
EXISTING FIRE HYDRANT
EXISTING 8" WATER LINE
EXISTING WATER TANK
GRAPHIC SCALE
LEGEND
FIRE HYDRANT
WATER LINE (UNDERGROUND)
FIRE PROTECTION PIPING (UNDERGROUND)
POST INDICATOR VALVE (PIV)
UNDERGROUND SHUT OFF VALVE
NOTES
1 VALVES NOT SHOWN
2 FIRE HYDRANT DELIVERS 500gpm minimum RESIDUAL PRESSURE 20 psig
3 OFFICE BUILDINGS SHALL HAVE PUBLIC LINE SPRINKLERS
MINIMUM OPERATING PRESSURE 7 psig
4 OFFICE
MAXIMUM SIZE 1,000 sq. ft.
FLOW REQUIRED: 0.13 gal/min/ft. = 130 gpm PLUS HOSE 250 gpm
5 TRANSFER PUMP minimum 125 GPM SALESLINE 100 GPM
BIOGAS RENEWABLE GENERATION PROJECT
CONCEPTUAL FIRE PROTECTION PLAN
GLENDALE WATER & POWER
CITY OF GLENDALE
SCPP-00-M-601

D. APPENDIX D – BIOGAS RENEWABLE GENERATION PROJECT OVERALL SITE PLAN

SCHOLL CAYNON LANDFILL
7721 N Figueroa St, Los Angeles, CA 90041


SCHOLL CANYON
LANDFILL
SCHOLL CANYON
ROAD
134

E. APPENDIX E – BIOGAS RENEWABLE GENERATION PROJECT WATER STORAGE SYSTEM DIAGRAM



WATER STORAGE TANKS REFILL SYSTEM FLOW DIAGRAM

FIRE WATER TANK REFILL LOGIC

a. Once the water tank water level in the new fire water tank falls below the tank float switch set point of 4" below normal water level (LL), the float switch will transmit a supervisory alarm sign to the plant fire alarm system indicating low water level.

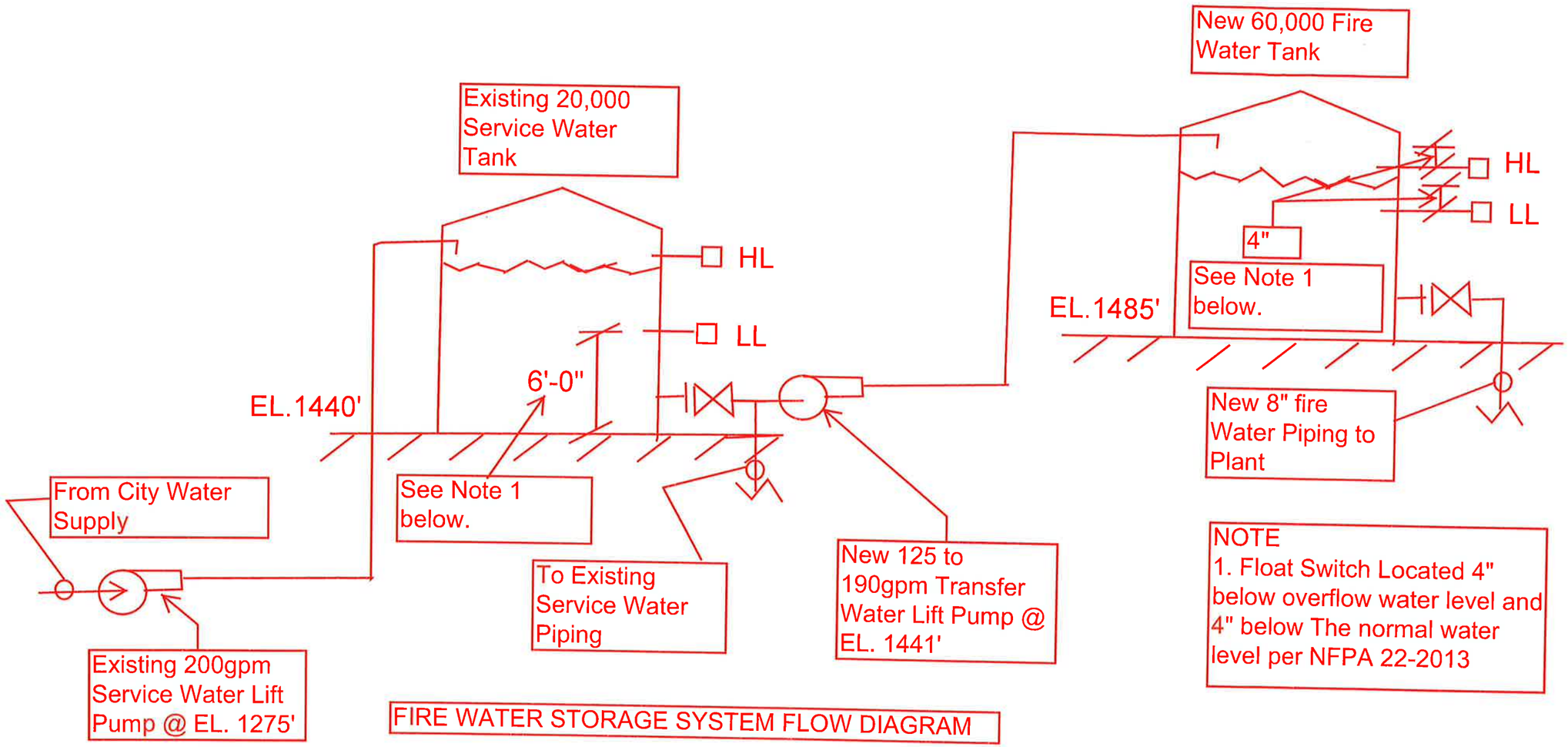
b. The fire water tank water level float switch (LL) will also transmit a signal to the new 125gpm transfer pump to start refilling the fire water tank.

