VALLEY OAKS RESIDENTIAL DEVELOPMENT AIR QUALITY & GREENHOUSE GAS ASSESSMENT

Novato, California

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Introduction

The purpose of this report is to address air quality, health risk, and greenhouse gas (GHG) impacts associated with the proposed Valley Oaks residential project located at vacant land adjoining 100 Pinkston Road in Novato, California. Air quality and GHG impacts would be associated with the demolition of the existing land uses, construction of new buildings and infrastructure, and operation of the project. Air pollutant and GHG emissions associated with construction and operation of the project were predicted using appropriate computer models. In addition, the potential project health risk impacts (construction and operation) and the impacts of existing toxic air contaminant (TAC) sources affecting the nearby and proposed sensitive receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Project Description

The Valley Oaks project comprises two separate projects, Valley Oaks North and Valley Oaks South on 37.7-acres. The project proposes demolishing the existing land use to construct Valley Oaks North. Valley Oaks North will include 61 single-family homes and duets ranging in size from 2,000 to 3,500 square feet (sf). Each will include a 2-car garage and 45 of these homes will have Junior Accessory Dwelling Units (JADU's) on the ground floor. Valley Oaks South will comprise of 20 townhomes which will range from 1,800- to 2,100-sf and include 2-car garages as well as guest parking. The proposed project would be constructed in three development phases, Valley Oaks South, and Valley Oaks North Phase 1 (planning Areas 1 and 2) which includes the construction of 29 single family homes and duets followed by Valley Oaks North Phase 2 (planning Area 3) which includes the construction of the remaining 32 family homes and duets. Construction is expected to begin in April of 2025 with all areas completed by December 2027.

Setting

The project is located in Marin County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

Air Pollutants of Concern

High ozone concentrations in the air basin are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_X). These precursor pollutants react under certain meteorological conditions to form ozone. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ambient ozone concentrations. The highest ozone concentrations in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone concentrations aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

[1] Bay Area Air Quality Management District, *2022 CEQA Guidelines*, April 2023.

Particulate matter is another problematic air pollutant in the air basin. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter concentrations aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic Air Contaminants

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer). TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure of TACs can result in adverse health effects, they are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects from diesel exhaust exposure a complicated scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs. The most recent Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines were published in February of 2015 and incorporated into BAAQMD's current CEQA guidance.[2]

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Therefore, new and/or existing residential locations are assumed to include infants and small children. The closest sensitive receptors to the project site are the adjacent multi-family residences in the Verandah at Valley Oaks and the single-family residences to the west and southwest of the project site. The project would introduce new sensitive receptors (i.e., residents) to the area.

[2] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.

Regulatory Setting

Federal Regulations

The United States Environmental Protection Agency (EPA) sets nationwide ambient air quality standards (NAAQS) and emission standards for mobile sources, which include on-road (highway) motor vehicles such trucks, buses, and automobiles, and non-road (off-road) vehicles and equipment used in construction, agricultural, industrial, and mining activities (such as bulldozers and loaders). The EPA also sets nationwide fuel standards.

In the past twenty years, the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of nitrogen oxides, or NO_X, and particulate matter (PM_{10} and $PM_{2.5}$) and because the EPA has identified diesel particulate matter as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce PM and NO_X emissions from diesel engines up to 95 percent in 2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.[3]

In concert with the diesel engine emission standards, the EPA has also substantially reduced the amount of sulfur allowed in diesel fuels. The sulfur contained in diesel fuel is a significant contributor to the formation of particulate matter in diesel-fueled engine exhaust. The current standards limit the amount of sulfur allowed in diesel fuel to 15 parts per million by weight (ppmw). Ultra-low sulfur diesel (ULSD), as it is referred to, is required for use by all vehicles in the U.S.

All of the above Federal diesel engine and diesel fuel requirements have been adopted by California, in some cases with modifications making the requirements more stringent or the implementation dates sooner.

State Regulations

The California Air Resources Board (CARB) has set statewide ambient air quality standards (CAAQS) and emission standards for on-road and off-road mobile sources that are more stringent than those adopted by the EPA. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a regulation to reduce emissions of DPM and NO_X from on-road heavy-duty diesel fueled vehicles.[4] The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements have been phased in over the compliance period and depend on the model year of the vehicle.

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[3] USEPA, 2000. *Regulatory Announcement, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*. EPA420-F-00-057. December.

[4] Available online: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed: November 21, 2014.

CARB has also adopted and implemented regulations to reduce DPM and NO_X emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders, tractors, bulldozers, backhoes, off-highway trucks, etc.). The regulations apply to diesel-powered off-road vehicles with engines 25 horsepower (hp) or greater. The regulations are intended to reduce DPM and NO_X exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates. Implementation of this regulation, in conjunction with the Federal off-road equipment engine emission limits for new vehicles, has significantly reduced emissions of DPM and NO_X.

To address the issue of diesel emissions in the state, CARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*[5]. In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the Federal on-road and non-road emission standards for new diesel engines, as well as adoption of regulations for ULSD fuel in California.

Bay Area Air Quality Management District (BAAQMD)

BAAQMD has jurisdiction over an approximately 5,600-square mile area, commonly referred to as the San Francisco Bay Area (Bay Area). The District's boundary encompasses the nine San Francisco Bay Area counties, including Alameda County, Contra Costa County, Marin County, San Francisco County, San Mateo County, Santa Clara County, Napa County, southwestern Solano County, and southern Sonoma County.

BAAQMD is the lead agency in developing plans to address attainment and maintenance of the NAAQS and CAAQS. The District also has permit authority over most types of stationary equipment utilized for the proposed project. The BAAQMD is responsible for permitting and inspection of stationary sources; enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized.

BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area.[6] The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program has been implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses has been used to develop

[5] California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October.

[6] See BAAQMD: https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program.

emission reduction activities in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. Seven areas have been identified by BAAQMD as impacted communities. They include Eastern San Francisco, Richmond/San Pablo, Western Alameda, San José, Vallejo, Concord, and Pittsburgh/Antioch. The project site is not within any of the BAAQMD CARE areas.

Overburdened communities are areas located (i) within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0 implemented by OEHHA, as having an overall score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract.[7] The BAAQMD has identified several overburdened areas within the air district's boundaries. However, the project site is not within an overburdened area as identified by BAAQMD as the Project site is scored at the 1st percentile on CalEnviroScreen.[8]

BAAQMD CEQA Air Quality Guidelines

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA. In 2023, the BAAQMD revised the *California Environmental Quality Act* (*CEQA) Air Quality Guidelines* that included the significance thresholds to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The thresholds contained in the CEQA guidance were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The original 2011 thresholds were challenged in court and were mostly upheld.

In 2017, BAAQMD updated its CEQA Air Quality Guidelines and included revised significance thresholds. The 2017 guidelines recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for air toxics, odors, and GHG emissions.

In 2022, BAAQMD revised its CEQA Guidelines and GHG thresholds, eliminating quantified emissions limits for GHG analyses. The current BAAQMD guidelines and thresholds were used in this analysis and are summarized in Table 1.[9] Air quality impacts and community health risks are considered potentially significant if they exceed these thresholds.

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD requires all projects include a "basic" set of best management practices (BMPs) to manage fugitive dust and consider impacts from dust (i.e., fugitive PM_{10} and $PM_{2.5}$) to be less than significant if BMPs are implemented.

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[7] See BAAQMD: https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20210722_01_appendixd_mapsofoverburdenedcommunities-pdf.pdf?la=en.
[8] OEHAA, CalEnviroScreen 4.0 Maps https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40
[9] Bay Area Air Quality Management District, 2023. *2022 CEQA Guidelines*. April.

Basic Best Management Practices: **Include measures to control dust and exhaust during construction.**

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. The contractor shall implement the following BMPs that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.

7. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.

8. Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.

9. Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take

corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

BAAQMD strongly encourages enhanced BMPs for construction sites near schools, residential areas, or other sensitive land uses. Enhanced measures include:

- Limit the simultaneous occurrence of excavation, grading, and ground-disturbing construction activities.
- Install wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
- Plant vegetative ground cover (e.g., fast-germinating native grass seed) in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Minimize the amount of excavated material or waste materials stored at the site.
- Hydroseed or apply non-toxic soil stabilizers to construction areas, including previously graded areas, that are inactive for at least 10 calendar days.

The measures above are consistent with BAAQMD-recommended basic and enhanced BMPs for reducing fugitive dust contained in the BAAQMD CEQA Air Quality Guidelines. For this analysis, only the basic set of best management practices are required as the unmitigated fugitive dust emissions from project sources were below the BAAQMD single-source threshold. Please see Table 6 of this report for more information.

Table 1. BAAQMD CEQA Significance Thresholds

Criteria Air Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	**Average Daily Emissions (lbs./day)**	**Annual Average Emissions (tons/year)**
ROG	54	54	10
NO_X	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards	**Single Sources Within 1,000-foot Zone of Influence**	**Combined Sources (Cumulative from all sources within 1000-foot zone of influence)**	
Excess Cancer Risk	10 per one million	100 per one million	
Hazard Index	1.0	10.0	
Incremental annual $PM_{2.5}$	0.3 $\mu g/m^3$	0.8 $\mu g/m^3$	
Greenhouse Gas Emissions			
Land Use Projects – (Must Include A or B)	A. Projects must include, at a minimum, the following project design elements: 1. Buildings a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development). b. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines. 2. Transportation a. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA: i. Residential projects: 15 percent below the existing VMT per capita ii. Office projects: 15 percent below the existing VMT per employee iii. Retail projects: no net increase in existing VMT b. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2. B. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).		

Note: ROG = reactive organic gases, NO_X = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less. GHG = greenhouse gases.

Source: Bay Area Air Quality Management District, 2022

City of Novato General Plan 2035

The *Novato General Plan 2035*[10] was adopted by the Novato City Council on October 27, 2020 and includes goals, policies, and programs to improve air quality issues facing the City of Novato. The following goals, policies, and programs are applicable to the proposed project:

Goal ES 2: Maintain clean, healthful air.

ES 17: **Clean Air**. Work to protect and improve air quality.

ES 17a: **Clean Air Plan**. Cooperate with the Bay Area Air Quality Management District in implementing the regional Clean Air Plan.

ES 24: Emission Reduction Targets. Establish reduction targets for GHG emissions and actively implement local strategies to reduce the effects of climate change.

ES 24a: Emission Reduction Goals. Implement cost-effective strategies to achieve reductions in greenhouse gas emissions consistent with the City's goal of a 15% reduction below 2005 emission levels by 2020, and a 40% reduction in 2005 emissions by 2035.

ES 24b: Implementation. Implement the Emission Reduction Measures contained in Appendix E to achieve projected reductions in greenhouse gas emissions as feasible.

ES 24c: Monitoring Emissions. Periodically update the greenhouse gas emissions inventory for both community and City emissions and quantify success in meeting reduction measures to monitor achievement of emission reduction targets.

[10] City of Novato, California (February 2020). "Chapter 3: Environmental Stewardship". *City of Novato General Plan 2035 Draft.* https://www.novato.org/home/showpublisheddocument?id=30461

AIR QUALITY IMPACTS AND MITIGATION MEASURES

Impact AIR-1: Conflict with or obstruct implementation of the applicable air quality plan?

BAAQMD, with assistance from the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC), implements specific plans to meet the applicable federal and State laws, regulations, and programs. The most recent and comprehensive plan is the *Bay Area 2017 Clean Air Plan*.[11] The primary goals of the Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions and protect the climate. The BAAQMD has also recently updated its CEQA guidelines to assist lead agencies in evaluating the significance of air quality impacts. In formulating compliance strategies, BAAQMD relies on planned land uses established by local general plans. Land use planning affects vehicle travel, which in turn affects region-wide emissions of air pollutants and GHGs.

The 2017 Clean Air Plan, adopted by BAAQMD in April 2017, includes control measures that are intended to reduce air pollutant emissions in the Bay Area either directly or indirectly. Plans must show consistency with the control measures listed within the Clean Air Plan. At the project-level, there are no consistency measures or thresholds. The proposed project would not conflict with the latest Clean Air planning efforts since 1) project would have construction and operational emissions below the BAAQMD thresholds (see Impact 2 below).

Impact AIR-2: 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?

The Bay Area is considered a non-attainment area for ground-level O_3 and $PM_{2.5}$ under both the NAAQS and the CAAQS. The area is also considered non-attainment for PM_{10} under the CAAQS, but not the NAAQS. The area has attained both the NAAQS and CAAQS for carbon monoxide (CO). As part of an effort to attain and maintain the NAAQS and CAAQS for O_3, $PM_{2.5}$ and PM_{10}, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for O_3 precursor pollutants (ROG and NO_X), PM_{10}, and $PM_{2.5}$ and apply to both construction period and operational period impacts.

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Version 2022.1.1.12 was used to estimate emissions from on-site construction activity, construction vehicle trips, and evaporative emissions. The project land use types and size, and anticipated construction schedule were input to CalEEMod. The CalEEMod model output along with construction inputs are included in *Attachment 1*.

<u>CalEEMod Inputs</u>

[11] Bay Area Air Quality Management District (BAAQMD), 2017. *Final 2017 Clean Air Plan.*

Land Use Inputs

The proposed project would be constructed in three development phases, Valley Oaks South and Valley Oaks North Phase 1 (planning Areas 1 and 2) followed by Valley Oaks North Phase 2 (planning Area 3). Separate CalEEMod runs were conducted for each area as each phase would construct new buildings over several years. The land uses for each construction section were entered into CalEEMod as described in Table 2.

Table 2. Construction Land Uses Entered into CalEEMod

Project Land Uses	Size	Units	Square Feet	Acreage
Valley Oaks South (2025-2026)				
Condo/Townhouse	20	Dwelling Unit	38,800	2.5
Parking Lot	10	Parking Spaces	-	
Valley Oaks North Phase 1(2025-2026)				
Single Family Housing	29	Dwelling Unit	75,900	4.5
Valley Oaks North Phase 2 (2026-2027)				
Single Family Housing	32	Dwelling Unit	80,000	6.5

Construction Inputs

CalEEMod computes annual emissions for construction that are based on the project type, size, and acreage. The model provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. The construction build-out scenario, including equipment list and schedule, were based on project-specific construction information provided by the project applicant.

The CalEEMod construction equipment worksheet provided by the applicant included the schedule for each phase (included in *Attachment 1*). Within each phase, the quantity of equipment to be used along with the average hours per day and total number of workdays were provided. Since different equipment would have different estimates of the working days per phase, the hours per day for each phase was computed by dividing the total number of hours that the equipment would be used by the total number of days in that phase. The construction schedule assumed that the earliest possible start date would be April 2025, based on information provided by the applicant, and would be built out over a period of approximately 32 months, or 719 construction workdays. The earliest year of full operation was assumed to be 2028.

Construction Traffic Emissions

Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips that were computed based on the amount of demolition material to be exported, soil imported and/or exported to the site, and the estimate of concrete and asphalt truck trips to and from the site. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for those were computed by multiplying the daily trip rate by the number of days in that phase. Haul trips were estimated by CalEEMod using the provided demolition and grading volumes provided. The number of concrete and asphalt total round haul trips were provided for

the project and converted to total one-way trips, assuming two trips per delivery. These values are shown in the project construction equipment worksheets included in *Attachment 1*.

Summary of Computed Construction Period Emissions

Average daily emissions were annualized for each year of construction by dividing the annual construction emissions by the number of active workdays during that year. Table 3 shows the annualized average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 3, predicted annualized project construction emissions would not exceed the BAAQMD significance thresholds during any year of construction.

Table 3. Construction Period Emissions

Year	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Construction Emissions Per Year (Tons)				
2025 (Valley Oaks South and Valley Oaks North Phase 1)	0.24	2.36	0.09	0.08
2026 (All areas)	1.08	2.67	0.10	0.09
2027 (Valley Oaks North Phase 2)	0.70	1.26	0.04	0.04
Average Daily Construction Emissions Per Year (pounds/day)				
2025 (197 construction workdays)	2.45	23.94	0.92	0.84
2026 (261construction workdays)	8.29	20.42	0.73	0.67
2027 (261 construction workdays)	5.40	9.63	0.34	0.31
BAAQMD Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	No	No	No	No

Operational Period Emissions

ROG, PM, and NO_X emissions from the project would be generated primarily from autos driven by future residents. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are also typical ROG emission sources from these types of land uses. CalEEMod was used to estimate emissions from operation of the proposed project assuming full build-out.

CalEEMod Inputs

Land Uses

All project land uses were combined and input to CalEEMod for the operational period modeling in the year 2028. Inputs are summarized in Table 4.

Table 4. Operational Land Uses Entered into CalEEMod

Project Land Uses	Size	Units	Square Feet	Acreage
Condo/Townhouse	20	Dwelling Units	38,800	2.5
Parking Lot	10	Parking Space	-	
Single Family Housing	29	Dwelling Unit	75,900	4.5
Single Family Housing	32	Dwelling Unit	80,000	6.5

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest full year of operation would be 2028. Emissions associated with build-out later than 2028 would be lower.

Traffic Information

CalEEMod allows the user to enter specific vehicle trip generation rates. Therefore, the project-specific daily trip generation rate provided by the traffic consultant was entered into the model.[12] The project would produce approximately 824 daily trips. The trip generation for the project was provided by the project's traffic consultant. However, since the provided trip generation land uses didn't match up with the provided project land uses by project area, the total trips per land use type were split to match the number of dwelling units in each project area. The Saturday and Sunday trip rates were adjusted by multiplying the ratio of the CalEEMod default rates for Saturday and Sunday trips to the default weekday rate with the project-specific daily weekday trip rate. The default trip lengths and trip types specified by CalEEMod were used.

Energy

The PG&E CalEEMod default intensity factors for GHG pollutants were used for the analysis, as the applicant specified that PG&E will be used instead of Marin Clean Energy (MCE)[13]. PG&E has a default rate of 203.98 pounds of CO_2 per megawatt of electricity produced, which is based on PG&E's 2019 emissions rate.

According to the project applicant, the project will be all electric.[14] Natural gas use for the project land uses was set to zero and the energy use associated with natural gas reassigned to electricity use in CalEEMod.

Wood-Burning Devices

CalEEMod default inputs assume new residential construction would include woodburning fireplaces and stoves. The project would not include wood-burning devices, as these devices are

[12] Email correspondence with Zack Matley AICP, Principal, W-Trans, April 21, 2023.
[13] File: 2023_03_17 Narrative.docx, March 17, 2023.
[14] File: 2023_03_17 Narrative.docx, March 17, 2023.

prohibited by BAAQMD Regulation 6, Rule 3.[15] Therefore, the number of woodstoves and woodburning fireplaces in CalEEMod were set to zero.

Other Inputs

Default model assumptions for emissions associated with solid waste generation use were used. Wastewater treatment was changed to 100 percent aerobic conditions to represent the use of city sewer services (i.e., project would not send wastewater to septic tanks or facultative lagoons).

Summary of Computed Operational Period Emissions

Annual emissions were predicted using CalEEMod and daily emissions were estimating assuming 365 days of operation. Table 5 shows unmitigated net average daily operational emissions of ROG, NO_X, total PM_{10}, and total $PM_{2.5}$ during operation of the project. The unmitigated operational period emissions would not exceed the BAAQMD significance thresholds.

Table 5. Operational Period Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
2028 Annual Project Operational Emissions (*tons/year*)	1.40	0.35	0.35	0.07
BAAQMD Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Threshold?	*No*	*No*	*No*	*No*
2028 Daily Project Operational Emissions (*pounds/day*)[1]	7.67	1.93	1.92	0.36
BAAQMD Thresholds (pounds/day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	*No*	*No*	*No*	*No*
Notes: [1]Assumes 365-day operation.				

Impact AIR-2: Expose sensitive receptors to substantial pollutant concentrations?

Project impacts related to increased health risk can occur either by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the project vicinity or by significantly exacerbating existing cumulative TAC impacts. The project would introduce new sources of TACs during construction (i.e., on-site construction and truck hauling emissions) and operation (i.e., mobile sources).

Project construction activity would generate dust and equipment exhaust that would affect nearby sensitive receptors and the project would generate some additional traffic consisting of mostly light-duty vehicles.

Project impacts to existing sensitive receptors were addressed for temporary construction activities and long-term operational conditions. There are also several sources of existing TACs and localized air pollutants in the vicinity of the project. The impact of the existing sources of TAC was assessed in terms of the cumulative risk which includes the project contribution as well as the risk on the new sensitive receptors introduced by the project.

[15] Bay Area Air Quality Management District, https://www.baaqmd.gov/~/media/dotgov/files/rules/regulation-6-rule-3/documents/20191120_r0603_final-pdf.pdf?la=en

Health Risk Methodology for Construction and Operation

Health risk impacts were addressed by predicting increased cancer risk, the increase in annual $PM_{2.5}$ concentrations and computing the Hazard Index (HI) for non-cancer health risks. The risk impacts from the project are the combination of risks from construction and operation sources. These sources include on-site construction activity, construction truck hauling, and increased traffic from the project. To evaluate the increased cancer risks from the project, a 30-year exposure period was used, per BAAQMD guidance.[16]

The project increased cancer risk is computed by summing the project construction cancer risk and operation cancer risk contributions. Unlike, the increased maximum cancer risk, the annual $PM_{2.5}$ concentration and HI values are not additive but based on the annual maximum values for the entirety of the project. The project maximally exposed individual (MEI) is identified as the sensitive receptor that is most impacted by the project's construction and operation.

The methodology for computing health risks impacts is contained in Appendix E of the BAAQMD CEQA Guidelines. TAC and $PM_{2.5}$ emissions are calculated, a dispersion model used to estimated ambient pollutant concentrations, and cancer risks and HI calculated using DPM concentrations.

Modeled Sensitive Receptors

Receptors for this assessment included locations where sensitive populations would be present for extended periods of time (i.e., chronic exposures). This includes the nearby existing residences to the west, southwest, and adjacent to the project site, as shown in Figure 1. Residential receptors are assumed to include all receptor groups (i.e., third trimester, infants, children, and adults) with almost continuous exposure to project emissions.

Health Risks from Project Construction

The primary health risk impact issued associated with construction projects are cancer risks associated with diesel exhaust (i.e., DPM), which is a known TAC, and exposure to high ambient concentrations of dust (i.e., $PM_{2.5}$). DPM poses both a potential health and nuisance impact to nearby receptors. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and $PM_{2.5}$.[17] This assessment included dispersion modeling to predict the offsite and onsite concentrations resulting from project construction, so that increased cancer risks and non-cancer health effects could be estimated.

Construction Emissions

The CalEEMod model provided total uncontrolled annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles. Total DPM emissions were estimated to be 0.22 tons (449 pounds) and fugitive dust emissions ($PM_{2.5}$) to be 0.09 tons (175 pounds) from all construction stages. The on-road emissions are a

[16] BAAQMD, 2022. Appendix E of the *BAAQMD CEQA Guidelines*. April 2023.
[17] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

result of haul truck travel during grading activities, worker travel, and vendor deliveries during construction. A trip length of one mile was used to represent vehicle travel while at or near the construction site. It was assumed that the emissions from on-road vehicles traveling at or near the site would occur at the construction site.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict DPM and $PM_{2.5}$ concentrations at sensitive receptors (residences) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[18] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

Construction Sources

Combustion equipment DPM exhaust emissions were modeled as an array of point sources to reflect construction equipment and trucks operating at the site. These sources included nine-foot release heights (construction equipment exhaust stack height) that were placed at 23 feet (7 meter) intervals throughout the construction site. This resulted in 684 individual point sources being used to represent mobile equipment DPM exhaust emissions in the Valley Oaks North Phase 1 construction area, 218 individual point source in the Valley Oaks South construction area, and 677 individual point sources in the Valley Oaks North Phase 2 construction area. The total DPM emissions for each construction area were divided into each of the point sources that were spread throughout the project construction site. In addition, the following stack parameters were used for each point source: stack diameter of 2.5 inches, an exhaust temperature of 918˚F, and an exit velocity of 309 feet per second. Since these are point sources, plume rise is calculated by the AERMOD dispersion model. DPM emissions from vehicle travel on- and off-site were also distributed among the point sources throughout the site. The locations of the point sources used for the modeling are identified in Figure 1.

For modeling fugitive $PM_{2.5}$ emissions, an area source was used. Fugitive dust emissions at construction sites come from a variety of sources, including truck and equipment travel, grading activities, truck loading (with loaders) and unloading (rear or bottom dumping), loaders and excavators moving and transferring soil and other materials, etc. All of these activities result in fugitive dust emissions at various heights at the point(s) of generation. Once generated, the dust plume will tend to rise as it moves downwind across the site and exit the site at a higher elevation than when it was generated. For all these reasons, a 7-foot release height was used as the average release height across the construction site. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources.

AERMOD Inputs and Meteorological Data

The modeling used a five-year data set (2013-2017) of hourly meteorological data from Gnoss Field Airport in Novato, California prepared by the BAAQMD for use with the AERMOD model. Construction emissions were modeled as occurring daily between 7:00 a.m. to 4:00 p.m. per the

[18] BAAQMD, 2023, *Appendix E of the 2022 BAAQMD CEQA Guidelines.* April.

project applicant's construction schedule. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptor locations. Receptor heights of 5 feet (1.5 meters) and 15 feet (4.5 meters) were used to represent the breathing heights on the first and second floors of sensitive receptors in the residences near the site.

Summary of Construction Health Risk Impacts

The maximum increased cancer risks were calculated using the modeled TAC concentrations combined with BAAQMD CEQA guidance for age-sensitivity factors and exposure parameters. Non-cancer health hazards and maximum $PM_{2.5}$ concentrations were also calculated and identified. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. Third trimester, infant, child, and adult exposures were assumed to occur at all residences during the entire construction period.

The maximum modeled annual $PM_{2.5}$ concentration was calculated based on combined exhaust and fugitive concentrations. The maximum computed HI values was based on the ratio of the maximum DPM concentration modeled and the chronic inhalation DPM refence exposure level of 5 $\mu g/m^3$.

The modeled maximum annual DPM and $PM_{2.5}$ concentrations were identified at nearby sensitive receptors to find the MEI from construction activities. Results of this assessment indicated that the cancer risk MEI and annual $PM_{2.5}$ concentration MEI occurred at two different locations. The construction cancer risk MEI was located on the second floor (4.5 meters) of a residence located on the southern end of the Verandah at Valley Oaks. The annual $PM_{2.5}$ concentration MEI was located on the first floor (1.5 meters) of a residence on the north end of the Verandah at Valley Oaks. The location of the MEIs and nearby sensitive receptors are shown in Figure 1. Table 6 lists the health risks from construction at the locations of the construction MEIs. *Attachment 2* to this report includes the emission calculations used for the construction modeling and the cancer risk calculations.

Health Risks from Project Operation

Diesel stationary equipment that could emit substantial TACs (e.g., emergency generators or fire pumps) are not planned for this project. Diesel powered vehicles are the primary concern with local traffic-generated TAC impacts. Per BAAQMD recommended risks and methodology, a road with less than 10,000 total vehicle per day is considered a low-impact source of TACs.[19] This project would generate 824 daily trips.[20] The project traffic would be dispersed on the roadway system with a majority of the trips being from light-duty vehicles (i.e., passenger automobiles), which is a fraction of 10,000 daily vehicles. In addition, projects with the potential to cause or contribute to increased cancer risk from traffic include those that have high numbers of diesel-powered on road trucks or use off-road diesel equipment on site, such as a warehouse distribution center, a quarry, or a manufacturing facility, may potentially expose existing or future planned receptors to substantial cancer risk levels and/or health hazards. This is not a project of concern

[19] BAAQMD, 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en

[20] Email correspondence with Zack Matley AICP, Principal, W-Trans, April 21, 2023.

for mobile sources. Therefore, emissions from project traffic are considered negligible and not included within this analysis.

Summary of Project-Related Health Risks at the Off-Site Project MEIs

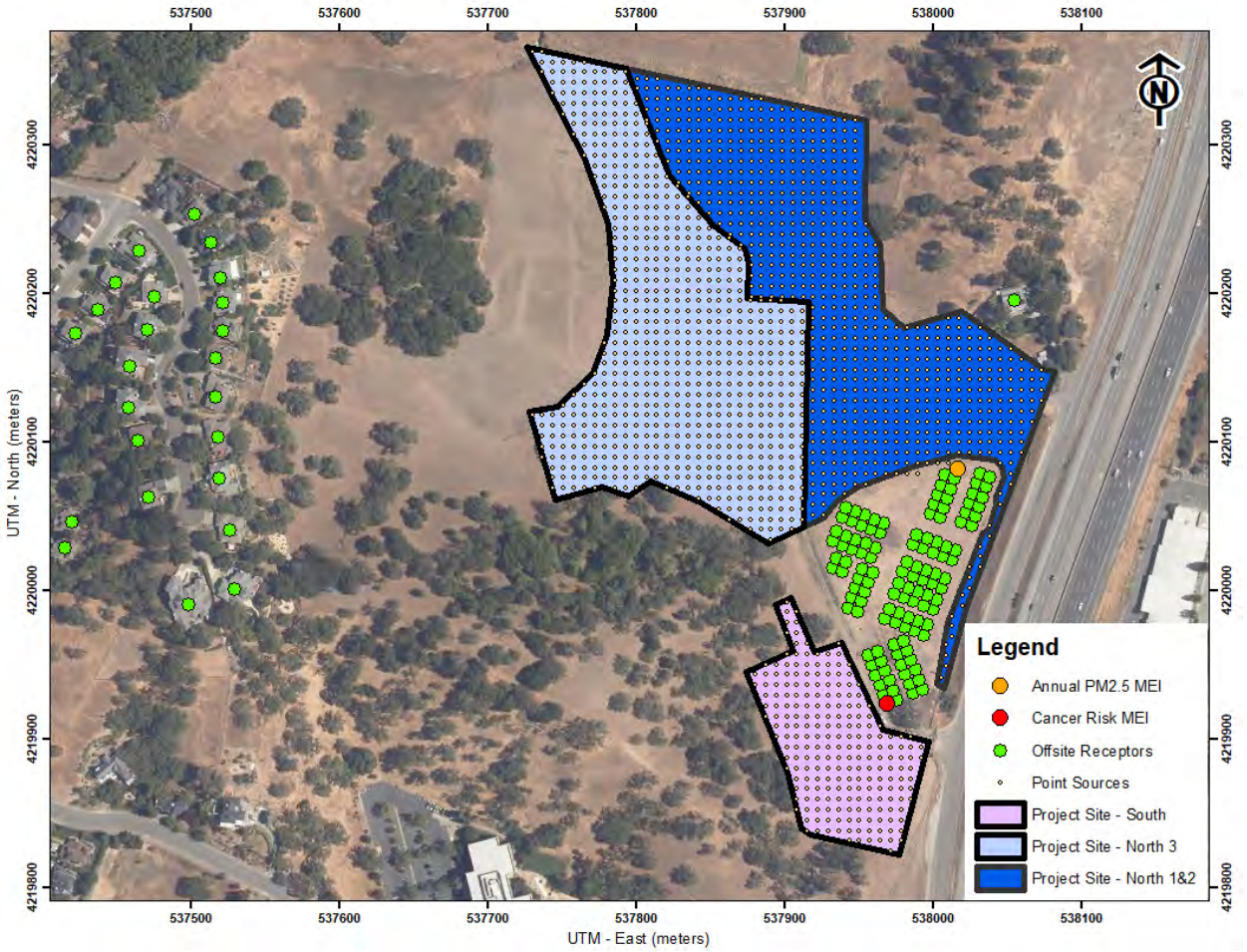
For this project, the sensitive receptors identified in Figure 1 as the construction MEIs are also the project MEIs. At this location, the MEIs would be exposed to three years of project construction. The annual $PM_{2.5}$ concentration and HI values are based on an annual maximum risk for the entirety of the project. As shown in Table 6, the unmitigated maximum cancer risks from construction activities would exceed the BAAQMD single-source significance threshold. However, with the incorporation of the *Mitigation Measure AQ-1*, the mitigated risk and hazard values would reduce emissions such that cancer risk caused by construction would not exceed the BAAQMD single-source significance thresholds. The unmitigated $PM_{2.5}$ concentration, which includes the basic best management practices, and HI do not exceed their respective BAAQMD single-source significance thresholds.

Table 6. Construction Risk Impacts at the Off-Site Receptors

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Construction	Unmitigated	**23.79 (infant)**	0.16	0.02
	Mitigated*	8.56 (infant)	0.06	0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	***Yes***	*No*	*No*
	Mitigated*	*No*	*No*	*No*

* Construction equipment with Tier 4 interim engines as Mitigation Measure AQ-1.

Figure 1. Locations of Project Construction Sites, DPM Point Sources, Off-Site Sensitive Receptors, and Maximum TAC Locations (MEIs)



Mitigation Measure AQ-1: **Use construction equipment that has low diesel particulate matter exhaust emissions.**

Implement a feasible plan to reduce DPM emissions by 65 percent such that increased cancer risk from construction would be reduced below BAAQMD significance thresholds as follows:

1. All construction equipment larger than 25 horsepower used at the site for more than two continuous days or 20 hours total shall meet U.S. EPA Tier 4 emission standards for PM (PM_{10} and $PM_{2.5}$), if feasible, otherwise,

    a. If use of Tier 4 equipment is not available, alternatively use equipment that meets U.S. EPA emission standards for Tier 3 engines and include particulate matter emissions control equivalent to CARB Level 3 verifiable diesel emission control devices that altogether achieve a 65 percent reduction in particulate matter exhaust in comparison to uncontrolled equipment; alternatively (or in combination).

b. Use of electrical or non-diesel fueled equipment.

2. Alternatively, the applicant may develop another construction operations plan demonstrating that the construction equipment used on-site would achieve a reduction in construction diesel particulate matter emissions by 65 percent or greater. Elements of the plan could include a combination of some of the following measures:
    - Implementation of No. 1 above to use Tier 4 or alternatively fueled equipment,
    - Installation of electric power lines during early construction phases to avoid use of diesel generators and compressors,
    - Use of electrically-powered equipment,
    - Forklifts and aerial lifts used for exterior and interior building construction shall be electric or propane/natural gas powered,
    - Change in construction build-out plans to lengthen phases, and
    - Implementation of different building techniques that result in less diesel equipment usage.

    Such a construction operations plan would be subject to review by an air quality expert and approved by the City prior to construction.

Effectiveness of Mitigation Measure AQ-1

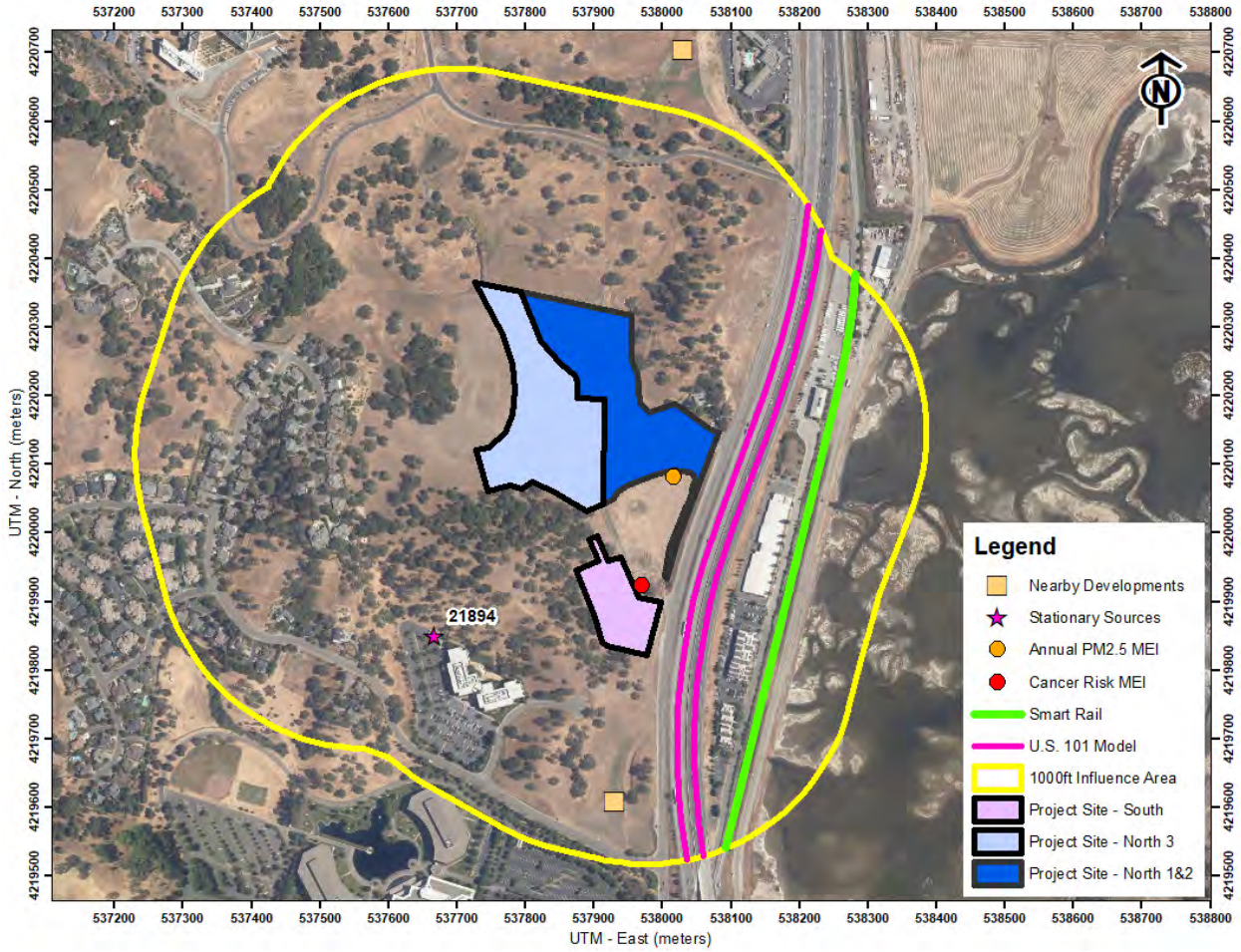
CalEEMod was used to compute emissions associated with mitigation measure AQ-1 assuming that all equipment met U.S. EPA Tier 4 Interim engines standards. With this measure implemented, the project's construction cancer risk levels (assuming infant exposure) would be reduced by 65 percent to 8.56 chances per million and would no longer exceed the single-source cancer risk threshold.

Cumulative Health Risks of all TAC Sources at the Off-Site Project MEI

Cumulative health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors located within 1,000 feet of a project site (i.e., influence area). These sources include rail lines, freeways or highways, busy surface streets, and stationary sources identified by BAAQMD.

A review of the provided traffic information indicated that U.S. Highway 101 (U.S. 101) would exceed 10,000 vehicles per day. Other nearby streets would have less than 10,000 vehicles per day. The Sonoma-Marin Rail Transit (SMART) rail line, located within 1,000 feet of the project site, includes the operation of diesel-powered passenger trains. A review of BAAQMD's stationary source map website identified one stationary source with the potential to affect the project MEI. In addition, there are two development projects whose construction would contribute to the cumulative risk. The risk impacts from these developments are included within the analysis. Figure 2 shows the location of the sources affecting the MEI. Health risk impacts from these sources upon the MEI are reported in Table 7. Details of the modeling and health risk calculations are included in *Attachment 3.*

Figure 2. Project Site and Nearby TAC and $PM_{2.5}$ Sources



Highways– U.S. 101

A refined analysis of potential health impacts from vehicle traffic on U.S. 101 was conducted since it was estimated to have average daily traffic (ADT) exceeding 10,000 vehicles. The refined analysis involved predicting emissions for the traffic volume and mix of vehicle types on U.S. 101 near the project site and using AERMOD to predict exposure to TACs and $PM_{2.5}$. The associated cancer risks and $PM_{2.5}$ are then computed based on the modeled exposures.

Emission Rates

Emissions were estimated for DPM, organic TACs (i.e., total organic gases [TOG]), and $PM_{2.5}$ for traffic on U.S. 101 using the latest version of CARB's EMFAC emissions model (EMFAC2021). EMFAC2021 includes the latest data on California's car and truck fleets and produces emissions rates for either specific vehicle categories or aggregate emissions rates using county-wide vehicle populations. However, the rates produced are only for criteria pollutants, not TACs or DPM. Therefore, CT-EMFAC2017 was also used to aid in the development of emissions rates used in the analysis.

CT-EMFAC2017 is the Caltrans version of the CARB's EMFAC2017 emissions model and provides emission factors for mobile source criteria pollutants and TACs, including DPM, based on specific truck fractions input by the user. CT-EMFAC2017 uses the fraction of Non-Truck vehicles and trucks (i.e., Truck 1 and Truck 2) to develop aggregate emissions factors for each of 15 speed bins. The truck percentage from the Caltrans Traffic Census Program's 2021 Annual Average Daily Truck Traffic data (Truck 1 2.4 percent and Truck 2 2.0 percent)[21] was input into CT-EMFAC2017 to develop emissions factors.

Next, the ratio of DPM to $PM_{2.5}$ produced by CT-EMFAC2017 was used to derive a DPM emissions rate using EMFAC2021 rates for each speed needed. Emission processes modeled for the analysis include running exhaust and evaporative emissions for $PM_{2.5}$, DPM, and TOG. Fugitive $PM_{2.5}$ emissions were also estimated using the road dust emissions factors provided by CT-EMFAC2017 and the tire wear and brake wear emissions rates provided by EMFAC2021. Inputs to the emissions models (both EMFAC2021 and CT-EMFAC2017) include region (i.e., Marin County), type of road (i.e., Freeway), year of analysis (i.e., 2025), and season (i.e., annual).

To estimate TAC and $PM_{2.5}$ emissions over the 30-year exposure period used for calculating the increased cancer risks, the EMFAC2021 and CT-EMFAC2017 models were used to develop vehicle emission factors for the year 2028. Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by EMFAC2021 and CT-EMFAC2017. Year 2025 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated.

The traffic volumes reported by Caltrans in 2022 were adjusted 1 percent per year to estimate a 2028 U.S. 101 AADT volume of 96,820 vehicles per day[22]. Hourly traffic distributions specific to these segments of U.S. 101 were obtained from Caltrans Performance Measurement System (PeMS). PeMS data is collected in real-time from nearly 40,000 individual detectors spanning the freeway system across all major metropolitan areas of California.[23] The fraction of traffic volume each hour was calculated and applied to the 2022 AADT volumes estimate to develop hourly traffic emission rates for U.S. 101. For all hours of the day, an average speed of 65 mph was assumed for all vehicles.

Hourly emissions rates were developed for DPM, organic TACs, and $PM_{2.5}$ along the applicable segments of U.S. 101 within 1,000 feet of the project site. AERMOD was used to estimate the TAC and $PM_{2.5}$ concentrations at the project MEIs locations using the emissions rates developed. Maximum increased lifetime cancer risks and maximum annual $PM_{2.5}$ concentrations for the project MEI receptors were then computed using modeled TAC and $PM_{2.5}$ concentrations and BAAQMD methods and exposure parameters.

Dispersion Modeling

[21] Bay Area Air Quality Management District, 2023, Appendix E of the *BAAQMD CEQA Guidance.* April.
[22] Caltrans. 2022. *2020 Traffic Volumes California State Highways.* Web: https://dot.ca.gov/programs/traffic-operations/census
[23] https://dot.ca.gov/programs/traffic-operations/mpr/pems-source

Dispersion modeling of TAC and $PM_{2.5}$ emissions was conducted using the EPA's AERMOD a dispersion model, which is recommended by the BAAQMD for this type of analysis.[24] Vehicle traffic on the roadways was modeled using a series of volume sources along a line (line volume sources); with line segments used for opposing travel directions on each roadway. The same meteorological data and off-site sensitive receptor MEI locations from the previous project impact dispersion modeling were used in the roadway modeling. Other inputs to the model included road geometry, hourly traffic emissions, and receptor locations, elevations, and heights. Roadway elevations were based on USGS National Elevation Data (NED) with a 10-meter resolution. Annual TAC and $PM_{2.5}$ concentrations at the project MEIs for 2025 from traffic on U.S. 101 were calculated using receptor heights of 5 feet (1.5 meters) and 15 feet (4.5 meters) to represent the breathing heights at the MEI receptors.

Computed Cancer and Non-Cancer Health Impacts

Maximum increased lifetime cancer risks and annual $PM_{2.5}$ concentrations for the MEIs were computed using modeled TAC and $PM_{2.5}$ concentrations and BAAQMD methods and exposure parameters described in Appendix E of the BAAQMD CEQA Guidelines.

The cancer risk, $PM_{2.5}$ concentration, and HI impacts from U.S. 101 on the project MEIs are shown in Table 7. Figure 2 shows the roadway links used for the modeling and receptor locations where concentrations were calculated. Details of the emission calculations, dispersion modeling, and cancer risk calculations for the receptors with the maximum cancer risk from U.S. 101 traffic are provided in *Attachment 3.*

SMART Rail Lines

The project site is located near the SMART commuter rail tracks (see Figure 2). SMART provides transit services between and within Sonoma and Marin Counties. The current 45-mile system includes stations in the Sonoma County Airport area, Santa Rosa, Rohnert Park, Cotati, Petaluma, Novato, San Rafael, and Larkspur. SMART's system also includes a bicycle and pedestrian pathway along the rail corridor. Currently all of SMART's locomotives have clean-diesel engines that meet the EPA's Tier 4 emission standards.[25]

Cancer risk and $PM_{2.5}$ concentrations associated with the SMART diesel-powered locomotives was estimated using BAAQMD screening values provided via GIS data files (i.e., raster files). BAAQMD raster files provide screening-level cancer risk and $PM_{2.5}$ concentrations for rail lines within the Bay Area and were produced using AERMOD and 20x20-meter emissions grid.

Screening-level cancer risk and $PM_{2.5}$ concentration at the project's MEI were identified using GIS software and are listed in Table 7. At the MEI, the increased cancer risk from the rail lines would be 0.90 per million, the $PM_{2.5}$ concentration from rail emissions would be less than 0.01 $\mu g/m^3$, and the HI from rail emissions would be less than 0.01. Note that these values are not adjusted for

[24] Bay Area Air Quality Management District, 2023, Appendix E of the *BAAQMD CEQA Guidance.* April.
[25] Sonoma-Marin Area Rail Transit, 2022. Web:
https://www.sonomamarintrain.org/sites/default/files/Document%20Library/Green-Commute-Fact-Sheet-with-video.pdf

age sensitivity or exposure duration and are considered higher than values that would be obtained with refined modeling methods.

BAAQMD Permitted Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2021* GIS website,[26] which identifies the location of nearby stationary sources and their estimated risk and hazard impacts, including emissions and adjustments to account for new OEHHA guidance. One source was identified within 1,000 feet of the project site using this tool, a diesel generator. The BAAQMD GIS website provided screening risks and hazards for this source. Therefore, a stationary source information request was not required to be submitted to BAAQMD.

The screening level risks and hazards provided by BAAQMD for the stationary source was adjusted for distance using BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines*. Health risk impacts from the stationary source upon the MEIs are reported in Table 7.

Construction Risk Impacts from Nearby Developments

Based on the City's website,[27] the following planned or approved projects are located within 1,000 feet of the proposed project:

- **Wood Hollow Hotel** – this project is located at 7701 Redwood Boulevard, which is approximately 680 feet south of the project site. This project would include construction of a three-story building that would include 87 hotel rooms and 87 parking spaces. This project is currently under final design review. Therefore, there is potential for this project to be constructed simultaneously or consecutively with the proposed project. For conservatism, it is assumed that the risk values from this project upon the MEI would be half of the BAAQMD single-source thresholds.

- **Habitat Redwood Boulevard** – this project is located approximately 1,100 feet north of the project site. This project proposes to construct a total of 23 residential buildings containing 105,575 square feet (sf) and 80 affordable multi-family dwelling units, a 2,154-sf office building, and 185 total parking spaces. This project was analyzed by *Illingworth & Rodkin, Inc.* in December of 2020. However, at that time, no sensitive receptors were within 1,000 feet of the project, so no health risk assessment was completed. To be conservative, the impacts from this project on the MEI are assumed to be just below the BAAQMD single-source thresholds. Some construction could overlap with the proposed project or occur simultaneously.

[26] BAAQMD, Web: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3
[27] City of Novato, Planning Projects, Web: https://www.novato.org/government/community-development/planning-division/planning-projects

For the purpose of this analysis, it was conservatively assumed the entire construction period from the proposed project would overlap with the nearby developments' construction schedule. This approach likely provides an overestimate of the health risk and hazard levels because it assumes that maximum impacts from the nearby development occurs concurrently with the proposed project at the proposed project's MEI. The mitigated construction risks reported in the applicable air quality assessments were included in Table 7.

Summary of Cumulative Risks at the Project MEI

Table 7 reports both the project and cumulative health risk impacts at the sensitive receptors most affected by project construction (i.e., the MEIs). The cumulative cancer risk, annual $PM_{2.5}$ concentration, and HI would not exceed the cumulative thresholds.

Table 7. Cumulative Health Risk Impacts at the Location of the Project MEIs

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impacts				
Project Construction	Unmitigated	**23.79 (infant)**	0.16	0.02
	Mitigated*	8.56 (infant)	0.06	0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	***Yes***	*No*	*No*
	Mitigated	*No*	*No*	*No*
Cumulative Sources				
U.S. 101, ADT 96,820		7.86	0.15	<0.01
SMART Rail Line		0.90	<0.01	<0.01
100 Wood Hollow Drive Owner LLC (Facility ID #21894, Generator), MEI at 1,000 feet.		0.28	<0.01	<0.01
Cumulative Temporary Construction Sources				
Wood Hollow Hotel, 680 feet south		<5.0	<0.15	<0.5
Habitat Redwood Boulevard, 1,100 feet north		<10.0	<0.30	<1.0
Combined Sources	Unmitigated	<47.83	<0.78	<1.07
	Mitigated	<32.60	<0.68	<1.07
BAAQMD Cumulative Source Threshold		***100***	***0.8***	***10.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*
	Mitigated	*No*	*No*	*No*

Non-CEQA: On-Site Health Risk Assessment for TAC Sources - New Project Residences

In addition to evaluating health risk impact from project construction, a health risk assessment was completed to assess the impact that the phased construction emissions from the proposed project and the existing TAC sources would have on the new proposed sensitive receptors (residents) that the project would introduce. The same TAC sources identified above were used in this health risk assessment.[28] BAAQMD's recommended thresholds for health risks and hazards, shown in Table 1, are used to evaluate on-site exposure. Figure 3 shows the on-site sensitive receptors in relation to the project's phased construction and nearby TAC sources. All on-site health risk results are listed in Table 8. *Attachment 3* includes the dispersion modeling and risk calculations for TAC source impacts upon the proposed on-site sensitive receptors.

Highways and Local Roadways – U.S. 101

The roadway analysis for the project residents was conducted in the same manner as described above for the off-site MEI. However, year 2028 (operational year) emission factors were conservatively assumed as being representative of future conditions, instead of 2025 (construction year). An analysis based on 2028 resulted in an increased AADT on U.S. 101 of 100,580 vehicles. Roadway cancer risk calculations were conducted in the same manner as described above for the on-site construction risk. The highest impacts from U.S. 101 occurred at a first-floor receptor (1.5 meters) in the south construction area of the project site. The portions of U.S. 101 included in the modeling are shown in Figure 3. The roadway health risk impacts at the project site are shown in Table 8. Details of the emission calculations, dispersion modeling, and cancer risk calculations are contained in *Attachment 3.*

SMART Rail Lines

Cancer risk and $PM_{2.5}$ concentrations associated with the SMART diesel-powered locomotives was estimated using BAAQMD screening values provided via GIS data files (i.e., raster files). The maximum onsite increased cancer risk from the SMART rail line operation would occur at a receptor in the south construction area and would be 0.89 per million. The maximum $PM_{2.5}$ concentration from rail emissions would be less than 0.01 $\mu g/m^3$. The maximum HI from rail emissions would be less than 0.01. All estimates are below the BAAQMD single source thresholds. Note that these values are not adjusted for age sensitivity or exposure duration and are higher than values that would be obtained with refined modeling methods.

Stationary Sources

The stationary source screening analysis for the new project sensitive receptors was conducted in the same manner as described above for the project MEI. Table 8 shows the health screening results from the stationary source.

[28] We note that to the extent this analysis considers *existing* air quality issues in relation to the impact on *future residents* of the Project, it does so for informational purposes only pursuant to the judicial decisions in *CBIA v. BAAQMD* (2015) 62 Cal.4th 369, 386 and *Ballona Wetlands Land Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 473, which confirm that the impacts of the environment on a project are excluded from CEQA unless the project itself "exacerbates" such impacts.

Construction Risk Impacts from Nearby Developments

Since it is assumed that construction of the nearby developments overlaps with the construction of this project, impacts from construction of the nearby developments are not included in this portion of the analysis. It is assumed that construction of the nearby developments would be completed prior to occupation of the proposed project.

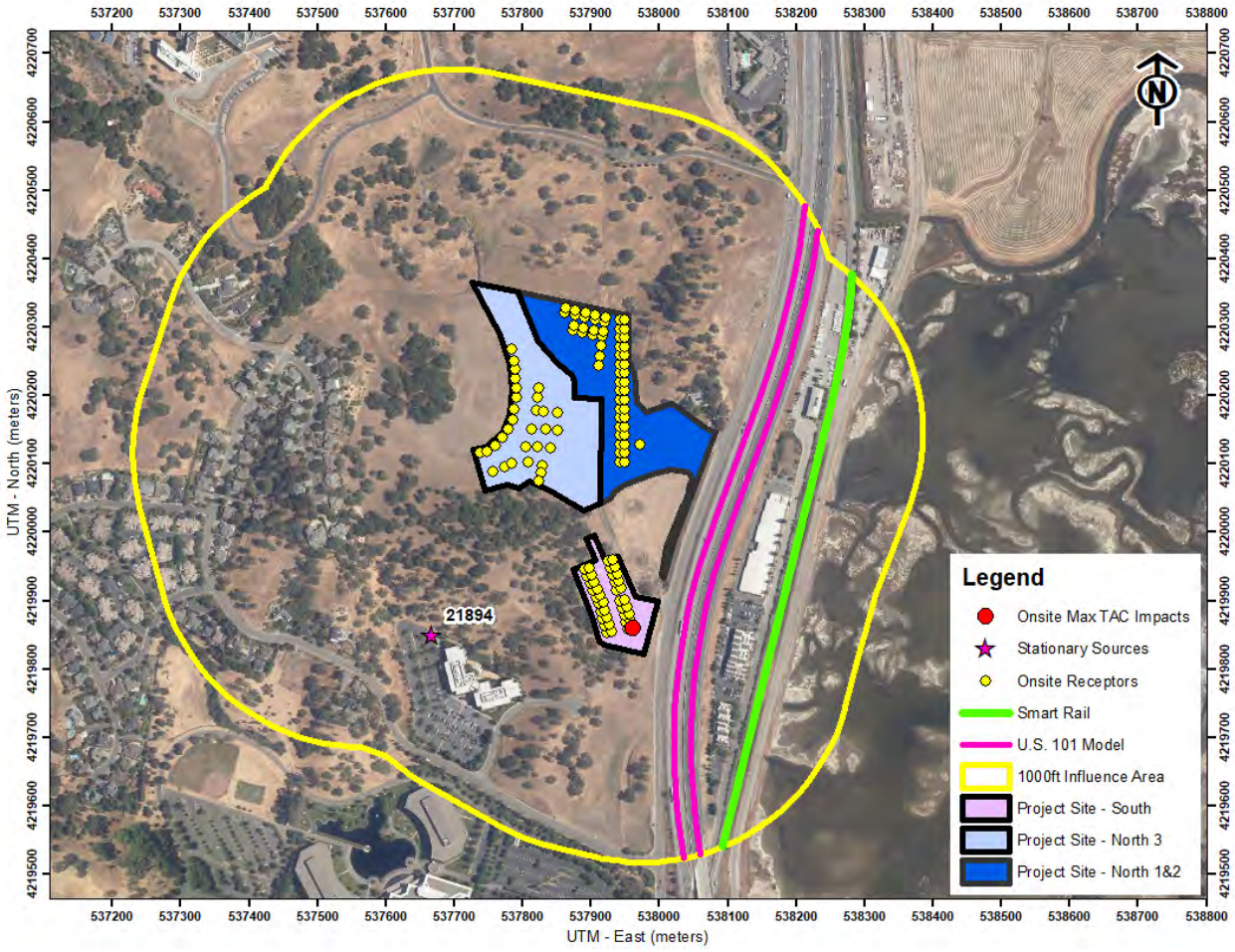
Summary of Cumulative Health Risks at the Project Site

Health risk impacts from existing TAC sources upon the project site are reported in Table 8. The risks from the TAC sources are compared against both the BAAQMD single-source threshold and the cumulative-source threshold. As shown, existing sources of TAC emissions do not exceed the BAAQMD single-source or cumulative-source thresholds for cancer risk, annual $PM_{2.5}$ concentration, or HI.

Table 8. Cumulative Health Risk Impacts Upon Valley Oaks Sensitive Receptors

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Cumulative Sources			
U.S. 101, ADT 100,580	7.67	0.16	<0.01
SMART Rail Line	0.89	<0.01	<0.01
100 Wood Hollow Drive Owner LLC (Facility ID #21894, Generator), Project Site at 495 feet.	0.49	<0.01	<0.01
BAAQMD Single-Source Threshold	***10***	***0.3***	***1.0***
Exceed Threshold?	*No*	*No*	*No*
Combined Sources	9.05	0.18	<0.03
BAAQMD Cumulative Source Threshold	***100***	***0.8***	***10.0***
Exceed Threshold?	*No*	*No*	*No*

Figure 3. Locations of Project Site, On-Site Residential Receptors, Roadway Segments Evaluated, Nearby TAC and $PM_{2.5}$ Sources, and Maximum TAC Impacts



GREENHOUSE GAS EMISSIONS

Setting

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide (CO_2) and water vapor but there are also several others, most importantly methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO_2, CH_4, and N_2O are byproducts of fossil fuel combustion.
- N_2O is associated with agricultural operations such as fertilization of crops.
- CH_4 is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with CO_2 being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of CO_2 equivalents (CO_2e).

An expanding body of scientific research supports the theory that global climate change is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California are adversely affected by the global warming trend. Increased precipitation and sea level rise will increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

Federal and Statewide GHG Emissions

The U.S. EPA reported that in 2022, total gross nationwide GHG emissions were 5,215.6 million metric tons (MMT) carbon dioxide equivalent (CO_2e).[29] These emissions were lower than peak levels of 7,416 MMT that were emitted in 2007. CARB updates the statewide GHG emission

[29] United States Environmental Protection Agency, 2022. *Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2020*. February. Web: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks

inventory on an annual basis where the latest inventory includes 2000 through 2020 emissions.[30] In 2020, GHG emissions from statewide emitting activities were 369.2 MMT CO_2e. The 2020 emissions have decreased by 25 percent since peak levels in 2004 and are 35.3 MMT CO_2e lower than 2019 emissions level and almost 62 MMT CO_2e below the State's 2020 GHG limit of 431 MMT CO_2e. Per capita GHG emissions in California have dropped from a 2001 peak of 13.8 MT CO_2e per person to 9.3 MT CO_2e per person in 2020.

Recent Regulatory Actions for GHG Emissions

Executive Order S-3-05 – California GHG Reduction Targets

Executive Order (EO) S-3-05 was signed by Governor Arnold Schwarzenegger in 2005 to set GHG emission reduction targets for California. The three targets established by this EO are as follows: (1) reduce California's GHG emissions to 2000 levels by 2010, (2) reduce California's GHG emissions to 1990 levels by 2020, and (3) reduce California's GHG emissions by 80 percent below 1990 levels by 2050.

Assembly Bill 32 – California Global Warming Solutions Act (2006)

Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, codified the State's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, the CARB, CEC, California Public Utilities Commission (CPUC), and Building Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05, which has a target of reducing GHG emissions 85 percent below 1990 levels.

The first Scoping Plan for AB 32 was adopted by CARB in December 2008. Its most recent update was completed in December of 2022[31]. It contains the State's main strategies to achieve carbon neutrality by 2045. This plan extends and expands upon the earlier versions with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. It also takes the step of adding carbon neutrality as a science-based guide and touchstone for California's climate work. Measures to achieve carbon neutrality include rapidly moving to zero emission vehicles (ZEV), removing natural gas as an option for space conditioning, increasing the number of solar arrays and wind turbines, and scaling up renewable hydrogen for hard-to-electrify end uses.

Senate Bill 375 – California's Regional Transportation and Land Use Planning Efforts (2008)

California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 provides incentives for local governments and applicants to implement new conscientiously planned growth patterns. This includes incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities.

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[30] CARB. 2022. *California Greenhouse Gas Emission for 2000 to 2020*. Web: https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000-2020_ghg_inventory_trends.pdf

[31] CARB. 2022. Final 2022 Scoping Plan Update and Appendices. Web: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents

The legislation also allows applicants to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB works with the metropolitan planning organizations (e.g., ABAG and MTC) to align their regional transportation, housing, and land use plans to reduce VMT and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

Senate Bill 350 - Renewable Portfolio Standards

In September 2015, the California Legislature passed SB 350, which increases the states Renewables Portfolio Standard (RPS) for content of electrical generation from the 33 percent target for 2020 to a 50 percent renewables target by 2030.

Executive Order B-30-15 & Senate Bill 32 GHG Reduction Targets – 2030 GHG Reduction Target

In April 2015, Governor Brown signed EO B-30-15, which extended the goals of AB 32, setting a GHG emissions target at 40 percent of 1990 levels by 2030. On September 8, 2016, Governor Brown signed Senate Bill (SB) 32, which legislatively established the GHG reduction target of 40 percent of 1990 levels by 2030. In November 2017, CARB issued *California's 2017 Climate Change Scoping Plan*.[32] While the State is on track to exceed the AB 32 scoping plan 2020 targets, this plan is an update to reflect the enacted SB 32 reduction target.

SB 32 was passed in 2016, which codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. CARB has drafted a 2022 Scoping Plan Update to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32. The 2022 draft plan:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 or earlier.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as a driving principle.
- Incorporates the contribution of natural and working lands to the state's GHG emissions, as well as its role in achieving carbon neutrality.
- Relies on the most up to date science, including the need to deploy all viable tools, including carbon capture and sequestration as well a direct air capture.

[32] California Air Resource Board, 2017. *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Targets.* November. Web: https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/scoping_plan_2017.pdf

- Evaluates multiple options for achieving our GHG and carbon neutrality targets, as well as the public health benefits and economic impacts associated with each.

The Scoping Plan was updated in 2022 and lays out how the state can get to carbon neutrality by 2045 or earlier. It is the first Scoping Plan that adds carbon neutrality as a science-based guide and touchstone beyond statutorily established emission reduction targets.[33]

The mid-term 2030 target is considered critical by CARB on the path to obtaining an even deeper GHG emissions target of 80 percent below 1990 levels by 2050, as directed in Executive Order S-3-05. The 2022 Scoping Plan outlines the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure, providing a blueprint to continue driving down GHG emissions and to not only obtain the statewide goals, but cost-effectively achieve carbon-neutrality by 2045 or earlier. In the 2022 Scoping Plan, CARB recommends:

- VMT per capita reduced 12% below 2019 levels by 2030 and 22% below 2019 levels by 2045.
- 100% of Light-duty vehicle sales are zero emissions vehicles (ZEV) by 2035.
- 100% of medium duty/heavy duty vehicle sales are ZEV by 2040.
- 100% of passenger and other locomotive sales are ZEV by 2030.
- 100% of line haul locomotive sales are ZEV by 2035.
- All electric appliances in new residential and commercial building beginning 2026 (residential) and 2029 (commercial).
- 80% of residential appliance sales are electric by 2030 and 100% of residential appliance sales are electric by 2035.
- 80% of commercial appliance sales are electric by 2030 and 100% of commercial appliance sales are electric by 2045.

SB 743 Transportation Impacts

Senate Bill 743 required lead agencies to abandon the old "level of service" metric for evaluating a project's transportation impacts, which was based solely on the amount of delay experienced by motor vehicles. In response, the Governor's Office of Planning and Research (OPR) developed a VMT metric that considered other factors such as reducing GHG emissions and developing multimodal transportation[34]. A VMT-per-capita metric was adopted into the CEQA Guidelines Section 15064.3 in November 2017. Given current baseline per-capita VMT levels computed by CARB in the 2030 Scoping Plan of 22.24 miles per day for light-duty vehicles and 24.61 miles per day for all vehicle types, the reductions needed to achieve the 2050 climate goal are 16.8 percent for light-duty vehicles and 14.3 percent for all vehicle types combined. Based on this analysis (as well as other factors), OPR recommended using a 15-percent reduction in per capita VMT as an appropriate threshold of significance for evaluating transportation impacts.

Executive Order B-55-18 – Carbon Neutrality

[33] https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents
[34] Governor's Office of Planning and Research. 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA.* December.

In 2018, a new statewide goal was established to achieve carbon neutrality as soon as possible, but no later than 2045, and to maintain net negative emissions thereafter. CARB and other relevant state agencies are tasked with establishing sequestration targets and create policies/programs that would meet this goal.

Senate Bill 100 – Current Renewable Portfolio Standards

In September 2018, SB 100 was signed by Governor Brown to revise California's RPS program goals, furthering California's focus on using renewable energy and carbon-free power sources for its energy needs. The bill would require all California utilities to supply a specific percentage of their retail sales from renewable resources by certain target years. By December 31, 2024, 44 percent of the retails sales would need to be from renewable energy sources, by December 31, 2026 the target would be 40 percent, by December 31, 2027 the target would be 52 percent, and by December 31, 2030 the target would be 60 percent. By December 31, 2045, all California utilities would be required to supply retail electricity that is 100 percent carbon-free and sourced from eligible renewable energy resource to all California end-use customers.

California Building Standards Code – Title 24 Part 11 & Part 6

The California Green Building Standards Code (CALGreen Code) is part of the California Building Standards Code under Title 24, Part 11.[35] The CALGreen Code encourages sustainable construction standards that involve planning/design, energy efficiency, water efficiency resource efficiency, and environmental quality. These green building standard codes are mandatory statewide and are applicable to residential and non-residential developments. The most recent CALGreen Code (2022 California Building Standard Code) was effective as of January 1, 2023.

The California Building Energy Efficiency Standards (California Energy Code) is under Title 24, Part 6 and is overseen by the California Energy Commission (CEC). This code includes design requirements to conserve energy in new residential and non-residential developments, while being cost effective for homeowners. This Energy Code is enforced and verified by cities during the planning and building permit process. The current energy efficiency standards (2022 Energy Code) replaced the 2019 Energy Code as of January 1,2023. Under the 2019 standards, single-family homes are predicted to be 53 percent more efficient than homes built under the 2016 standard due more stringent energy-efficiency standards and mandatory installation of solar photovoltaic systems. For nonresidential developments, it is predicted that these buildings will use 30 percent less energy due to lightening upgrades.[36]

Requirements for electric vehicle (EV) charging infrastructure are set forth in Title 24 of the California Code of Regulations. The CALGreen standards consist of a set of mandatory standards required for new development, as well as two more voluntary standards known as Tier 1 and Tier 2. The CalGreen 2022 standards require deployment of additional EV chargers in various building types, including multifamily residential and nonresidential land uses. They include requirements for both EV capable parking spaces and the installation of Level 2 EV supply equipment for

[35] See: https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen#:~:text=CALGreen%20is%20the%20first%2Din,to%201990%20levels%20by%202020.
[36] See: https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf

multifamily residential and nonresidential buildings. The 2022 CALGreen standards include requirements for both EV readiness, installation of EV chargers, and include both mandatory requirements and more aggressive voluntary Tier 1 and Tier 2 provisions. Providing EV charging infrastructure that meets current CALGreen requirements will not be sufficient to power the anticipated more extensive level of EV penetration in the future that is needed to meet SB 30 climate goals.

CEC studies have identified the most aggressive electrification scenario as putting the building sector on track to reach the carbon neutrality goal by 2045.[37] Installing new natural gas infrastructure in new buildings will interfere with this goal. To meet the State's goal, communities have been adopting "Reach" codes that prohibit natural gas connections in new and remodeled buildings.

Advanced Clean Cars

The Advanced Clean Cars Program, originally adopted by CARB in 2012, was designed to bring together CARB's traditional passenger vehicle requirements to meet federal air quality standards and also support California's AB 32 goals to develop and implement programs to reduce GHG emissions back down to 1990 levels by 2020, a goal achieved in 2016 as a result of numerous emissions reduction programs.

Advanced Clean Cars II (ACC II) is phase two of the original rule. ACC II establishes a year-by-year process, starting in 2026, so all new cars and light trucks sold in California will be zero-emission vehicles by 2035, including plug-in hybrid electric vehicles. The regulation codifies the light-duty vehicle goals set out in Governor Newsom's Executive Order N-79-20. Currently, 16 percent of new light-duty vehicles sold in California are zero emissions or plug-in hybrids. By 2030, 68 percent of new vehicles sold in California would be zero emissions and 100 percent by 2035.

Since this regulation was recently adopted, the air pollutant and GHG emissions computed in this assessment do not reflect the emissions reductions. Future updates to the State's mobile emission factor model, EMFAC, will include these effects.

<u>City of Novato Climate Change Action Plan</u>

Adopted in December 2009, the *Novato Climate Change Action Plan* includes a GHG reduction target of 15 percent below 2005 levels by 2020, consistent with the State's AB32 (2007) target, and a 40 percent reduction by 2035.[38] In 2015, the City reaffirmed the GHG targets and supported one of the four new programs presented in the *Climate Change Action Plan White Paper*.[39] However, the City's Climate Change Action Plan does not have a specific quantified GHG

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[37] California Energy Commission. 2021. F*inal Commission Report: California Building Decarbonization Assessment. Publication Number CEC-400-2021-006-CMF*.August

[38] City of Novato, California (2009). *City of Novato Climate Change Action Plan.* https://www.novato.org/home/showpublisheddocument?id=29116

[39] City of Novato, California (2015). *City of Novato General Plan 2035 Policy White Paper Climate Change Action Plan.* https://www.novato.org/home/showpublisheddocument?id=12601

threshold for project-level construction or operational activities. Therefore, the BAAQMD's CEQA Air Quality Guideline's thresholds are used.

BAAQMD GHG Significance Thresholds

On April 20, 2022, BAAQMD adopted new thresholds of significance for operational GHG emissions from land use projects for projects beginning the CEQA process. The current thresholds of significance are:

A. Projects must include, at a minimum, the following project design elements:
   a. Buildings
      i. The project will not include natural gas appliances or natural gas plumbing (in both residential and non-residential development).
      ii. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
   b. Transportation
      i. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
         1. Residential Projects: 15 percent (16.8 percent in Petaluma) below the existing VMT per capita
         2. Office Projects: 15 percent (16.8 percent in Petaluma) below the existing VMT per employee
         3. Retail Projects: no net increase in existing VMT
      ii. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

B. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

New land use projects are required to meet either section A or B from the above list, not both, to be considered less than significant.

Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

GHG emissions associated with development of the proposed project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term operational emissions associated with vehicular traffic within the project vicinity, energy and water usage, and solid waste disposal. Emissions for the proposed project are discussed below.

CalEEMod Modeling

CalEEMod was used to predict GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model, as described above within the construction and operational period emissions. CalEEMod output is included in *Attachment 1*.

Construction GHG Emissions

GHG emissions associated with construction were computed at 1,635 MT of CO_2e for the total construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City nor BAAQMD have an adopted threshold of significance for construction-related GHG emissions, though the California Office of Planning and Research (OPR) recommends quantifying emissions and disclosing that GHG emissions would occur during construction, even in cases where BAAQMD does not. BAAQMD encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable.

Operational GHG Emissions

The CalEEMod model along with the project vehicle trip generation rates were used to estimate daily emissions associated with operation of the proposed project. As shown in Table 9 for informational purposes, net annual GHG emissions resulting from operation of the proposed project are predicted to be 955 MT of CO_2e in 2028.

Table 9. Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	Proposed Project in 2028
Mobile	812
Area	1
Energy Consumption	125
Water Usage	3
Solid Waste Generation	14
Refrigerants	0
Total (MT CO_2e/year)	955

For this impact to be considered less than significant, it must be consistent with a local GHG reduction strategy (Threshold B) or meet the minimum project design elements recommended by BAAQMD (Threshold A).Threshold A is being applied to the analysis of this project as Threshold B is not applicable. Threshold A requires the project:

1. Avoid construction of new natural gas connections for the residential buildings,
    - Conforms – Per the applicant, the project will be all-electric powered.
2. Avoid wasteful or inefficient use of electricity,
    - Conforms – would meet CALGreen Building Standards Code requirements that are considered to be energy efficient.

3. Include electric vehicle (EV) charging infrastructure that meets current Building Code CALGreen Tier 2 compliance, and
    - Conforms – All garages will be wired to accommodate EV chargers.
4. Reduce VMT per service population by 15 percent over regional average.
    - Conforms – The City of Novato has determined that the project qualifies for screening from a transportation VMT analysis, therefore a VMT analysis was not prepared. [40]

The project conforms with Threshold A. Therefore, the GHG emissions impacts from project would be less-than-significant.

Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The City of Novato has a CAP and enforces its building codes, which aim to reduce GHG emissions. Therefore, if individual projects conform to City building Codes, they will conform with the CAP and would not conflict with local plans, policies, or regulations applicable to GHG emissions. The proposed project would be constructed in conformance with at minimum the 2022 CalGreen and the Title 24 Building Codes, which requires high-efficiency water fixtures, water-efficient irrigation systems, and compliance with current energy efficiency standards. Compliance with these standards ensures compliance with State and federal plans, policies, and regulations applicable to GHG emissions.

[40] Email correspondence with Zack Matley AICP, Principal, W-Trans, April 21, 2023.

Energy Use Assessment

Setting

Many federal, state, and local statutes and policies address energy conservation. At the federal level, energy standards apply to numerous products (e.g., the *EnergyStar*™ program) and transportation (e.g., fuel efficiency standards). At the state level, the Energy Efficiency Standards for Residential and Nonresidential Buildings, as specified in Title 24, Part 6, of the California Code of Regulations (CCR), promote efficient energy use in new buildings constructed in California. The standards regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The California Green Building Standards Code (CALGreen) establishes mandatory green building standards for new construction (new buildings and expansions) in California. The code covers five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and indoor environmental quality. These standards include a mandatory set of minimum guidelines, as well as more rigorous voluntary measures, for new construction projects to achieve specific green building performance levels. Building Energy Efficiency Standards and CALGreen standards are enforced through the local building permit process.

The California Energy Commission (CEC) provides full forecasts for electricity, natural gas, and fuel every two years as part of the *Integrated Energy Policy Report* (IEPR) process. In 2035, it is estimated that Californians will consume up to 358,738 GWh of electricity. Gasoline demand is projected to decline each year through 2030 due to greater numbers of zero-emission vehicles, with 840,000 zero emission vehicles registered for 2021, and increasing fuel economy.

California's electric grid relies increasingly on clean sources of energy such as solar, wind, geothermal, hydroelectricity, and biomass. As this transition advances, the grid is also expanding to serve new sectors including electric vehicles, rail, and space and water heating. California's Renewables Portfolio Standard (RPS) is among the most ambitious energy policies in the nation, requiring utilities to produce 44 percent of their retail electricity from clean, renewable sources by 2024 and 60 percent by 2030. Increasing California's renewable supplies will diminish the state's dependence on fossil fuels for electric power generation.

Discussion

Construction of the project would require energy for the manufacture and transportation of building materials, preparation and grading of the project site, and construction of the project including the infrastructure. This would be a temporary use of energy.

Operation of the project would consume energy. The primary means of energy consumption would include vehicle travel and electricity usage associated with operating the new residential units proposed by the project. In addition, there would be indirect electricity usage associated with the conveyance of water supplied to the residential units and wastewater produced by the units. As described in the air quality report, the CalEEMod model was used to compute air pollutant emissions associated with operation of the project. CalEEMod provides estimated direct electricity usage, while the vehicle trip generation rate was provided by the project's traffic consultant. The energy usage reflects the project operating under a full build out with all three residential areas

fully occupied. It is assumed that all vehicles operated by project residents are gasoline powered even though the project plans to install EV charging capabilities within all units to encourage electric vehicle usage. Table 10 shows the estimated energy demand of the project during operation.

Table 10. Project Operational Annual Energy Demand

Energy Usage	Estimated Demand	2028 Demand in MM Btu	Source
Electricity	1,338,095 kWh	4,566	CalEEMod
Vehicle Travel (gasoline, diesel and electric vehicles)	2,524,313 annual miles travelled. Consumption of 87,015 gallons	9,920	CalEEMod VMT and EMFAC2021 average light duty fuel economy of 29.01 mpg in 2028.
Total Usage		14,486	
Sources: Illingworth & Rodkin, Inc. CalEEMod modeling, EMFAC2021 1 gallon of gasoline = 114,000 Btu = 0.114 MM Btu MM Btu = one million British thermal units, VMT = vehicle miles travelled			

Supporting Documentation

Attachment 1 includes the CalEEMod outputs for project construction and operational criteria air pollutant and GHG emissions. Also included are any modeling assumptions.

Attachment 2 is the health risk assessment. This includes the summary of the dispersion modeling and the cancer risk calculations for construction. The AERMOD dispersion modeling files for this assessment, which are quite voluminous, are available upon request and would be provided in digital format.

Attachment 3 includes the cumulative health risk calculations, modeling results, and health risk calculations from sources affecting the project MEI and new project sensitive receptors.

Attachment 1: CalEEMod Input Assumptions and Outputs

Air Quality/Noise Construction Information Data Request

Project Name: Valley Oaks NORTH AREAS 1 & 2 DEFAULTS

Complete ALL Portions in Yellow

See Equipment Type TAB for type, horsepower and load factor

Project Size	29	Dwelling Units	4.5 total project acres disturbed
	75,900	s.f. residential	
	0	s.f. retail	
	0	s.f. office/commercial	
	0	s.f. other, specify:	
	400	s.f. parking garage	58 spaces
	400	s.f. Driveway	58 spaces
	0	s.f. parking lot	0 spaces
Construction Days (i.e, M-F)	Monday	to	Friday
Construction Hours	7 am	to	4 pm

Pile Driving? Y/N? NO

Project include on-site GENERATOR OR FIRE PUMP during project OPERATION (not construction)? Y/N? __NO__

IF YES (if BOTH separate values) -->

Kilowatts/Horsepower: _____

Fuel Type: _____

Location in project (Plans Desired if Available):

DO NOT MULTIPLY EQUIPMENT HOURS/DAY BY THE QUANTITY OF EQUIPMENT

Phasing:

	Revised VTM Grading Area Acres
Valley Oaks South	2.5
Valley Oaks North Areas 1 and 2	4.5
Valley Oaks North Area 3	6.5
	13.5

Valley Oaks South

Quantity	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	HP Annual Hours	Comments
Site Improvements								
	Demolition	**Start Date:**	4/1/2025	**Total phase:**	3			**Overall Import/Export Volumes**
		End Date:	4/3/2025					
1	Concrete/Industrial Saws	81	0.73	4	1	1.3	237	**Demolition Volume**
1	Excavators	158	0.38	8	3	8.0	1441	Square footage of buildings to be demolished
1	Rubber-Tired Dozers	247	0.4	8	3	8.0	2371	(or total tons to be hauled)
1	Tractors/Loaders/Backhoes	97	0.37	8	3	8.0	861	2,000 square feet *Pavement*
								50 Hauling volume (tons)
								Any pavement demolished and hauled? 50 **tons**
	Site Preparation	**Start Date:**	4/1/2025	**Total phase:**	5			
		End Date:	4/5/2025					
1	Graders	187	0.41	8	3	4.8	1840	
1	Rubber Tired Dozers	247	0.4	8	2	3.2	1581	
1	Tractors/Loaders/Backhoes	97	0.37	8	3	4.8	861	
	Grading / Excavation	**Start Date:**	4/6/2025	**Total phase:**	40			
		End Date:	6/6/2025					**Soil Hauling Volume**
1	Excavators	158	0.38	8	20	4	9606	Export volume = 0 cubic yards?
1	Graders	187	0.41	8	25	5	15334	Import volume = 20,000 cubic yards
1	Rubber Tired Dozers	247	0.4	8	25	5	19760	
0	Concrete/Industrial Saws	81	0.73	8	0	0	0	
1	Tractors/Loaders/Backhoes	97	0.37	8	30	6	8614	
1	Scrapers	423	0.48	8	40	8	64972.8	
	Trenching/Foundation	**Start Date:**	6/7/2025	**Total phase:**	10			
		End Date:	6/21/2025					
1	Tractor/Loader/Backhoe	97	0.37	8	10	8	2871	
1	Excavators	158	0.38	8	10	8	4803	
Building - Exterior		**Start Date:**	6/22/2025	**Total phase:**	325			**Cement Trucks? _?_ Total Round-Trips**
		End Date:	9/22/2026					
1	Cranes	231	0.29	7	325	7	152402	Electric? (Y/N) ___ Otherwise assumed diesel
3	Forklifts	89	0.2	8	325	8	138840	Liquid Propane (LPG)? (Y/N) ___ Otherwise Assumed diesel
1	Generator Sets	84	0.74	8	325	8	161616	Or temporary line power? (Y/N) ___
3	Tractors/Loaders/Backhoes	97	0.37	7	325	7	244949	
1	Welders	46	0.45	8	325	8	53820	
	Other Equipment?							
Building - Interior/Architectural Coating		**Start Date:**	9/22/2026	**Total phase:**	73			
		End Date:	12/31/2026					
1	Air Compressors	78	0.48	6	20	1.6	4493	
0	Aerial Lift	62	0.31			0	0	
	Other Equipment?							
	Paving	**Start Date:**	7/1/2026	**Total phase:**	10			
		Start Date:	7/15/2026					
1	Cement and Mortar Mixers	9	0.56	8	2	1.6	81	
1	Pavers	130	0.42	8	2	1.6	874	**Asphalt = 500 cubic yards**
1	Paving Equipment	132	0.36	8	2	1.6	760	
2	Rollers	80	0.38	8	2	1.6	973	
1	Tractors/Loaders/Backhoes	97	0.37	8	2	1.6	574	
	Other Equipment?							
	Additional Phases	**Start Date:**		**Total phase:**				
		Start Date:						
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
Building - Interior/Architectural Coating		**Start Date:**		**Total phase:**	10			
		End Date:						
	Air Compressors	78	0.48			0	0	
	Aerial Lift	62	0.31			0	0	
	Other Equipment?							

Equipment types listed in "Equipment Types" worksheet tab.