c. The transfer pump will continue to operate until the water level reaches the high water level float switch (HL) just below the overflow outlet within the fire water tank.

EXISITNG SERVICE WATER TANK REFILL LOGIC

a. Once the water tank water level in the existing service water tank falls below the tank float switch set point between 3' to 5' above the tank suction nozzle level, the float switch (LL) will transmit a signal to the existing city 200gpm pump to start refilling the existing service water tank.

b. The city pump will continue to operate until the water level reaches the high water level float switch (HL) just below the overflow outlet within the service water tank.



FIRE WATER STORAGE SYSTEM FLOW DIAGRAM

1. FIRE WATER TANK REFILL LOGIC

a. Once the water tank water level in the new fire water tank falls below the tank float switch set point of 4” below normal water level, the float switch will transmit a supervisory alarm sign to the plant fire alarm system indicating low water level.

b. The fire water tank water level float switch will also transmit a signal to the new 125gpm transfer pump to start refilling the fire water tank.

c. The transfer pump will continue to operate until the water level returns to normal level within the fire water tank.

2. EXISITNG SERVICE WATER TANK REFILL LOGIC

a. Once the water tank water level in the existing service water tank falls below the tank float switch set point of 6' above the tank bottom level, the float switch will transmit a signal to the existing 200gpm transfer pump to start refilling the existing service water tank.

b. The transfer pump will continue to operate until the water level returns to normal level within the existing service water tank.

1. FIRE WATER TANK REFILL LOGIC

a. Once the water tank water level in the new fire water tank falls below the tank float switch set point of 4” below normal water level, the float switch will transmit a supervisory alarm sign to the plant fire alarm system indicating low water level.