Equipment listed in this sheet is to provide an example of inputs

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horsepower or load factor, as appropriate

Complete one sheet for each project component

Air Quality/Noise Construction Information Data Request

Project Name: Valley Oaks NORTH AREA 3 DEFAULTS

See Equipment Type TAB for type, horsepower and load factor

Complete ALL Portions in Yellow

Project Size	32	Dwelling Units	6.5 total project acres disturbed
	80,000	s.f. residential	
	0	s.f. retail	
	0	s.f. office/commercial	
	0	s.f. other, specify:	
	400	s.f. parking garage	64 spaces
	400	s.f. Driveway	64 spaces
	0	s.f. parking lot	0 spaces
Construction Days (i.e, M-F)	Monday	to	Friday
Construction Hours	7 am	to	4 pm

Pile Driving? Y/N? NO

Project include on-site GENERATOR OR FIRE PUMP during project OPERATION (not construction)? Y/N? __NO__

IF YES (if BOTH separate values) -->

Kilowatts/Horsepower: _____

Fuel Type: _____

Location in project (Plans Desired if Available):

DO NOT MULTIPLY EQUIPMENT HOURS/DAY BY THE QUANTITY OF EQUIPMENT

Phasing:

	Revised VTM Grading Area Acres
Valley Oaks South	2.5
Valley Oaks North Areas 1 and 2	4.5
Valley Oaks North Area 3	6.5
	13.5

Valley Oaks South

Quantity	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	HP Annual Hours	Comments
Site Improvements								
	Demolition	**Start Date:**	**4/1/2026**	**Total phase:**	**2**			**Overall Import/Export Volumes**
		End Date:	**4/2/2026**					
0	Concrete/Industrial Saws	81	0.73	0	0	0	0	**Demolition Volume**
1	Excavators	158	0.38	8	1	4	480	Square footage of buildings to be demolished
0	Rubber-Tired Dozers	247	0.4	0	0	0	0	(*or* total tons to be hauled)
1	Tractors/Loaders/Backhoes	97	0.37	8	1	4	287	0 square feet *or*
								0 Hauling volume (tons)
								Any pavement demolished and hauled? 0 **tons**
	Site Preparation	**Start Date:**	**4/1/2026**	**Total phase:**	**5**			
		End Date:	**4/6/2026**					
1	Graders	187	0.41	8	5	8	3067	
2	Rubber Tired Dozers	247	0.4	8	5	8	7904	
1	Tractors/Loaders/Backhoes	97	0.37	8	5	8	1436	
	Grading / Excavation	**Start Date:**	**4/7/2026**	**Total phase:**	**50**			
		End Date:	**6/21/2026**					**Soil Hauling Volume**
1	Excavators	158	0.38	8	3	0.48	1441	Export volume = 0 cubic yards
1	Graders	187	0.41	8	5	0.8	3067	Import volume = 35,000 cubic yards?
1	Rubber Tired Dozers	247	0.4	8	3	0.48	2371	
0	Concrete/Industrial Saws	81	0.73	0	0	0	0	
1	Tractors/Loaders/Backhoes	97	0.37	8	5	0.8	1436	
1	Scrapers	423	0.48	8	3	0.48	4872.96	
	Trenching/Foundation	**Start Date:**	**6/21/2026**	**Total phase:**	**10**			
		End Date:	**7/7/2026**					
1	Tractor/Loader/Backhoe	97	0.37	8	1	0.8	287	
1	Excavators	158	0.38	8	1	0.8	480	
Building - Exterior		**Start Date:**	**7/7/2026**	**Total phase:**	**389**			**Cement Trucks? ?? Total Round-Trips**
		End Date:	**12/31/2027**					
1	Cranes	231	0.29	7	389	7	182414	Electric? (Y/N) ___ Otherwise assumed diesel
3	Forklifts	89	0.2	8	389	8	166181	Liquid Propane (LPG)? (Y/N) ___ Otherwise Assumed diesel
1	Generator Sets	84	0.74	8	389	8	193442	Or temporary line power? (Y/N) ___
3	Tractors/Loaders/Backhoes	97	0.37	7	389	7	293185	
1	Welders	46	0.45	8	389	8	64418	
	Other Equipment?							
Building - Interior/Architectural Coating		**Start Date:**	**9/15/2027**	**Total phase:**	**55**			
		End Date:	**11/30/2027**					
1	Air Compressors	78	0.48	6	30	3.27272727	6739	
0	Aerial Lift	62	0.31			0	0	
	Other Equipment?							
	Paving	**Start Date:**	**10/4/2026**	**Total phase:**	**20**			
		Start Date:	**11/1/2026**					
1	Cement and Mortar Mixers	9	0.56	8	2	0.8	81	
1	Pavers	130	0.42	8	2	0.8	874	**Asphalt 400 cubic yards**
1	Paving Equipment	132	0.36	8	2	0.8	760	
2	Rollers	80	0.38	8	2	0.8	973	
1	Tractors/Loaders/Backhoes	97	0.37	8	2	0.8	574	
	Additional Phases	**Start Date:**		**Total phase:**				
		Start Date:						
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	

Equipment types listed in "Equipment Types" worksheet tab.

Equipment listed in this sheet is to provide an example of inputs

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horsepower or load factor, as appropriate

Complete one sheet for each project component

Air Quality/Noise Construction Information Data Request

Project Name: Valley Oaks SOUTH DEFAULTS

See Equipment Type TAB for type, horsepower and load factor

Complete ALL Portions in Yellow

Project Size	20 Dwelling Units	2.5 total project acres disturbed	
	38,800 s.f. residential		Pile Driving? Y/N? NO
	0 s.f. retail		
	0 s.f. office/commercial	20 townhomes	Project include on-site GENERATOR OR FIRE PUMP during project OPERATION (not construction)? Y/N? __NO__
	0 s.f. other, specify:		IF YES (if BOTH separate values) -->
	400 s.f. parking garage	40 spaces	Kilowatts/Horsepower: _____
	400 s.f. Driveway	0 spaces	
	5,000 s.f. parking lot	10 spaces	Fuel Type: _____
Construction Days (i.e, M-F)	Monday to	Friday	Location in project (Plans Desired if Available):
Construction Hours	7 am to	4 pm	

DO NOT MULTIPLY EQUIPMENT HOURS/DAY BY THE QUANTITY OF EQUIPMENT

Phasing:

	Revised VTM Grading Area Acres
Valley Oaks South	2.5
Valley Oaks North Areas 1 and 2	4.5
Valley Oaks North Area 3	6.5
	13.5

Valley Oaks South

Quantity	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	HP Annual Hours	Comments
Site Improvements								
	Demolition	**Start Date:**	4/1/2025	**Total phase:**	1			**Overall Import/Export Volumes**
		End Date:	4/1/2025					
0	Concrete/Industrial Saws	81	0.73	0	0	0	0	**Demolition Volume**
1	Excavators	158	0.38	8	1	8	480	Square footage of buildings to be demolished
0	Rubber-Tired Dozers	247	0.4	0	0	0	0	(*or* total tons to be hauled)
1	Tractors/Loaders/Backhoes	97	0.37	8	1	8	287	0 square feet *or*
								0 Hauling volume (tons)
								Any pavement demolished and hauled? 0 **tons**
	Site Preparation	**Start Date:**	4/1/2025	**Total phase:**	1			
		End Date:	4/1/2025					
1	Graders	187	0.41	8	1	8	613	
1	Rubber Tired Dozers	247	0.4	8	1	8	790	
1	Tractors/Loaders/Backhoes	97	0.37	8	1	8	287	
	Grading / Excavation	**Start Date:**	4/2/2025	**Total phase:**	10			
		End Date:	4/16/2025					**Soil Hauling Volume**
1	Excavators	158	0.38	8	2	1.6	961	Export volume = 0 cubic yards
1	Graders	187	0.41	8	4	3.2	2453	Import volume = 10,000 cubic yards?
1	Rubber Tired Dozers	247	0.4	8	2	1.6	1581	
0	Concrete/Industrial Saws	81	0.73	0	0	0	0	
1	Tractors/Loaders/Backhoes	97	0.37	8	5	4	1436	
1	Scrapers	423	0.48	8	4	3.2	6497.28	
	Trenching/Foundation	**Start Date:**	4/17/2025	**Total phase:**	1			
		End Date:	4/17/2025					
1	Tractor/Loader/Backhoe	97	0.37	8	1	8	287	
1	Excavators	158	0.38	8	1	8	480	
Building - Exterior		**Start Date:**	4/18/2025	**Total phase:**	325			**Cement Trucks? ?? Total Round-Trips**
		End Date:	7/18/2026		4/18/2025			
1	Cranes	231	0.29	7	325	7	152402	Electric? (Y/N) ___ Otherwise assumed diesel
3	Forklifts	89	0.2	8	325	8	138840	Liquid Propane (LPG)? (Y/N) ___ Otherwise Assumed diesel
1	Generator Sets	84	0.74	8	325	8	161616	Or temporary line power? (Y/N) ___
3	Tractors/Loaders/Backhoes	97	0.37	7	325	7	244949	
1	Welders	46	0.45	8	325	8	53820	
	Other Equipment?							
Building - Interior/Architectural Coating		**Start Date:**	4/18/2026	**Total phase:**	60			
		End Date:	7/18/2026					
1	Air Compressors	78	0.48	6	20	2	4493	
0	Aerial Lift	62	0.31			0	0	
	Other Equipment?							
	Paving	**Start Date:**	4/1/2026	**Total phase:**	5			
		Start Date:	4/5/2026					
1	Cement and Mortar Mixers	9	0.56	8	1	1.6	40	
1	Pavers	130	0.42	8	1	1.6	437	**Asphalt 200 cubic yards**
1	Paving Equipment	132	0.36	8	1	1.6	380	
2	Rollers	80	0.38	8	1	1.6	486	
1	Tractors/Loaders/Backhoes	97	0.37	8	1	1.6	287	
	Additional Phases	**Start Date:**		**Total phase:**				
		Start Date:						
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	

Equipment types listed in "Equipment Types" worksheet tab.

Equipment listed in this sheet is to provide an example of inputs

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horsepower or load factor, as appropriate

Complete one sheet for each project component

Construction Criteria Air Pollutants							
Unmitigated	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	PM2.5 Fugitive	**CO2e**	
Year	Tons					MT	
Construction Equipment							
2025	0.24	2.36	0.09	0.08	0.08	599.80	
2026	1.08	2.67	0.10	0.09	0.08	726.34	
2027	0.70	1.26	0.04	0.04	0.02	308.93	
	Total Construction Emissions						
Tons	2.03	6.28	0.23	0.21		1635.07	
Pounds/Workdays	*Average Daily Emissions*					Workdays	
2025	2.45	23.94	0.92	0.84			**197**
2026	8.29	20.42	0.73	0.67			**261**
2027	5.40	9.63	0.34	0.31			**261**
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			
	Total Construction Emissions						
Pounds	16.14	54.00	1.99	1.82		0.00	
Average	5.64	17.47	0.64	0.59		0.00	719.00
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			

Operational Criteria Air Pollutants							
Unmitigated	ROG	NOX	Total PM10	Total PM2.5			
Year	Tons						
Total	1.40	0.35	0.35	0.07			
	Net Annual Operational Emissions						
Tons/year	1.40	0.35	0.35	0.07			
Threshold - Tons/year	**10.0**	**10.0**	**15.0**	**10.0**			
	Average Daily Emissions						
Pounds Per Day	7.67	1.93	1.92	0.36			
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			

Category	**CO2e**			
	Project	Existing	Project 2030	Existing
Mobile	811.95			
Area	1.01			
Energy	125.03			
Water	2.99			
Waste	13.78			
Refrig.	0.23			
TOTAL	954.98	0.00	0.00	0.00
Net GHG Emissions		954.98		0.00

Traffic Consultant Trip Gen					CalEEMod Default		
Land Use	Size	Daily Trips	New Trips	Weekday Trip Gen	Weekday	Sat	Sun
Single Family Housing North Area	DU 32	230	362	***11.31***	9.44	9.54	8.55
Includes JADUs		*132*			*Rev*	***11.43***	***10.25***
Single Family Housing North area	DU 29	273	273	***9.43***	9.44	9.54	8.55
					Rev	***9.53***	***8.54***
Condos/Townhomes South Area	DU 20	189	189	***9.43***	7.32	8.14	6.28
					Rev	***10.48***	***8.09***
		Total:	824				

Valley Oaks Trip Generation

Table 1 – Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Single-Family Attached Housing	32 du	7.20	230	0.48	15	4	11	0.57	18	11	7
Single-Family Detached Housing	49 du	9.43	462	0.70	34	9	25	0.94	46	29	17
Junior Accessory Dwelling Unit (JADU)	58* residents	2.28	132	0.22	13	3	10	0.19	11	7	4
Total			**824**		**62**	**16**	**46**		**75**	**47**	**28**

Notes: du = dwelling unit;
*The number of JADU units (45) was multiplied by 1.28 to yield an equivalent number of residents for this residential use type

23-019 Valley Oaks North Areas 1 & 2 Const Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

2.3. Construction Emissions by Year, Mitigated

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

3.2. Demolition (2025) - Mitigated

3.3. Site Preparation (2025) - Unmitigated

3.4. Site Preparation (2025) - Mitigated

3.5. Grading (2025) - Unmitigated

3.6. Grading (2025) - Mitigated

3.7. Building Construction (2025) - Unmitigated

3.8. Building Construction (2025) - Mitigated

3.9. Building Construction (2026) - Unmitigated

3.10. Building Construction (2026) - Mitigated

3.11. Paving (2026) - Unmitigated

3.12. Paving (2026) - Mitigated

3.13. Architectural Coating (2026) - Unmitigated

3.14. Architectural Coating (2026) - Mitigated

3.15. Trenching (2025) - Unmitigated

3.16. Trenching (2025) - Mitigated

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	23-019 Valley Oaks North Areas 1 & 2 Const
Construction Start Date	4/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	43.4
Location	100 Pinkston Rd, Novato, CA 94945, USA
County	Marin
City	Novato
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	911
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.12

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	29.0	Dwelling Unit	4.50	75,900	0.00	0.00	70.0	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	15.8	27.9	1.03	7.48	8.51	0.92	2.48	3.41	9.39	8,994
Mit.	15.1	19.1	0.17	7.48	7.66	0.15	2.48	2.63	9.39	8,994
% Reduced	4%	32%	83%	—	10%	84%	—	23%	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	14.7	10.6	0.43	0.44	0.87	0.40	0.11	0.51	0.02	2,582
Mit.	14.7	9.70	0.12	0.44	0.56	0.11	0.11	0.22	0.02	2,582
% Reduced	< 0.5%	9%	72%	—	36%	71%	—	56%	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	3.52	6.95	0.26	0.93	1.20	0.24	0.28	0.52	0.59	1,994
Mit.	3.17	5.79	0.07	0.93	1.00	0.06	0.28	0.34	0.59	1,994
% Reduced	10%	17%	75%	—	17%	75%	—	35%	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	0.64	1.27	0.05	0.17	0.22	0.04	0.05	0.10	0.10	330
Mit.	0.58	1.06	0.01	0.17	0.18	0.01	0.05	0.06	0.10	330

% Reduced	10%	17%	75%	—	17%	75%	—	35%	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—
2025	2.53	27.9	1.03	7.48	8.51	0.92	2.48	3.41	9.39	8,994
2026	15.8	12.4	0.45	1.70	2.15	0.41	0.43	0.83	2.78	3,881
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—
2025	1.17	10.6	0.43	0.44	0.87	0.40	0.11	0.51	0.02	2,582
2026	14.7	10.0	0.38	0.44	0.82	0.35	0.11	0.46	0.01	2,578
Average Daily	—	—	—	—	—	—	—	—	—	—
2025	0.69	6.95	0.26	0.93	1.20	0.24	0.28	0.52	0.59	1,994
2026	3.52	5.31	0.20	0.27	0.47	0.18	0.07	0.25	0.15	1,387
Annual	—	—	—	—	—	—	—	—	—	—
2025	0.13	1.27	0.05	0.17	0.22	0.04	0.05	0.10	0.10	330
2026	0.64	0.97	0.04	0.05	0.09	0.03	0.01	0.05	0.03	230

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—
2025	0.73	19.1	0.17	7.48	7.66	0.15	2.48	2.63	9.39	8,994
2026	15.1	12.2	0.15	1.70	1.86	0.14	0.43	0.57	2.78	3,881

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—
2025	0.45	9.70	0.12	0.44	0.56	0.11	0.11	0.22	0.02	2,582
2026	14.7	9.68	0.12	0.44	0.56	0.11	0.11	0.22	0.01	2,578
Average Daily	—	—	—	—	—	—	—	—	—	—
2025	0.25	5.79	0.07	0.93	1.00	0.06	0.28	0.34	0.59	1,994
2026	3.17	5.15	0.06	0.27	0.33	0.06	0.07	0.13	0.15	1,387
Annual	—	—	—	—	—	—	—	—	—	—
2025	0.05	1.06	0.01	0.17	0.18	0.01	0.05	0.06	0.10	330
2026	0.58	0.94	0.01	0.05	0.06	0.01	0.01	0.02	0.03	230

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.19	11.3	0.47	—	0.47	0.44	—	0.44	—	1,856
Demolition	—	—	—	0.69	0.69	—	0.10	0.10	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.3
Demolition	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.53
Demolition	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.02	0.00	0.34	0.34	0.00	0.08	0.08	0.35	87.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	1.19	0.01	0.69	0.71	0.01	0.18	0.19	1.72	859
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.67
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01	7.05
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.17

3.2. Demolition (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.23	5.93	0.07	—	0.07	0.07	—	0.07	—	1,856
Demolition	—	—	—	0.69	0.69	—	0.10	0.10	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.05	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.3
Demolition	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.53
Demolition	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.02	0.00	0.34	0.34	0.00	0.08	0.08	0.35	87.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	1.19	0.01	0.69	0.71	0.01	0.18	0.19	1.72	859
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.67
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01	7.05
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.11

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.17

3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.67	6.13	0.29	—	0.29	0.26	—	0.26	—	1,070
Dust From Material Movement	—	—	—	1.15	1.15	—	0.54	0.54	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.7
Dust From Material Movement	—	—	—	0.02	0.02	—	0.01	0.01	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.43
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.00	0.26	0.26	0.00	0.06	0.06	0.26	65.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.84
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Site Preparation (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	3.42	0.02	—	0.02	0.02	—	0.02	—	1,070
Dust From Material Movement	—	—	—	1.15	1.15	—	0.54	0.54	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.05	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.7
Dust From Material Movement	—	—	—	0.02	0.02	—	0.01	0.01	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.43
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.00	0.26	0.26	0.00	0.06	0.06	0.26	65.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.84
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.69	15.7	0.67	—	0.67	0.61	—	0.61	—	3,411
Dust From Material Movement	—	—	—	2.15	2.15	—	0.88	0.88	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	1.93	0.08	—	0.08	0.08	—	0.08	—	421
Dust From Material Movement	—	—	—	0.27	0.27	—	0.11	0.11	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.35	0.01	—	0.01	0.01	—	0.01	—	69.6
Dust From Material Movement	—	—	—	0.05	0.05	—	0.02	0.02	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.03	0.00	0.43	0.43	0.00	0.10	0.10	0.44	109
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.11	6.02	0.07	3.50	3.58	0.05	0.89	0.94	8.69	4,338
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	0.05	0.05	0.00	0.01	0.01	0.02	12.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.77	0.01	0.42	0.43	0.01	0.11	0.11	0.46	534
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	< 0.005	2.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.14	< 0.005	0.08	0.08	< 0.005	0.02	0.02	0.08	88.4

3.6. Grading (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	9.58	0.08	—	0.08	0.08	—	0.08	—	3,411
Dust From Material Movement	—	—	—	2.15	2.15	—	0.88	0.88	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	1.18	0.01	—	0.01	0.01	—	0.01	—	421
Dust From Material Movement	—	—	—	0.27	0.27	—	0.11	0.11	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.22	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	69.6
Dust From Material Movement	—	—	—	0.05	0.05	—	0.02	0.02	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.03	0.00	0.43	0.43	0.00	0.10	0.10	0.44	109
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.11	6.02	0.07	3.50	3.58	0.05	0.89	0.94	8.69	4,338
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	0.05	0.05	0.00	0.01	0.01	0.02	12.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.77	0.01	0.42	0.43	0.01	0.11	0.11	0.46	534
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	< 0.005	2.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.14	< 0.005	0.08	0.08	< 0.005	0.02	0.02	0.08	88.4

3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	0.43	—	0.43	0.40	—	0.40	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	0.43	—	0.43	0.40	—	0.40	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43	3.94	0.16	—	0.16	0.15	—	0.15	—	909
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.72	0.03	—	0.03	0.03	—	0.03	—	150
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.00	0.36	0.36	0.00	0.09	0.09	0.36	91.4
Vendor	< 0.005	0.12	< 0.005	0.08	0.08	< 0.005	0.02	0.02	0.22	91.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—

Worker	0.04	0.03	0.00	0.36	0.36	0.00	0.09	0.09	0.01	85.1
Vendor	< 0.005	0.13	< 0.005	0.08	0.08	< 0.005	0.02	0.02	0.01	91.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.13	0.13	0.00	0.03	0.03	0.06	32.3
Vendor	< 0.005	0.05	< 0.005	0.03	0.03	< 0.005	0.01	0.01	0.04	34.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.02	0.02	0.00	0.01	0.01	0.01	5.35
Vendor	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01	5.70
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Building Construction (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.42	9.53	0.12	—	0.12	0.11	—	0.11	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.42	9.53	0.12	—	0.12	0.11	—	0.11	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	3.60	0.05	—	0.05	0.04	—	0.04	—	909

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.66	0.01	—	0.01	0.01	—	0.01	—	150
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.00	0.36	0.36	0.00	0.09	0.09	0.36	91.4
Vendor	< 0.005	0.12	< 0.005	0.08	0.08	< 0.005	0.02	0.02	0.22	91.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.00	0.36	0.36	0.00	0.09	0.09	0.01	85.1
Vendor	< 0.005	0.13	< 0.005	0.08	0.08	< 0.005	0.02	0.02	0.01	91.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.13	0.13	0.00	0.03	0.03	0.06	32.3
Vendor	< 0.005	0.05	< 0.005	0.03	0.03	< 0.005	0.01	0.01	0.04	34.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.02	0.02	0.00	0.01	0.01	0.01	5.35
Vendor	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01	5.70
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	9.85	0.38	—	0.38	0.35	—	0.35	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	9.85	0.38	—	0.38	0.35	—	0.35	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	5.11	0.20	—	0.20	0.18	—	0.18	—	1,247
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.93	0.04	—	0.04	0.03	—	0.03	—	207
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.02	0.00	0.36	0.36	0.00	0.09	0.09	0.33	89.7
Vendor	< 0.005	0.12	< 0.005	0.08	0.08	< 0.005	0.02	0.02	0.20	89.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.00	0.36	0.36	0.00	0.09	0.09	0.01	83.5
Vendor	< 0.005	0.12	< 0.005	0.08	0.08	< 0.005	0.02	0.02	0.01	89.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	0.18	0.18	0.00	0.04	0.04	0.07	43.6
Vendor	< 0.005	0.06	< 0.005	0.04	0.04	< 0.005	0.01	0.01	0.05	46.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.03	0.03	0.00	0.01	0.01	0.01	7.21
Vendor	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01	7.68
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Building Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	9.53	0.12	—	0.12	0.11	—	0.11	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	9.53	0.12	—	0.12	0.11	—	0.11	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	4.94	0.06	—	0.06	0.06	—	0.06	—	1,247
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04	0.90	0.01	—	0.01	0.01	—	0.01	—	207
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.02	0.00	0.36	0.36	0.00	0.09	0.09	0.33	89.7
Vendor	< 0.005	0.12	< 0.005	0.08	0.08	< 0.005	0.02	0.02	0.20	89.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.00	0.36	0.36	0.00	0.09	0.09	0.01	83.5
Vendor	< 0.005	0.12	< 0.005	0.08	0.08	< 0.005	0.02	0.02	0.01	89.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	0.18	0.18	0.00	0.04	0.04	0.07	43.6
Vendor	< 0.005	0.06	< 0.005	0.04	0.04	< 0.005	0.01	0.01	0.05	46.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.03	0.03	0.00	0.01	0.01	0.01	7.21
Vendor	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01	7.68
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.13	1.18	0.05	—	0.05	0.05	—	0.05	—	250
Paving	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.52
Paving	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.25
Paving	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.03	0.00	0.51	0.51	0.00	0.13	0.13	0.48	129
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	1.24	0.02	0.76	0.77	0.01	0.19	0.20	1.76	918
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	0.01	3.64
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.04	< 0.005	0.02	0.02	< 0.005	0.01	0.01	0.02	27.6
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.60

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	4.58

3.12. Paving (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	1.26	0.02	—	0.02	0.02	—	0.02	—	250
Paving	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.52
Paving	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.25
Paving	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.03	0.00	0.51	0.51	0.00	0.13	0.13	0.48	129

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	1.24	0.02	0.76	0.77	0.01	0.19	0.20	1.76	918
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	0.01	3.64
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.04	< 0.005	0.02	0.02	< 0.005	0.01	0.01	0.02	27.6
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.60
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	4.58

3.13. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.23	0.01	—	0.01	0.01	—	0.01	—	35.7
Architectural Coatings	14.6	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.23	0.01	—	0.01	0.01	—	0.01	—	35.7
Architectural Coatings	14.6	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.05	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.14
Architectural Coatings	2.93	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.18
Architectural Coatings	0.53	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	0.07	0.07	0.00	0.02	0.02	0.07	17.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.07	0.07	0.00	0.02	0.02	< 0.005	16.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	0.01	3.36
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.56

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.14. Architectural Coating (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.29	0.01	—	0.01	0.01	—	0.01	—	35.7
Architectural Coatings	14.6	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.29	0.01	—	0.01	0.01	—	0.01	—	35.7
Architectural Coatings	14.6	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.06	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.14
Architectural Coatings	2.93	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.18

Architectural Coatings	0.53	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	0.07	0.07	0.00	0.02	0.02	0.07	17.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.07	0.07	0.00	0.02	0.02	< 0.005	16.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	0.01	3.36
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.56
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Trenching (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.20	1.93	0.07	—	0.07	0.06	—	0.06	—	434
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.05	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.97
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	0.17	0.17	0.00	0.04	0.04	0.17	43.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	1.12
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.19
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.16. Trenching (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	2.28	0.04	—	0.04	0.03	—	0.03	—	434
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.06	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.97
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	0.17	0.17	0.00	0.04	0.04	0.17	43.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	1.12

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.19
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	4/1/2025	4/3/2025	5.00	3.00	—
Site Preparation	Site Preparation	4/1/2025	4/7/2025	5.00	5.00	—
Grading	Grading	4/6/2025	6/6/2025	5.00	45.0	—
Building Construction	Building Construction	6/22/2025	9/22/2026	5.00	327	—
Paving	Paving	7/1/2026	7/15/2026	5.00	11.0	—
Architectural Coating	Architectural Coating	9/22/2026	12/31/2026	5.00	73.0	—
Trenching	Trenching	6/7/2025	6/21/2025	5.00	10.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	1.30	33.0	0.73

Demolition	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	3.20	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	4.80	84.0	0.37
Site Preparation	Graders	Diesel	Average	1.00	4.80	148	0.41
Grading	Graders	Diesel	Average	1.00	5.00	148	0.41
Grading	Excavators	Diesel	Average	1.00	4.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	5.00	367	0.40
Grading	Scrapers	Diesel	Average	1.00	8.00	423	0.48
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	1.60	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	1.60	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	1.60	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	1.60	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	1.60	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	1.60	37.0	0.48
Trenching	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Trenching	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Interim	1.00	1.30	33.0	0.73
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	36.0	0.38
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	8.00	84.0	0.37
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	3.20	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	4.80	84.0	0.37
Site Preparation	Graders	Diesel	Tier 4 Interim	1.00	4.80	148	0.41
Grading	Graders	Diesel	Tier 4 Interim	1.00	5.00	148	0.41
Grading	Excavators	Diesel	Tier 4 Interim	1.00	4.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	6.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	5.00	367	0.40
Grading	Scrapers	Diesel	Tier 4 Interim	1.00	8.00	423	0.48
Building Construction	Cranes	Diesel	Tier 4 Interim	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Interim	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Welders	Diesel	Tier 4 Interim	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	7.00	84.0	0.37
Paving	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	1.60	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	1.60	10.0	0.56
Paving	Pavers	Diesel	Tier 4 Interim	1.00	1.60	81.0	0.42

Paving	Paving Equipment	Diesel	Tier 4 Interim	1.00	1.60	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Interim	2.00	1.60	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 4 Interim	1.00	1.60	37.0	0.48
Trenching	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	8.00	84.0	0.37
Trenching	Excavators	Diesel	Tier 4 Interim	1.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	11.0	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	12.5	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	55.6	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	10.4	11.7	LDA,LDT1,LDT2

Building Construction	Vendor	3.10	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	12.0	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	2.09	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	5.00	11.7	LDA,LDT1,LDT2
Trenching	Vendor	—	8.40	HHDT,MHDT
Trenching	Hauling	0.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	11.0	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—

Site Preparation	Worker	7.50	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	12.5	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	55.6	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	10.4	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	3.10	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	12.0	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	2.09	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	5.00	11.7	LDA,LDT1,LDT2
Trenching	Vendor	—	8.40	HHDT,MHDT

Trenching	Hauling	0.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	153,698	51,233	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	2,000	—
Site Preparation	—	—	2.50	0.00	—
Grading	20,000	—	73.1	0.00	—
Paving	0.00	0.00	0.00	0.00	0.32

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	0.32	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.36	annual days of extreme heat
Extreme Precipitation	14.2	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	13.4	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	10.6
AQ-PM	14.7
AQ-DPM	5.51
Drinking Water	5.55
Lead Risk Housing	14.1
Pesticides	0.00
Toxic Releases	25.9
Traffic	58.9
Effect Indicators	—
CleanUp Sites	2.07
Groundwater	35.0
Haz Waste Facilities/Generators	26.7
Impaired Water Bodies	12.5
Solid Waste	0.00
Sensitive Population	—
Asthma	16.3
Cardio-vascular	3.78

Low Birth Weights	1.68
Socioeconomic Factor Indicators	—
Education	12.0
Housing	20.6
Linguistic	13.3
Poverty	10.7
Unemployment	33.6

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	85.39715129
Employed	48.77454125
Median HI	85.07635057
Education	—
Bachelor's or higher	88.66931862
High school enrollment	100
Preschool enrollment	80.93160529
Transportation	—
Auto Access	88.68215065
Active commuting	52.03387656
Social	—
2-parent households	90.42730656
Voting	98.99910176
Neighborhood	—
Alcohol availability	78.13422302

Park access	81.35506224
Retail density	39.31733607
Supermarket access	41.88374182
Tree canopy	88.86179905
Housing	—
Homeownership	82.99756191
Housing habitability	93.08353651
Low-inc homeowner severe housing cost burden	68.45887335
Low-inc renter severe housing cost burden	83.61349929
Uncrowded housing	96.93314513
Health Outcomes	—
Insured adults	82.81791351
Arthritis	0.0
Asthma ER Admissions	91.6
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	82.1
Cognitively Disabled	58.3
Physically Disabled	47.8
Heart Attack ER Admissions	98.7
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0

Pedestrian Injuries	89.7
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	79.7
Children	88.7
Elderly	8.1
English Speaking	86.1
Foreign-born	19.0
Outdoor Workers	69.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	87.1
Traffic Density	46.5
Traffic Access	23.0
Other Indices	—
Hardship	8.4
Other Decision Support	—
2016 Voting	99.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	1.00

Healthy Places Index Score for Project Location (b)	93.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Provided by project applicant.
Construction: Construction Phases	Construction schedule provided by project applicant.
Construction: Off-Road Equipment	Equipment list provided by project applicant.
Construction: Trips and VMT	Demolition = 50-tons of pavement demolished and hauled (3.333 trips/day), Paving = 500-cy of asphalt hauled (12 trips/day).
Construction: On-Road Fugitive Dust	Silt loading factor = 0.5 g/m2. BAAQMD BMP for construction-related fugitive dust emissions.

2. Emissions Summary - One Mile Onsite Trips

2.2 Construction Emissions by Year, Unmitigated

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO_2e
Daily - Summer (Max)										
2025	2.5340782	27.865779	1.0256346	7.4841847	8.5098194	0.9249670	2.4819997	3.4069668	9.3858051	8994.001462023385
2026	15.792178	12.442597	0.4452713	1.7023702	2.1476415	0.4057202	0.4267104	0.8324306	2.7772894	3881.3918849143392
Daily - Winter (Max)										
2025	1.1666543	10.607141	0.4329888	0.4351995	0.8681884	0.3984416	0.1078840	0.5063256	0.0151977	2582.068812709244
2026	14.680786	10.006984	0.3798022	0.4351995	0.8150018	0.3495099	0.1078840	0.4573939	0.0139129	2578.3911144393114
Average Daily										
2025	0.6926355	6.9517014	0.2644085	0.9338376	1.1982462	0.2409650	0.2803536	0.5213187	0.5920648	1994.2785868136116
2026	3.5155541	5.3088232	0.2001699	0.2700666	0.4702365	0.1840827	0.0670491	0.2511318	0.1548109	1386.7196969773847
Annual										
2025	0.1264059	1.2686855	0.0482545	0.1704253	0.2186799	0.0439761	0.0511645	0.0951406	0.0980230	330.17557864256344
2026	0.6415886	0.9688602	0.0365310	0.0492871	0.0858181	0.0335951	0.0122364	0.0458315	0.0256307	229.5872710021434

2. Emissions Summary - One Mile Onsite Trips

2.3 Construction Emissions by Year, Mitigated

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO_2e
Daily - Summer (Max)										
2025	0.7280747	19.074409	0.1720289	7.4841847	7.6562137	0.1463267	2.4819997	2.6283265	9.3858051	8994.001462023385
2026	15.109234	12.200865	0.1549873	1.7023702	1.8573575	0.1422770	0.4267104	0.5689874	2.7772894	3881.3918849143392
Daily - Winter (Max)										
2025	0.4547650	9.6963567	0.1204075	0.4351995	0.5556071	0.1141721	0.1078840	0.2220561	0.0151977	2582.068812709244
2026	14.654342	9.6822758	0.1199151	0.4351995	0.5551147	0.1137191	0.1078840	0.2216031	0.0139129	2578.3911144393114
Average Daily										
2025	0.2470690	5.7857596	0.0662053	0.9338376	1.0000429	0.0605500	0.2803536	0.3409037	0.5920648	1994.2785868136116
2026	3.1672088	5.1542636	0.0648727	0.2700666	0.3349393	0.0613378	0.0670491	0.1283870	0.1548109	1386.7196969773847
Annual										
2025	0.0450900	1.0559011	0.0120824	0.1704253	0.1825078	0.0110503	0.0511645	0.0622149	0.0980230	330.17557864256344
2026	0.5780156	0.9406531	0.0118392	0.0492871	0.0611264	0.0111941	0.0122364	0.0234306	0.0256307	229.5872710021434

5.3. Construction Vehicles - One Mile Onsite Trips

5.3.1 Unmitigated

Phase Name	Trip Type	One-Way T	Miles per T	Vehicle Mix
Demolition				
Demolition	Worker	10	1	LDA,LDT1,LDT2
Demolition	Vendor		1	HHDT,MHDT
Demolition	Hauling	10.9999	1	HHDT
Demolition	Onsite truc			HHDT
Site Preparation				
Site Preparation	Worker	7.5	1	LDA,LDT1,LDT2
Site Preparation	Vendor		1	HHDT,MHDT
Site Preparation	Hauling	0	1	HHDT
Site Preparation	Onsite truc			HHDT
Grading				
Grading	Worker	12.5	1	LDA,LDT1,LDT2
Grading	Vendor		1	HHDT,MHDT
Grading	Hauling	55.555555	1	HHDT
Grading	Onsite truc			HHDT
Building Construction				
Building Construction	Worker	10.44	1	LDA,LDT1,LDT2
Building Construction	Vendor	3.1001	1	HHDT,MHDT
Building Construction	Hauling	0	1	HHDT
Building Construction	Onsite truc			HHDT
Paving				
Paving	Worker	15	1	LDA,LDT1,LDT2
Paving	Vendor		1	HHDT,MHDT
Paving	Hauling	12	1	HHDT
Paving	Onsite truc			HHDT
Architectural Coating				
Architectural Coating	Worker	2.088	1	LDA,LDT1,LDT2
Architectural Coating	Vendor		1	HHDT,MHDT
Architectural Coating	Hauling	0	1	HHDT
Architectural Coating	Onsite truc			HHDT
Trenching				
Trenching	Worker	5	1	LDA,LDT1,LDT2
Trenching	Vendor		1	HHDT,MHDT
Trenching	Hauling	0	1	HHDT
Trenching	Onsite truc			HHDT

5.3. Construction Vehicles - One Mile Onsite Trips

5.3.2 Mitigated

Phase Name	Trip Type	One-Way T	Miles per T	Vehicle Mix
Demolition				
Demolition	Worker	10	1	LDA,LDT1,LDT2
Demolition	Vendor		1	HHDT,MHDT
Demolition	Hauling	10.9999	1	HHDT
Demolition	Onsite truc			HHDT
Site Preparation				
Site Preparation	Worker	7.5	1	LDA,LDT1,LDT2
Site Preparation	Vendor		1	HHDT,MHDT
Site Preparation	Hauling	0	1	HHDT
Site Preparation	Onsite truc			HHDT
Grading				
Grading	Worker	12.5	1	LDA,LDT1,LDT2
Grading	Vendor		1	HHDT,MHDT
Grading	Hauling	55.555555	1	HHDT
Grading	Onsite truc			HHDT
Building Construction				
Building Construction	Worker	10.44	1	LDA,LDT1,LDT2
Building Construction	Vendor	3.1001	1	HHDT,MHDT
Building Construction	Hauling	0	1	HHDT
Building Construction	Onsite truc			HHDT
Paving				
Paving	Worker	15	1	LDA,LDT1,LDT2
Paving	Vendor		1	HHDT,MHDT
Paving	Hauling	12	1	HHDT
Paving	Onsite truc			HHDT
Architectural Coating				
Architectural Coating	Worker	2.088	1	LDA,LDT1,LDT2
Architectural Coating	Vendor		1	HHDT,MHDT
Architectural Coating	Hauling	0	1	HHDT
Architectural Coating	Onsite truc			HHDT
Trenching				
Trenching	Worker	5	1	LDA,LDT1,LDT2
Trenching	Vendor		1	HHDT,MHDT
Trenching	Hauling	0	1	HHDT
Trenching	Onsite truc			HHDT

23-019 Valley Oaks North Area 3 Const Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

2.3. Construction Emissions by Year, Mitigated

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

3.2. Demolition (2026) - Mitigated

3.3. Site Preparation (2026) - Unmitigated

3.4. Site Preparation (2026) - Mitigated

3.5. Grading (2026) - Unmitigated

3.6. Grading (2026) - Mitigated

3.7. Building Construction (2026) - Unmitigated

3.8. Building Construction (2026) - Mitigated

3.9. Building Construction (2027) - Unmitigated

3.10. Building Construction (2027) - Mitigated

3.11. Paving (2026) - Unmitigated

3.12. Paving (2026) - Mitigated

3.13. Architectural Coating (2027) - Unmitigated

3.14. Architectural Coating (2027) - Mitigated

3.15. Trenching (2026) - Unmitigated

3.16. Trenching (2026) - Mitigated

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	23-019 Valley Oaks North Area 3 Const
Construction Start Date	4/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	43.4
Location	100 Pinkston Rd, Novato, CA 94945, USA
County	Marin
City	Novato
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	911
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.12

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	32.0	Dwelling Unit	6.50	80,000	0.00	0.00	77.0	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	21.6	30.1	1.08	11.4	12.5	0.97	4.23	5.20	12.6	10,313
Mit.	21.0	19.5	0.18	11.4	11.6	0.15	4.23	4.37	12.6	10,313
% Reduced	3%	35%	83%	—	7%	85%	—	16%	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	21.6	11.2	0.41	1.29	1.70	0.38	0.32	0.70	0.05	3,208
Mit.	21.0	10.9	0.14	1.29	1.43	0.13	0.32	0.45	0.05	3,208
% Reduced	3%	3%	67%	—	16%	66%	—	36%	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	3.86	6.89	0.24	1.12	1.29	0.22	0.31	0.46	0.90	1,967
Mit.	3.41	7.00	0.09	1.12	1.18	0.08	0.31	0.36	0.90	1,967
% Reduced	12%	-2%	64%	—	9%	63%	—	22%	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	0.70	1.26	0.04	0.20	0.24	0.04	0.06	0.08	0.15	326
Mit.	0.62	1.28	0.02	0.20	0.22	0.02	0.06	0.07	0.15	326

% Reduced	12%	-2%	64%	—	9%	63%	—	22%	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—
2026	2.61	30.1	1.08	11.4	12.5	0.97	4.23	5.20	12.6	10,313
2027	21.6	10.0	0.35	0.56	0.91	0.32	0.14	0.46	0.60	2,692
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—
2026	1.23	11.2	0.41	1.29	1.70	0.38	0.32	0.70	0.05	3,208
2027	21.6	10.0	0.35	0.56	0.91	0.32	0.14	0.46	0.02	2,684
Average Daily	—	—	—	—	—	—	—	—	—	—
2026	0.47	5.33	0.17	1.12	1.29	0.15	0.31	0.46	0.90	1,967
2027	3.86	6.89	0.24	0.34	0.59	0.22	0.09	0.31	0.17	1,866
Annual	—	—	—	—	—	—	—	—	—	—
2026	0.09	0.97	0.03	0.20	0.24	0.03	0.06	0.08	0.15	326
2027	0.70	1.26	0.04	0.06	0.11	0.04	0.02	0.06	0.03	309