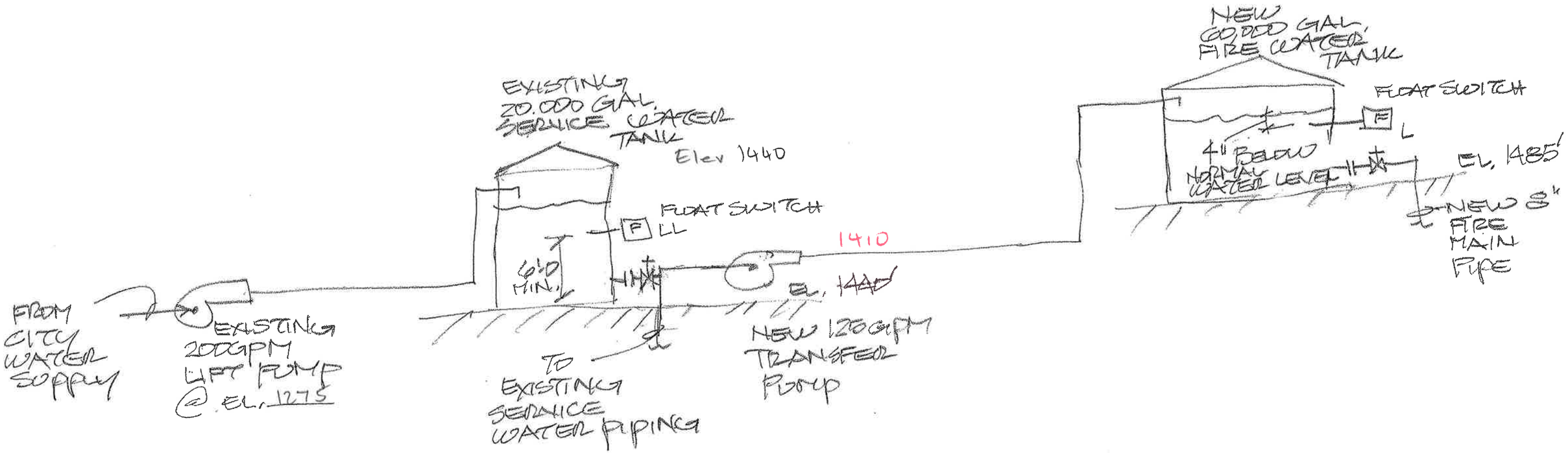
b. The fire water tank water level float switch will also transmit a signal to the new 125gpm transfer pump to start refilling the fire water tank.

c. The transfer pump will continue to operate until the water level returns to normal level within the fire water tank.

2. EXISITNG SERVICE WATER TANK REFILL LOGIC

a. Once the water tank water level in the existing service water tank falls below the tank float switch set point of 6’ above the tank bottom level, the float switch will transmit a signal to the existing 200gpm transfer pump to start refilling the existing service water tank.

b. The transfer pump will continue to operate until the water level returns to normal level within the existing service water tank.