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—
2026	0.67	19.5	0.18	11.4	11.6	0.15	4.23	4.37	12.6	10,313
2027	21.0	10.3	0.14	0.56	0.70	0.13	0.14	0.27	0.60	2,692

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—
2026	0.53	10.9	0.14	1.29	1.43	0.13	0.32	0.45	0.05	3,208
2027	21.0	10.3	0.14	0.56	0.70	0.13	0.14	0.27	0.02	2,684
Average Daily	—	—	—	—	—	—	—	—	—	—
2026	0.20	5.02	0.06	1.12	1.18	0.05	0.31	0.36	0.90	1,967
2027	3.41	7.00	0.09	0.34	0.43	0.08	0.09	0.17	0.17	1,866
Annual	—	—	—	—	—	—	—	—	—	—
2026	0.04	0.92	0.01	0.20	0.22	0.01	0.06	0.07	0.15	326
2027	0.62	1.28	0.02	0.06	0.08	0.02	0.02	0.03	0.03	309

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.93	0.03	—	0.03	0.03	—	0.03	—	217
Demolition	—	—	—	0.00	0.00	—	0.00	0.00	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.19
Demolition	—	—	—	0.00	0.00	—	0.00	0.00	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.20
Demolition	—	—	—	0.00	0.00	—	0.00	0.00	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	0.17	0.17	0.00	0.04	0.04	0.16	43.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.2. Demolition (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.03	1.14	0.02	—	0.02	0.02	—	0.02	—	217
Demolition	—	—	—	0.00	0.00	—	0.00	0.00	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.19
Demolition	—	—	—	0.00	0.00	—	0.00	0.00	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.20
Demolition	—	—	—	0.00	0.00	—	0.00	0.00	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	0.17	0.17	0.00	0.04	0.04	0.16	43.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.04

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.26	20.4	0.92	—	0.92	0.85	—	0.85	—	3,629
Dust From Material Movement	—	—	—	5.32	5.32	—	2.65	2.65	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.28	0.01	—	0.01	0.01	—	0.01	—	49.7
Dust From Material Movement	—	—	—	0.07	0.07	—	0.04	0.04	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.05	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.23
Dust From Material Movement	—	—	—	0.01	0.01	—	0.01	0.01	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.00	0.34	0.34	0.00	0.08	0.08	0.32	85.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	1.10
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.18
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Site Preparation (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	10.2	0.07	—	0.07	0.07	—	0.07	—	3,629
Dust From Material Movement	—	—	—	5.32	5.32	—	2.65	2.65	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.14	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	49.7
Dust From Material Movement	—	—	—	0.07	0.07	—	0.04	0.04	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.23
Dust From Material Movement	—	—	—	0.01	0.01	—	0.01	0.01	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.00	0.34	0.34	0.00	0.08	0.08	0.32	85.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	1.10
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.18
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	1.30	0.06	—	0.06	0.05	—	0.05	—	292
Dust From Material Movement	—	—	—	0.22	0.22	—	0.09	0.09	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.19	0.01	—	0.01	0.01	—	0.01	—	43.2
Dust From Material Movement	—	—	—	0.03	0.03	—	0.01	0.01	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.14
Dust From Material Movement	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.00	0.43	0.43	0.00	0.10	0.10	0.40	107
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.12	8.38	0.11	5.11	5.21	0.07	1.30	1.38	11.9	6,199
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	0.06	0.06	0.00	0.02	0.02	0.03	14.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	1.29	0.02	0.74	0.75	0.01	0.19	0.20	0.76	916
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	< 0.005	2.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.24	< 0.005	0.13	0.14	< 0.005	0.03	0.04	0.13	152

3.6. Grading (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.89	0.01	—	0.01	0.01	—	0.01	—	292
Dust From Material Movement	—	—	—	0.22	0.22	—	0.09	0.09	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.13	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	43.2
Dust From Material Movement	—	—	—	0.03	0.03	—	0.01	0.01	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.14
Dust From Material Movement	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.00	0.43	0.43	0.00	0.10	0.10	0.40	107
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.12	8.38	0.11	5.11	5.21	0.07	1.30	1.38	11.9	6,199
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	0.06	0.06	0.00	0.02	0.02	0.03	14.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	1.29	0.02	0.74	0.75	0.01	0.19	0.20	0.76	916
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	< 0.005	2.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.24	< 0.005	0.13	0.14	< 0.005	0.03	0.04	0.13	152

3.7. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	9.85	0.38	—	0.38	0.35	—	0.35	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	9.85	0.38	—	0.38	0.35	—	0.35	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.37	3.43	0.13	—	0.13	0.12	—	0.12	—	838
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.63	0.02	—	0.02	0.02	—	0.02	—	139
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.02	0.00	0.39	0.39	0.00	0.10	0.10	0.37	99.0
Vendor	< 0.005	0.13	< 0.005	0.09	0.09	< 0.005	0.02	0.02	0.22	98.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—

Worker	0.04	0.03	0.00	0.39	0.39	0.00	0.10	0.10	0.01	92.2
Vendor	< 0.005	0.14	< 0.005	0.09	0.09	< 0.005	0.02	0.02	0.01	98.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.13	0.13	0.00	0.03	0.03	0.06	32.3
Vendor	< 0.005	0.05	< 0.005	0.03	0.03	< 0.005	0.01	0.01	0.03	34.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.02	0.02	0.00	0.01	0.01	0.01	5.35
Vendor	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01	5.69
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Building Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	9.53	0.12	—	0.12	0.11	—	0.11	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	9.53	0.12	—	0.12	0.11	—	0.11	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	3.32	0.04	—	0.04	0.04	—	0.04	—	838

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.61	0.01	—	0.01	0.01	—	0.01	—	139
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.02	0.00	0.39	0.39	0.00	0.10	0.10	0.37	99.0
Vendor	< 0.005	0.13	< 0.005	0.09	0.09	< 0.005	0.02	0.02	0.22	98.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.00	0.39	0.39	0.00	0.10	0.10	0.01	92.2
Vendor	< 0.005	0.14	< 0.005	0.09	0.09	< 0.005	0.02	0.02	0.01	98.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.13	0.13	0.00	0.03	0.03	0.06	32.3
Vendor	< 0.005	0.05	< 0.005	0.03	0.03	< 0.005	0.01	0.01	0.03	34.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.02	0.02	0.00	0.01	0.01	0.01	5.35
Vendor	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01	5.69
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.03	9.39	0.34	—	0.34	0.31	—	0.31	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.03	9.39	0.34	—	0.34	0.31	—	0.31	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	6.71	0.24	—	0.24	0.22	—	0.22	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	1.22	0.04	—	0.04	0.04	—	0.04	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.02	0.00	0.39	0.39	0.00	0.10	0.10	0.33	97.2
Vendor	< 0.005	0.12	< 0.005	0.09	0.09	< 0.005	0.02	0.02	0.20	96.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.00	0.39	0.39	0.00	0.10	0.10	0.01	90.5
Vendor	< 0.005	0.13	< 0.005	0.09	0.09	< 0.005	0.02	0.02	0.01	96.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.27	0.27	0.00	0.07	0.07	0.10	64.9
Vendor	< 0.005	0.09	< 0.005	0.06	0.06	< 0.005	0.02	0.02	0.06	69.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.05	0.05	0.00	0.01	0.01	0.02	10.8
Vendor	< 0.005	0.02	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01	11.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Building Construction (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	9.53	0.12	—	0.12	0.11	—	0.11	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	9.53	0.12	—	0.12	0.11	—	0.11	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	6.80	0.08	—	0.08	0.08	—	0.08	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.05	1.24	0.02	—	0.02	0.01	—	0.01	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.02	0.00	0.39	0.39	0.00	0.10	0.10	0.33	97.2
Vendor	< 0.005	0.12	< 0.005	0.09	0.09	< 0.005	0.02	0.02	0.20	96.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.00	0.39	0.39	0.00	0.10	0.10	0.01	90.5
Vendor	< 0.005	0.13	< 0.005	0.09	0.09	< 0.005	0.02	0.02	0.01	96.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.27	0.27	0.00	0.07	0.07	0.10	64.9
Vendor	< 0.005	0.09	< 0.005	0.06	0.06	< 0.005	0.02	0.02	0.06	69.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.05	0.05	0.00	0.01	0.01	0.02	10.8
Vendor	< 0.005	0.02	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01	11.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.59	0.02	—	0.02	0.02	—	0.02	—	125
Paving	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.84
Paving	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.13
Paving	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.00	0.51	0.51	0.00	0.13	0.13	0.01	120
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.52	0.01	0.30	0.31	< 0.005	0.08	0.08	0.02	367
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.03	0.03	0.00	0.01	0.01	0.01	6.61
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.03	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02	20.1
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	1.09

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.33

3.12. Paving (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.63	0.01	—	0.01	0.01	—	0.01	—	125
Paving	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.84
Paving	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.13
Paving	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—

Worker	0.05	0.04	0.00	0.51	0.51	0.00	0.13	0.13	0.01	120
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.52	0.01	0.30	0.31	< 0.005	0.08	0.08	0.02	367
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.03	0.03	0.00	0.01	0.01	0.01	6.61
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.03	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02	20.1
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	1.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.33

3.13. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.46	0.01	—	0.01	0.01	—	0.01	—	73.7
Architectural Coatings	20.5	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.46	0.01	—	0.01	0.01	—	0.01	—	73.7
Architectural Coatings	20.5	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.1
Architectural Coatings	3.09	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.84
Architectural Coatings	0.56	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	0.08	0.08	0.00	0.02	0.02	0.07	19.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.08	0.08	0.00	0.02	0.02	< 0.005	18.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	< 0.005	2.74
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.45

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.14. Architectural Coating (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.59	0.02	—	0.02	0.02	—	0.02	—	73.7
Architectural Coatings	20.5	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.59	0.02	—	0.02	0.02	—	0.02	—	73.7
Architectural Coatings	20.5	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.09	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.1
Architectural Coatings	3.09	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.84

Architectural Coatings	0.56	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	0.08	0.08	0.00	0.02	0.02	0.07	19.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.08	0.08	0.00	0.02	0.02	< 0.005	18.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	< 0.005	2.74
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.45
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Trenching (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.19	0.01	—	0.01	0.01	—	0.01	—	43.3
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.24
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	0.17	0.17	0.00	0.04	0.04	0.16	43.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	< 0.005	1.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.16. Trenching (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.23	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	43.3
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.24
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	0.17	0.17	0.00	0.04	0.04	0.16	43.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	< 0.005	1.32

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	4/1/2026	4/2/2026	5.00	2.00	—
Site Preparation	Site Preparation	4/1/2026	4/7/2026	5.00	5.00	—
Grading	Grading	4/7/2026	6/21/2026	5.00	54.0	—
Building Construction	Building Construction	7/7/2026	12/31/2027	5.00	389	—
Paving	Paving	10/4/2026	11/1/2026	5.00	20.0	—
Architectural Coating	Architectural Coating	9/15/2027	11/30/2027	5.00	55.0	—
Trenching	Trenching	6/21/2026	7/7/2026	5.00	12.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Excavators	Diesel	Average	1.00	4.00	36.0	0.38
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	1.00	4.00	84.0	0.37

Site Preparation	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Graders	Diesel	Average	1.00	0.80	148	0.41
Grading	Excavators	Diesel	Average	1.00	0.48	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	0.80	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	0.48	367	0.40
Grading	Scrapers	Diesel	Average	1.00	0.48	423	0.48
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	1.00	0.80	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	0.80	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	0.80	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	0.80	10.0	0.56
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	0.80	84.0	0.37
Architectural Coating	Air Compressors	Diesel	Average	1.00	3.30	37.0	0.48
Trenching	Tractors/Loaders/Backhoes	Diesel	Average	1.00	0.80	84.0	0.37
Trenching	Excavators	Diesel	Average	1.00	0.80	36.0	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	4.00	36.0	0.38
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	4.00	84.0	0.37
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	2.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	8.00	84.0	0.37
Site Preparation	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Grading	Graders	Diesel	Tier 4 Interim	1.00	0.80	148	0.41
Grading	Excavators	Diesel	Tier 4 Interim	1.00	0.48	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	0.80	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	0.48	367	0.40
Grading	Scrapers	Diesel	Tier 4 Interim	1.00	0.48	423	0.48
Building Construction	Forklifts	Diesel	Tier 4 Interim	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Tier 4 Interim	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Tier 4 Interim	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Tier 4 Interim	1.00	0.80	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Interim	1.00	0.80	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Interim	2.00	0.80	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	0.80	10.0	0.56
Paving	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	0.80	84.0	0.37
Architectural Coating	Air Compressors	Diesel	Tier 4 Interim	1.00	3.30	37.0	0.48
Trenching	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	0.80	84.0	0.37

Trenching	Excavators	Diesel	Tier 4 Interim	1.00	0.80	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	5.00	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	10.0	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	12.5	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	81.0	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	11.5	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	3.42	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—

Paving	Worker	15.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	4.80	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	2.30	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	5.00	11.7	LDA,LDT1,LDT2
Trenching	Vendor	—	8.40	HHDT,MHDT
Trenching	Hauling	0.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	5.00	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	10.0	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT

Grading	—	—	—	—
Grading	Worker	12.5	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	81.0	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	11.5	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	3.42	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	4.80	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	2.30	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	5.00	11.7	LDA,LDT1,LDT2
Trenching	Vendor	—	8.40	HHDT,MHDT
Trenching	Hauling	0.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	162,000	54,000	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	7.50	0.00	—
Grading	35,000	—	7.56	0.00	—
Paving	0.00	0.00	0.00	0.00	0.35

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	0.35	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.36	annual days of extreme heat
Extreme Precipitation	14.2	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	13.4	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A

Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	10.6
AQ-PM	14.7
AQ-DPM	5.51
Drinking Water	5.55
Lead Risk Housing	14.1
Pesticides	0.00
Toxic Releases	25.9
Traffic	58.9
Effect Indicators	—
CleanUp Sites	2.07
Groundwater	35.0
Haz Waste Facilities/Generators	26.7
Impaired Water Bodies	12.5
Solid Waste	0.00
Sensitive Population	—
Asthma	16.3
Cardio-vascular	3.78
Low Birth Weights	1.68
Socioeconomic Factor Indicators	—
Education	12.0
Housing	20.6
Linguistic	13.3
Poverty	10.7

Unemployment	33.6

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	85.39715129
Employed	48.77454125
Median HI	85.07635057
Education	—
Bachelor's or higher	88.66931862
High school enrollment	100
Preschool enrollment	80.93160529
Transportation	—
Auto Access	88.68215065
Active commuting	52.03387656
Social	—
2-parent households	90.42730656
Voting	98.99910176
Neighborhood	—
Alcohol availability	78.13422302
Park access	81.35506224
Retail density	39.31733607
Supermarket access	41.88374182
Tree canopy	88.86179905
Housing	—
Homeownership	82.99756191

Housing habitability	93.08353651
Low-inc homeowner severe housing cost burden	68.45887335
Low-inc renter severe housing cost burden	83.61349929
Uncrowded housing	96.93314513
Health Outcomes	—
Insured adults	82.81791351
Arthritis	0.0
Asthma ER Admissions	91.6
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	82.1
Cognitively Disabled	58.3
Physically Disabled	47.8
Heart Attack ER Admissions	98.7
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	89.7
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0

No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	79.7
Children	88.7
Elderly	8.1
English Speaking	86.1
Foreign-born	19.0
Outdoor Workers	69.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	87.1
Traffic Density	46.5
Traffic Access	23.0
Other Indices	—
Hardship	8.4
Other Decision Support	—
2016 Voting	99.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	1.00
Healthy Places Index Score for Project Location (b)	93.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	—
Land Use	Provided by project applicant.
Construction: Construction Phases	Construction schedule provided by project applicant.
Construction: Off-Road Equipment	Construction equipment provided by project applicant.
Construction: Trips and VMT	Paving = 400-cy of asphalt hauling (4.8 truck trips/day).
Construction: On-Road Fugitive Dust	Road silt loading = 0.5g/m2. BAAQMD BMP for Construction-Related Fugitive Dust Emissions.

2. Emissions Summary - One Mile Onsite Trips

2.2 Construction Emissions by Year, Unmitigated

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO_2e
Daily - Summer (Max)										
2026	2.6065993	30.147206	1.0843874	11.411519	12.495907	0.9704869	4.2282268	5.1987137	12.619618	10312.62785383005
2027	21.622139	10.000216	0.3483180	0.5586556	0.9069737	0.3205539	0.1383561	0.4589101	0.6013844	2692.401267961177
Daily - Winter (Max)										
2026	1.2290275	11.177142	0.4110682	1.2934769	1.7045451	0.3766756	0.3220113	0.6986870	0.0460258	3207.6967307325763
2027	21.620540	10.012367	0.3483180	0.5586556	0.9069737	0.3205539	0.1383561	0.4589101	0.0156200	2684.225613220497
Average Daily										
2026	0.4708559	5.3291986	0.1712382	1.1183643	1.2896026	0.1534697	0.3056979	0.4591677	0.9025956	1967.3130888990968
2027	3.8590100	6.8885914	0.2428939	0.3445382	0.5874321	0.2235347	0.0853679	0.3089027	0.1692865	1865.93459558481
Annual										
2026	0.0859312	0.9725787	0.0312509	0.2041014	0.2353524	0.0280082	0.0557898	0.0837981	0.1494350	325.7111327340632
2027	0.7042693	1.2571679	0.0443281	0.0628782	0.1072063	0.0407951	0.0155796	0.0563747	0.0280273	308.9267662401936

2. Emissions Summary - One Mile Onsite Trips

2.3 Construction Emissions by Year, Mitigated

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO_2e
Daily - Summer (Max)										
2026	0.6743738	19.474760	0.1823374	11.411519	11.593857	0.1464695	4.2282268	4.3746963	12.619618	10312.62785383005
2027	20.955661	10.265835	0.1363883	0.5586556	0.6950440	0.1289356	0.1383561	0.2672918	0.6013844	2692.401267961177
Daily - Winter (Max)										
2026	0.5293677	10.893921	0.1359826	1.2934769	1.4294596	0.1270586	0.3220113	0.4490700	0.0460258	3207.6967307325763
2027	20.954062	10.277987	0.1363883	0.5586556	0.6950440	0.1289356	0.1383561	0.2672918	0.0156200	2684.225613220497
Average Daily										
2026	0.1978224	5.0201521	0.0607599	1.1183643	1.1791243	0.0531311	0.3056979	0.3588291	0.9025956	1967.3130888990968
2027	3.4115361	7.0046234	0.0879533	0.3445382	0.4324916	0.0833582	0.0853679	0.1687261	0.1692865	1865.93459558481
Annual										
2026	0.0361025	0.9161777	0.0110886	0.2041014	0.2151901	0.0096964	0.0557898	0.0654863	0.1494350	325.7111327340632
2027	0.6226053	1.2783437	0.0160514	0.0628782	0.0789297	0.0152128	0.0155796	0.0307925	0.0280273	308.9267662401936

5.3. Construction Vehicles - One Mile Onsite Trips

5.3.1 Unmitigated

Phase Nam	Trip Type	One-Way T	Miles per T	Vehicle Mix
Demolition				
Demolitior	Worker	5	1	LDA,LDT1,LDT2
Demolitior	Vendor		1	HHDT,MHDT
Demolitior	Hauling	0	1	HHDT
Demolitior	Onsite truc			HHDT
Site Preparation				
Site Prepar	Worker	10	1	LDA,LDT1,LDT2
Site Prepar	Vendor		1	HHDT,MHDT
Site Prepar	Hauling	0	1	HHDT
Site Prepar	Onsite truc			HHDT
Grading				
Grading	Worker	12.5	1	LDA,LDT1,LDT2
Grading	Vendor		1	HHDT,MHDT
Grading	Hauling	81.018518	1	HHDT
Grading	Onsite truc			HHDT
Building Construction				
Building Cc	Worker	11.52	1	LDA,LDT1,LDT2
Building Cc	Vendor	3.4208	1	HHDT,MHDT
Building Cc	Hauling	0	1	HHDT
Building Cc	Onsite truc			HHDT
Paving				
Paving	Worker	15	1	LDA,LDT1,LDT2
Paving	Vendor		1	HHDT,MHDT
Paving	Hauling	4.8	1	HHDT
Paving	Onsite truc			HHDT
Architectural Coating				
Architectu	Worker	2.304	1	LDA,LDT1,LDT2
Architectu	Vendor		1	HHDT,MHDT
Architectu	Hauling	0	1	HHDT
Architectu	Onsite truc			HHDT
Trenching				
Trenching	Worker	5	1	LDA,LDT1,LDT2
Trenching	Vendor		1	HHDT,MHDT
Trenching	Hauling	0	1	HHDT
Trenching	Onsite truc			HHDT

5.3. Construction Vehicles - One Mile Onsite Trips

5.3.2 Mitigated

Phase Nam	Trip Type	One-Way T	Miles per T	Vehicle Mix
Demolition				
Demolitior	Worker	5	1	LDA,LDT1,LDT2
Demolitior	Vendor		1	HHDT,MHDT
Demolitior	Hauling	0	1	HHDT
Demolitior	Onsite truc			HHDT
Site Preparation				
Site Prepar	Worker	10	1	LDA,LDT1,LDT2
Site Prepar	Vendor		1	HHDT,MHDT
Site Prepar	Hauling	0	1	HHDT
Site Prepar	Onsite truc			HHDT
Grading				
Grading	Worker	12.5	1	LDA,LDT1,LDT2
Grading	Vendor		1	HHDT,MHDT
Grading	Hauling	81.018518	1	HHDT
Grading	Onsite truc			HHDT
Building Construction				
Building Cc	Worker	11.52	1	LDA,LDT1,LDT2
Building Cc	Vendor	3.4208	1	HHDT,MHDT
Building Cc	Hauling	0	1	HHDT
Building Cc	Onsite truc			HHDT
Paving				
Paving	Worker	15	1	LDA,LDT1,LDT2
Paving	Vendor		1	HHDT,MHDT
Paving	Hauling	4.8	1	HHDT
Paving	Onsite truc			HHDT
Architectural Coating				
Architectu	Worker	2.304	1	LDA,LDT1,LDT2
Architectu	Vendor		1	HHDT,MHDT
Architectu	Hauling	0	1	HHDT
Architectu	Onsite truc			HHDT
Trenching				
Trenching	Worker	5	1	LDA,LDT1,LDT2
Trenching	Vendor		1	HHDT,MHDT
Trenching	Hauling	0	1	HHDT
Trenching	Onsite truc			HHDT

23-019 Valley Oaks South Const Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

2.3. Construction Emissions by Year, Mitigated

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

3.2. Demolition (2025) - Mitigated

3.3. Site Preparation (2025) - Unmitigated

3.4. Site Preparation (2025) - Mitigated

3.5. Grading (2025) - Unmitigated

3.6. Grading (2025) - Mitigated

3.7. Building Construction (2025) - Unmitigated

3.8. Building Construction (2025) - Mitigated

3.9. Building Construction (2026) - Unmitigated

3.10. Building Construction (2026) - Mitigated

3.11. Paving (2026) - Unmitigated

3.12. Paving (2026) - Mitigated

3.13. Architectural Coating (2026) - Unmitigated

3.14. Architectural Coating (2026) - Mitigated

3.15. Trenching (2025) - Unmitigated

3.16. Trenching (2025) - Mitigated

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	23-019 Valley Oaks South Const
Construction Start Date	4/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	43.4
Location	100 Pinkston Rd, Novato, CA 94945, USA
County	Marin
City	Novato
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	911
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.12

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Condo/Townhouse	20.0	Dwelling Unit	2.50	38,800	0.00	0.00	48.0	—

Parking Lot	10.0	Space	0.00	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	9.58	18.8	0.68	8.38	8.81	0.63	2.23	2.59	18.2	10,421
Mit.	8.89	16.6	0.18	8.38	8.56	0.14	2.23	2.36	18.2	10,421
% Reduced	7%	12%	73%	—	3%	78%	—	9%	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	1.18	10.6	0.43	0.55	0.98	0.40	0.13	0.53	0.02	2,586
Mit.	0.47	9.67	0.12	0.55	0.67	0.11	0.13	0.25	0.02	2,586
% Reduced	60%	9%	72%	—	32%	71%	—	53%	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	1.94	5.97	0.23	0.52	0.76	0.21	0.14	0.35	0.38	1,629
Mit.	1.68	5.42	0.07	0.52	0.59	0.06	0.14	0.20	0.38	1,629
% Reduced	14%	9%	72%	—	22%	71%	—	43%	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	0.35	1.09	0.04	0.10	0.14	0.04	0.02	0.06	0.06	270

Mit.	0.31	0.99	0.01	0.10	0.11	0.01	0.02	0.04	0.06	270
% Reduced	14%	9%	72%	—	22%	71%	—	43%	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—
2025	1.68	18.8	0.68	8.38	8.81	0.63	2.23	2.59	18.2	10,421
2026	9.58	12.2	0.44	1.66	2.10	0.40	0.41	0.82	2.49	3,704
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—
2025	1.18	10.6	0.43	0.55	0.98	0.40	0.13	0.53	0.02	2,586
2026	1.12	9.98	0.38	0.55	0.92	0.35	0.13	0.48	0.02	2,582
Average Daily	—	—	—	—	—	—	—	—	—	—
2025	0.63	5.97	0.23	0.52	0.76	0.21	0.14	0.35	0.38	1,629
2026	1.94	3.97	0.15	0.24	0.39	0.14	0.06	0.20	0.12	1,033
Annual	—	—	—	—	—	—	—	—	—	—
2025	0.11	1.09	0.04	0.10	0.14	0.04	0.02	0.06	0.06	270
2026	0.35	0.72	0.03	0.04	0.07	0.03	0.01	0.04	0.02	171

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—
2025	0.47	16.6	0.18	8.38	8.56	0.13	2.23	2.36	18.2	10,421
2026	8.89	11.9	0.15	1.66	1.81	0.14	0.41	0.55	2.49	3,704

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—
2025	0.47	9.67	0.12	0.55	0.67	0.11	0.13	0.25	0.02	2,586
2026	0.46	9.66	0.12	0.55	0.66	0.11	0.13	0.25	0.02	2,582
Average Daily	—	—	—	—	—	—	—	—	—	—
2025	0.25	5.42	0.07	0.52	0.59	0.06	0.14	0.20	0.38	1,629
2026	1.68	3.85	0.05	0.24	0.29	0.05	0.06	0.11	0.12	1,033
Annual	—	—	—	—	—	—	—	—	—	—
2025	0.05	0.99	0.01	0.10	0.11	0.01	0.02	0.04	0.06	270
2026	0.31	0.70	0.01	0.04	0.05	0.01	0.01	0.02	0.02	171

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	1.93	0.07	—	0.07	0.06	—	0.06	—	434
Demolition	—	—	—	0.00	0.00	—	0.00	0.00	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.19
Demolition	—	—	—	0.00	0.00	—	0.00	0.00	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.20
Demolition	—	—	—	0.00	0.00	—	0.00	0.00	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	0.17	0.17	0.00	0.04	0.04	0.17	43.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.2. Demolition (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.07	2.28	0.04	—	0.04	0.03	—	0.03	—	434
Demolition	—	—	—	0.00	0.00	—	0.00	0.00	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.19
Demolition	—	—	—	0.00	0.00	—	0.00	0.00	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.20
Demolition	—	—	—	0.00	0.00	—	0.00	0.00	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	0.17	0.17	0.00	0.04	0.04	0.17	43.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.02

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.43	13.2	0.61	—	0.61	0.56	—	0.56	—	2,244
Dust From Material Movement	—	—	—	2.76	2.76	—	1.34	1.34	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.15
Dust From Material Movement	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.02
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.00	0.26	0.26	0.00	0.06	0.06	0.26	65.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.17
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.03
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Site Preparation (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.28	6.82	0.04	—	0.04	0.04	—	0.04	—	2,244
Dust From Material Movement	—	—	—	2.76	2.76	—	1.34	1.34	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.15
Dust From Material Movement	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.02
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.00	0.26	0.26	0.00	0.06	0.06	0.26	65.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.17
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.03
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.70	6.49	0.28	—	0.28	0.26	—	0.26	—	1,439
Dust From Material Movement	—	—	—	0.79	0.79	—	0.29	0.29	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.20	0.01	—	0.01	0.01	—	0.01	—	43.4
Dust From Material Movement	—	—	—	0.02	0.02	—	0.01	0.01	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.18
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.03	0.00	0.43	0.43	0.00	0.10	0.10	0.44	109
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.22	12.3	0.15	7.16	7.31	0.10	1.83	1.93	17.8	8,873
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	0.01	3.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.39	< 0.005	0.21	0.21	< 0.005	0.05	0.06	0.23	267
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.51
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.07	< 0.005	0.04	0.04	< 0.005	0.01	0.01	0.04	44.2

3.6. Grading (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	4.25	0.03	—	0.03	0.03	—	0.03	—	1,439
Dust From Material Movement	—	—	—	0.79	0.79	—	0.29	0.29	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.13	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	43.4
Dust From Material Movement	—	—	—	0.02	0.02	—	0.01	0.01	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.18
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.03	0.00	0.43	0.43	0.00	0.10	0.10	0.44	109
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.22	12.3	0.15	7.16	7.31	0.10	1.83	1.93	17.8	8,873
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	0.01	3.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.39	< 0.005	0.21	0.21	< 0.005	0.05	0.06	0.23	267
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.51
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.07	< 0.005	0.04	0.04	< 0.005	0.01	0.01	0.04	44.2

3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	0.43	—	0.43	0.40	—	0.40	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	0.43	—	0.43	0.40	—	0.40	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.57	5.27	0.22	—	0.22	0.20	—	0.20	—	1,215
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.96	0.04	—	0.04	0.04	—	0.04	—	201
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.00	0.49	0.49	0.00	0.12	0.12	0.50	126
Vendor	< 0.005	0.09	< 0.005	0.06	0.06	< 0.005	0.01	0.01	0.15	62.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—

Worker	0.05	0.05	0.00	0.49	0.49	0.00	0.12	0.12	0.01	117
Vendor	< 0.005	0.09	< 0.005	0.06	0.06	< 0.005	0.01	0.01	< 0.005	62.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.24	0.24	0.00	0.06	0.06	0.11	59.6
Vendor	< 0.005	0.04	< 0.005	0.03	0.03	< 0.005	0.01	0.01	0.03	31.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.04	0.04	0.00	0.01	0.01	0.02	9.87
Vendor	< 0.005	0.01	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.01	5.25
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Building Construction (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.42	9.53	0.12	—	0.12	0.11	—	0.11	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.42	9.53	0.12	—	0.12	0.11	—	0.11	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	4.81	0.06	—	0.06	0.06	—	0.06	—	1,215

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.88	0.01	—	0.01	0.01	—	0.01	—	201
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.00	0.49	0.49	0.00	0.12	0.12	0.50	126
Vendor	< 0.005	0.09	< 0.005	0.06	0.06	< 0.005	0.01	0.01	0.15	62.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.00	0.49	0.49	0.00	0.12	0.12	0.01	117
Vendor	< 0.005	0.09	< 0.005	0.06	0.06	< 0.005	0.01	0.01	< 0.005	62.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.24	0.24	0.00	0.06	0.06	0.11	59.6
Vendor	< 0.005	0.04	< 0.005	0.03	0.03	< 0.005	0.01	0.01	0.03	31.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.04	0.04	0.00	0.01	0.01	0.02	9.87
Vendor	< 0.005	0.01	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.01	5.25
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	9.85	0.38	—	0.38	0.35	—	0.35	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	9.85	0.38	—	0.38	0.35	—	0.35	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.42	3.84	0.15	—	0.15	0.14	—	0.14	—	937
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.70	0.03	—	0.03	0.02	—	0.02	—	155
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.03	0.00	0.49	0.49	0.00	0.12	0.12	0.46	124
Vendor	< 0.005	0.08	< 0.005	0.06	0.06	< 0.005	0.01	0.01	0.14	61.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.00	0.49	0.49	0.00	0.12	0.12	0.01	115
Vendor	< 0.005	0.09	< 0.005	0.06	0.06	< 0.005	0.01	0.01	< 0.005	61.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	0.19	0.19	0.00	0.05	0.05	0.08	45.1
Vendor	< 0.005	0.03	< 0.005	0.02	0.02	< 0.005	0.01	0.01	0.02	24.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.03	0.03	0.00	0.01	0.01	0.01	7.47
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.98
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Building Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	9.53	0.12	—	0.12	0.11	—	0.11	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	9.53	0.12	—	0.12	0.11	—	0.11	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	3.71	0.05	—	0.05	0.04	—	0.04	—	937
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.03	0.68	0.01	—	0.01	0.01	—	0.01	—	155
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.03	0.00	0.49	0.49	0.00	0.12	0.12	0.46	124
Vendor	< 0.005	0.08	< 0.005	0.06	0.06	< 0.005	0.01	0.01	0.14	61.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.00	0.49	0.49	0.00	0.12	0.12	0.01	115
Vendor	< 0.005	0.09	< 0.005	0.06	0.06	< 0.005	0.01	0.01	< 0.005	61.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	0.19	0.19	0.00	0.05	0.05	0.08	45.1
Vendor	< 0.005	0.03	< 0.005	0.02	0.02	< 0.005	0.01	0.01	0.02	24.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.03	0.03	0.00	0.01	0.01	0.01	7.47
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.98
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.13	1.18	0.05	—	0.05	0.05	—	0.05	—	250
Paving	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.42
Paving	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.57
Paving	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.03	0.00	0.51	0.51	0.00	0.13	0.13	0.48	129
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.99	0.01	0.61	0.62	0.01	0.15	0.16	1.41	735
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	< 0.005	1.65
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01	10.1
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.27

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.66

3.12. Paving (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	1.26	0.02	—	0.02	0.02	—	0.02	—	250
Paving	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.42
Paving	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.57
Paving	0.00	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.03	0.00	0.51	0.51	0.00	0.13	0.13	0.48	129

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.99	0.01	0.61	0.62	0.01	0.15	0.16	1.41	735
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	< 0.005	1.65
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01	10.1
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.27
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.66

3.13. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.29	0.01	—	0.01	0.01	—	0.01	—	44.7
Architectural Coatings	8.41	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.05	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.95

Architectural Coatings	1.50	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.32
Architectural Coatings	0.27	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.10	0.10	0.00	0.02	0.02	0.09	24.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.02	0.02	0.00	< 0.005	< 0.005	0.01	4.13
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.68
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.14. Architectural Coating (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.36	0.01	—	0.01	0.01	—	0.01	—	44.7
Architectural Coatings	8.41	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.06	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.95
Architectural Coatings	1.50	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.32
Architectural Coatings	0.27	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.10	0.10	0.00	0.02	0.02	0.09	24.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.00	0.02	0.02	0.00	< 0.005	< 0.005	0.01	4.13
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.68
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Trenching (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	1.93	0.07	—	0.07	0.06	—	0.06	—	434
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.19
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.20
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	0.17	0.17	0.00	0.04	0.04	0.17	43.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.16. Trenching (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	2.28	0.04	—	0.04	0.03	—	0.03	—	434
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.19
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.20
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	0.17	0.17	0.00	0.04	0.04	0.17	43.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	4/1/2025	4/1/2025	5.00	1.00	—

Site Preparation	Site Preparation	4/1/2025	4/1/2025	5.00	1.00	—
Grading	Grading	4/2/2025	4/16/2025	5.00	11.0	—
Building Construction	Building Construction	4/18/2025	7/18/2026	5.00	326	—
Paving	Paving	4/1/2026	4/7/2026	5.00	5.00	—
Architectural Coating	Architectural Coating	4/18/2026	7/18/2026	5.00	65.0	—
Trenching	Trenching	4/17/2025	4/17/2025	5.00	1.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Demolition	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Graders	Diesel	Average	1.00	3.20	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	1.60	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	4.00	84.0	0.37
Grading	Excavators	Diesel	Average	1.00	1.60	36.0	0.38
Grading	Scrapers	Diesel	Average	1.00	3.20	423	0.48
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37

Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	1.60	84.0	0.37
Paving	Pavers	Diesel	Average	1.00	1.60	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	1.60	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	1.60	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	1.60	10.0	0.56
Architectural Coating	Air Compressors	Diesel	Average	1.00	2.00	37.0	0.48
Trenching	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Trenching	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	8.00	84.0	0.37
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	36.0	0.38
Site Preparation	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	8.00	84.0	0.37
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Grading	Graders	Diesel	Tier 4 Interim	1.00	3.20	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	1.60	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	4.00	84.0	0.37
Grading	Excavators	Diesel	Tier 4 Interim	1.00	1.60	36.0	0.38
Grading	Scrapers	Diesel	Tier 4 Interim	1.00	3.20	423	0.48
Building Construction	Cranes	Diesel	Tier 4 Interim	1.00	7.00	367	0.29

Building Construction	Forklifts	Diesel	Tier 4 Interim	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Tier 4 Interim	1.00	8.00	46.0	0.45
Paving	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	1.60	84.0	0.37
Paving	Pavers	Diesel	Tier 4 Interim	1.00	1.60	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Interim	1.00	1.60	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Interim	2.00	1.60	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	1.60	10.0	0.56
Architectural Coating	Air Compressors	Diesel	Tier 4 Interim	1.00	2.00	37.0	0.48
Trenching	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	8.00	84.0	0.37
Trenching	Excavators	Diesel	Tier 4 Interim	1.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	5.00	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT

Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	12.5	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	114	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	14.4	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	2.14	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	9.60	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	2.88	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	5.00	11.7	LDA,LDT1,LDT2
Trenching	Vendor	—	8.40	HHDT,MHDT
Trenching	Hauling	0.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	5.00	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	12.5	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	114	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	14.4	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	2.14	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	9.60	20.0	HHDT
Paving	Onsite truck	—	—	HHDT

Architectural Coating	—	—	—	—
Architectural Coating	Worker	2.88	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	5.00	11.7	LDA,LDT1,LDT2
Trenching	Vendor	—	8.40	HHDT,MHDT
Trenching	Hauling	0.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	78,570	26,190	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	1.00	0.00	—
Grading	10,000	—	7.70	0.00	—

Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Condo/Townhouse	—	0%
Parking Lot	0.00	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.36	annual days of extreme heat
Extreme Precipitation	14.2	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	13.4	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A

Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	10.6
AQ-PM	14.7
AQ-DPM	5.51
Drinking Water	5.55
Lead Risk Housing	14.1
Pesticides	0.00
Toxic Releases	25.9
Traffic	58.9
Effect Indicators	—

CleanUp Sites	2.07
Groundwater	35.0
Haz Waste Facilities/Generators	26.7
Impaired Water Bodies	12.5
Solid Waste	0.00
Sensitive Population	—
Asthma	16.3
Cardio-vascular	3.78
Low Birth Weights	1.68
Socioeconomic Factor Indicators	—
Education	12.0
Housing	20.6
Linguistic	13.3
Poverty	10.7
Unemployment	33.6

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	85.39715129
Employed	48.77454125
Median HI	85.07635057
Education	—
Bachelor's or higher	88.66931862
High school enrollment	100
Preschool enrollment	80.93160529

Transportation	—
Auto Access	88.68215065
Active commuting	52.03387656
Social	—
2-parent households	90.42730656
Voting	98.99910176
Neighborhood	—
Alcohol availability	78.13422302
Park access	81.35506224
Retail density	39.31733607
Supermarket access	41.88374182
Tree canopy	88.86179905
Housing	—
Homeownership	82.99756191
Housing habitability	93.08353651
Low-inc homeowner severe housing cost burden	68.45887335
Low-inc renter severe housing cost burden	83.61349929
Uncrowded housing	96.93314513
Health Outcomes	—
Insured adults	82.81791351
Arthritis	0.0
Asthma ER Admissions	91.6
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0

Diagnosed Diabetes	0.0
Life Expectancy at Birth	82.1
Cognitively Disabled	58.3
Physically Disabled	47.8
Heart Attack ER Admissions	98.7
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	89.7
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	79.7
Children	88.7
Elderly	8.1
English Speaking	86.1
Foreign-born	19.0
Outdoor Workers	69.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	87.1
Traffic Density	46.5
Traffic Access	23.0

Other Indices	—
Hardship	8.4
Other Decision Support	—
2016 Voting	99.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	1.00
Healthy Places Index Score for Project Location (b)	93.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Provided by project applicant.
Construction: Construction Phases	Construction schedule provided by project applicant.
Construction: Off-Road Equipment	Construction equipment provided by project applicant.

Construction: Trips and VMT	Paving = 200-cy asphalt (9.6 truck trips/day).
Construction: On-Road Fugitive Dust	Road silt loading = 0.5g/m2. BAAQMD BMP for construction-related fugitive dust emissions.

2. Emissions Summary - One Mile Onsite Trips

2.2 Construction Emissions by Year, Unmitigated

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO_2e
Daily - Summer (Max)										
2025	2.4927413	23.913553	0.9671987	9.2318591	10.199057	0.8879188	4.2115785	5.0994974	0.9631009	4774.9132400167155
2026	10.271066	11.264832	0.4289790	0.0317235	0.4607025	0.3945074	0.0078008	0.4023083	0.1673148	2743.9144640180325
Daily - Winter (Max)										
2025	1.1716206	10.489647	0.4319349	0.0120146	0.4439496	0.3973876	0.0028802	0.4002679	0.0015854	2428.396408680419
2026	1.1127759	9.8976375	0.3787482	0.0120146	0.3907629	0.3484559	0.0028802	0.3513362	0.0014509	2427.538893217709
Average Daily										
2025	0.6259258	5.6536373	0.2308468	0.1092078	0.3400546	0.2123255	0.0438261	0.2561516	0.0255180	1306.0414797920957
2026	1.9363019	3.8812453	0.1479712	0.0050948	0.1530661	0.1361342	0.0012208	0.1373551	0.0105214	947.9444424988825
Annual										
2025	0.1142314	1.0317888	0.0421295	0.0199304	0.0620599	0.0387494	0.0079982	0.0467476	0.0042248	216.2300714518216
2026	0.3533750	0.7083272	0.0270047	0.0009298	0.0279345	0.0248445	0.0002228	0.0250673	0.0017419	156.94302034459096

2. Emissions Summary - One Mile Onsite Trips

2.3 Construction Emissions by Year, Mitigated

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO_2e
Daily - Summer (Max)										
2025	0.6818857	15.590850	0.1885078	3.6769858	3.7962206	0.1772750	1.6626339	1.7764681	0.9631009	4774.9132400167155
2026	9.6800820	11.896096	0.1737358	0.0317235	0.2054593	0.1633016	0.0078008	0.1711025	0.1673148	2859.4163557561365
Daily - Winter (Max)										
2025	0.5588065	10.373073	0.1516606	0.0120146	0.1636752	0.1428406	0.0028802	0.1457209	0.0015854	2532.5961057998065
2026	0.5548469	10.363004	0.1506758	0.0120146	0.1626905	0.1419346	0.0028802	0.1448149	0.0014509	2531.739460673775
Average Daily										
2025	0.2928713	5.4956673	0.0784215	0.0483305	0.1267521	0.0738519	0.0185204	0.0923723	0.0255180	1358.6511116057984
2026	1.7147433	4.0745671	0.0600776	0.0050948	0.0651725	0.0565558	0.0012208	0.0577767	0.0105214	988.2705111071396
Annual										
2025	0.0534490	1.0029592	0.0143119	0.0088203	0.0231322	0.0134779	0.0033799	0.0168579	0.0042248	224.94019637675262
2026	0.3129406	0.7436084	0.0109641	0.0009298	0.0118939	0.0103214	0.0002228	0.0105442	0.0017419	163.61946120152496

5.3. Construction Vehicles - One Mile Onsite Trips

5.3.1 Unmitigated

Phase Name	Trip Type	One-Way T	Miles per T	Vehicle Mix
Demolition				
Demolition	Worker	5	1	LDA,LDT1,LDT2
Demolition	Vendor		1	HHDT,MHDT
Demolition	Hauling	0	1	HHDT
Demolition	Onsite truc			HHDT
Site Preparation				
Site Preparation	Worker	7.5	1	LDA,LDT1,LDT2
Site Preparation	Vendor		1	HHDT,MHDT
Site Preparation	Hauling	0	1	HHDT
Site Preparation	Onsite truc			HHDT
Grading				
Grading	Worker	12.5	1	LDA,LDT1,LDT2
Grading	Vendor		1	HHDT,MHDT
Grading	Hauling	113.63636	1	HHDT
Grading	Onsite truc			HHDT
Building Construction				
Building Construction	Worker	14.399999	1	LDA,LDT1,LDT2
Building Construction	Vendor	2.138	1	HHDT,MHDT
Building Construction	Hauling	0	1	HHDT
Building Construction	Onsite truc			HHDT
Paving				
Paving	Worker	15	1	LDA,LDT1,LDT2
Paving	Vendor		1	HHDT,MHDT
Paving	Hauling	9.6	1	HHDT
Paving	Onsite truc			HHDT
Architectural Coating				
Architectural Coating	Worker	2.88	1	LDA,LDT1,LDT2
Architectural Coating	Vendor		1	HHDT,MHDT
Architectural Coating	Hauling	0	1	HHDT
Architectural Coating	Onsite truc			HHDT
Trenching				
Trenching	Worker	5	1	LDA,LDT1,LDT2
Trenching	Vendor		1	HHDT,MHDT
Trenching	Hauling	0	1	HHDT
Trenching	Onsite truc			HHDT

5.3. Construction Vehicles - One Mile Onsite Trips

5.3.2 Mitigated

Phase Name	Trip Type	One-Way T	Miles per T	Vehicle Mix
Demolition				
Demolition	Worker	5	1	LDA,LDT1,LDT2
Demolition	Vendor		1	HHDT,MHDT
Demolition	Hauling	0	1	HHDT
Demolition	Onsite truc			HHDT
Site Preparation				
Site Preparation	Worker	7.5	1	LDA,LDT1,LDT2
Site Preparation	Vendor		1	HHDT,MHDT
Site Preparation	Hauling	0	1	HHDT
Site Preparation	Onsite truc			HHDT
Grading				
Grading	Worker	12.5	1	LDA,LDT1,LDT2
Grading	Vendor		1	HHDT,MHDT
Grading	Hauling	113.63636	1	HHDT
Grading	Onsite truc			HHDT
Building Construction				
Building Construction	Worker	14.399999	1	LDA,LDT1,LDT2
Building Construction	Vendor	2.138	1	HHDT,MHDT
Building Construction	Hauling	0	1	HHDT
Building Construction	Onsite truc			HHDT
Paving				
Paving	Worker	15	1	LDA,LDT1,LDT2
Paving	Vendor		1	HHDT,MHDT
Paving	Hauling	9.6	1	HHDT
Paving	Onsite truc			HHDT
Architectural Coating				
Architectural Coating	Worker	2.88	1	LDA,LDT1,LDT2
Architectural Coating	Vendor		1	HHDT,MHDT
Architectural Coating	Hauling	0	1	HHDT
Architectural Coating	Onsite truc			HHDT
Trenching				
Trenching	Worker	5	1	LDA,LDT1,LDT2
Trenching	Vendor		1	HHDT,MHDT
Trenching	Hauling	0	1	HHDT
Trenching	Onsite truc			HHDT

Valley Oaks Operation Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.3. Area Emissions by Source

4.3.2. Unmitigated

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Valley Oaks Operation
Operational Year	2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	43.4
Location	100 Pinkston Rd, Novato, CA 94945, USA
County	Marin
City	Novato
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	911
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.12

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	29.0	Dwelling Unit	4.50	75,900	0.00	0.00	70.0	—

Condo/Townhouse	20.0	Dwelling Unit	2.50	38,800	0.00	0.00	48.0	—
Parking Lot	10.0	Space	0.00	0.00	0.00	0.00	—	—
Single Family Housing	32.0	Dwelling Unit	6.50	80,000	0.00	0.00	77.0	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	8.11	1.83	0.03	1.97	2.00	0.03	0.34	0.38	17.1	6,270
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	7.62	2.11	0.03	1.97	2.00	0.03	0.34	0.37	1.80	5,959
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	7.67	1.93	0.03	1.89	1.92	0.03	0.33	0.36	7.90	5,768
Annual (Max)	—	—	—	—	—	—	—	—	—	—
Unmit.	1.40	0.35	0.01	0.34	0.35	0.01	0.06	0.07	1.31	955

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	2.80	1.78	0.03	1.97	2.00	0.03	0.34	0.37	15.7	5,400
Area	5.32	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.3
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	755
Water	—	—	—	—	—	—	—	—	—	18.0
Waste	—	—	—	—	—	—	—	—	—	83.2
Refrig.	—	—	—	—	—	—	—	—	1.39	1.39
Total	8.11	1.83	0.03	1.97	2.00	0.03	0.34	0.38	17.1	6,270
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Mobile	2.70	2.11	0.03	1.97	2.00	0.03	0.34	0.37	0.41	5,101
Area	4.92	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	755
Water	—	—	—	—	—	—	—	—	—	18.0
Waste	—	—	—	—	—	—	—	—	—	83.2
Refrig.	—	—	—	—	—	—	—	—	1.39	1.39
Total	7.62	2.11	0.03	1.97	2.00	0.03	0.34	0.37	1.80	5,959
Average Daily	—	—	—	—	—	—	—	—	—	—
Mobile	2.55	1.91	0.03	1.89	1.92	0.03	0.33	0.36	6.51	4,904
Area	5.12	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.08
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	755
Water	—	—	—	—	—	—	—	—	—	18.0
Waste	—	—	—	—	—	—	—	—	—	83.2
Refrig.	—	—	—	—	—	—	—	—	1.39	1.39
Total	7.67	1.93	0.03	1.89	1.92	0.03	0.33	0.36	7.90	5,768
Annual	—	—	—	—	—	—	—	—	—	—
Mobile	0.47	0.35	0.01	0.34	0.35	0.01	0.06	0.07	1.08	812

Area	0.93	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.01
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	125
Water	—	—	—	—	—	—	—	—	—	2.99
Waste	—	—	—	—	—	—	—	—	—	13.8
Refrig.	—	—	—	—	—	—	—	—	0.23	0.23
Total	1.40	0.35	0.01	0.34	0.35	0.01	0.06	0.07	1.31	955

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Single Family Housing	2.11	1.35	0.02	1.48	1.51	0.02	0.26	0.28	11.9	4,071
Condo/Townhouse	0.69	0.44	0.01	0.48	0.49	0.01	0.08	0.09	3.87	1,329
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	2.80	1.78	0.03	1.97	2.00	0.03	0.34	0.37	15.7	5,400
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Single Family Housing	2.04	1.59	0.02	1.48	1.51	0.02	0.26	0.28	0.31	3,846
Condo/Townhouse	0.66	0.52	0.01	0.48	0.49	0.01	0.08	0.09	0.10	1,255
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	2.70	2.11	0.03	1.97	2.00	0.03	0.34	0.37	0.41	5,101

Annual	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.36	0.27	< 0.005	0.26	0.27	< 0.005	0.05	0.05	0.83	625
Condo/Townhouse	0.11	0.08	< 0.005	0.08	0.08	< 0.005	0.01	0.02	0.25	187
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.47	0.35	0.01	0.34	0.35	0.01	0.06	0.07	1.08	812

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	623
Condo/Townhouse	—	—	—	—	—	—	—	—	—	133
Parking Lot	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	755
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	623
Condo/Townhouse	—	—	—	—	—	—	—	—	—	133
Parking Lot	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	755
Annual	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	103
Condo/Townhouse	—	—	—	—	—	—	—	—	—	21.9
Parking Lot	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	125

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00
Condo/Townhouse	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00
Condo/Townhouse	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00
Condo/Townhouse	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00

Parking Lot	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00
Consumer Products	4.17	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.75	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.40	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.3
Total	5.32	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00
Consumer Products	4.17	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.75	—	—	—	—	—	—	—	—	—
Total	4.92	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00
Consumer Products	0.76	—	—	—	—	—	—	—	—	—

Architectural Coatings	0.14	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.01
Total	0.93	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.01

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	13.6
Condo/Townhouse	—	—	—	—	—	—	—	—	—	4.45
Parking Lot	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	18.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	13.6
Condo/Townhouse	—	—	—	—	—	—	—	—	—	4.45
Parking Lot	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	18.0
Annual	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	2.25

Condo/Townhouse	—	—	—	—	—	—	—	—	—	0.74
Parking Lot	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	2.99

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	55.3
Condo/Townhouse	—	—	—	—	—	—	—	—	—	27.9
Parking Lot	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	83.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	55.3
Condo/Townhouse	—	—	—	—	—	—	—	—	—	27.9
Parking Lot	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	83.2
Annual	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	9.16
Condo/Townhouse	—	—	—	—	—	—	—	—	—	4.62

Parking Lot	—	—	—	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	13.8

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	1.12	1.12
Condo/Townhouse	—	—	—	—	—	—	—	—	0.28	0.28
Total	—	—	—	—	—	—	—	—	1.39	1.39
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	1.12	1.12
Condo/Townhouse	—	—	—	—	—	—	—	—	0.28	0.28
Total	—	—	—	—	—	—	—	—	1.39	1.39
Annual	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	0.18	0.18
Condo/Townhouse	—	—	—	—	—	—	—	—	0.05	0.05
Total	—	—	—	—	—	—	—	—	0.23	0.23

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	273	276	248	98,622	2,319	2,344	2,100	836,279
Condo/Townhouse	189	210	162	68,537	1,599	1,777	1,372	581,166
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Single Family Housing	362	366	328	130,532	3,069	3,102	2,781	1,106,868

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	23
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	26
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	10

Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
394267.5	131,423	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	524,501	204	0.0330	0.0040	0.00
Condo/Townhouse	234,834	204	0.0330	0.0040	0.00
Parking Lot	0.00	204	0.0330	0.0040	0.00
Single Family Housing	578,760	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	876,438	0.00
Condo/Townhouse	604,440	0.00
Parking Lot	0.00	0.00
Single Family Housing	967,104	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	14.0	—
Condo/Townhouse	14.8	—
Parking Lot	0.00	—
Single Family Housing	15.4	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0

Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.36	annual days of extreme heat
Extreme Precipitation	14.2	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	13.4	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A

Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	10.6
AQ-PM	14.7
AQ-DPM	5.51
Drinking Water	5.55
Lead Risk Housing	14.1
Pesticides	0.00
Toxic Releases	25.9
Traffic	58.9
Effect Indicators	—
CleanUp Sites	2.07
Groundwater	35.0
Haz Waste Facilities/Generators	26.7

Impaired Water Bodies	12.5
Solid Waste	0.00
Sensitive Population	—
Asthma	16.3
Cardio-vascular	3.78
Low Birth Weights	1.68
Socioeconomic Factor Indicators	—
Education	12.0
Housing	20.6
Linguistic	13.3
Poverty	10.7
Unemployment	33.6

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	85.39715129
Employed	48.77454125
Median HI	85.07635057
Education	—
Bachelor's or higher	88.66931862
High school enrollment	100
Preschool enrollment	80.93160529
Transportation	—
Auto Access	88.68215065
Active commuting	52.03387656

Social	—
2-parent households	90.42730656
Voting	98.99910176
Neighborhood	—
Alcohol availability	78.13422302
Park access	81.35506224
Retail density	39.31733607
Supermarket access	41.88374182
Tree canopy	88.86179905
Housing	—
Homeownership	82.99756191
Housing habitability	93.08353651
Low-inc homeowner severe housing cost burden	68.45887335
Low-inc renter severe housing cost burden	83.61349929
Uncrowded housing	96.93314513
Health Outcomes	—
Insured adults	82.81791351
Arthritis	0.0
Asthma ER Admissions	91.6
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	82.1
Cognitively Disabled	58.3

Physically Disabled	47.8
Heart Attack ER Admissions	98.7
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	89.7
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	79.7
Children	88.7
Elderly	8.1
English Speaking	86.1
Foreign-born	19.0
Outdoor Workers	69.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	87.1
Traffic Density	46.5
Traffic Access	23.0
Other Indices	—
Hardship	8.4
Other Decision Support	—

2016 Voting	99.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	1.00
Healthy Places Index Score for Project Location (b)	93.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	Default clean energy provider.
Land Use	Operational run - land uses provided by trip gen and project applicant.
Operations: Vehicle Data	Provided trip gen.
Operations: Hearths	No new hearths,
Operations: Energy Use	All-electric project according to applicant. Convert natural gas to electricity.
Operations: Water and Waste Water	Wastewater treatment 100% aerobic - no septic tanks or lagoons.

Attachment 2: Project Construction Dispersion Modeling Inputs and Risk Calculations

Valley Oaks, Novato, CA
Construction Health Impact Summary

Maximum Impacts at MEI Location - Without Mitigation

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Infant/Child	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2025	0.0827	0.1263	14.70	0.24	0.02	0.16
2026	0.0549	0.0292	9.02	0.16	0.01	0.06
2027	0.0025	0.0004	0.06	0.01	0.00	0.02
Total	-	-	**23.79**	**0.40**		-
Maximum	0.0827	0.1263	**-**	**-**	**0.02**	**0.16**

Maximum Impacts at MEI Location - With Mitigation

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Infant/Child	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2025	0.0277	0.0502	4.93	0.08	0.01	0.06
2026	0.0219	0.0123	3.60	0.06	0.00	0.02
2027	0.0009	0.0004	0.02	0.00	0.00	0.01
Total	-	-	**8.56**	**0.08**	-	-
Maximum	0.0277	0.0502	**-**	**-**	**0.01**	**0.06**

- Tier 4 Interim Engine as mitigation

Valley Oaks, Novato, CA

DPM Construction Emissions and Modeling Emission Rates

Construction Year	Activity	DPM (ton/year)	Source Type	No. Sources	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Emissions per Point Source (g/s)
2025	N12_Construction	0.0468	Point	684	93.6	0.02848	3.59E-03	5.25E-06
2026	N12_Construction	0.0364	Point	684	72.7	0.02213	2.79E-03	4.08E-06
2025	S_Construction	0.0421	Point	218	84.3	0.02565	3.23E-03	1.48E-05
2026	S_Construction	0.0270	Point	218	54.0	0.01644	2.07E-03	9.50E-06
2026	N3_Construction	0.0283	Point	677	56.5	0.01720	2.17E-03	3.20E-06
2027	N3_Construction	0.0442	Point	677	88.4	0.02690	3.39E-03	5.01E-06
Total		***0.2247***			***449.4***	***0.1368***	***0.0172***	

Emissions assumed to be evenly distributed over each construction areas

hr/day = 9 (7am -4pm)

days/yr = 365

hours/year = 3285

Valley Oaks, Novato, CA

PM2.5 Fugitive Dust Construction Emissions for Modeling

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate $g/s/m^2$
2025	N12_Construction	CON_FUG	0.0550	110.0	0.03349	4.22E-03	33838.0	1.25E-07
2026	N12_Construction	CON_FUG	0.0003	0.5	0.00016	2.05E-05	33838.0	6.06E-10
2025	S_Construction	CON_FUG	0.0080	16.0	0.00487	6.14E-04	10626.0	5.77E-08
2026	S_Construction	CON_FUG	0.0002	0.4	0.00014	1.71E-05	10626.0	1.61E-09
2026	N3_Construction	CON_FUG	0.0234	46.8	0.01423	1.79E-03	33069.8	5.42E-08
2027	N3_Construction	CON_FUG	0.0004	0.7	0.00021	2.71E-05	33069.8	8.18E-10
Total			***0.0633***	***126.6***	***0.0385***	***0.0049***		

Emissions assumed to be evenly distributed over each construction areas

hr/day = 9 (7am -4pm)

days/yr = 365

hours/year = 3285

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Construction Year	Activity	DPM (ton/year)	Source Type	No. Sources	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Emissions per Point Source (g/s)
2025	N12_Construction	0.0104	Point	684	20.9	0.00636	8.01E-04	1.17E-06
2026	N12_Construction	0.0117	Point	684	23.3	0.00710	8.95E-04	1.31E-06
2025	S_Construction	0.0143	Point	218	28.6	0.00871	1.10E-03	5.04E-06
2026	S_Construction	0.0110	Point	218	21.9	0.00668	8.41E-04	3.86E-06
2026	N3_Construction	0.0082	Point	677	16.4	0.00499	6.29E-04	9.28E-07
2027	N3_Construction	0.0159	Point	677	31.8	0.00968	1.22E-03	1.80E-06
Total		***0.0715***			***143.0***	***0.0435***	***0.0055***	

Emissions assumed to be evenly distributed over each construction areas

hr/day = 9 (7am -4pm)

days/yr = 365

hours/year = 3285

PM2.5 Fugitive Dust Construction Emissions for Modeling - With Mitigation

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate $g/s/m^2$
2025	N12_Construction	CON_FUG	0.0219	43.8	0.01332	1.68E-03	33838.0	4.96E-08
2026	N12_Construction	CON_FUG	0.0003	0.5	0.00016	2.05E-05	33838.0	6.06E-10
2025	S_Construction	CON_FUG	0.0034	6.8	0.00206	2.59E-04	10626.0	2.44E-08
2026	S_Construction	CON_FUG	0.0002	0.4	0.00014	1.71E-05	10626.0	1.61E-09
2026	N3_Construction	CON_FUG	0.0096	19.2	0.00585	7.37E-04	33069.8	2.23E-08
2027	N3_Construction	CON_FUG	0.0004	0.7	0.00021	2.71E-05	33069.8	8.18E-10
Total			***0.0357***	***71.4***	***0.0217***	***0.0027***		

Emissions assumed to be evenly distributed over each construction areas

hr/day = 9 (7am -4pm)

days/yr = 365

hours/year = 3285

Valley Oaks, Novato, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction Impacts at Off-Site MEI Location - 4.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information						
			DPM Conc (ug/m3)				Modeled DPM Conc (ug/m3)				Maximum		
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**Year**	**Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Hazard Index**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	2025	0.0827	10	1.12	2025	0.0827	-	-			
1	1	0 - 1	2025	0.0827	10	13.58	2025	0.0827	1	0.24	0.017	0.085	0.14
2	1	1 - 2	2026	0.0549	10	9.02	2026	0.0549	1	0.16	0.011	0.024	0.06
3	1	2 - 3	2027	0.0025	3	0.06	2027	0.0025	1	0.01	0.000	0.000	0.02
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**23.79**				**0.40**			

* Third trimester of pregnancy

Valley Oaks, Novato, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction Impacts at Off-Site MEI Location - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information						
							Modeled				Maximum		
Exposure Year	Exposure Duration (years)	Age	DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)	DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Adult Cancer Risk (per million)	Hazard Index	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2025	0.0524	10	0.71	2025	0.0524	-	-			
1	1	0 - 1	2025	0.0524	10	8.60	2025	0.0524	1	0.15	0.01	0.126	0.16
2	1	1 - 2	2026	0.0356	10	5.84	2026	0.0356	1	0.10	0.01	0.029	0.06
3	1	2 - 3	2027	0.0025	3	0.07	2027	0.0025	1	0.01	0.00	0.000	0.02
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**15.22**				**0.26**			

* Third trimester of pregnancy

Valley Oaks, Novato, CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction Impacts at Off-Site MEI Location - 4.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
							Modeled						
Exposure	Exposure Duration		DPM Conc (ug/m3)		Age Sensitivity	Infant/Child Cancer Risk	DPM Conc (ug/m3)		Age Sensitivity	Adult Cancer Risk	Hazard	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	Index	PM2.5	PM2.5
0	0.25	-0.25 - 0*	2025	0.0277	10	0.38	2025	0.0277	-	-			
1	1	0 - 1	2025	0.0277	10	4.56	2025	0.0277	1	0.08	0.006	0.03	0.05
2	1	1 - 2	2026	0.0219	10	3.60	2026	0.0219	1	0.06	0.004	0.01	0.02
3	1	2 - 3	2027	0.0009	3	0.02	2027	0.0009	1	0.00	0.000	0.00	0.01
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**8.56**				**0.15**			

* Third trimester of pregnancy

Valley Oaks, Novato, CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
							Modeled						
Exposure	Exposure Duration		DPM Conc (ug/m3)		Age Sensitivity	Infant/Child Cancer Risk	DPM Conc (ug/m3)		Age Sensitivity	Adult Cancer Risk	Hazard	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	Index	PM2.5	PM2.5
0	0.25	-0.25 - 0*	2025	0.0175	10	0.24	2025	0.0175	-	-			
1	1	0 - 1	2025	0.0175	10	2.87	2025	0.0175	1	0.05	0.003	0.05	0.06
2	1	1 - 2	2026	0.0141	10	2.31	2026	0.0141	1	0.04	0.003	0.01	0.02
3	1	2 - 3	2027	0.0009	3	0.02	2027	0.0009	1	0.00	0.000	0.00	0.01
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**5.44**				**0.09**			

* Third trimester of pregnancy

Attachment 3: Cumulative Health Risk from Existing TAC Sources

Valley Oaks, Novato, CA - US101 Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction Residential MEI Receptor (1.5 meter receptor height)

Emission Year	2025
Receptor Information	Construction Residential MEI receptor
Number of Receptors	2
Receptor Height	4.5 & 1.5 meters
Receptor Distances	At Construction Residential MEI location
Meteorological Conditions	
BAAQMD Gnoss Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction Residential MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0091	0.2455	0.2194

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.1522	0.1297	0.0225

Valley Oaks, Novato, CA - US101 Traffic Cancer Risk
Impacts at Construction Residential MEI - 4.5 & 1.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-day)[1]
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air (µg/m^3)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors (mg/kg-day)[1]

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Age Sensitivity Factor**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	
0	0.25	-0.25 - 0*	2025	10	0.0091	0.2455	0.2194	0.123	0.019	0.0010	0.14
1	1	0 - 1	2025	10	0.0091	0.2455	0.2194	1.491	0.230	0.0121	1.73
2	1	1 - 2	2026	10	0.0091	0.2455	0.2194	1.491	0.230	0.0121	1.73
3	1	2 - 3	2027	3	0.0091	0.2455	0.2194	0.235	0.036	0.0019	0.27
4	1	3 - 4	2028	3	0.0091	0.2455	0.2194	0.235	0.036	0.0019	0.27
5	1	4 - 5	2029	3	0.0091	0.2455	0.2194	0.235	0.036	0.0019	0.27
6	1	5 - 6	2030	3	0.0091	0.2455	0.2194	0.235	0.036	0.0019	0.27
7	1	6 - 7	2031	3	0.0091	0.2455	0.2194	0.235	0.036	0.0019	0.27
8	1	7 - 8	2032	3	0.0091	0.2455	0.2194	0.235	0.036	0.0019	0.27
9	1	8 - 9	2033	3	0.0091	0.2455	0.2194	0.235	0.036	0.0019	0.27
10	1	9 - 10	2034	3	0.0091	0.2455	0.2194	0.235	0.036	0.0019	0.27
11	1	10 - 11	2035	3	0.0091	0.2455	0.2194	0.235	0.036	0.0019	0.27
12	1	11 - 12	2036	3	0.0091	0.2455	0.2194	0.235	0.036	0.0019	0.27
13	1	12 - 13	2037	3	0.0091	0.2455	0.2194	0.235	0.036	0.0019	0.27
14	1	13 - 14	2038	3	0.0091	0.2455	0.2194	0.235	0.036	0.0019	0.27
15	1	14 - 15	2039	3	0.0091	0.2455	0.2194	0.235	0.036	0.0019	0.27
16	1	15 - 16	2040	3	0.0091	0.2455	0.2194	0.235	0.036	0.0019	0.27
17	1	16-17	2041	1	0.0091	0.2455	0.2194	0.026	0.004	0.0002	0.03
18	1	17-18	2042	1	0.0091	0.2455	0.2194	0.026	0.004	0.0002	0.03
19	1	18-19	2043	1	0.0091	0.2455	0.2194	0.026	0.004	0.0002	0.03
20	1	19-20	2044	1	0.0091	0.2455	0.2194	0.026	0.004	0.0002	0.03
21	1	20-21	2045	1	0.0091	0.2455	0.2194	0.026	0.004	0.0002	0.03
22	1	21-22	2046	1	0.0091	0.2455	0.2194	0.026	0.004	0.0002	0.03
23	1	22-23	2047	1	0.0091	0.2455	0.2194	0.026	0.004	0.0002	0.03
24	1	23-24	2048	1	0.0091	0.2455	0.2194	0.026	0.004	0.0002	0.03
25	1	24-25	2049	1	0.0091	0.2455	0.2194	0.026	0.004	0.0002	0.03
26	1	25-26	2050	1	0.0091	0.2455	0.2194	0.026	0.004	0.0002	0.03
27	1	26-27	2051	1	0.0091	0.2455	0.2194	0.026	0.004	0.0002	0.03
28	1	27-28	2052	1	0.0091	0.2455	0.2194	0.026	0.004	0.0002	0.03
29	1	28-29	2053	1	0.0091	0.2455	0.2194	0.026	0.004	0.0002	0.03
30	1	29-30	2054	1	0.0091	0.2455	0.2194	0.026	0.004	0.0002	0.03
Total Increased Cancer Risk								6.76	1.043	0.055	**7.86**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00182	0.13	0.15

* Third trimester of pregnancy

File Name: Highway 101 2025.EF
EMFAC2021/CT-EMFAC2017
Run Date: 5/4/2023 12:44
Area: Marin (SF)
Analysis Year: 2025
Season: Annual

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Vehicle Category	VMT Fraction Across Category	Diesel VMT Fra Within Categor	Gas VMT Fraction Within Category
Truck 1	0.024	0.514	0.486
Truck 2	0.02	0.876	0.103
Non-Truck	0.956	0.018	0.95

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Road Type:		Freeway	Major/Collecto	Local Urban
Silt Loading Factor:	CARB	0.015 g/m2	0.032 g/m2	0.32 g/m2
Precipitation Correctior	CARB	P = 64 days	N = 365 days	

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Fleet Average Running Exhaust Emission Factors (grams/veh-mile)

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
PM2.5	0.010135	0.006807	0.004725	0.003433	0.002637	0.002130	0.001806	0.001613	0.001522	0.001519	0.001597	0.001753	0.001993	0.009038	0.009038
TOG	0.155013	0.100852	0.067657	0.047795	0.035988	0.028527	0.023702	0.020642	0.018865	0.018117	0.018310	0.019487	0.021836	0.090778	0.090804
Diesel PM	0.001424	0.001172	0.000919	0.000737	0.000626	0.000563	0.000532	0.000527	0.000548	0.000594	0.000667	0.000755	0.000857	0.000866	0.000866

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Fleet Average Running Loss Emission Factors (grams/veh-hour)

Pollutant Name	Emission Factor
TOG	1.267500

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Fleet Average Tire Wear Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.002035

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Fleet Average Brake Wear Factors (grams/veh-mile)

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
PM2.5	0.003832011	0.004383156	0.004928288	0.005465386	0.005726717	0.005783845	0.005788653	0.005284082	0.004238998	0.003206569	0.002555872	0.002249785	0.001943697	0.001943697	0.001943697

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Fleet Average Road Dust Factors (grams/veh-mile)
Road Type: Freeway
Pollutant Name
PM2.5 0.007528

==========END==========

Valley Oaks, Novato, CA - Off-Site Residential
Cumulative Operation - Highway 101
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_NB_101	Highway 101 Northbound	NB	3	938.1	0.58	17.0	55.7	3.4	65	48,410
DPM_SB_101	Highway 101 Southbound	SB	3	981.8	0.61	17.0	55.7	3.4	65	48,410
									Total	96,820

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	65			
Emissions per Vehicle (g/VMT)	0.00086			

2025 Hourly Traffic Volumes and DPM Emissions - DPM_NB_101

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.10%	535	7.42E-05	9	5.36%	2595	3.60E-04	17	6.83%	3306	4.59E-04
2	0.62%	300	4.17E-05	10	5.51%	2668	3.70E-04	18	6.74%	3263	4.53E-04
3	0.46%	224	3.11E-05	11	5.74%	2778	3.85E-04	19	6.06%	2936	4.07E-04
4	0.47%	229	3.18E-05	12	5.92%	2866	3.98E-04	20	5.14%	2488	3.45E-04
5	0.89%	431	5.99E-05	13	6.11%	2957	4.10E-04	21	4.32%	2092	2.90E-04
6	2.02%	977	1.36E-04	14	6.24%	3022	4.19E-04	22	3.74%	1812	2.51E-04
7	3.49%	1688	2.34E-04	15	6.69%	3236	4.49E-04	23	2.91%	1410	1.96E-04
8	4.90%	2373	3.29E-04	16	6.78%	3283	4.56E-04	24	1.93%	936	1.30E-04
								Total		48,410	

2025 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.10%	535	7.76E-05	9	5.36%	2596	3.77E-04	17	6.83%	3306	4.80E-04
2	0.62%	300	4.36E-05	10	5.51%	2668	3.87E-04	18	6.74%	3263	4.74E-04
3	0.46%	224	3.25E-05	11	5.74%	2778	4.03E-04	19	6.06%	2936	4.26E-04
4	0.47%	229	3.33E-05	12	5.92%	2866	4.16E-04	20	5.14%	2488	3.61E-04
5	0.89%	431	6.26E-05	13	6.11%	2957	4.29E-04	21	4.32%	2093	3.04E-04
6	2.02%	977	1.42E-04	14	6.24%	3022	4.39E-04	22	3.74%	1812	2.63E-04
7	3.49%	1688	2.45E-04	15	6.69%	3237	4.70E-04	23	2.91%	1410	2.05E-04
8	4.90%	2373	3.45E-04	16	6.78%	3283	4.77E-04	24	1.93%	936	1.36E-04
								Total		48,410	

Valley Oaks, Novato, CA - Off-Site Residential
Cumulative Operation - Highway 101
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_NB_101	Highway 101 Northbound	NB	3	938.1	0.58	17.0	56	1.3	65	48,410
PM2.5_SB_101	Highway 101 Southbound	SB	3	981.8	0.61	17.0	56	1.3	65	48,410
									Total	96,820

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	65			
Emissions per Vehicle (g/VMT)	0.001993			

2025 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_101

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.10%	535	1.73E-04	9	5.36%	2595	8.38E-04	17	6.83%	3306	1.07E-03
2	0.62%	300	9.70E-05	10	5.51%	2668	8.61E-04	18	6.74%	3263	1.05E-03
3	0.46%	224	7.23E-05	11	5.74%	2778	8.97E-04	19	6.06%	2936	9.48E-04
4	0.47%	229	7.39E-05	12	5.92%	2866	9.25E-04	20	5.14%	2488	8.03E-04
5	0.89%	431	1.39E-04	13	6.11%	2957	9.55E-04	21	4.32%	2092	6.75E-04
6	2.02%	977	3.15E-04	14	6.24%	3022	9.75E-04	22	3.74%	1812	5.85E-04
7	3.49%	1688	5.45E-04	15	6.69%	3236	1.04E-03	23	2.91%	1410	4.55E-04
8	4.90%	2373	7.66E-04	16	6.78%	3283	1.06E-03	24	1.93%	936	3.02E-04
								Total		48,410	

2025 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_SB_101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.10%	535	1.81E-04	9	5.36%	2596	8.77E-04	17	6.83%	3306	1.12E-03
2	0.62%	300	1.01E-04	10	5.51%	2668	9.01E-04	18	6.74%	3263	1.10E-03
3	0.46%	224	7.57E-05	11	5.74%	2778	9.38E-04	19	6.06%	2936	9.92E-04
4	0.47%	229	7.74E-05	12	5.92%	2866	9.68E-04	20	5.14%	2488	8.40E-04
5	0.89%	431	1.46E-04	13	6.11%	2957	9.99E-04	21	4.32%	2093	7.07E-04
6	2.02%	977	3.30E-04	14	6.24%	3022	1.02E-03	22	3.74%	1812	6.12E-04
7	3.49%	1688	5.70E-04	15	6.69%	3237	1.09E-03	23	2.91%	1410	4.76E-04
8	4.90%	2373	8.02E-04	16	6.78%	3283	1.11E-03	24	1.93%	936	3.16E-04
								Total		48,410	

Valley Oaks, Novato, CA - Off-Site Residential
Cumulative Operation - Highway 101
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_NB_101	Highway 101 Northbound	NB	3	938.1	0.58	17.0	56	1.3	65	48,410
TEXH_SB_101	Highway 101 Southbound	SB	3	981.8	0.61	17.0	56	1.3	65	48,410
									Total	96,820

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	65			
Emissions per Vehicle (g/VMT)	0.02184			

2025 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_101

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.10%	535	1.89E-03	9	5.36%	2595	9.18E-03	17	6.83%	3306	1.17E-02
2	0.62%	300	1.06E-03	10	5.51%	2668	9.43E-03	18	6.74%	3263	1.15E-02
3	0.46%	224	7.92E-04	11	5.74%	2778	9.82E-03	19	6.06%	2936	1.04E-02
4	0.47%	229	8.10E-04	12	5.92%	2866	1.01E-02	20	5.14%	2488	8.80E-03
5	0.89%	431	1.52E-03	13	6.11%	2957	1.05E-02	21	4.32%	2092	7.40E-03
6	2.02%	977	3.46E-03	14	6.24%	3022	1.07E-02	22	3.74%	1812	6.41E-03
7	3.49%	1688	5.97E-03	15	6.69%	3236	1.14E-02	23	2.91%	1410	4.99E-03
8	4.90%	2373	8.39E-03	16	6.78%	3283	1.16E-02	24	1.93%	936	3.31E-03
								Total		48,410	

2025 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.10%	535	1.98E-03	9	5.36%	2596	9.60E-03	17	6.83%	3306	1.22E-02
2	0.62%	300	1.11E-03	10	5.51%	2668	9.87E-03	18	6.74%	3263	1.21E-02
3	0.46%	224	8.29E-04	11	5.74%	2778	1.03E-02	19	6.06%	2936	1.09E-02
4	0.47%	229	8.48E-04	12	5.92%	2866	1.06E-02	20	5.14%	2488	9.21E-03
5	0.89%	431	1.60E-03	13	6.11%	2957	1.09E-02	21	4.32%	2093	7.74E-03
6	2.02%	977	3.62E-03	14	6.24%	3022	1.12E-02	22	3.74%	1812	6.71E-03
7	3.49%	1688	6.25E-03	15	6.69%	3237	1.20E-02	23	2.91%	1410	5.22E-03
8	4.90%	2373	8.78E-03	16	6.78%	3283	1.21E-02	24	1.93%	936	3.47E-03
								Total		48,410	

Valley Oaks, Novato, CA - Off-Site Residential
Cumulative Operation - Highway 101
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_NB_101	Highway 101 Northbound	NB	3	938.1	0.58	17.0	56	1.3	65	48,410
TEVAP_SB_101	Highway 101 Southbound	SB	3	981.8	0.61	17.0	56	1.3	65	48,410
									Total	96,820

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	65			
Emissions per Vehicle per Hour (g/hour)	1.26750			
Emissions per Vehicle per Mile (g/VMT)	0.01950			

2025 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_101

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.10%	535	1.69E-03	9	5.36%	2595	8.19E-03	17	6.83%	3306	1.04E-02
2	0.62%	300	9.49E-04	10	5.51%	2668	8.42E-03	18	6.74%	3263	1.03E-02
3	0.46%	224	7.08E-04	11	5.74%	2778	8.77E-03	19	6.06%	2936	9.27E-03
4	0.47%	229	7.23E-04	12	5.92%	2866	9.05E-03	20	5.14%	2488	7.86E-03
5	0.89%	431	1.36E-03	13	6.11%	2957	9.34E-03	21	4.32%	2092	6.61E-03
6	2.02%	977	3.09E-03	14	6.24%	3022	9.54E-03	22	3.74%	1812	5.72E-03
7	3.49%	1688	5.33E-03	15	6.69%	3236	1.02E-02	23	2.91%	1410	4.45E-03
8	4.90%	2373	7.49E-03	16	6.78%	3283	1.04E-02	24	1.93%	936	2.96E-03
								Total		48,410	

2025 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.10%	535	1.77E-03	9	5.36%	2596	8.58E-03	17	6.83%	3306	1.09E-02
2	0.62%	300	9.93E-04	10	5.51%	2668	8.82E-03	18	6.74%	3263	1.08E-02
3	0.46%	224	7.41E-04	11	5.74%	2778	9.18E-03	19	6.06%	2936	9.70E-03
4	0.47%	229	7.57E-04	12	5.92%	2866	9.47E-03	20	5.14%	2488	8.22E-03
5	0.89%	431	1.43E-03	13	6.11%	2957	9.77E-03	21	4.32%	2093	6.91E-03
6	2.02%	977	3.23E-03	14	6.24%	3022	9.99E-03	22	3.74%	1812	5.99E-03
7	3.49%	1688	5.58E-03	15	6.69%	3237	1.07E-02	23	2.91%	1410	4.66E-03
8	4.90%	2373	7.84E-03	16	6.78%	3283	1.08E-02	24	1.93%	936	3.09E-03
								Total		48,410	

Valley Oaks, Novato, CA - Off-Site Residential
Cumulative Operation - Highway 101
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_NB_101	Highway 101 Northbound	NB	3	938.1	0.58	17.0	56	1.3	65	48,410
FUG_SB_101	Highway 101 Southbound	SB	3	981.8	0.61	17.0	56	1.3	65	48,410
									Total	96,820

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	65			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00203			
Brake Wear - Emissions per Vehicle (g/VMT)	0.00194			
Road Dust - Emissions per Vehicle (g/VMT)	0.00753			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.01151			

2025 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_101

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.10%	535	9.96E-04	9	5.36%	2595	4.84E-03	17	6.83%	3306	6.16E-03
2	0.62%	300	5.60E-04	10	5.51%	2668	4.97E-03	18	6.74%	3263	6.08E-03
3	0.46%	224	4.18E-04	11	5.74%	2778	5.18E-03	19	6.06%	2936	5.47E-03
4	0.47%	229	4.27E-04	12	5.92%	2866	5.34E-03	20	5.14%	2488	4.64E-03
5	0.89%	431	8.04E-04	13	6.11%	2957	5.51E-03	21	4.32%	2092	3.90E-03
6	2.02%	977	1.82E-03	14	6.24%	3022	5.63E-03	22	3.74%	1812	3.38E-03
7	3.49%	1688	3.15E-03	15	6.69%	3236	6.03E-03	23	2.91%	1410	2.63E-03
8	4.90%	2373	4.42E-03	16	6.78%	3283	6.12E-03	24	1.93%	936	1.74E-03
								Total		48,410	