FIRE WATER STORAGE SYSTEM DIAGRAM

Appendix N OFF-SITE CONSEQUENCE ANALYSIS FOR LFG TO LNG (ALTERNATIVE 3)



```
SITE DATA:
  Location: LOS ANGELES, CALIFORNIA
  Building Air Exchanges Per Hour: 0.57 (unsheltered single storied)
  Time: December 4, 2019  1137 hours PST (using computer's clock)

CHEMICAL DATA:
  Chemical Name: METHANE
  CAS Number: 74-82-8                    Molecular Weight: 16.04 g/mol
  PAC-1: 65000 ppm   PAC-2: 230000 ppm   PAC-3: 400000 ppm
  LEL: 50000 ppm     UEL: 150000 ppm
  Ambient Boiling Point: -258.9° F
  Vapor Pressure at Ambient Temperature: greater than 1 atm
  Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
  Wind: 1.5 meters/second from W at 3 meters
  Ground Roughness: 10.59 inches         Cloud Cover: 5 tenths
  Air Temperature: 109.2° F
  Stability Class: F (user override)
  No Inversion Height                    Relative Humidity: 50%

SOURCE STRENGTH:
  Direct Source: 70000 gallons           Source Height: 0
  Source State: Liquid
  Source Temperature: -260° F
  Release Duration: 1 minute
  Release Rate: 4,120 pounds/sec
  Total Amount Released: 247,456 pounds
  Note: This chemical may flash boil and/or result in two phase flow.
     Use both dispersion modules to investigate its potential behavior.

THREAT ZONE:
  Threat Modeled: Flammable Area of Vapor Cloud
  Model Run: Gaussian
  Red   : 1.2 miles --- (30000 ppm = 60% LEL = Flame Pockets)
  Yellow: 2.5 miles --- (5000 ppm = 10% LEL)
```

```
SITE DATA:
  Location: LOS ANGELES, CALIFORNIA
  Building Air Exchanges Per Hour: 0.57 (unsheltered single storied)
  Time: December 4, 2019  1137 hours PST (using computer's clock)

CHEMICAL DATA:
  Chemical Name: METHANE
  CAS Number: 74-82-8                    Molecular Weight: 16.04 g/mol
  PAC-1: 65000 ppm   PAC-2: 230000 ppm   PAC-3: 400000 ppm
  LEL: 50000 ppm     UEL: 150000 ppm
  Ambient Boiling Point: -258.9° F
  Vapor Pressure at Ambient Temperature: greater than 1 atm
  Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
  Wind: 1.5 meters/second from W at 3 meters
  Ground Roughness: 10.59 inches         Cloud Cover: 5 tenths
  Air Temperature: 109.2° F
  Stability Class: F (user override)
  No Inversion Height                    Relative Humidity: 50%

SOURCE STRENGTH:
  Direct Source: 70000 gallons           Source Height: 0
  Source State: Liquid
  Source Temperature: -260° F
  Release Duration: 1 minute
  Release Rate: 4,120 pounds/sec
  Total Amount Released: 247,456 pounds
  Note: This chemical may flash boil and/or result in two phase flow.
     Use both dispersion modules to investigate its potential behavior.

THREAT ZONE:
  Threat Modeled: Overpressure (blast force) from vapor cloud explosion
  Type of Ignition: ignited by spark or flame
  Level of Congestion: congested
  Model Run: Gaussian
  Red   : LOC was never exceeded --- (8.0 psi = destruction of buildings)
  Orange: LOC was never exceeded --- (3.5 psi = serious injury likely)
  Yellow: 1.0 miles --- (1.0 psi = shatters glass)
```

```
SITE DATA:
  Location: LOS ANGELES, CALIFORNIA
  Building Air Exchanges Per Hour: 0.57 (unsheltered single storied)
  Time: December 4, 2019  1137 hours PST (using computer's clock)

CHEMICAL DATA:
  Chemical Name: METHANE
  CAS Number: 74-82-8                    Molecular Weight: 16.04 g/mol
  PAC-1: 65000 ppm   PAC-2: 230000 ppm   PAC-3: 400000 ppm
  LEL: 50000 ppm     UEL: 150000 ppm
  Ambient Boiling Point: -258.9° F
  Vapor Pressure at Ambient Temperature: greater than 1 atm
  Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
  Wind: 1.5 meters/second from W at 3 meters
  Ground Roughness: 10.59 inches         Cloud Cover: 5 tenths
  Air Temperature: 109.2° F
  Stability Class: F (user override)
  No Inversion Height                    Relative Humidity: 50%

SOURCE STRENGTH:
  Direct Source: 70000 gallons           Source Height: 0
  Source State: Liquid
  Source Temperature: -260° F
  Release Duration: 1 minute
  Release Rate: 4,120 pounds/sec
  Total Amount Released: 247,456 pounds
  Note: This chemical may flash boil and/or result in two phase flow.
     Use both dispersion modules to investigate its potential behavior.

THREAT ZONE:
  Model Run: Gaussian
  Red   : 604 yards --- (400000 ppm = PAC-3)
  Orange: 746 yards --- (230000 ppm = PAC-2)
  Yellow: 1212 yards --- (65000 ppm = PAC-1)
```