2025 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.10%	535	1.04E-03	9	5.36%	2596	5.06E-03	17	6.83%	3306	6.45E-03
2	0.62%	300	5.86E-04	10	5.51%	2668	5.20E-03	18	6.74%	3263	6.36E-03
3	0.46%	224	4.37E-04	11	5.74%	2778	5.42E-03	19	6.06%	2936	5.73E-03
4	0.47%	229	4.47E-04	12	5.92%	2866	5.59E-03	20	5.14%	2488	4.85E-03
5	0.89%	431	8.41E-04	13	6.11%	2957	5.77E-03	21	4.32%	2093	4.08E-03
6	2.02%	977	1.91E-03	14	6.24%	3022	5.89E-03	22	3.74%	1812	3.53E-03
7	3.49%	1688	3.29E-03	15	6.69%	3237	6.31E-03	23	2.91%	1410	2.75E-03
8	4.90%	2373	4.63E-03	16	6.78%	3283	6.40E-03	24	1.93%	936	1.83E-03
								Total		48,410	

Valley Oaks, Novato, CA - US101 Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at OnSite MEI Receptor (1.5 meter receptor height)

Emission Year	2028
Receptor Information	Onsite MEI receptor
Number of Receptors	127
Receptor Height	1.5 meters
Receptor Distances	At Construction Residential MEI location
Meteorological Conditions	
BAAQMD Gnoss Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction Residential MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0090	0.2141	0.2277

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.1648	0.1432	0.0216

Valley Oaks, Novato, CA - US101 Traffic Cancer Risk
Impacts at Onsite MEI - 1.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-day)[1]
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air (µg/m^3)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors (mg/kg-day)[1]

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Age Sensitivity Factor**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	
0	0.25	-0.25 - 0*	2028	10	0.0090	0.2141	0.2277	0.122	0.017	0.0010	0.14
1	1	0 - 1	2028	10	0.0090	0.2141	0.2277	1.478	0.201	0.0126	1.69
2	1	1 - 2	2029	10	0.0090	0.2141	0.2277	1.478	0.201	0.0126	1.69
3	1	2 - 3	2030	3	0.0090	0.2141	0.2277	0.233	0.032	0.0020	0.27
4	1	3 - 4	2031	3	0.0090	0.2141	0.2277	0.233	0.032	0.0020	0.27
5	1	4 - 5	2032	3	0.0090	0.2141	0.2277	0.233	0.032	0.0020	0.27
6	1	5 - 6	2033	3	0.0090	0.2141	0.2277	0.233	0.032	0.0020	0.27
7	1	6 - 7	2034	3	0.0090	0.2141	0.2277	0.233	0.032	0.0020	0.27
8	1	7 - 8	2035	3	0.0090	0.2141	0.2277	0.233	0.032	0.0020	0.27
9	1	8 - 9	2036	3	0.0090	0.2141	0.2277	0.233	0.032	0.0020	0.27
10	1	9 - 10	2037	3	0.0090	0.2141	0.2277	0.233	0.032	0.0020	0.27
11	1	10 - 11	2038	3	0.0090	0.2141	0.2277	0.233	0.032	0.0020	0.27
12	1	11 - 12	2039	3	0.0090	0.2141	0.2277	0.233	0.032	0.0020	0.27
13	1	12 - 13	2040	3	0.0090	0.2141	0.2277	0.233	0.032	0.0020	0.27
14	1	13 - 14	2041	3	0.0090	0.2141	0.2277	0.233	0.032	0.0020	0.27
15	1	14 - 15	2042	3	0.0090	0.2141	0.2277	0.233	0.032	0.0020	0.27
16	1	15 - 16	2043	3	0.0090	0.2141	0.2277	0.233	0.032	0.0020	0.27
17	1	16-17	2044	1	0.0090	0.2141	0.2277	0.026	0.004	0.0002	0.03
18	1	17-18	2045	1	0.0090	0.2141	0.2277	0.026	0.004	0.0002	0.03
19	1	18-19	2046	1	0.0090	0.2141	0.2277	0.026	0.004	0.0002	0.03
20	1	19-20	2047	1	0.0090	0.2141	0.2277	0.026	0.004	0.0002	0.03
21	1	20-21	2048	1	0.0090	0.2141	0.2277	0.026	0.004	0.0002	0.03
22	1	21-22	2049	1	0.0090	0.2141	0.2277	0.026	0.004	0.0002	0.03
23	1	22-23	2050	1	0.0090	0.2141	0.2277	0.026	0.004	0.0002	0.03
24	1	23-24	2051	1	0.0090	0.2141	0.2277	0.026	0.004	0.0002	0.03
25	1	24-25	2052	1	0.0090	0.2141	0.2277	0.026	0.004	0.0002	0.03
26	1	25-26	2053	1	0.0090	0.2141	0.2277	0.026	0.004	0.0002	0.03
27	1	26-27	2054	1	0.0090	0.2141	0.2277	0.026	0.004	0.0002	0.03
28	1	27-28	2055	1	0.0090	0.2141	0.2277	0.026	0.004	0.0002	0.03
29	1	28-29	2056	1	0.0090	0.2141	0.2277	0.026	0.004	0.0002	0.03
30	1	29-30	2057	1	0.0090	0.2141	0.2277	0.026	0.004	0.0002	0.03
Total Increased Cancer Risk								6.70	0.910	0.057	**7.67**

Maximum Hazard Index	**Maximum Fugitive PM2.5**	**Total PM2.5**
0.00180	0.14	0.16

* Third trimester of pregnancy

Valley Oaks, Novato, CA - US101 Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at OnSite MEI Receptor (4.5 meter receptor height)

Emission Year	2028
Receptor Information	Onsite MEI receptor
Number of Receptors	40
Receptor Height	4.5 meters
Receptor Distances	At Construction Residential MEI location
Meteorological Conditions	
BAAQMD Gnoss Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction Residential MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0083	0.1945	0.2069

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.1498	0.1301	0.0197

Valley Oaks, Novato, CA - US101 Traffic Cancer Risk
Impacts at Onsite MEI - 4.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-day)[1]
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air (µg/m^3)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors (mg/kg-day)[1]

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Age Sensitivity Factor**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	
0	0.25	-0.25 - 0*	2028	10	0.0083	0.1945	0.2069	0.112	0.015	0.0009	0.13
1	1	0 - 1	2028	10	0.0083	0.1945	0.2069	1.358	0.182	0.0114	1.55
2	1	1 - 2	2029	10	0.0083	0.1945	0.2069	1.358	0.182	0.0114	1.55
3	1	2 - 3	2030	3	0.0083	0.1945	0.2069	0.214	0.029	0.0018	0.24
4	1	3 - 4	2031	3	0.0083	0.1945	0.2069	0.214	0.029	0.0018	0.24
5	1	4 - 5	2032	3	0.0083	0.1945	0.2069	0.214	0.029	0.0018	0.24
6	1	5 - 6	2033	3	0.0083	0.1945	0.2069	0.214	0.029	0.0018	0.24
7	1	6 - 7	2034	3	0.0083	0.1945	0.2069	0.214	0.029	0.0018	0.24
8	1	7 - 8	2035	3	0.0083	0.1945	0.2069	0.214	0.029	0.0018	0.24
9	1	8 - 9	2036	3	0.0083	0.1945	0.2069	0.214	0.029	0.0018	0.24
10	1	9 - 10	2037	3	0.0083	0.1945	0.2069	0.214	0.029	0.0018	0.24
11	1	10 - 11	2038	3	0.0083	0.1945	0.2069	0.214	0.029	0.0018	0.24
12	1	11 - 12	2039	3	0.0083	0.1945	0.2069	0.214	0.029	0.0018	0.24
13	1	12 - 13	2040	3	0.0083	0.1945	0.2069	0.214	0.029	0.0018	0.24
14	1	13 - 14	2041	3	0.0083	0.1945	0.2069	0.214	0.029	0.0018	0.24
15	1	14 - 15	2042	3	0.0083	0.1945	0.2069	0.214	0.029	0.0018	0.24
16	1	15 - 16	2043	3	0.0083	0.1945	0.2069	0.214	0.029	0.0018	0.24
17	1	16-17	2044	1	0.0083	0.1945	0.2069	0.024	0.003	0.0002	0.03
18	1	17-18	2045	1	0.0083	0.1945	0.2069	0.024	0.003	0.0002	0.03
19	1	18-19	2046	1	0.0083	0.1945	0.2069	0.024	0.003	0.0002	0.03
20	1	19-20	2047	1	0.0083	0.1945	0.2069	0.024	0.003	0.0002	0.03
21	1	20-21	2048	1	0.0083	0.1945	0.2069	0.024	0.003	0.0002	0.03
22	1	21-22	2049	1	0.0083	0.1945	0.2069	0.024	0.003	0.0002	0.03
23	1	22-23	2050	1	0.0083	0.1945	0.2069	0.024	0.003	0.0002	0.03
24	1	23-24	2051	1	0.0083	0.1945	0.2069	0.024	0.003	0.0002	0.03
25	1	24-25	2052	1	0.0083	0.1945	0.2069	0.024	0.003	0.0002	0.03
26	1	25-26	2053	1	0.0083	0.1945	0.2069	0.024	0.003	0.0002	0.03
27	1	26-27	2054	1	0.0083	0.1945	0.2069	0.024	0.003	0.0002	0.03
28	1	27-28	2055	1	0.0083	0.1945	0.2069	0.024	0.003	0.0002	0.03
29	1	28-29	2056	1	0.0083	0.1945	0.2069	0.024	0.003	0.0002	0.03
30	1	29-30	2057	1	0.0083	0.1945	0.2069	0.024	0.003	0.0002	0.03
Total Increased Cancer Risk								6.16	0.827	0.052	**7.03**

Maximum Hazard Index	**Maximum Fugitive PM2.5**	**Total PM2.5**
0.00165	0.13	0.15

* Third trimester of pregnancy

File Name: Highway 101 2028.EF
EMFAC2021/CT-EMFAC2017
Run Date: 5/4/2023 12:44
Area: Marin (SF)
Analysis Year: 2028
Season: Annual

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Vehicle Category	VMT Fraction Across Category	Diesel VMT Fra Within Categor	Gas VMT Fraction Within Category
Truck 1	0.024	0.526	0.474
Truck 2	0.02	0.876	0.103
Non-Truck	0.956	0.017	0.943

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Road Type:		Freeway	Major/Collecto	Local Urban
Silt Loading Factor:	CARB	0.015 g/m2	0.032 g/m2	0.32 g/m2
Precipitation Correctior	CARB	P = 64 days	N = 365 days	

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Fleet Average Running Exhaust Emission Factors (grams/veh-mile)

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
PM2.5	0.008536	0.005723	0.003977	0.002897	0.002227	0.001800	0.001530	0.001372	0.001302	0.001306	0.001380	0.001522	0.001737	0.009038	0.009038
TOG	0.123988	0.080571	0.053893	0.037991	0.028589	0.022655	0.018812	0.016368	0.014936	0.014318	0.014442	0.015344	0.017172	0.090778	0.090804
Diesel PM	0.001085	0.000920	0.000735	0.000598	0.000515	0.000469	0.000449	0.000452	0.000478	0.000524	0.000593	0.000679	0.000779	0.000787	0.000787

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Fleet Average Running Loss Emission Factors (grams/veh-hour)

Pollutant Name	Emission Factor
TOG	1.188267

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Fleet Average Tire Wear Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.002021

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Fleet Average Brake Wear Factors (grams/veh-mile)

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
PM2.5	0.003837711	0.00438618	0.004928427	0.005462467	0.005720555	0.005774132	0.005773046	0.005268694	0.004229269	0.003203047	0.002557	0.002252685	0.00194837	0.00194837	0.00194837

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Fleet Average Road Dust Factors (grams/veh-mile)
Road Type: Freeway

Pollutant Name	
PM2.5	0.007521

==========END==========

Valley Oaks, Novato, CA - Off-Site Residential
Cumulative Operation - Highway 101
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2028

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_NB_101	Highway 101 Northbound	NB	3	938.1	0.58	17.0	55.7	3.4	65	50,290
DPM_SB_101	Highway 101 Southbound	SB	3	981.8	0.61	17.0	55.7	3.4	65	50,290
									Total	100,580

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	65			
Emissions per Vehicle (g/VMT)	0.00078			

2028 Hourly Traffic Volumes and DPM Emissions - DPM_NB_101

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.10%	555	7.00E-05	9	5.36%	2696	3.40E-04	17	6.83%	3435	4.33E-04
2	0.62%	312	3.93E-05	10	5.51%	2772	3.49E-04	18	6.74%	3390	4.27E-04
3	0.46%	233	2.93E-05	11	5.74%	2886	3.64E-04	19	6.06%	3050	3.85E-04
4	0.47%	238	3.00E-05	12	5.92%	2978	3.75E-04	20	5.14%	2585	3.26E-04
5	0.89%	448	5.65E-05	13	6.11%	3072	3.87E-04	21	4.32%	2174	2.74E-04
6	2.02%	1015	1.28E-04	14	6.24%	3139	3.96E-04	22	3.74%	1883	2.37E-04
7	3.49%	1754	2.21E-04	15	6.69%	3362	4.24E-04	23	2.91%	1465	1.85E-04
8	4.90%	2466	3.11E-04	16	6.78%	3411	4.30E-04	24	1.93%	973	1.23E-04
								Total		50,290	

2028 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.10%	555	7.33E-05	9	5.36%	2696	3.56E-04	17	6.83%	3435	4.53E-04
2	0.62%	312	4.12E-05	10	5.51%	2772	3.66E-04	18	6.74%	3390	4.47E-04
3	0.46%	233	3.07E-05	11	5.74%	2886	3.81E-04	19	6.06%	3050	4.02E-04
4	0.47%	238	3.14E-05	12	5.92%	2978	3.93E-04	20	5.14%	2585	3.41E-04
5	0.89%	448	5.91E-05	13	6.11%	3072	4.05E-04	21	4.32%	2174	2.87E-04
6	2.02%	1015	1.34E-04	14	6.24%	3139	4.14E-04	22	3.74%	1883	2.48E-04
7	3.49%	1754	2.31E-04	15	6.69%	3362	4.44E-04	23	2.91%	1465	1.93E-04
8	4.90%	2465	3.25E-04	16	6.78%	3411	4.50E-04	24	1.93%	973	1.28E-04
								Total		50,290	

Valley Oaks, Novato, CA - Off-Site Residential
Cumulative Operation - Highway 101
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2028

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_NB_101	Highway 101 Northbound	NB	3	938.1	0.58	17.0	56	1.3	65	50,290
PM2.5_SB_101	Highway 101 Southbound	SB	3	981.8	0.61	17.0	56	1.3	65	50,290
									Total	100,580

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	65			
Emissions per Vehicle (g/VMT)	0.001737			

2028 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_101

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.10%	555	1.56E-04	9	5.36%	2696	7.58E-04	17	6.83%	3435	9.66E-04
2	0.62%	312	8.78E-05	10	5.51%	2772	7.80E-04	18	6.74%	3390	9.53E-04
3	0.46%	233	6.55E-05	11	5.74%	2886	8.12E-04	19	6.06%	3050	8.58E-04
4	0.47%	238	6.69E-05	12	5.92%	2978	8.37E-04	20	5.14%	2585	7.27E-04
5	0.89%	448	1.26E-04	13	6.11%	3072	8.64E-04	21	4.32%	2174	6.11E-04
6	2.02%	1015	2.86E-04	14	6.24%	3139	8.83E-04	22	3.74%	1883	5.30E-04
7	3.49%	1754	4.93E-04	15	6.69%	3362	9.46E-04	23	2.91%	1465	4.12E-04
8	4.90%	2466	6.93E-04	16	6.78%	3411	9.59E-04	24	1.93%	973	2.74E-04
								Total		50,290	

2028 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_SB_101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.10%	555	1.63E-04	9	5.36%	2696	7.94E-04	17	6.83%	3435	1.01E-03
2	0.62%	312	9.19E-05	10	5.51%	2772	8.16E-04	18	6.74%	3390	9.98E-04
3	0.46%	233	6.85E-05	11	5.74%	2886	8.49E-04	19	6.06%	3050	8.98E-04
4	0.47%	238	7.00E-05	12	5.92%	2978	8.76E-04	20	5.14%	2585	7.61E-04
5	0.89%	448	1.32E-04	13	6.11%	3072	9.04E-04	21	4.32%	2174	6.40E-04
6	2.02%	1015	2.99E-04	14	6.24%	3139	9.24E-04	22	3.74%	1883	5.54E-04
7	3.49%	1754	5.16E-04	15	6.69%	3362	9.90E-04	23	2.91%	1465	4.31E-04
8	4.90%	2466	7.26E-04	16	6.78%	3411	1.00E-03	24	1.93%	973	2.86E-04
								Total		50,290	

Valley Oaks, Novato, CA - Off-Site Residential
Cumulative Operation - Highway 101
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2028

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_NB_101	Highway 101 Northbound	NB	3	938.1	0.58	17.0	56	1.3	65	50,290
TEXH_SB_101	Highway 101 Southbound	SB	3	981.8	0.61	17.0	56	1.3	65	50,290
									Total	100,580

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	65			
Emissions per Vehicle (g/VMT)	0.01717			

2028 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_101

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.10%	555	1.54E-03	9	5.36%	2696	7.50E-03	17	6.83%	3435	9.55E-03
2	0.62%	312	8.68E-04	10	5.51%	2772	7.71E-03	18	6.74%	3390	9.42E-03
3	0.46%	233	6.47E-04	11	5.74%	2886	8.02E-03	19	6.06%	3050	8.48E-03
4	0.47%	238	6.62E-04	12	5.92%	2978	8.28E-03	20	5.14%	2585	7.19E-03
5	0.89%	448	1.25E-03	13	6.11%	3072	8.54E-03	21	4.32%	2174	6.04E-03
6	2.02%	1015	2.82E-03	14	6.24%	3139	8.73E-03	22	3.74%	1883	5.23E-03
7	3.49%	1754	4.88E-03	15	6.69%	3362	9.35E-03	23	2.91%	1465	4.07E-03
8	4.90%	2466	6.86E-03	16	6.78%	3411	9.48E-03	24	1.93%	973	2.70E-03
								Total		50,290	

2028 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.10%	555	1.62E-03	9	5.36%	2696	7.85E-03	17	6.83%	3435	1.00E-02
2	0.62%	312	9.08E-04	10	5.51%	2772	8.07E-03	18	6.74%	3390	9.86E-03
3	0.46%	233	6.77E-04	11	5.74%	2886	8.40E-03	19	6.06%	3050	8.88E-03
4	0.47%	238	6.93E-04	12	5.92%	2978	8.67E-03	20	5.14%	2585	7.52E-03
5	0.89%	448	1.30E-03	13	6.11%	3072	8.94E-03	21	4.32%	2174	6.33E-03
6	2.02%	1015	2.95E-03	14	6.24%	3139	9.13E-03	22	3.74%	1883	5.48E-03
7	3.49%	1754	5.10E-03	15	6.69%	3362	9.78E-03	23	2.91%	1465	4.26E-03
8	4.90%	2466	7.18E-03	16	6.78%	3411	9.93E-03	24	1.93%	973	2.83E-03
								Total		50,290	

Valley Oaks, Novato, CA - Off-Site Residential
Cumulative Operation - Highway 101
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2028

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_NB_101	Highway 101 Northbound	NB	3	938.1	0.58	17.0	56	1.3	65	50,290
TEVAP_SB_101	Highway 101 Southbound	SB	3	981.8	0.61	17.0	56	1.3	65	50,290
									Total	100,580

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	65			
Emissions per Vehicle per Hour (g/hour)	1.18827			
Emissions per Vehicle per Mile (g/VMT)	0.01828			

2028 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_101

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.10%	555	1.64E-03	9	5.36%	2696	7.98E-03	17	6.83%	3435	1.02E-02
2	0.62%	312	9.24E-04	10	5.51%	2772	8.20E-03	18	6.74%	3390	1.00E-02
3	0.46%	233	6.89E-04	11	5.74%	2886	8.54E-03	19	6.06%	3050	9.03E-03
4	0.47%	238	7.04E-04	12	5.92%	2978	8.81E-03	20	5.14%	2585	7.65E-03
5	0.89%	448	1.33E-03	13	6.11%	3072	9.09E-03	21	4.32%	2174	6.43E-03
6	2.02%	1015	3.01E-03	14	6.24%	3139	9.29E-03	22	3.74%	1883	5.57E-03
7	3.49%	1754	5.19E-03	15	6.69%	3362	9.95E-03	23	2.91%	1465	4.34E-03
8	4.90%	2466	7.30E-03	16	6.78%	3411	1.01E-02	24	1.93%	973	2.88E-03
								Total		50,290	

2028 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.10%	555	1.72E-03	9	5.36%	2696	8.35E-03	17	6.83%	3435	1.06E-02
2	0.62%	312	9.67E-04	10	5.51%	2772	8.59E-03	18	6.74%	3390	1.05E-02
3	0.46%	233	7.21E-04	11	5.74%	2886	8.94E-03	19	6.06%	3050	9.45E-03
4	0.47%	238	7.37E-04	12	5.92%	2978	9.22E-03	20	5.14%	2585	8.01E-03
5	0.89%	448	1.39E-03	13	6.11%	3072	9.52E-03	21	4.32%	2174	6.73E-03
6	2.02%	1015	3.15E-03	14	6.24%	3139	9.72E-03	22	3.74%	1883	5.83E-03
7	3.49%	1754	5.43E-03	15	6.69%	3362	1.04E-02	23	2.91%	1465	4.54E-03
8	4.90%	2466	7.64E-03	16	6.78%	3411	1.06E-02	24	1.93%	973	3.01E-03
								Total		50,290	

Valley Oaks, Novato, CA - Off-Site Residential
Cumulative Operation - Highway 101
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2028

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_NB_101	Highway 101 Northbound	NB	3	938.1	0.58	17.0	56	1.3	65	50,290
FUG_SB_101	Highway 101 Southbound	SB	3	981.8	0.61	17.0	56	1.3	65	50,290
									Total	100,580

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	65			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00202			
Brake Wear - Emissions per Vehicle (g/VMT)	0.00195			
Road Dust - Emissions per Vehicle (g/VMT)	0.00752			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.01149			

2028 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_101

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.10%	555	1.03E-03	9	5.36%	2696	5.02E-03	17	6.83%	3435	6.39E-03
2	0.62%	312	5.81E-04	10	5.51%	2772	5.16E-03	18	6.74%	3390	6.31E-03
3	0.46%	233	4.33E-04	11	5.74%	2886	5.37E-03	19	6.06%	3050	5.67E-03
4	0.47%	238	4.43E-04	12	5.92%	2978	5.54E-03	20	5.14%	2585	4.81E-03
5	0.89%	448	8.34E-04	13	6.11%	3072	5.72E-03	21	4.32%	2174	4.04E-03
6	2.02%	1015	1.89E-03	14	6.24%	3139	5.84E-03	22	3.74%	1883	3.50E-03
7	3.49%	1754	3.26E-03	15	6.69%	3362	6.26E-03	23	2.91%	1465	2.73E-03
8	4.90%	2466	4.59E-03	16	6.78%	3411	6.35E-03	24	1.93%	973	1.81E-03
								Total		50,290	

2028 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.10%	555	1.08E-03	9	5.36%	2696	5.25E-03	17	6.83%	3435	6.69E-03
2	0.62%	312	6.08E-04	10	5.51%	2772	5.40E-03	18	6.74%	3390	6.60E-03
3	0.46%	233	4.53E-04	11	5.74%	2886	5.62E-03	19	6.06%	3050	5.94E-03
4	0.47%	238	4.63E-04	12	5.92%	2978	5.80E-03	20	5.14%	2585	5.03E-03
5	0.89%	448	8.73E-04	13	6.11%	3072	5.98E-03	21	4.32%	2174	4.23E-03
6	2.02%	1015	1.98E-03	14	6.24%	3139	6.11E-03	22	3.74%	1883	3.67E-03
7	3.49%	1754	3.41E-03	15	6.69%	3362	6.55E-03	23	2.91%	1465	2.85E-03
8	4.90%	2466	4.80E-03	16	6.78%	3411	6.64E-03	24	1.93%	973	1.89E-03
								Total		50,290	

Bay Area Air Quality Management District

Risk & Hazard Stationary Source Inquiry Form

This form is required when users request stationary source data from BAAQMD

This form is to be used with the BAAQMD's Google Earth stationary source screening tables.

Click here for guidance on coducting risk & hazard screening, including roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart.

Click here for District's Recommended Methods for Screening and Modeling Local Risks and Hazards document.

Table A: Requester Contact Information

Date of Request	**4/27/2023**
Contact Name	Jordyn Bauer
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x103
Email	jbauer@illingworthrodkin.com
Project Name	Valley Oaks
Address	
City	Novato
County	Marin
Type (residential, commercial, mixed use, industrial, etc.)	Residential
Project Size (# of units or building square feet)	

Comments:

For Air District assistance, the following steps must be completed:

1. Complete all the contact and project information requested in Table A. Incomplete forms will not be processed. Please include a project site map.

2. Download and install the free program Google Earth, **http://www.google.com/earth/download/ge/,** and then download the county specific Google Earth stationary source application files from the District's website, **http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.** The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.

3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.

4. Identify stationary sources within at least a 1000ft radius of project site. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.

5. List the stationary source information in Table B section only.

6. Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name (Map B on right). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.

7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

Note that a public records request received for the same stationary source information will cancel the processing of your SSIF request.

Submit forms, maps, and questions to Matthew Hanson at 415-749-8733, or mhanson@baaqmd.gov

Table B: Google Earth data

Distance from Receptor (feet) or MEI[1]	Plant No.	Facility Name	Address	Cancer Risk[2]	Hazard Risk[2]	$PM_{2.5}$[2]	Source No.[3]	Type of Source[4]	Fuel Code[5]	Status/Comments
1000	21894	100 Wood Hollow Drive Owner L	100 Wood Hollow	7.063	0.002	0.009		Generator		2021 Dataset

Project MEI

Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
0.04	0.28	0.00008	0.0004

Project Site @ Valley Oaks South

Distance from Receptor (feet) or MEI[1]	FACID (Plant No.)	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
730	21894	0.07	0.49	0.0001	0.0006

Project Site @ Valley Oaks North Areas 1 & 2

Distance from Receptor (feet) or MEI[1]	FACID (Plant No.)	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
1000+	21894	0.04	0.28	0.0001	0.0004

Footnotes:

1. Maximally exposed individual

2. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.
3. Each plant may have multiple permits and sources.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. Fuel codes: 98 = diesel, 189 = Natural Gas.
6. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.

8. Engineer who completed the HRSA. For District purposes only.
9. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
10. The HRSA "Chronic Health" number represents the Hazard Index.
11. Further information about common sources:
    a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
    b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard index of 0.003 or less. To be
    c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010.
    Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
    d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period, but instead should reflect the number
    e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.
    f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
    g. This spray booth is considered to be insignificant.

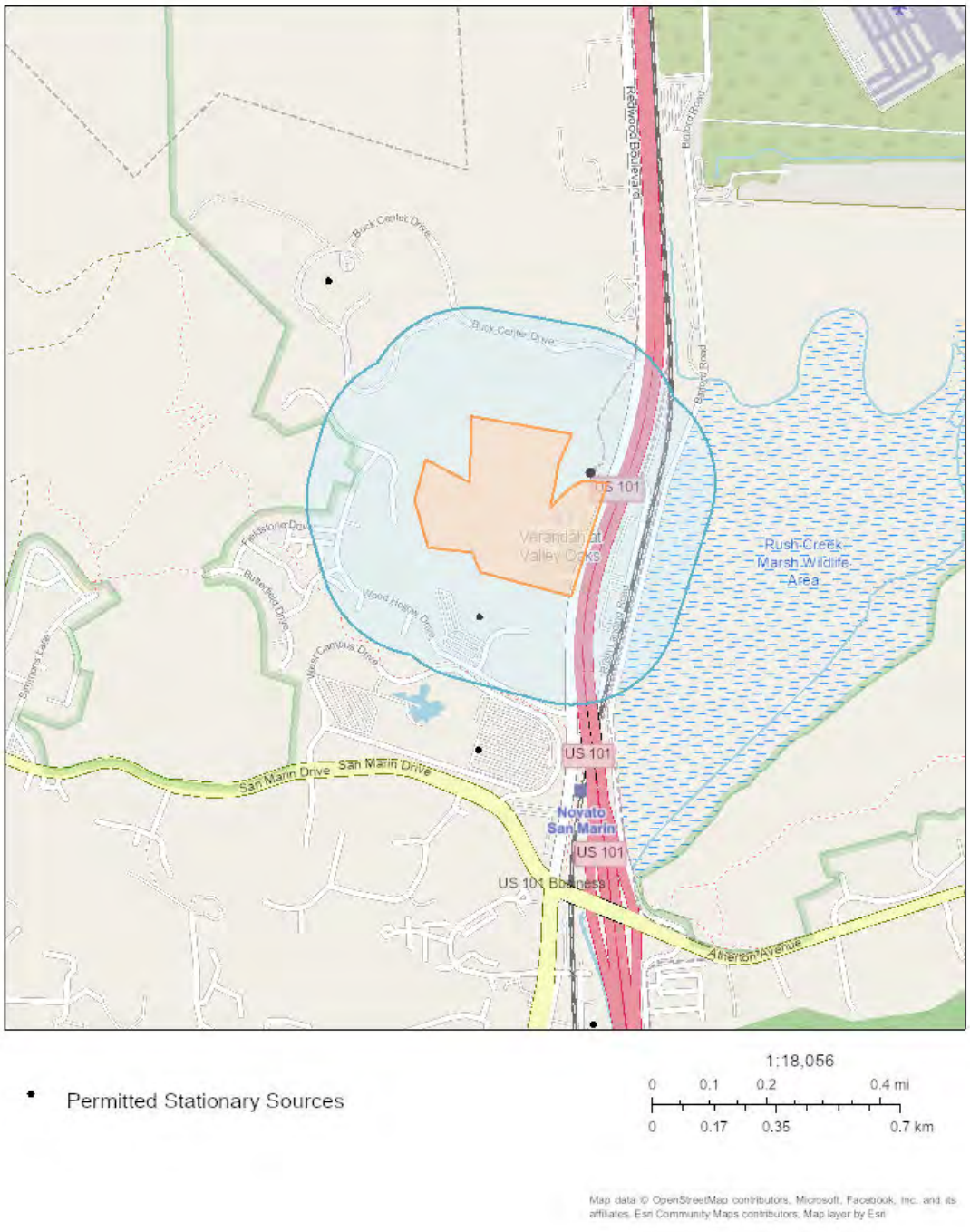
Date last updated:
03/13/2018

Screening Report

Area of Interest (AOI) Information

Area : 10,635,517.32 ft²

Apr 27 2023 15:37:39 Pacific Daylight Time



Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Stationary Sources	1	N/A	N/A

Permitted Stationary Sources

#	Facility_I	Facility_N	Address	City	State
1	21894	100 Wood Hollow Drive Owner LLC	100 Wood Hollow	Novato	CA

#	Zip	County	Latitude	Longitude	Details
1	94945	Marin	38.125145	-122.569392	Generator

#	NAICS	NAICS_Sect	NAICS_Subs	NAICS_Indu	Cancer_Ris
1	531120	Real Estate and Rental and Leasing	Real Estate	Lessors of Nonresidential Buildings (except Miniwarehouses)	7.063000

#	Chronic_Ha	PM25	Count
1	0.002000	0.009000	1

NOTE: A larger buffer than 1000 feet may be warranted depending on proximity to significant sources.

BIOLOGICAL RESOURCES ANALYSIS
VALLEY OAKS PROJECT SITE
CITY OF NOVATO, CALIFORNIA

Revised May 19, 2023

Prepared for

Campus Property Group, LLC.
PO Box 1613
Glen Ellen, California 95442
Attention: Mr. Michael Hooper

Prepared by

Monk & Associates, Inc.
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
Contact : Ms. Sarah Lynch

TABLE OF CONTENTS

1. INTRODUCTION 1
2. PROPERTY LOCATION AND SETTING 1
3. PROPOSED PROJECT 2
4. ANALYSIS METHODS 2
5. RESULTS OF RESEARCH AND PROJECT SITE ANALYSES 3
5.1 Topography 3
5.1.1 The WCJA Property 3
5.1.2 The Former Lands of Wright property 3
5.2 Soils 3
5.3 Hydrology 4
5.3.1 The WCJA property 4
5.3.2 The Former Lands of Wright Property 4
5.4 Plant Communities and Associated Wildlife Habitats 4
5.4.1 Non-native annual grassland -WCJA Property 5
5.4.2 Oak Woodland-WCJA property 6
5.4.3 Drainage - WCJA Property 7
5.4.4 Ruderal Herbaceous Vegetation with Valley Oaks - Former Lands of Wright Property 7
5.4.5 Seasonal Wetlands - WCJA Property and Former Lands of Wright 8
5.5 Wildlife Corridors 8
6. PROJECT SITE BIOLOGICAL RESOURCES REVIEW AND PERMITTING HISTORY 9
6.1 Federally Listed Species 9
6.2 U.S. Army Corps of Engineers (Corps) Jurisdictional Areas 10
7. SPECIAL-STATUS SPECIES DEFINITION 10
7.1 Definitions 10
7.2 Potential Special-Status Plants on the Project Site 13
7.3 Potential Special-Status Animals on the Project Site 14
7.3.1 Pallid Bat 14
7.3.2 Townsend's Big-eared Bat 14
7.3.3 White-tailed Kite 15
7.3.4 California Red-legged frog 15
7.3.5 Myrtle's silverspot butterfly 16
8. REGULATORY FRAMEWORK FOR NATIVE WILDLIFE, FISH, AND PLANTS 17
8.1 Federal Endangered Species Act 17
8.1.1 Responsible Agency 19
8.1.2 Applicability to the proposed project 19
8.2 Federal Migratory Bird Treaty Act 19
8.2.1 Applicability to The Proposed Project 20
8.3 California Endangered Species Act 20
8.3.1 Section 2081 of the California Endangered Species Act 20
8.3.2 Applicability to The Proposed Project 21
8.4 California Fish and Game Code § 3503, 3503.5, 3511, and 3513 22
8.4.1 Applicability to the Proposed Project 22

9. LOCAL ORDINANCES AND REGULATIONS....22
9.1 Heritage Tree Ordinance....22
9.1.1 APPLICABILITY TO THE PROPOSED PROJECT....22
9.2 City of Novato Zoning Code 19.36 Wetland Protection and Restoration....23
9.2.1 19.36.010 PURPOSE OF DIVISION....23
9.2.2 19.36.020 APPLICABILITY....23
9.2.3 19.36.030 GENERAL WETLAND PRESERVATION AND ENHANCEMENT STANDARDS....23
9.2.4 19.36.040 PERMIT REQUIREMENTS....24
9.2.5 19.36.050 APPLICATION REQUIREMENTS- WETLAND MANAGEMENT PLAN.....24
9.2.6 19.36.060 LIMITATIONS ON LAND USE WITHIN WETLAND AREAS....25
9.2.7 19.36.070 DEVELOPMENT STANDARDS AND DESIGN CRITERIA.....25
10. CITY OF NOVATO GENERAL PLAN-ENVIRONMENTAL STEWARDSHIP CHAPTER (ES)....28
10.1 Goal ES 1: Preserve, enhance and restore natural areas and features, including Novato's scenic hillsides, waterways, riparian corridors, wetlands, baylands, and species status species. 28
10.1.1 ES 1: ECOLOGY OF CREEKS AND STREAMS....28
10.1.2 ES 2: WATERSHED MANAGEMENT....28
10.1.3 ES 3: WILDLIFE HABITAT....29
10.1.4 ES 4: HABITAT RESTORATION....29
10.1.5 ES 5: PUBLIC ACCESS TO WATERCOURSES....30
10.1.6 ES 6: WETLANDS ECOLOGY....30
10.1.7 ES 10: WATER QUALITY....30
10.1.8 ES 11: SPECIES DIVERSITY AND HABITAT....30
10.1.9 ES 12: VIEWS....31
10.1.10 ES 15: SCENIC RESOURCES....31
10.2 Goal ES 4: Protect trees and woodlands that provide ecological, economic and aesthetic benefits for Novato.....31
10.2.1 ES 20: NATIVE WOODLANDS....31
10.2.2 ES 22: TREES ON PRIVATE PROPERTY....32
10.2.3 ES 23: TREES IN NEW DEVELOPMENT....32
11. REGULATORY REQUIREMENTS PERTAINING TO WATERS OF THE UNITED STATES AND STATE....32
11.1 U.S. Army Corps of Engineers Jurisdiction and General Permitting....32
11.1.1 PERMITTING CORPS JURISDICTIONAL AREAS....35
11.1.2 APPLICABILITY TO THE PROPOSED PROJECT....36
11.2 California Regional Water Quality Control Board (RWQCB)....37
11.2.1 SECTION 401 OF THE CLEAN WATER ACT....37
11.2.2 APPLICABILITY TO THE PROPOSED PROJECT....38
11.2.3 PORTER-COLOGNE WATER QUALITY CONTROL ACT....38
11.2.4 APPLICABILITY TO THE PROPOSED PROJECT....39
12. STATE WATER RESOURCES CONTROL BOARD (SWRCB)/RWQCB – STORMWATER MANAGEMENT....40
12.1 Construction General Permit....40
12.1.1 APPLICABILITY TO THE PROPOSED PROJECT....41
12.2 RWQCB Municipal Stormwater Permitting Programs....42
12.2.1 NPDES C.3 REQUIREMENTS....43
12.2.2 APPLICABILITY TO THE PROPOSED PROJECT....44

12.3 California Department of Fish and Wildlife Protections....44
12.3.1 SECTION 1602 OF CALIFORNIA FISH AND GAME CODE....44
12.3.2 APPLICABILITY TO THE PROPOSED PROJECT....44
13. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) REGULATIONS....45
13.1 Applicability to the Proposed Project....46
14. IMPACTS ANALYSIS....46
14.1 Significance Criteria....46
14.1.1 THRESHOLDS OF SIGNIFICANCE....46
15. IMPACT ASSESSMENT AND PROPOSED MITIGATION....47
15.1 Impact BIO-1 Development of the Project Would Have a Potentially Significant Adverse Impact on Nesting Birds Including White-tailed Kite (Potentially Significant)....47
15.2 Mitigation Measure BIO-1. Impacts to Nesting Birds....48
15.3 Impact BIO-2. Bats –Tree Removal and Site Development May Have a Potentially Significant Impact on Townsend's Big Eared Bat and Pallid Bat (Potentially Significant)....49
15.4 Mitigation Measure BIO-2. Bats....49
15.5 Impact BIO-3. Development of the Proposed Project Would Have a Potentially Significant Impact on Waters of the United States and/or State (Potentially Significant)....50
15.6 Mitigation Measure BIO-3. Impacts to Waters of the United States and/or State....50
15.7 Impact BIO-4. Development of the Project Would Have a Significant Adverse Impact on Heritage Trees (Significant)....52
15.8 Mitigation Measure BIO-4. Impacts to Heritage Trees....52
15.9 Impact BIO-5. Development of the Project Would Have a Significant Impact on CDFW Fish and Game Code Section 1602 Jurisdictional Areas (Significant)....53
15.10 Mitigation Measure BIO-5. Impacts to Section 1602 Jurisdictional Areas....53
16. LITERATURE CITED....55

FIGURES
(At Back of Report)

Figure 1. Regional Map of the Valley Oaks Project Site

Figure 2. Valley Oaks Project Site Location

Figure 3. Aerial photograph of the Valley Oaks Project Site

Figure 4. Closest Known Records for Special-Status Species Within 3 Miles of the Valley Oaks Project Site

TABLES
(In Text)

Table A. History of Biological Resource Analysis Field Work

(At Back of Report)

Table 1. Plant Species Observed on the Valley Oaks Project Site

Table 2. Wildlife Species Observed on the Valley Oaks Project Site

Table 3. Special-Status Plant Species Known to Occur in the Vicinity of Valley Oaks Project Site

Table 4. Special-Status Wildlife Species Known to Occur in the Vicinity of the Valley Oaks Project Site

ATTACHMENTS
(At Back of Report)

Exhibit A. Schematic Site Plan Valley Oaks prepared by William Hezmalhalch Architects, Inc., October 21, 2022

Exhibit B. Aquatic Resources Map prepared by First Carbon Solutions, confirmed by the U.S. Army Corps of Engineers, June 20, 2019

Exhibit C. *Valley Oaks Trees Proposed for Removal Exh- 4A* created by CSW/Stuber-Stroeh Engineering Group, Inc. dated October 20, 2022

Exhibit D. Overall Map of Wetland Impact Areas prepared by CBG Engineers, February 1, 2022

1. INTRODUCTION

Monk & Associates, Inc. (M&A) has prepared this biological resources analysis for the proposed Valley Oaks development site located on Redwood Boulevard in the city of Novato, California (herein referred to as the project site (Figures 1-3)). The purpose of our analysis is to provide a description of existing biological resources on the project site and to identify potentially significant impacts that could occur to sensitive biological resources from the construction of the proposed project. M&A used the Schematic Site Plan Valley Oaks prepared by William Hezmalhalch Architects, Inc., October 21, 2022, to assess the effects of the project on biological resources (Exhibit A).

Biological resources include common plant and animal species, and special-status plants and animals as designated by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), National Marine Fisheries Service (NMFS), and other resource organizations including the California Native Plant Society (CNPS). Biological resources also include waters of the United States and State, as regulated by the U.S. Army Corps of Engineers (Corps), California Regional Water Quality Control Board (RWQCB), and CDFW.

This biological resources analysis also provides mitigation measures for "potentially significant" and "significant" impacts that could occur to biological resources. Whenever possible, upon implementation, the prescribed mitigation measures would reduce impacts to levels considered less than significant pursuant to the California Environmental Quality Act (CEQA) (Pub. Resources Code §§ 21000 et seq.; 14 Cal. Code Regs §§ 15000 et seq). Accordingly, this report is suitable for review and inclusion in any review being conducted by the City of Novato for the proposed project pursuant to the CEQA.

2. PROPERTY LOCATION AND SETTING

The project site consists of approximately 38 acres and is located in northern Marin County in the City of Novato just north of the Atherton Avenue freeway exit off of Highway 101 (Figures 1 & 2). The 38-acre project site is comprised of two main areas: the remainder of the San Marin Business Park 40-acre project site minus approximately 4.5 acres of this property that was sold in 2020 and 2022 (referred to as the "WCJA property"), and an additional 2.5 acres at 100 Pinkston Road including the remnant of the Pinkston Road easement (the Former Lands of Wright Property) (Figure 3).

The project site is bordered by Highway 101 which is approximately 100 feet east of the project site; Redwood Boulevard is the frontage road that runs along Highway 101 immediately east of the project site. On the east side of Highway 101 is an office complex and the Rush Creek Marsh Wildlife Area, an extensive brackish marsh. Undeveloped grazing lands which are proposed for future development are located immediately south of the project site and commercial development resides beyond. The land immediately north of the project site is undeveloped private lands and the Buck Institute for Research on Aging. Mount Burdell open space lands lie beyond. West of the project site, abutting the western site boundary are single-family homes. For the past 40 plus years the WCJA property has been used for cattle grazing and the Former Lands of Wright property consists of a small pasture until recently used to hold horses.

3. PROPOSED PROJECT

The originally proposed 40-acre San Marin Business Park development was first approved for industrial development in 1979. In 2020, a 4-acre portion was sold to Landsea Homes and in 2022 a 2.5-acre portion of 100 Pinkston Road was purchased, and an approximately 0.5-acre portion was sold to Wright resulting in the approximate 38-acre project site. At that time the development was changed from industrial to residential. The proposed project is divided into Valley Oaks North and Valley Oaks South. Valley Oaks North will comprise 61 single-family homes ranging from 2,000 to 3,500 square feet with two-car garages and private yards. Forty-five of these homes will include Junior Accessory Dwelling Units ranging in size from 150 sq. ft. to 500 sq. ft. Valley Oaks South will comprise 20 two- and three-story condominium townhomes ranging from 1,800 to 2,100 square feet with 2-car garages. The remainder of the property is being slated as open space containing natural areas, a network of trails, and sitting places.

4. ANALYSIS METHODS

Prior to preparing this biological resource analysis report, M&A researched the most recent version of CDFW's Natural Diversity Database (CNDDB) (RareFind 5 application) for historic and recent records of special-status plant and animal species (that is, threatened, endangered, rare) known to occur in the region of the project site (CNDDB 2022). M&A examined all known record locations for special-status species to determine if special-status species could occur on the project site or within an area of affect (Figure 4).

The project site and its surroundings have a long history of biological resource analysis field work. Table A below outlines the purpose and dates of site visits by multiple consulting companies.

Table A. History of Biological Resource Analysis Field Work

Company	Purpose	Date
Harding Lawson Associates	Site Assessment	4 visits between 1998-1999
Zander Associates	Wetland delineation	March 2013
Monk & Associates	Rare Plant Surveys	March 25, April 21, May 16 and July 8, 2014
Monk & Associates	Wetland delineation	February 24 and April 9, 2015
First Carbon Solutions	Wetland delineation	June 2019
Monk & Associates	Wetland delineation	February 4 and November 12, 2020
Monk & Associates	Rare Plant Surveys	March 9, April 22, May 25 and June 29, 2022

M&A cross-referenced the habitats found on the project site against the habitat requirements of local or regionally known special-status plant and animal species to determine if the proposed project could directly or indirectly impact such species. The results of our literature research and field studies are provided in the sections below.

5. RESULTS OF RESEARCH AND PROJECT SITE ANALYSES

5.1 Topography

5.1.1 THE WCJA PROPERTY

The southern portion of the WCJA property is highly constrained by mixed oak woodland hills with average slopes greater than 25%. The northern portion of the property comprises lowlands and a gentle slope rising to the west. Additionally, there are lowland points throughout the grassland that contain jurisdictional wetlands and a drainage that runs from the northern region to the central area of the property.

5.1.2 THE FORMER LANDS OF WRIGHT PROPERTY

The Former Lands of Wright property consists of pasture lands which range in elevation from approximately 10 feet near the road up to approximately 30 feet with gradual slopes. There are two areas of slight depressional topography along the property's southern boundary on the Pinkston Road easement where jurisdictional wetlands have been mapped. There is some uneven ground present throughout the property caused by cattle and horses.

5.2 Soils

The Natural Resource Conservation Service (NRCS) mapped 4 soil types for the project site. These mapped soil units are Blucher-Cole complex, Gilroy-Gilroy variant-Bonnydoon variant loams, Los Osos-Bonnydoon complex, and Montara clay loam, which are each described below (University of California, Davis, 2019).

Blucher-Cole complex

The Blucher series and the Cole series both consist of deep, somewhat poorly drained soils that formed in alluvium from granite, sandstone, or shale. The Blucher silt loam soil is found in basins and on alluvial fans on slopes from 2 to 5 percent and elevations of 0 to 500 feet. It is mainly used for rangeland, hay and pasture, and some row crops. Common vegetation is soft chess (*Bromus hordeaceus*), California bur clover (*Medicago polymorpha*), fescue (*Vulpia myuros*), Italian ryegrass (*Festuca perennis*), wiregrass (*Cynodon dactylon*) and dock (*Rumex* sp.). The Cole clay loam is found on stream terraces, flood plain steps, and alluvial fans with slopes of 0 to 5 percent and elevations of 50 to 1,500 feet. It is mainly used for production of orchards, vineyards, truck crops, and irrigated pasture. Uncultivated areas have oak-grass vegetation with some shrubs and forbs.

Gilroy-Gilroy variant-Bonnydoon variant loams

The Gilroy series consists of moderately deep, well drained soils that formed in material weathered from basic igneous and metamorphic rocks. The fine, loamy soil is found on uplands with slopes of 30 to 50 percent and elevations from near sea level to 3,000 feet. Uncultivated areas consist of annual rangeland and the native vegetation is oakgrass (*Danthonia californica*) and forbs with some scattered perennial grasses.

The Bonnydoon series consists of shallow, somewhat excessively drained loamy soil that formed in material weathered from sandstone and shale. This series is found on slopes 30 to 50 percent

and elevations 50 to 2,100 feet. Common uses are for rangeland, wildlife habitat and recreation and the vegetation mainly consists of annual grasses and forbs. Shrubs grow in the canyons and gulches near the coast.

Los Osos-Bonnydoon complex
Similar to the Bonnydoon complex described above, the Los Osos series consists of moderately deep, well drained soils that formed in material weathered from sandstone and shale. This series is found on slopes that are 15 to 30 percent and elevations of 100 to 3,500 feet. Also similar to the Bonnydoon complex, the vegetation mainly consists of annual grasses and forbs, but also will have some perennial grasses, coastal sagebrush, and live oaks.

Montara clay loam
The Montara series consists of shallow well drained soils that formed in material weathered from serpentinitic rocks. Montara soils are on uplands and ridge tops. They occur in slope ranges from 15 to 30 percent and elevations of 100 to 3,000 feet. The vegetation typically consists of annual grasses and forbs and is most commonly used for grazing, wildlife, and recreation.

5.3 Hydrology

5.3.1 The WCJA property

The WCJA portion of the project site contains one incised drainage feature that enters the project site at the northwest and travels southeast near the center of the project site and towards and through existing, double 48-inch storm drains underneath Redwood Boulevard and Highway 101. All water exiting the site through these pipes drains east into the Rush Creek Marsh Wildlife Area and the Petaluma River, and eventually into the San Pablo Bay.

5.3.2 The Former Lands of Wright Property

There are two areas of slight depressional topography along this property's southern boundary on the Pinkston Road easement where surface water collects and wetland vegetation grows. These seasonal wetlands have connectivity with the Corps-confirmed wetlands that are present on the WCJA property and ultimately flow into the storm drain pipes and out to San Pablo Bay.

5.4 Plant Communities and Associated Wildlife Habitats

A complete list of plant species observed on the project site is presented in Table 1. Nomenclature used for plant names follows *The Jepson Manual* Second Edition (Baldwin 2012) and changes made to this manual as published on the Jepson Interchange Project website (http://ucjeps.berkeley.edu/interchange/index.html). Table 2 is a list of wildlife species observed on the project site. Nomenclature for wildlife follows the CDFW's *Complete List of Amphibian, Reptile, Bird, and Mammal Species in California* (2016) and any changes made to species nomenclature as published in scientific journals since the publication of the CDFW's list.

Several vegetation communities occur on the project site. Non-native annual grassland and oak woodland comprise the majority of the WCJA property along with low-lying seasonal wetlands in the central region of the project site. An intermittent drainage channel runs through the northern end of the property, flowing into the seasonal wetlands. The Former Lands of Wright

property is mainly comprised of ruderal herbaceous habitat with two seasonal wetlands on the Pinkston Road easement. These plant communities and the associated wildlife species are discussed in further detail below.

5.4.1 NON-NATIVE ANNUAL GRASSLAND -WCJA PROPERTY

Prior to the settlement of Europeans in California, the California landscape was dominated by native, perennial bunchgrasses. When the Europeans settled in California, they brought a variety of Mediterranean grass and forb species for use as crops or ornamentals, or inadvertently in the fur and digestive systems of livestock. Land use changes, such as domestic animal grazing, has resulted in highly palatable native plants being reduced or eliminated. Introduced species tolerant of grazing pressure, particularly annual grasses of Eurasian ancestry, have displaced the native grasses, creating a new kind of grassland community. Grasslands on the WCJA property have been heavily grazed over the decades and provide an example of how cattle grazing can greatly change the vegetative composition of the landscape.

The northern section of the WCJA property can be characterized as non-native annual grassland. This plant community is dominated by non-native annual grasses including soft chess, Italian ryegrass, hare barley (*Hordeum murinum* ssp. *leporinum*), foxtail chess (*Bromus madritensis* ssp. *madritensis*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), ripgut brome (*Bromus diandrus*), brome fescue (*Festuca bromoides*) and slender wild oat (*Avena barbata*). Non-native forbs (broad-leaved plants) observed in grassland habitat include white-stem filaree (*Erodium moschatum*), geranium (*Geranium dissectum* and *Geranium molle*), clover (*Trifolium glomeratum*, *T. tomentosum, T. subterraneum and T. dubium*), bindweed (*Convolvulus arvensis*), English plantain (*Plantago lanceolata*), California bur clover, perennial pepperweed (*Lepidium latifolium*), mustard (*Sisymbrium altissimum* and *Brassica nigra*), starthistle (*Centaurea solstitialis* and *Centaurea calcitrapa*), field bur weed (*Soliva sessilis*), and vetch (*Vicia sativa* and *V. benghalensis*).

Native forb and grass species are also present, although they do not dominate this grassland community. Native species include small fescue (*Festuca microstachys*), miner's lettuce (*Claytonia perfoliata* and *C. parviflora*), soaproot (*Chlorogalum pomeridianum* ssp. *pomeridianum*), purple needlegrass (*Stipa pulchra*), blue wildrye (*Elymus glaucus*), creeping wildrye (*Elymus triticoides*), plantain (*Plantago erecta*), tarweed (*Hemizonia congesta* ssp. *lutescens*), wild cucumber (*Marah fabaceus*), linanthus (*Leptosiphon parviflorus*), pink owl's clover (*Castilleja exserta* ssp. *exserta*), valley tassels (*Castilleja attenuata*), California buttercup (*Ranunculus californicus*), hill morning glory (*Calystegia subacaulis* ssp. *subacaulis*), owl's clover (*Triphysaria pusilla*), blue-eyed grass (*Sisyrinchium bellum*), cotton top (*Micropus californicus* var. *californicus*) and common yarrow (*Achillea millefolium*).

The WCJA property's grassland community provides habitat for graniverous (seed-eating) birds such as Mourning Dove (*Zenaida macroura*), House Finch (*Haemorphus mexicanus*), and Lesser Goldfinch (*Spinus psaltria*), insectivorous birds such as Say's Phoebe (*Sayornis saya*), Northern Mockingbird (*Mimus polyglottos*), California Scrub-jay (*Aphelocoma californica*) and Northern Flicker (*Colaptes auratus*), and raptors such as Red-tailed Hawk (*Buteo jamaicensis*), Red-shouldered Hawk (*Buteo lineatus*) and Merlin (*Falco columbarius*), all of which were observed during surveys on the project site. Other animals observed in the grassland included western gray

squirrel (*Sciurus griseus*) and Columbian black-tailed deer (*Odocoileus hemionus* subsp. *columbianus*).

5.4.2 OAK WOODLAND-WCJA PROPERTY

Oak woodlands are a characteristic vegetational cover in the foothills and valleys of California (Waddell and Barrett 2005). This plant community occurs at elevations from 196 to 2296 feet where summers are warm and dry and winters are mild (Barbour, Keeler-Wolf, and Schoenherr 2007). Oak woodlands are a transitional plant community between the grasslands of the hot dry valleys and the montane forests of moist cool uplands. This habitat has an overstory tree canopy dominated by oaks (*Quercus* spp.) and an understory dominated by grasses and forbs.

Oak woodland makes up the southern portion of the WCJA property, covering the north and east facing slopes and grading into the annual grassland. This community is dominated by valley oak (*Quercus lobata*), interspersed with coast live oak (*Q. agrifolia*) and black oak (*Q. kelloggii*), blue oak (*Q. douglasii*), California scrub oak (*Quercus berberidifolia*), California buckeye (*Aesculus californica*), and California bay-laurel (*Umbellularia californica*). A sparse shrub layer is comprised of native woody species that include California blackberry (*Rubus ursinus*), poison oak (*Toxicodendron diversilobum*), common snowberry (*Symphoricarpus albus* ssp. *laevigata*), oso berry (*Oemleria cerasiformis*), coast ground rose (*Rosa spithamea*), California coffeeberry (*Frangula californica* ssp. *californica*) and coyote brush (*Baccharis pilularis*). The understory is dominated by a similar suite of non-native grass and forb species as those observed in the annual grassland as well as dogtail grass (*Cynosurus echinatus*), Queen Ann's lace (*Daucus carota*), common chickweed (*Stellaria media*), mouse-eared chickweed (*Cerastium glomeratum*), field madder (*Sherardia arvensis*) and bedstraw (*Galium murale*).

Despite heavy grazing pressure, a strong native component of the herbaceous community remains intact on these slopes which include native fern species such as goldback fern (*Pentagramma triangularis*), wood fern (*Dryopteris arguta*) and California polypody (*Polypodium californica*). Native forb species that comprise the understory include hedge-nettle (*Stachys rigida* ssp. *quercetorum*), miner's lettuce, bugle hedge nettle (*Stachys ajugoides*), climbing bedstraw (*Galium porrigens* var. *porrigens*), woodland star (*Lithophragma affine*), sanicle (*Sanicula crassicaulis*, *S. bipinnata* and *S. bipinnatifida*), lady's mantle (*Aphanes occidentalis*), milkmaids (*Cardamine californica*), mugwort (*Artemesia douglasiana*), and grand hound's tongue (*Cynoglossum grande*).

Oak trees are known to provide habitat for a variety of wildlife species. Hundreds of vertebrate species and thousands of invertebrate species are associated with California's oak habitats (Pavlik et al. 1991). Oak acorns, leaves, wood, and sap are sustenance for a myriad of insects, birds, and mammals. Insectivorous bird species such as Northern Flicker, Ruby-crowned Kinglet (*Regulus calendula*), Oak Titmouse (*Baeolophus inornatus*) and White-breasted Nuthatch (*Sitta carolinensis*) thrive in oak woodlands on the various insects and other invertebrates that live on oak leaves, burrow in oak bark, and that collect in the leaf litter and rotting lots. Oak acorns provide food for many of the wildlife species found onsite including Acorn Woodpeckers (*Melanerpes formicivorus*), Band-tailed Pigeons (*Patagioenas fasciata*), California Scrub Jays, Wild Turkeys (*Meleagris gallopavo*), and gray squirrels (*Sciurus griseus*). Raptors such as the Red-shouldered Hawk, Red-tailed Hawk, Great Horned Owl (*Bubo virginianus*) and Cooper's

Hawk (*Accipiter cooperi*) nest in oak woodland canopy. In fact, both the Red-tailed Hawk and Great Horned Owl have been identified nesting on the project site in various years. Mammal species expected to occur in the oak woodland habitat include Columbian black-tailed deer, raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*) and deer mouse (*Peromyscus maniculatus*). Along the oak woodland edges, where the habitat transitions into grassland, reptile species such as the western fence lizard (*Sceloporus occidentalis*) and western skink (*Plestiodon skiltonianus*) can be found.

5.4.3 Drainage - WCJA Property

The WCJA portion of the project site contains one incised drainage feature that enters the project site at the northwest and travels southeast near the center of the project site. This drainage only flows during and immediately flowing storm events and is dry most of the year. Water from this drainage drains into the seasonal wetlands onsite and eventually drains out to the Rush Creek Marsh Wildlife Area and the Petaluma River, and eventually into the San Pablo Bay. The drainage is extremely eroded, and little vegetation has established on the bed and banks. Vegetation found in the channel and on the banks includes swamp pricklegrass (*Crypsis schoenoides*), perennial pepperweed, brass buttons (*Cotula coronopifolia*), bristly oxtongue (*Helminthotheca echioides*), slender wild oat and English plantain. The northern half of the drainage has some shaded areas from several silver dollar gum trees (*Eucalyptus cinerea*), forest red gum trees (*Eucalyptus tereticornis*), and ornamental white cottonwood trees (*Populus alba*). A large barn and farm equipment are stationed adjacent to the drainage with debris scattered in the area.

The intermittent drainage may be used as shelter and foraging habitat for a variety of wildlife species. In the wet season, amphibians such as Sierran tree frog (*Pseudacris sierra*) and the California toad (*Anaxyrus boreas halophilus*) may reside or lay eggs in the shallow water that accumulates after heavy rain. Other species observed using the drainage and surrounding area include western fence lizards, House Finch, Wilson's snipe (*Gallinago delicata*), Tree Swallow (*Tachycineta bicolor*), Northern Mockingbird (*Mimus polyglottos*) and Lesser Goldfinch. The ornamental blue gum and cottonwood trees provide nesting habitat for a variety of passerine birds and raptor species as well as for grey squirrels. Eucalyptus flowers and foliage provide foraging opportunities for various bird species as well including Anna's Hummingbird (*Calypte anna*), Bullock's Oriole (*Icterus bullockii*), Hooded Oriole (*Icterus cucullatus*), and Yellow-rumped Warblers (*Setophaga coronata*).

5.4.4 Ruderal Herbaceous Vegetation with Valley Oaks - Former Lands of Wright Property

The Former Lands of Wright property is a horse pasture largely composed of ruderal herbaceous vegetation. Much of the vegetation present in the upland areas of the property has been trampled and severely disturbed by horses. This ruderal herbaceous habitat is dominated by Italian ryegrass (*Festuca perennis*), bromes (*Bromus hordaceous, B. diandrus*), and wild oats (*Avena* spp.). Subdominants in the ruderal herbaceous community include annual bluegrass (*Poa annua*), toad rush (*Juncus bufonius*), subterranean clover (*Trifolium subterraneum*), chickweed (*Stellaria media*), field burweed (*Soliva sessilis*), rough cat's ear (*Hypochaeris radicata*), and cutleaf geranium (*Geranium dissectum*). In the summer and fall months the following weeds are

dominant: black mustard (*Brassica nigra*), yellow starthistle (*Centaurea solstitialis*), stinkwort (*Dittrichia graveolens*), and purple starthistle (*Centaurea calcitrapa*). A native bright yellow tarweed (*Hemizonia congesta lutescens*) is also present. Two mature valley oaks (*Quercus lobata*) grow on the hillslope.

Typically, ruderal communities provide habitat for those animal species adapted to living alongside humans; however, since this ruderal community is next to an expansive grassland community on the WCJA property, this ruderal community provides greater habitat value to wildlife than most ruderal communities which are found along roadsides or disced fields. The project site's ruderal herbaceous community may be used by burrowing rodents, raptors (birds of prey), and grassland-dwelling birds as foraging and breeding habitat. Wildlife species observed in this community on the project site include, Killdeer (*Charadrius vociferus*), Anna's Hummingbird, Mourning Dove (*Zenaida macroura*), American Crow (*Corvus brachyrhynchos*), Northern Mockingbird, Western Bluebird (*Sialia mexicana*), and western fence lizard.

5.4.5 Seasonal Wetlands - WCJA Property and Former Lands of Wright

Seasonal wetlands are habitats that may appear dry in the summer and fall months but following the first winter rains become saturated or hold water for a period of several weeks to months at a time. Seasonal wetlands may remain inundated for a prolonged period of time typically due to the presence of impervious soils and/or confining topography such as topographic low areas. Seasonal wetlands occur in the low-lying sections of this site. The seasonal wetlands support non-native grass species including rabbit's foot grass (*Polypogon monspeliensis*), Italian ryegrass, Mediterranean barley, swamp pricklegrass and small quaking grass (*Briza minor*). Non-native forb species observed in the seasonal wetlands include the spiny buttercup (*Ranunculus muricatus*), woolly clover (*Trifolium tomentosum*), curly dock (*Rumex crispus*), pennyroyal (*Mentha pulegium*), common knotweed (*Polygonum aviculare*), hyssop loosestrife (*Lythrum hyssopifolium*), sheep sorrel (*Rumex acetosella*), brass buttons, and fiddle dock (*Rumex pulcher*). Native plant species that occur in the wetland habitat on the project site include spiny cocklebur (*Xanthium spinosum*), toad rush (*Juncus bufonius*), slender wooly marbles (*Psilocarphus tenellus*) and bracted popcornflower (*Plagiobothrys bracteatus*).

Seasonal wetlands provide wildlife with a seasonal water source that allows animals to drink and forage in the water during the winter and spring months. Amphibians with short aquatic life cycles such as the Sierran tree frog and the California toad will lay their eggs in seasonal wetland habitats and complete their life cycle in the wetlands before they dry down. Invertebrates such as mayflies (Ephemeroptera), damselflies (Odonata), and predaceous diving beetles (Dytiscidae) are commonly associated with inundated seasonal wetland habitats and complete their life cycle in the wetlands.

5.5 Wildlife Corridors

Wildlife corridors are linear and/or regional habitats that provide connectivity to other natural vegetation communities within a landscape fractured by urbanization and other development. Wildlife corridors have several functions: 1) they provide avenues along which wide-ranging animals can travel, migrate, and breed, allowing genetic interchange to occur; 2) populations can move in response to environmental changes and natural disasters; and 3) individuals can

recolonize habitats from which populations have been locally extirpated (Beier and Loe 1992). All three of these functions can be met if both regional and local wildlife corridors are accessible to wildlife. Regional wildlife corridors provide foraging, breeding, and retreat areas for migrating, dispersing, immigrating, and emigrating wildlife populations. Local wildlife corridors also provide access routes to food, cover, and water resources within restricted habitats.

There are no wildlife nursery grounds onsite or any significant regional wildlife corridors on the project site. The project site is located adjacent to Highway 101's frontage road Redwood Boulevard which has moderate traffic, and just to the east of Redwood Boulevard is Highway 101, which has exceptionally high traffic levels. These two roads effectively remove any possibility that wildlife could move from the project site to environments east of these roads. Similarly, terrestrial wildlife would be unable to travel from areas east of Highway 101 westward towards the project site. The project site is also bordered by houses to the west and office complexes farther to the south, thus, there is only a very small and localized wildlife corridor onsite allowing wildlife to move to limited open space areas at the north.

Common wildlife species occur in the area and although the entire property serves as a wildlife corridor in its current undeveloped state, it is likely that locally based terrestrial wildlife moving through the area currently use the mixed oak woodland habitat on the south and west of the project site as it is further from the heavily used roads and provides escape habitat. The proposed project is unlikely to interfere with the movement of local or migratory wildlife since the oak woodland portion of the project site will remain undeveloped. A small, hand-built trail is proposed to be constructed in a loop along the western and northwestern tree line of the oak woodlands. As the remainder of the woodlands would be untouched, any purpose this area may serve as a local wildlife corridor would remain. *The development of the Valley Oaks project should not have a significant impact on local wildlife movements.*

6. PROJECT SITE BIOLOGICAL RESOURCES REVIEW AND PERMITTING HISTORY

Most of the project site and its immediately surrounding area was originally called the San Marin Business Park Project (40 acres) and it has been studied for many years. More recently a 2.5-acre including the remnant of the Pinkston Road easement portion of 100 Pinkston Road property has been added (Former Lands of Wright property) and an approximately 4.5-acre portion of the San Marin Business Park Project site has been sold. Since 1999, many biological surveys have been conducted on the 38-acre project site as detailed above and many reports have been written and sent to various regulatory agencies. We summarize some of these surveys and their permitting review below.

6.1 Federally Listed Species

One of the relevant reports written for the original overall 40-acre San Marin Business Park was a California red-legged frog (*Rana draytonii*) Site Assessment prepared by Harding Lawson Associates (Harding Lawson Associates 1999). The California red-legged frog is a federally listed threatened species that is protected pursuant to the Federal Endangered Species Act (FESA). The U.S. Fish and Wildlife Service (USFWS) is the federal agency with the regulatory authority tasked with protecting this threatened species.

In the Site Assessment report Harding Lawson Associates dismissed the potential presence of the California red-legged frog on the project site. The USFWS responded with a letter stating: "*Based on the provided survey information, which followed protocol as described in the 'Dissemination of Interim Guidance on Site Assessment and Field Surveys for California Red-Legged Frogs,' there is no further need for red-legged frog surveys at the proposed project site. However, the Service believes that other federally listed species may occur in the project area*" (USFWS 1999). These "other federally listed species" are two federally listed plant species (*Hesperolinon congestum* and *Trifolium amoenum*) and one federally listed butterfly species (*Speyeria zerene myrtleae*). These species are not believed to be present on the project site based on survey data collected over the years after receipt of the USFWS 1999 letter and are discussed in the "Special-Status Species" section below. The Former Lands of Wright portion of the project site was an addition after this USFWS letter; however, this portion of the project site also does not provide habitat that is suitable for California red-legged frog, the federally listed plant species (surveys were conducted), or for the federally listed butterfly species and they are not expected to occur on the project site. Thus, the findings of the Harding Lawson Associates' Site Assessment and the USFWS letter remain valid today.

6.2 U.S. Army Corps of Engineers (Corps) Jurisdictional Areas

The Corps initially confirmed the extent of its jurisdiction over the then-proposed 40-acre San Marin Business Park on September 23, 1999 (the WCJA property). Zander Associates took the original delineation map and had it reverified and the Corps reauthorized the map on September 4, 2013. In November 2018 and January 2019, First Carbon Solutions prepared a Revised Jurisdictional Delineation Map for the San Marin Business Park project and on June 20, 2019, the Corps field verified and confirmed this jurisdictional map. According to the valid jurisdictional map, there are 7 wetland features and one drainage feature (other waters) on the WCJA property, totaling 1.71 acres (Exhibit B). This Corps map is a Preliminary Jurisdictional Determination map (or PJD) and does not expire. Thus, it is still valid today.

M&A conducted wetland delineations on the Former Lands of Wright property on February 4 and November 12, 2020. A PJD map was verified by the Corps on January 14, 2021. There are two wetland features on the Former Lands of Wright property, totaling 0.044-acre.

Prior to impacting (for example, filling or culverting) any of these areas, authorization from the Corps and the Regional Water Quality Control Board would be necessary. See the discussion on waters of the United States and State in the sections below.

7. SPECIAL-STATUS SPECIES DEFINITION

7.1 Definitions

For purposes of this analysis, special-status species are plants and animals that are legally protected under the California and Federal Endangered Species Acts (CESA and FESA, respectively) or other regulations, and species that are considered rare by the scientific community (for example, the CNPS). Special-status species are defined as:

- plants and animals that are listed or proposed for listing as threatened or endangered under the CESA (Fish and Game Code §2050 *et seq.*; 14 CCR §670.1 *et seq.*) or the FESA (50 CFR 17.12 for plants; 50 CFR 17.11 for animals; various notices in the Federal Register [FR] for proposed species);

- plants and animals that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR 17; FR Vol. 64, No. 205, pages 57533-57547, October 25, 1999); and under the CESA (California Fish and Game Code §2068);

- plants and animals that meet the definition of endangered, rare, or threatened under the CEQA (14 CCR §15380) that may include species not found on either CESA or FESA lists;

- plants occurring on Ranks 1A, 1B, 2A, 2B, 3, and 4 of the CNPS' electronic *Inventory* (CNPS 2001). The CDFW recognizes that Ranks 1A, 1B, 2A and 2B of the CNPS inventory contain plants that, in the majority of cases, would qualify for State listing, and the CDFW requests their inclusion in EIRs. Plants occurring on CNPS Ranks 3 and 4 are "plants about which more information is necessary," and "plants of limited distribution," respectively (CNPS 2001). Such plants may be included as special-status species on a case-by-case basis due to local significance or recent biological information (more on CNPS Rank species below);

- migratory nongame birds of management concern listed by the USFWS (Migratory Nongame Birds of Management Concern in the United States: The list 1995; Office of Migratory Bird Management; Washington D.C.; Sept. 1995);

- animals that are designated as "species of special concern" by the CDFW (2022);

- animal species that are "fully protected" in California (Fish and Game Codes 3511, 4700, 5050, and 5515).

- bat species that are designated on the Western Bat Working Group's (WBWG) Regional Bat Species Priority Matrix as: "RED OR HIGH." This priority is justified by the WBWG as follows: "Based on available information on distribution, status, ecology, and known threats, this designation should result in these bat species being considered the highest priority for funding, planning, and conservation actions. Information about status and threats to most species could result in effective conservation actions being implemented should a commitment to management exist. These species are imperiled or are at high risk of imperilment."

In the paragraphs below we provide further definitions of legal status as they pertain to the special-status species discussed in this report or in the attached tables.

Federal Endangered or Threatened Species. A species listed as endangered or threatened under the FESA is protected from unauthorized "take" (that is, harass, harm, pursue, hunt, shoot, trap)

of that species. If it is necessary to take a federally-listed endangered or threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the USFWS prior to initiating the take.

State Threatened Species. A species listed as threatened under the CESA (§2050 of California Fish and Game Code) is protected from unauthorized "take" (that is, harass, pursue, hunt, shoot, trap) of that species. If it is necessary to "take" a State-listed threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the CDFW prior to initiating the "take."

California Species of Special Concern. These are species in which their California breeding populations are seriously declining and extirpation from all or a portion of their range is possible. This designation affords no legally mandated protection; however, pursuant to the CEQA Guidelines (14 CCR §15380), some species of special concern could be considered "rare." Pursuant to its rarity status, any unmitigated impacts to rare species could be considered a "significant effect on the environment" (§15382). Thus, species of special concern must be considered in any project that will, or is currently, undergoing CEQA review, and/or that must obtain an environmental permit(s) from a public agency.

CNPS Rank Species. The CNPS maintains an "Inventory" of special-status plant species. This inventory has four lists of plants with varying rarity. These lists are Rank 1, Rank 2, Rank 3, and Rank 4. Although plants on these lists have no formal legal protection (unless they are also State or federally-listed species), the CDFW requests the inclusion of Rank 1 species in environmental documents. In addition, other State and local agencies may request the inclusion of species on other lists as well. The Rank 1 and 2 species are defined below:

- Rank 1A: Presumed extinct in California;
- Rank 1B: Rare, threatened, or endangered in California and elsewhere;
- Rank 2A: Plants presumed extirpated in California, but more common elsewhere;
- Rank 2B: Rare, threatened, or endangered in California, but more common elsewhere.

All of the plants constituting Rank 1B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (CESA) of the Fish and Game Code and are eligible for State listing (CNPS 2001). Rank 2 species are rare in California, but more common elsewhere. Ranks 3 and 4 contain species about which there is some concern and are reviewed by the CDFW and maintained on "watch lists."

Additionally, in 2006, the CNPS updated their lists to include "threat code extensions" for each list. For example, Rank 1B species would now be categorized as Rank 1B.1, Rank 1B.2, or Rank 1B.3. These threat codes are defined as follows:

- .1 is considered "seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)";
- .2 is "fairly endangered in California (20-80% of occurrences threatened)";
- .3 is "not very endangered in California (less than 20% of occurrences threatened or no current threats known)."

Under the CEQA review process only CNPS Rank 1 and 2 species are considered since these are the only CNPS species that meet CEQA's definition of "rare" or "endangered." Impacts to Rank 3 and 4 species are not regarded as significant pursuant to CEQA.

Fully Protected Birds. Fully protected birds, such as the White-tailed Kite (*Elanus leucurus*) and Golden Eagle (*Aquila chrysaetos*), are protected under California Fish and Game Code (§3511). Fully protected birds may not be "taken" or possessed (i.e., kept in captivity) at any time.

7.2 Potential Special-Status Plants on the Project Site

Figure 4 provides a graphical illustration of the closest known records for special-status species within 3 miles of the project site and helps readers visually understand the number of sensitive species that occur in the vicinity of the project site. No special-status plants were identified on the project site after more than two years of formal special-status plant surveys were conducted by M&A and no special-status plant is posted in CDFW's CNDDB (RareFind database) on or immediately adjacent to the project site.

However, according to the CNPS' Petaluma River quad (#3812225) and the CDFW's CNDDB, a total of 12 special-status plant species are known to occur within 3 miles of the project site or within the Petaluma River quad (Table 3 and Figure 4). Most of these special-status plants are known from specialized habitats such as tidally influenced marshes that occur in association with the Petaluma River approximately three miles east of the project site, as well as plants adapted to serpentinite soils or coastal prairie, which do not exist on the project site.

In order to address potential impacts to special-status plants, M&A Biologists conducted special-status plant surveys on the project site over multiple years. M&A's first surveys were conducted monthly between March and July 2014. Two additional surveys of the project site's wetlands were conducted in February and April of 2015, the following year; the 2014 and 2015 surveys followed the CDFW's survey protocol that was in effect at that time (CDFW 2000). In March 2018, the CDFW came out with an updated special-status plant survey protocol (CDFW 2018). Hence, two more surveys of the Former Lands of Wright wetlands were conducted in February and November of 2020, and in 2022, M&A conducted an additional season of special-status plant surveys on the project site, including the Former Lands of Wright property, in 2022, with one conducted in March, one in April, one in May, and one in June following the current CDFW protocol.

No special-status plants were found during all of M&A's site surveys which were appropriately timed to correspond with the blooming periods of special-status plants known from similar habitats in the region. Owing to the lack of specialized habitats, and the more than two years of negative survey results, M&A botanists concluded that it would be highly unlikely that special-status plants would occur on the project site now or in the future. ***Therefore, based on the results of the two years of protocol level surveys conducted to date, no impacts to special-status plants are expected from project site development.***

7.3 Potential Special-Status Animals on the Project Site

Figure 4 provides a graphical illustration of the closest known records for special-status species within 3 miles of the project site and helps readers visually understand the number of sensitive species that occur in the vicinity of the project site. No special-status animal records have ever been mapped on or adjacent to the project site. However, a total of ten special-status animal species are known to occur within 3 miles of the project site (Table 4). Of these 10 species, there is a low probability that the pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhinus townsendii*) could be located on the project site, and a moderate probability that the White-tailed Kite (*Elanus caeruleus*) could be located on the project site. We discuss these species below. There is no suitable habitat for the remaining seven special-status wildlife species listed in Table 4 to occur on the project site.

Two other special-status species known to occur in Marin County, yet not known within three miles, are discussed below due to the fact that they were discussed in past project site reports: the California red-legged frog (*Rana draytonii*) and Myrtle's silverspot butterfly (*Speyeria zerene myrtleae*) there. There are no occurrences of either species within 3 miles of the project site, and therefore, these two special-status species are not included in Table 4. Finally, while the western burrowing owl (*Athene cunicularia hypugaea*) was observed in 2002 less than a mile away (north) of the project site, this was a winter sighting (November 2002) and was likely a transient owl moving through the area; there are no burrows/burrowing owl habitat on the subject project site (Table 4).

7.3.1 PALLID BAT

The pallid bat is a California "species of special concern" protected pursuant to CEQA and is a locally common species of low elevations in California. It occurs throughout California except for the high Sierra Nevada from Shasta to Kern Counties, and the northwestern corner of the state from Del Norte and western Siskiyou counties to northern Mendocino County in a wide range of habitats. It is most common in open, dry habitats with rocky areas where it avoids high temperatures by roosting in caves, crevices, mines, and occasionally in hollow trees and buildings. Night roosts may be in more open sites such as porches and open buildings. This species is a social bat that roosts in groups of 20 or more. The closest known record for the pallid bat to the project site is located approximately 1.6 miles north of the project site (CNDDB Occurrence No. 3). This occurrence is from 1992 to 2004, when a nursery colony was located in the attic of several buildings, which have since been demolished. There is one quonset hut/barn onsite and there may be some suitable tree hollows for pallid bats to use. Thus, impacts to this bat from project development are considered potentially significant.

7.3.2 TOWNSEND'S BIG-EARED BAT

The Townsend's big-eared bat is a California "species of special concern" protected pursuant to CEQA. This bat is found throughout California in all but subalpine and alpine habitats. Suitable roosting and maternity sites for this species include caves, mines, tunnels, buildings, or other human-made structures. The closest record for the Townsend's big-eared bat is located approximately 1.5 miles north of the project site (CNDDB Occurrence No. 121). This occurrence is in Olompali State Park from 1992 when 2 adult males were observed, and again in 2001 when 2 adult males were captured with a hand net. There is only one barn/quonset hut on the project

site that may provide suitable roosting habitat. Thus, impacts to this bat from project development are considered potentially significant.

7.3.3 WHITE-TAILED KITE

The White-tailed Kite (*Elanus caeruleus*) is a "Fully Protected" species under the California Fish and Game Code (§3511). Fully protected birds may not be "taken" or possessed (i.e., kept in captivity) at any time. It is also protected under the Federal Migratory Bird Treaty Act (50 CFR 10.13). The White-tailed Kite is typically found foraging in grassland, marsh, or cultivated fields where there are dense-topped trees or shrubs for nesting and perching. They nest in a wide variety of trees of moderate height and sometimes in tall bushes, such as coyote bush (*Baccharis pilularis*). Native trees used by White-tailed Kites are live and deciduous oaks (*Quercus* spp.), willows (*Salix* spp.), cottonwoods (*Populus* spp.), sycamores (*Platanus* spp.), maples (*Acer* spp.), toyon (*Heteromeles arbutifolia*), and Monterey cypress (*Cupressus macrocarpa*). Although the surrounding terrain may be semiarid, kites often reside near water sources, where prey is more abundant. The particular characteristics of the nesting site do not appear to be as important as its proximity to a suitable food source (Shuford 1993). Kites primarily hunt small mammals, with California meadow voles (*Microtus californicus*) accounting from between 50-100% of their diet (Shuford 1993).

The nearest CNDDB record for this species is a nest from 1973 and is located 1.20 miles southwest of the project site (Occurrence No. 8). There are more recent sightings of White-tailed Kites in the vicinity around the project site, however, no nests have been observed and M&A has never observed White-tailed Kites on the project site during site visits. The open grassland community provides suitable hunting grounds for White-tailed Kites, and the trees on the project site provide potentially suitable nesting habitat. ***Accordingly, impacts to White-tailed Kite are regarded as potentially significant pursuant to the CEQA.*** As long as there is no direct mortality of the White-tailed Kite, its eggs and/or young caused by development of the site, there should be no constraints to site development. Any active nest site(s) would have to be avoided while in use. Upon completion of nesting, the project could commence as otherwise planned. Recommendations for avoidance of White-tailed Kite nest sites is presented in the Impacts and Mitigations section below. Mitigation could be implemented to reduce impacts to levels regarded as less than significant pursuant to the CEQA.

7.3.4 CALIFORNIA RED-LEGGED FROG

The California red-legged frog (*Rana draytonii*) was federally listed as threatened on May 23, 1996 (Federal Register 61: 25813-25833) and as such is protected pursuant to the Federal Endangered Species Act. On March 16, 2010, the USFWS issued the final designation for California red-legged frog Critical Habitat. The 2010 Critical Habitat maps (Federal Register dated March 17, 2010 (Volume 75, Number 51:12815-12864)) show that *the project site falls outside designated critical habitat* (the closest designated critical habitat is approximately 6.5 miles away). The California red-legged frog is also a state "species of special concern."

In a Site Assessment report prepared by Harding Lawson Associates for the 40-acre San Marin Business Park project site, Harding Lawson Associates dismissed the potential presence of the California red-legged frog on the project site. This report was submitted to the USFWS and the USFWS responded by preparing a letter for Harding Lawson Associates that stated: "*Based on*

the provided survey information, which followed protocol as described in the 'Dissemination of Interim Guidance on Site Assessment and Field Surveys for California Red-Legged Frogs,' there is no further need for red-legged frog surveys at the proposed project site. However, the Service believes that other federally listed species may potentially occur in the project area" (USFWS 1999). Thus, in this letter the USFWS effectively dismissed the presence of the California red-legged frog on the property. Mr. Geoff Monk called Mr. Tattersall of the Sacramento Endangered Species office of the USFWS on May 22, 2014 to see if he could determine if the conclusions in the USFWS' 1999 letter remained valid. Mr. Tattersall determined that it is likely that the USFWS' prior findings would be likely to be regarded as remaining valid if confirmed by an assessment from M&A's Principal Biologist, Mr. Monk, a federally permitted 10(a)(1)(A) California red-legged frog biologist. Mr. Monk concluded at that time (2014) that the project site did not provide suitable habitat for the California red-legged frog. In 2022, the project site conditions are much the same and still do not provide suitable habitat for this federally listed amphibian. See the explanation provided below.