Appendix O OFF-SITE CONSEQUENCE ANALYSIS FOR LFG TO CNG (CONSIDERED ALTERNATIVE)



```
SITE DATA:
  Location: LOS ANGELES, CALIFORNIA
  Building Air Exchanges Per Hour: 0.57 (unsheltered single storied)
  Time: December 6, 2019  1422 hours PST (using computer's clock)

CHEMICAL DATA:
  Chemical Name: METHANE
  CAS Number: 74-82-8                    Molecular Weight: 16.04 g/mol
  PAC-1: 65000 ppm   PAC-2: 230000 ppm   PAC-3: 400000 ppm
  LEL: 50000 ppm     UEL: 150000 ppm
  Ambient Boiling Point: -258.9° F
  Vapor Pressure at Ambient Temperature: greater than 1 atm
  Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
  Wind: 1.5 meters/second from W at 3 meters
  Ground Roughness: 10.59 inches         Cloud Cover: 5 tenths
  Air Temperature: 109.2° F
  Stability Class: F (user override)
  No Inversion Height                    Relative Humidity: 50%

SOURCE STRENGTH:
  Direct Source: 112.5 cubic feet        Source Height: 0
  Source State: Gas
  Source Temperature: 100° F
  Source Pressure: 4515 psia
  Release Duration: 1 minute
  Release Rate: 23.8 pounds/sec
  Total Amount Released: 1,428 pounds

THREAT ZONE:
  Threat Modeled: Overpressure (blast force) from vapor cloud explosion
  Type of Ignition: ignited by spark or flame
  Level of Congestion: congested
  Model Run: Gaussian
  Red   : LOC was never exceeded --- (8.0 psi = destruction of buildings)
  Orange: LOC was never exceeded --- (3.5 psi = serious injury likely)
  Yellow: 245 yards --- (1.0 psi = shatters glass)
```

```
SITE DATA:
  Location: LOS ANGELES, CALIFORNIA
  Building Air Exchanges Per Hour: 0.57 (unsheltered single storied)
  Time: December 6, 2019  1422 hours PST (using computer's clock)

CHEMICAL DATA:
  Chemical Name: METHANE
  CAS Number: 74-82-8                    Molecular Weight: 16.04 g/mol
  PAC-1: 65000 ppm   PAC-2: 230000 ppm   PAC-3: 400000 ppm
  LEL: 50000 ppm     UEL: 150000 ppm
  Ambient Boiling Point: -258.9° F
  Vapor Pressure at Ambient Temperature: greater than 1 atm
  Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
  Wind: 1.5 meters/second from W at 3 meters
  Ground Roughness: 10.59 inches         Cloud Cover: 5 tenths
  Air Temperature: 109.2° F
  Stability Class: F (user override)
  No Inversion Height                    Relative Humidity: 50%

SOURCE STRENGTH:
  Direct Source: 112.5 cubic feet        Source Height: 0
  Source State: Gas
  Source Temperature: 100° F
  Source Pressure: 4515 psia
  Release Duration: 1 minute
  Release Rate: 23.8 pounds/sec
  Total Amount Released: 1,428 pounds

THREAT ZONE:
  Model Run: Gaussian
  Red   : 60 yards --- (400000 ppm = PAC-3)
  Orange: 80 yards --- (230000 ppm = PAC-2)
  Yellow: 151 yards --- (65000 ppm = PAC-1)
```

```
SITE DATA:
  Location: LOS ANGELES, CALIFORNIA
  Building Air Exchanges Per Hour: 0.57 (unsheltered single storied)
  Time: December 6, 2019  1422 hours PST (using computer's clock)

CHEMICAL DATA:
  Chemical Name: METHANE
  CAS Number: 74-82-8                    Molecular Weight: 16.04 g/mol
  PAC-1: 65000 ppm   PAC-2: 230000 ppm   PAC-3: 400000 ppm
  LEL: 50000 ppm     UEL: 150000 ppm
  Ambient Boiling Point: -258.9° F
  Vapor Pressure at Ambient Temperature: greater than 1 atm
  Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
  Wind: 1.5 meters/second from W at 3 meters
  Ground Roughness: 10.59 inches         Cloud Cover: 5 tenths
  Air Temperature: 109.2° F
  Stability Class: F (user override)
  No Inversion Height                    Relative Humidity: 50%

SOURCE STRENGTH:
  Direct Source: 112.5 cubic feet        Source Height: 0
  Source State: Gas
  Source Temperature: 100° F
  Source Pressure: 4515 psia
  Release Duration: 1 minute
  Release Rate: 23.8 pounds/sec
  Total Amount Released: 1,428 pounds

THREAT ZONE:
  Threat Modeled: Flammable Area of Vapor Cloud
  Model Run: Gaussian
  Red   : 289 yards --- (30000 ppm = 60% LEL = Flame Pockets)
  Yellow: 583 yards --- (5000 ppm = 10% LEL)
```