The seasonal wetlands and drainage ditch on the entire project site are too shallow and ephemeral to provide deep plunge pools or other escape habitat required for California red-legged frogs to escape predators such as the raccoon (*Procyon lator*). These wetlands do not stay inundated long enough to provide California red-legged frogs with larval development habitat as they are typically dry by May or earlier. Suitable California red-legged frog breeding habitat typically must remain inundated into August so that the larvae have time to successfully metamorphose. Finally, the project site is not hydrologically connected to a known California red-legged creek, pond, or other suitable California red-legged frog drainage so there is no known corridor for connectivity with offsite California red-legged frog habitats. Finally, M&A biologists have been onsite over many months in several years and have never observed a California red-legged frog or other large Ranid frog onsite. Thus, M&A concludes that the project site and the seasonal wetlands and ephemeral drainage do not provide suitable habitat for this federally listed amphibian species and as such, ***no impacts to the California red-legged frog are expected from implementation of the proposed project.***

7.3.5 MYRTLE'S SILVERSPOT BUTTERFLY

Myrtle's silverspot butterfly (*Speyeria zerene myrtleae*) is a federally listed endangered species. It has no state status. ***There are no CNDDB records for this butterfly within 3 miles of the project site*;** this butterfly was included on the USFWS' list to Harding Lawson Associates. The habitat of the Myrtle's silverspot butterfly has been considered to include only low elevation dune and grassland areas immediately inland from the coast. This habitat is well within the summer "fog belt," a physical setting that ensures comparatively buffered environmental conditions (Launer, A. et al 1992). The project site and most of Novato lies well inland of the summer fog belt.

The Myrtle's silverspot butterfly lays its eggs on western dog violet (*Viola adunca*) plants; the larvae eat the leaves when they hatch. The native plant, curly-leaved monardella (*Monardella undulata*) is an important nectar source. Non-native thistles such as bull thistle and Italian thistle have been used when native nectar sources have not been available. Gum plants (*Grindelia* spp.) have also been used.

During the months of March, April, May and July 2014, and March, April, May and June 2022, surveys for special-status plants were conducted on the project site. During these surveys complete plant species lists were kept. While bull thistle, Italian thistle and gum plants are present on the project site, the Myrtle's silverspot butterfly larval host plant (western dog violet) and the primary adult nectar source (curly-leaved monardella) were not identified onsite during these spring surveys. Additionally, no Myrtle's silverspot butterflies have been observed onsite during any surveys. Finally, the project site is well inland of the coastal areas where this butterfly is known to occur. ***Since no habitat for this rare butterfly is provided onsite, no impact to Myrtle's silverspot butterfly is expected from project site development***.

8. REGULATORY FRAMEWORK FOR NATIVE WILDLIFE, FISH, AND PLANTS

This section provides a discussion of those laws and regulations that are in place to protect native wildlife, fish, and plants. Under each law its relevance to the proposed project is discussed.

8.1 Federal Endangered Species Act

The FESA forms the basis for the federal protection of threatened or endangered plants, insects, fish, and wildlife. FESA contains four main elements, they are as follows:

Section 4 (16 USCA §1533): Species listing, Critical Habitat Designation, and Recovery Planning: outlines the procedure for listing endangered plants and wildlife.

Section 7 (§1536): Federal Consultation Requirement: imposes limits on the actions of federal agencies that might impact listed species.

Section 9 (§1538): Prohibition on Take: prohibits the "taking" of a listed species by anyone, including private individuals, and State and local agencies.

Section 10: Exceptions to the Take Prohibition: non-federal agencies can obtain an incidental take permit (ITP) through approval of a Habitat Conservation Plan (HCP).

In the case of saltwater fish and other marine organisms, the requirements of FESA are enforced by the NMFS. The USFWS enforces all other cases. Below, Sections 9, 7, and 10 of FESA are discussed since they are the sections most relevant to the proposed project.

Section 9 of FESA as amended, prohibits the "take" of any fish or wildlife species listed under FESA as endangered. Under federal regulation, "take" of fish or wildlife species listed as threatened is also prohibited unless otherwise specifically authorized by regulation. "Take," as defined by FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." "Harm" includes not only the direct taking of a species itself, but the destruction or modification of the species' habitat resulting in the potential injury of the species. As such, "harm" is further defined to mean "an act which actually kills or injures wildlife; 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). A December 2001 decision by the 9th Circuit Court of Appeals (Arizona Cattle Growers' Association, Jeff Menges, vs. the U.S. Fish

and Wildlife Service and Bureau of Land Management, and the Southwest Center for Biological Diversity) ruled that the USFWS must show that a threatened or endangered species is present on a project site and that it would be taken by the project activities. According to this ruling, the USFWS can no longer require mitigation based on the probability that the species could use the site. Rather they must show that it is "reasonably certain to occur."

Section 9 applies to any person, corporation, federal agency, or any local or State agency. If "take" of a listed species (other than a plant species) is necessary to complete an otherwise lawful activity, this triggers the need to obtain an ITP either through a Section 7 Consultation as discussed further below (for federal actions or private actions that are permitted or funded by a federal agency such as the Corps), or through Section 10 of FESA which requires preparation of an HCP (for State and local agencies, or individuals, and projects without a federal "nexus"; for example, projects that do not need a Corps permit).

Section 7(a)(2) of the Act requires that each federal agency consult with the USFWS to ensure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of critical habitat for listed species. Critical habitat designations mean: (1) specific areas within a geographic region currently occupied by a listed species, on which are found those physical or biological features that are essential to the conservation of a listed species and that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a listed species that are determined essential for the conservation of the species.

The Section 7 consultation process only applies to actions taken by federal agencies that are considering authorizing discretionary projects. Section 7 is by and between the NMFS and/or the USFWS and the federal agency contemplating a discretionary approval (that is, the federal "action agency," for example, the Corps or the Federal Highway Administration). Private parties, cities, counties, etc. (i.e., applicants) may participate in the Section 7 consultation *at the discretion of the federal agencies conducting the Section 7 consultation*. The Section 7 consultation process is triggered by a determination of the "action agency" – that is, the federal agency that is carrying out, funding, or approving a project - that the project "may affect" a listed species or critical habitat. If an action is likely to adversely affect a listed species or designated critical habitat, formal consultation between the nexus agency and the USFWS/NMFS is required. As part of the formal consultation, the USFWS/NMFS may resolve any issues informally with the nexus agency or may prepare a formal Biological Opinion assessing whether the proposed action would be likely to result in "jeopardy" to a listed species or if it could adversely modify designated critical habitat. If the USFWS/NMFS prepares a Biological Opinion, it will contain either a "jeopardy" or "non-jeopardy" decision. If the USFWS/NMFS concludes that a proposed project would result in adverse modification of critical habitat or would jeopardize the continued existence of a federally-listed species (that is, it will issue a jeopardy decision), the nexus federal agency would be most unlikely to authorize its discretionary permit. If the USFWS/NMFS prepares a "non-jeopardy" Biological Opinion, the nexus federal agency may authorize the discretionary permit making all conditions of the Biological Opinion conditions of its discretionary permit. A non-jeopardy Biological Opinion

constitutes an "incidental take" permit that allows applicants to "take" federally-listed species while otherwise carrying out legally sanctioned projects.

For non-federal entities, for example private parties, cities, and counties that are proposing a project that might result in incidental take, Section 10 provides the mechanism for obtaining that take authorization. Under Section 10 of FESA, for the applicant to obtain an ITP, the applicant is required to submit a "conservation plan" to the USFWS or NMFS that specifies the impacts that are likely to result to federally-listed species, and the measures the applicant will undertake to minimize and mitigate such impacts, and the funding that will be available to implement those steps. Conservation plans under FESA have come to be known as "habitat conservation plans" or "HCPs" for short. The terms incidental take permit, Section 10 permit, and Section 10(a)(1)(B) permit are used interchangeably by the USFWS. Section 10(a)(2)(B) of FESA provides statutory criteria that must be satisfied before an ITP can be issued.

8.1.1 Responsible Agency

FESA gives regulatory authority to the USFWS for federally-listed terrestrial species and non-anadromous fish. The NMFS has regulatory authority over federally-listed marine mammals and anadromous fish.

8.1.2 Applicability to the Proposed Project

There are no federally listed species on the project site. There is no habitat for federally listed wildlife. Special-status plant surveys have been conducted and demonstrated that no federally listed plants occur on the project site. An assessment for the California red-legged frog was conducted by a federal 10(a)(1)(A) permitted California red-legged frog biologist and determined that this frog would not be expected in the habitats onsite. The project would not impact any known FESA protected species as addressed above. No impacts are expected to occur to dispersing or migrating federally listed animals or their habitats.

8.2 Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989) makes it unlawful to "take" (kill, harm, harass, shoot, etc.) any migratory bird listed in Title 50 of the Code of Federal Regulations, Section 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

Executive Order 13186 for conservation of migratory birds (January 11, 2001) requires that any project with federal involvement address impacts of federal actions on migratory birds. The order is designed to assist federal agencies in their efforts to comply with the Migratory Bird Treaty Act and does not constitute any legal authorization to take migratory birds. The order also requires federal agencies to work with the USFWS to develop a memorandum of understanding (MOU). Protocols developed under the MOU must promote the conservation of migratory bird populations through the following means:

- avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions;

- restore and enhance habitat of migratory birds, as practicable; and prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

8.2.1 Applicability to The Proposed Project

The oak woodlands located on the southern and western portions of the project site provide nesting habitat for raptors (birds of prey) and passerine birds. These birds would be protected pursuant to the Migratory Bird Treaty Act. As long as there is no direct mortality of species protected pursuant to this Act caused by development of the site, there should be no constraints to site development. To comply with the Migratory Bird Treaty Act, all active nest sites would have to be avoided while nests were in use. Upon completion of nesting, the project could commence as otherwise planned. Recommendations for avoidance of nest sites for potentially occurring nesting birds are presented in the Impacts and Mitigations section below.

8.3 **California Endangered Species Act**

8.3.1 Section 2081 of the California Endangered Species Act

In 1984, the State legislated the CESA (Fish and Game Code §2050). The basic policy of CESA is to conserve and enhance endangered species and their habitats. State agencies will not approve private or public projects under their jurisdiction that would impact threatened or endangered species if reasonable and prudent alternatives are available. Because CESA does not have a provision for "harm" (see discussion of FESA, above), CDFW considerations pursuant to CESA are limited to those actions that would result in the direct take of a listed species.

If the CDFW determines that a proposed project could impact a State-listed threatened or endangered species, the CDFW will provide recommendations for "reasonable and prudent" project alternatives. The CEQA lead agency can only approve a project if these alternatives are implemented, unless it finds that the project's benefits clearly outweigh the costs, reasonable mitigation measures are adopted, there has been no "irreversible or irretrievable" commitment of resources made in the interim, and the resulting project would not result in the extinction of the species. In addition, if there would be impacts to threatened or endangered species, the lead agency typically requires project applicants to demonstrate that they have acquired "incidental take" permits from the CDFW and/or USFWS (if it is a federally-listed species) prior to allowing/permitting impacts to such species.

If proposed projects would result in impacts to a State-listed species, an "incidental take" permit pursuant to §2081 of the Fish and Game Code would be necessary (versus a federal ITP for federally listed species). The CDFW will issue an ITP only if:

1) The authorized take is incidental to an otherwise lawful activity;
2) the impacts of the authorized take are minimized and fully mitigated;
3) measures required to minimize and fully mitigate the impacts of the authorized take:
    a) are roughly proportional in extent to the impact of the taking on the species;
    b) maintain the project applicant’s objectives to the greatest extent possible; and,
    c) capable of successful implementation; and,

4) adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with, and the effectiveness of, the measures.

If an applicant is preparing an HCP as part of the federal 10(a) permit process, the HCP might be incorporated into the §2081 permit if it meets the substantive criteria of §2081(b). To ensure that an HCP meets the mitigation and monitoring standards in Section 2081(b), an applicant should involve CDFW staff in development of the HCP. If a final Biological Opinion (federal action) has been issued for the project pursuant to Section 7 of the FESA, it might also be incorporated into the §2081 permit if it meets the standards of §2081(b).

No §2081 permit may authorize the take of a species for which the Legislature has imposed strict prohibitions on all forms of "take." These species are listed in several statutes that identify "fully protected" species and "specified birds." See Fish and Game Code §§ 3505, 3511, 4700, 5050, 5515, and 5517. If a project is planned in an area where a "fully protected" species or a "specified bird" occurs, an applicant must design the project to avoid all take.

Fish and Game Code §2080.1 allows an applicant who has obtained a "non-jeopardy" federal Biological Opinion pursuant to Section 7 of the FESA, or who has received a federal 10(a) permit (federal ITP) pursuant to the FESA, to submit the federal opinion or permit to the CDFW for a determination as to whether the federal document is "consistent" with CESA. If after 30 days the CDFW determines that the federal ITP is consistent with state law, and that all State-listed species under consideration have been considered in the federal Biological Opinion, then no further permit or consultation is required under CESA for the project. However, if the CDFW determines that the federal opinion or permit is not consistent with CESA, or that there are State-listed species that were not considered in the federal Biological Opinion, then the applicant must apply for a CESA permit under Section 2081(b). Section 2080.1 is of no use if an affected species is State-listed, but not federally-listed.

State and federal ITPs are issued on a discretionary basis, and are typically only authorized if applicants are able to demonstrate that impacts to the listed species in question are unavoidable, and can be mitigated to an extent that the reviewing agency can conclude that the proposed impacts would not jeopardize the continued existence of the listed species under review. Typically, if there would be impacts to a listed species, mitigation that includes habitat avoidance, preservation, and creation of endangered species habitat is necessary to demonstrate that projects would not threaten the continued existence of a species. In addition, management endowment fees are usually collected as part of the agreement for the ITP(s). The endowment is used to manage any lands set-aside to protect listed species, and for biological mitigation monitoring of these lands over (typically) a five-year period.

8.3.2 Applicability to The Proposed Project

No state-listed plant or wildlife species (Tables 3 and 4 respectively) are expected to occur on the project site. Consequently, no impacts are expected to occur to plant or animal species protected pursuant to the CESA. As such, no CESA (2081b) Incidental Take Permit is warranted for the proposed project.

8.4 California Fish and Game Code § 3503, 3503.5, 3511, and 3513

California Fish and Game Code §3503, 3503.5, 3511, and 3513 prohibit the "take, possession, or destruction of birds, their nests or eggs." Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered "take." Such a take would also violate federal law protecting migratory birds (Migratory Bird Treaty Act).

All raptors (that is, hawks, eagles, owls) their nests, eggs, and young are protected under California Fish and Game Code (§3503.5). Additionally, "fully protected" birds, such as the White-tailed Kite and Golden Eagle, are protected under California Fish and Game Code (§3511). "Fully protected" birds may not be taken or possessed (that is, kept in captivity) at any time.

8.4.1 Applicability to the Proposed Project

The oak trees onsite provide potential nesting habitat for several raptor and passerine bird species. Any nesting birds would be protected by Fish and Game Code §3503, 3503.5, 3511, and 3513. Preconstruction nesting surveys should be conducted for nesting birds to ensure that there is no direct "take" of nesting birds including their eggs, or young. Any active nests that were found during preconstruction surveys would have to be avoided by the project through the establishment of non-disturbance buffers around any active nest site until the nesting cycle is complete. More specifics regarding preconstruction nesting survey requirements and for active nest protection measures are provided below in the "Impacts and Mitigations" section.

9. LOCAL ORDINANCES AND REGULATIONS

9.1 Heritage Tree Ordinance

The City of Novato has an Ordinance protecting "Heritage Trees." Such trees include any tree with a trunk that measures a diameter of 24 inches or greater (or a circumference of 75 inches or greater) measured at 24 inches above ground level. (Novato Municipal Code § 17-1.2.) It is "unlawful for any person or group of persons to alter or remove or cause to be altered or removed, one or more heritage trees on any parcel in the city without a permit." (*Id.* at § 17-1.3.) To alter means "to take action in a way that could reasonably be said to diminish the vigor of the tree." (*Id.* at § 17-1.2.)

9.1.1 Applicability to the Proposed Project

According to the *Valley Oaks Trees Proposed for Removal Exh- 4A* created by CSW/Stuber-Stroeh Engineering Group, Inc. dated October 20, 2022 (Exhibit C) and the *Further Updated Gurka Tree Inventory* dated October 20, 2022, 13 heritage trees are proposed for removal, and an additional 3 heritage trees are proposed for potential removal on the project site. Out of the 13 heritage trees proposed for removal, eight are valley oak trees (*Quercus lobata*) ranging from diameter at breast height (DBH) of 28-35 inches. Two silver dollar gum trees (*Eucalyptus cinerea*) are proposed for removal and are both multi-stem trees adding up to greater than 24-inch DBH. One coast live oak (*Quercus agrifolia*) at 27" DBH, one Monterey cypress (*Cypresses macrocarpa*) at 26" DBH, and one black oak (*Quercus kelloggii*) at 29" DBH are also proposed for removal. The three trees proposed for *potential* removal are all valley oak trees. The removal or alteration of these trees would require a permit from the City of Novato.

Subsequent mitigation (replacement tree planting) would also likely be required if these trees were to be impacted. The Impacts and Mitigation Measures that follow in the sections below address these potential impacts.

9.2 City of Novato Zoning Code 19.36 Wetland Protection and Restoration

Below we present relevant sections of the City's zoning code that apply to wetland protection and preservation that affects development of the project site.

9.2.1 19.36.010 Purpose of Division

This division provides procedures and standards for identifying and protecting wetland resources, and permitting wetland restoration, enhancement, and mitigation projects (Ord. No. 1441 § 2(A)).

9.2.2 19.36.020 Applicability

The standards of this division apply to all lands within the City of Novato that support wetlands within the jurisdiction of the Corps pursuant to the Clean Water Act. The delineation of wetlands is subject to the procedures specified in the Corps' Wetland Delineation Manual (Corps 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Corps 2008). The standards of this division do not apply to treatment wetlands or drainage ways considered "other waters" under the Clean Water Act. (Ord. No. 1441 § 2(A))

9.2.3 19.36.030 General Wetland Preservation and Enhancement Standards

A. Development shall be designed and constructed to avoid wetlands to the maximum extent feasible.

Applicability to the Proposed Project
Development will be constructed to avoid wetlands to the maximum extent feasible with only 0.39 acre of wetlands being impacted out of the 1.75 acres on the entire project site. Prior to any impact to waters of the U.S. subject to the jurisdiction of the Corps, proper permitting and mitigation requirements will be met.

B. Any permitted development, grading, fill, excavation, or shading within a wetland shall provide for the mitigation of wetland loss at a minimum replacement ratio of 2:1 or greater and shall ensure that there is no net loss of wetland functions and values.

Applicability to the Proposed Project
The Corps field confirmed the extent of its Clean Water Act jurisdictional limits on the 40-acre project site on May 22, 2019. Since the RWQCB does not have a method for defining and confirming wetland boundaries, this agency typically relies on the Corps' confirmed jurisdictional map when reviewing permit applications. M&A Principal Biologist, Ms. Sarah Lynch has been in correspondence with Ms. Nicole Fairley from the RWQCB most recently on December 3, 2021, regarding the project's proposed wetland impacts and mitigation. Ms. Nicole Fairley agreed that the current proposed project layout and a proposed 1:1 wetland mitigation ratio for wetland creation is likely an acceptable mitigation ratio for the project's impacts. However, mitigation prescribed by the Corps may be as high as a 2:1 ratio; it is unknown at this

time. Thus, for purposes of this analysis, the mitigation ratio will be between a 1:1 and 2:1 ratio as prescribed by the resource agencies at the time the permits for the project are issued. City conditions of project approval for wetland mitigation should remain consistent with agency issued permits.

C. Off-site mitigation of impacted wetlands may be considered where on-site mitigation is not possible. Off-site mitigation shall provide for a minimum mitigation ratio of 3:1 or greater and must be located within the Novato area watershed (Ord. No. 1441 § 2(A)).

Applicability to the Proposed Project

Mitigation for the 0.39-acre of impacted wetlands on the proposed project site will be through constructed wetlands on-site. The mitigation will be between a 1:1 and 2:1 ratio as prescribed by the resource agencies at the time the permits for the project are issued. City conditions of project approval for wetland mitigation should remain consistent with agency issued permits.

9.2.4 19.36.040 PERMIT REQUIREMENTS

Under City of Novato Zoning Code 19.36.040, use permit approval is required for any project within 50 feet of a wetland or requiring wetland protection measures or involving wetland fill/encroachment, or requiring wetland mitigation; and, for all wetland protection, restoration, enhancement and/or mitigation projects, in addition to compliance with section 19.20.050 (Grading), and chapter VI (Excavation and Fills).

Applicability to the Proposed Project

The Applicant is requesting a Use Permit for the Project and encroachment into certain 50-foot setbacks from the wetlands on the WCJA and Former Lands of Wright property. See Overall Map of Wetland Impact Areas prepared by CBG Engineers, February 1, 2022 (Exhibit D). This Use Permit would apply to Wetland Area 1 which would be impacted in two places due to the "A" Street crossing and the EVA road linking "D" Street to the Verandah development. Additionally, Wetland Areas 2 and 3 are completely impacted by the proposed project, and Wetland Area 4 is less than 50 feet from grading limits.

9.2.5 19.36.050 APPLICATION REQUIREMENTS- WETLAND MANAGEMENT PLAN.

Zoning Code 19.36.050 requires the use permit application to include a wetland delineation and a wetlands management plan prepared by a qualified wetlands expert. The wetlands management plan shall comply with the City's stream management guidelines, and the standards and design criteria in section 19.36.070.

Applicability to the Proposed Project

A wetland delineation for the WCJA property, prepared by First Carbon Solutions, was field confirmed by the Corps on May 22, 2019. This Preliminary Jurisdictional Determination (or PJD) is still valid today. A total of 1.71 acres of wetlands and other waters of the United States/State is located on the WCJA property. The Corps confirmed jurisdiction over an additional 0.044 acres of wetlands on the Former Lands of Wright property on January 14, 2021.

Prior to authorizing impacts to any of the wetlands or other waters onsite, the Corps and the RWQCB will require preparation and submittal of a wetland mitigation plan. Any plan submitted to these agencies and approved should also satisfy the City of Novato's Zoning Code requirements for a wetland management plan.

9.2.6 19.36.060 LIMITATIONS ON LAND USE WITHIN WETLAND AREAS

A. *Allowed Uses.* Wetlands may fulfill the landscaping requirements of Section 19.28.030 (except that landscaping required in parking areas shall be provided), where the building and landscape design provides for the participation by residents and/or users of the site in passive outdoor recreational activities such as bird watching, fishing, and nature photography. Public access for passive recreational activities may be permitted and shall be encouraged where appropriate and consistent with the protection of habitat functions and values and adequate habitat protection measures are provided in the Wetland Management Plan.

Applicability to the Proposed Project
The wetlands onsite provide natural functions and values such as ground-water recharge, biofiltration, and a seasonal water source for wildlife, among other natural functions. However, the wetlands onsite will not provide recreational value to the residents in the ways of fishing, photography. Regardless, wetlands onsite, whether created or preserved, shall be used to meet Project landscape requirements other than in parking areas.

B. *Allowed Structures.* Any structure allowed in a wetland that is being created, preserved or enhanced, shall be designed to minimize its adverse impacts on the wetland. Measures to minimize adverse effects may include construction on pilings to allow unobstructed flow of water, preserving the natural contour of the wetland, and otherwise minimizing impairment, alteration, or loss of the wetland.

Applicability to the Proposed Project
There are no structures proposed to be developed within a wetland on the project site.

9.2.7 19.36.070 DEVELOPMENT STANDARDS AND DESIGN CRITERIA.

Zoning Code 19.36.070 states that the wetlands management plan required by section 19.36.050 shall comply with the following standards. In the event of conflicts between applicable standards, the most restrictive shall apply.

9.2.7.1 *Wetland Buffer*

A buffer area of a minimum of 50 feet in width shall be established to provide for undisturbed habitat adjacent to the wetland and to maintain sufficient watershed to support the wetland. The review authority may require additional width to protect high habitat values and/or provide adequate watershed area and hydrology.

The review authority may reduce the wetland buffer if a finding is made with respect to either of the following grounds (1) or (2):

1. The proposed buffer provides adequate watershed hydrology to support the wetland and protects the resource value of the wetland; or
2. The strict application of the buffer requirement would result in the inability to construct a project at the project site location.

Applicability to the Proposed Project

The Applicant is requesting a Use Permit for the proposed project and encroachment into certain 50-foot setbacks from the wetlands on the WCJA and Former Lands of Wright Properties. See Overall Map of Wetland Impact Areas prepared by CBG Engineers, February 1, 2022 (Exhibit D). This Use Permit would apply to Wetland Area 1 which would be impacted in two places due to the "A" Street crossing and the EVA road linking "D" Street to the Verandah development. Additionally, Wetland Areas 2 and 3 are completely impacted by the proposed project, and Wetland Area 4 is less than 50 feet from grading limits. This project site plan has been determined as the Least Environmental Damaging Project Alternative (LEDPA) that preserves the most area of wetlands on the project site, while still maintaining a practicable project (Exhibit A).

9.2.7.2 *Protective Measures*

Measures including protective fencing, landscaping, setbacks for roads and parking areas, shall be required to minimize adverse impacts on wetlands and wetland habitat. Facilities, structures, and pavement may be adjacent to, but not within, the wetland setback area. Retention ponds, swales, or water quality control features may be required in setback areas to prevent pollutants in urban runoff from discharging into wetland habitat.

Applicability to the Proposed Project

Protective fencing is proposed to be established around the drainage and all preserved and created wetlands on the project site to ensure preservation of the habitats and the buffer areas. No facilities, structures or pavement will be placed in wetlands, and native landscaping is proposed to be planted in buffer areas.

A Stormwater Management Plan (SWMP) is being prepared by the project civil engineer to ensure that stormwater leaving the project site is both treated and hydromodified, ensuring that flows do not leave the project site any faster than they do today. The SWMP will be in compliance with the National Pollutant Discharge Elimination System C.3 regulations enforced by the State Water Resources Control Board and the Regional Water Quality Control Board and will be in compliant with the City of Novato's MS-4 permit issued to the City by the Regional Water Quality Control Board.

9.2.7.3 *Landscaping*

Wetland buffer areas shall be planted and maintained with native vegetation that is consistent with the maintenance of the adjacent wetland habitat values.

Applicability to the Proposed Project

The preserved wetland buffers, and the created mitigation wetlands and buffers will be enhanced with native vegetation that is consistent with the maintenance of the adjacent wetland habitat values.

9.2.7.4 *Erosion and Sediment Control*

Prior to issuance of a grading permit, an erosion control plan prepared by a registered professional engineer shall be submitted to the department for approval, including best-management practices to minimize siltation, sedimentation, and erosion (see section 5-23.008). During construction, temporary fencing shall be placed around the wetland/buffer area. To ensure that sediment remains on the site and is not transported into wetlands and other waters, erosion and sediment controls shall be left in place until the site is stabilized with permanent vegetation.

Applicability to the Proposed Project

The erosion control plan will be prepared in compliance with the State Water Resources Control Board's (SWRCB) General Construction Permit that requires preparation and submittal of a Stormwater Pollution Prevention Plan (SWPPP) for projects that exceed one acre. The SWPPP will be submitted to the SWRCB as necessary to obtain authorization to use the General Stormwater Permit for the proposed project. The SWPPP will ensure that erosion control measures are implemented prior to and while the project site is being developed. In addition, a SWMP shall be developed in compliance with the City of Novato's MS4 permit from the RWQCB. The SWMP will ensure that the post developed project site will continue to treat stormwater falling on the project site so as to minimize the effects of the project on downstream receiving waters.

9.2.7.5 *Timing of Wetland Restoration or Creation*

The restoration or creation of wetlands required as a condition of development approval shall be undertaken prior to completion of the development unless a security agreement is provided to the satisfaction of the city attorney prior to issuance of a certificate of occupancy or acceptance of improvements that will ensure wetland restoration and monitoring of the effort (Ord. No. 1441 § 2(A)).

Applicability to the Proposed Project

The proposed project will impact 0.39-acre of wetlands on the project site. Wetlands will be re-created on the project site between a 1:1 and 2:1 ratio to mitigate for the impacts of waters of the State/U.S, or at a ratio agreed upon by RWQCB and the Corps at the time permits are applied for. The creation of these wetlands will be undertaken prior to the completion of the development or in arrangement with the city attorney prior to issuance of a certificate of occupancy or acceptance of improvements.

10. CITY OF NOVATO GENERAL PLAN-ENVIRONMENTAL STEWARDSHIP CHAPTER (ES)

10.1 Goal ES 1: Preserve, enhance and restore natural areas and features, including Novato's scenic hillsides, waterways, riparian corridors, wetlands, baylands, and species status species.

10.1.1 ES 1: ECOLOGY OF CREEKS AND STREAMS

Preserve and enhance the ecology of creeks and streams, including riparian vegetation. Prohibit further degradation and require restoration of previously-degraded riparian areas as a condition of development approval when restoration is feasible, taking into account the project's size and cumulative impacts.

ES 1a: Waterway and Riparian Protection. Ensure that new development complies with the requirements of the Waterway and Riparian Protection ordinance in the Zoning Code for watercourses shown on Figure ES-1.

Applicability to the Proposed Project:

There are no blueline creeks or streams on the project site, and the project site does not have watercourses shown on the City's Figure ES-1. There is an intermittent drainage feature onsite that is deeply incised that will be preserved. Except for the "A" Street crossing, the pedestrian footbridge and a limited number of minor encroachments into the minimum 10-foot building setback, the project as proposed will be setback at least a 10-foot with an average setback of 25 feet from the drainage. Native California vegetation will be incorporated into the landscape design and riparian plantings along the drainage will enhance the drainage and improve its overall function in the landscape. Implemented BMPs including bioretention (treatment) of surface runoff prior to discharge into the drainage will prevent impacts to the drainage and the wetlands onsite.

10.1.2 ES 2: WATERSHED MANAGEMENT

Minimize the effects of pollution in stormwater runoff in Novato and its effective watersheds. Retain and restore where feasible the natural hydrological characteristics of watersheds in Novato, including daylighting of drainages that were previously buried.

ES 2a: NPDES Compliance. Ensure that new development complies with the requirements of the Natural Pollutant Discharge Elimination System (NPDES) and the applicable Urban Runoff Pollution Prevention Ordinance.

Applicability to the Proposed Project:

The project will be responsible for implementing both a preconstruction and construction-based Storm Water Pollution Prevention Plan (SWPPP) and a post-construction SWMP as necessary to comply with the NPDES and the City of Novato's MS4 Phase II NPDES requirements. All stormwater runoff currently flows through existing, double 48-inch storm drains underneath Redwood Boulevard and Highway 101. Since it is a requirement for pre-treatment of stormwater in accordance with MS4 (discussed in the section below), the development plan has incorporated bioretention

treatment areas into its design so that stormwater is treated prior to being released into the storm drains and offsite. Additionally, during project construction it is important for the project proponent to have the components of a SWPPP and a SWMP in place.

ES 2b: Maintenance. Prioritize storm drain maintenance and street sweeping programs to reduce urban runoff pollutants.

Applicability to the Proposed Project:
Since it is a requirement for pre-treatment of stormwater in accordance with MS4 (discussed in the section below), the development plan has incorporated bioretention treatment areas into its design so that stormwater is treated prior to being released into the storm drains and offsite. Proper BMPs, such as silt fencing and straw wattles, will be used around the drainage and any storm drains to prevent discharge of substances during construction. The proposed project will work with the appropriate state and local agencies in preventing all pollution and runoff. Additionally, the project site will be kept cleaned from trash or liquid substances that could run off in stormwater during construction.

10.1.3 ES 3: WILDLIFE HABITAT

Endeavor to preserve and enhance wildlife habitat areas and wildlife movement corridors in watercourse areas and control human use of these areas as necessary to protect them.

Applicability to the Proposed Project:
The oak woodlands on the hillside, and the local wildlife corridor it provides, will be fully preserved and not impacted. Additionally, a majority of the seasonal wetlands onsite will be preserved and to mitigate for the 0.39-acre of wetland impacted, onsite wetlands will be created while the preserved wetlands will be enhanced. There are no named streams on the project site, but the unnamed, incised drainage feature will be preserved and buffered by the project as well.

10.1.4 ES 4: HABITAT RESTORATION

Restore damaged portions of riparian areas to their natural state, including removal of invasive species, whenever feasible.

Applicability to the Proposed Project:
The 'A' Street overpass that is proposed to be constructed over the drainage would either be a standard culvert, an arched open bottom culvert, or a span bridge; the exact design has not been finalized. The wooden pedestrian footbridge is proposed to span from the top of one bank to the top of the other bank. There is no riparian habitat in or near the areas of impact, and the remainder of the drainage would not be impacted, as an average 25-foot setback, and at least a 10-foot setback is proposed along the remainder of the drainage minus a few minor encroachments. The applicant proposes to enhance the drainage on the project site with native riparian plantings to mitigate for any impacts from the road crossing.

10.1.5 ES 5: PUBLIC ACCESS TO WATERCOURSES

Manage public access to watercourses shown on the City's Figure ES-1 in a manner that will not degrade the habitat.

Applicability to the Proposed Project:
There are no watercourses on the project site that are shown on the City's Figure ES-1.

10.1.6 ES 6: WETLANDS ECOLOGY

Preserve and enhance wetlands ecology.

ES 6a: Wetland Protection. Ensure that new development complies with the requirements of the Wetland Protection and Restoration ordinance in the Zoning Code.

Applicability to the Proposed Project:
The Applicant is requesting a Use Permit for the proposed project and encroachment into certain 50-foot setbacks from the wetlands on the WCJA and Former Lands of Wright Properties. Further, protective fencing is proposed to be established around wetlands and the drainage, no structures, facilities or pavement will be in the wetland areas, and native vegetation is proposed to be planted in the buffer areas to enhance the habitat surrounding the wetlands. Thus, the development complies with the requirements of the Wetland Protection and Restoration ordinance in the Zoning Code. Please see the City of Novato Zoning Code, Wetland Protection and Restoration Section in 9.2 above.

10.1.7 ES 10: WATER QUALITY

Protect water resources from pollution and sedimentation, and preserve their environmental and recreational values.

Applicability to the Proposed Project:
Proper BMPs, such as silt fencing and straw wattles, will be used around the drainage and any storm drains to minimize the effects of pollution in stormwater runoff. Additionally, the project site will be kept cleaned from trash or liquid substances that could run off in stormwater during construction.

10.1.8 ES 11: SPECIES DIVERSITY AND HABITAT

Protect biological resources, including migratory birds, anadromous fish, and threatened and endangered species, that are necessary to maintain a diversity of plant and animal species.

ES 11a: Agency Cooperation. Cooperate with state and federal agencies to ensure that development does not substantially adversely affect species status species appearing on the state or federal list for any rare, endangered, or threatened species. Require a special status species survey as appropriate.

Applicability to the Proposed Project:
M&A Biologists conducted special-status plant surveys on the project site four times in 2014, two surveys of the project site's wetlands in 2014 and two in 2020, and four additional plant surveys in 2022. No special-status plants have been observed on the project site, and during each of these surveys, no special-status animals have been observed on the project site. No special-status animal records have ever been mapped on or adjacent to the project site. However, a total of ten special-status animal species are known to occur in the region of the project site. Please see the Potential Special-Status Animals on the Project Site section above for more information.

10.1.9 ES 12: VIEWS

Encourage protection of visual access to the San Pablo Bay Shoreline and the Petaluma River.

Applicability to the Proposed Project:
The proposed project will not create visual barriers to the San Pablo Bay Shoreline and the Petaluma River.

10.1.10 ES 15: SCENIC RESOURCES

Protect visual values on hillsides, ridgelines, and other scenic resources. Development should be located and designed to protect views of important scenic resources identified on Figure ES-5.

ES 15a: Hillside and Ridgeline Protection. Ensure that new development complies with the requirements of the Scenic Resources Protection Ordinance and the hillside and Ridgeline Protection Ordinance in the Zoning Code.

Applicability to the Proposed Project:
Except for isolated disturbed and fringe areas the proposed project neither builds on slopes of greater than 25% slope nor impacts ridgelines. Instead, development is clustered in the flat low-lying areas of the site. The steeper slopes and the area of historic landslide will not be developed and designated as Open Space and used as an open space amenity for the benefit of the Valley Oaks community.

10.2 Goal ES 4: Protect trees and woodlands that provide ecological, economic and aesthetic benefits for Novato.

10.2.1 ES 20: NATIVE WOODLANDS

Maintain age and species diversity of native woodlands and preserve the health of trees and other vegetation wherever feasible.

Applicability to the Proposed Project:
The proposed project will impact the fewest trees possible on the project site, while maintaining the mixed oak woodland to the south and west of the project site and clusters of trees throughout the residential units. Proper permits will be required for impacts to any Heritage Trees through the City of Novato and additionally, proper measures will be taken to maintain the health of trees near the construction site.

10.2.2 ES 22: TREES ON PRIVATE PROPERTY

Encourage and, where appropriate, require actions by private property owners to protect the health of native woodlands and trees.

Applicability to the Proposed Project:
A majority of the oak woodlands located on the project site will be preserved and only the trees necessary for development will be impacted. The proper permits will be applied for to the City of Novato prior to impacting any Heritage Trees.

10.2.3 ES 23: TREES IN NEW DEVELOPMENT

Require that the site planning, construction and maintenance of development preserve existing healthy trees and native vegetation on site to the maximum extent feasible. Replace trees and vegetation not able to be saved.

Applicability to the Proposed Project:
The *Valley Oaks Trees Proposed for Removal Exh- 4A* dated October 20, 2022 created by CSW/Stuber-Stroeh Engineering Group, Inc. shows Valley Oaks Trees Proposed for Removal. Mitigation (replacement tree planting) for any impacted trees would likely be required if heritage trees were impacted on the project site, which would require the applicant to provide and description and plan for replacement planting. Please see the Impacts and Mitigation Measure BIO-3 below for more information.

11. REGULATORY REQUIREMENTS PERTAINING TO WATERS OF THE UNITED STATES AND STATE

This section presents an overview of the criteria used by the Corps, the RWQCB, the State Water Resources Control Board (SWRCB), and the CDFW to determine those areas within a project area that would be subject to their regulation.

11.1 U.S. Army Corps of Engineers Jurisdiction and General Permitting

Congress enacted the Clean Water Act "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (33 U.S.C. §1251(a)). Pursuant to Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344), the Corps regulates the disposal of dredged or fill material into "waters of the United States" (33 CFR Parts 328 through 330). This requires project applicants to obtain authorization from the Corps prior to discharging dredged or fill materials into any water of the United States.

On November 18, 2021, the U.S. EPA and the Corps (the "agencies") announced the signing of a proposed rule to revise the definition of "waters of the United States." On December 7, 2021, the proposed rule was published in the Federal Register. The agencies propose to put back into place the pre-2015 definition of "waters of the United States," (40 CFR 230.3(s). This proposal redefining wetlands is not final at this time. The agencies are interpreting "waters of the United States" consistent with the pre-2015 regulatory regime until further notice.

In the published proposed rule from the Federal Register, the term "waters of the United States" is defined as:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds:
    (i) That are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (1), (2), (5)(i), or (6) of this section; or
    (ii) (ii) That either alone or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of waters identified in paragraph (1), (2), or (6) of this section;
4. All impoundments of waters otherwise defined as waters of the United States under the definition, other than impoundments of waters identified under 3 of this section;
5. Tributaries of waters identified in (1), (2), (4), or (6) of this section;
    (i) That are relatively permanent, standing or continuously flowing bodies of water; or
    (ii) That either alone or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of waters identified in (1), (2), or (6) of this section;
6. The territorial seas;
7. Wetlands adjacent to the following waters (other than waters that are themselves wetlands):
    (i) Waters identified in (1), (2), or (6) of this section; or
    (ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (4) or (5)(i) of this section and with a continuous surface connection to such waters; or
    (iii) Waters identified in (4) or (5)(ii) of this section when the wetlands either alone or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of waters identified in paragraph (1), (2), or (6) of this section.

Waters of the United States do not include:

8. Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States.

9. Prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

Limits of Corps' jurisdiction:

(a) Territorial Seas. The limit of jurisdiction in the territorial seas is measured from the baseline in a seaward direction a distance of three nautical miles. (See 33 CFR 329.12)

(b) Tidal Waters of the United States. The landward limits of jurisdiction in tidal waters:

(1) Extends to the high tide line, or
(2) When adjacent non-tidal waters of the United States are present, the jurisdiction extends to the limits identified in paragraph (c) of this section.

(c) Non-Tidal Waters of the United States. The limits of jurisdiction in non-tidal waters:

(1) In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark ("OHWM"), or
(2) When adjacent wetlands are present, the jurisdiction extends beyond the ordinary high water mark to the limit of the adjacent wetlands.
(3) When the water of the United States consists only of wetlands the jurisdiction extends to the limit of the wetland.

Section 404 jurisdiction in "other waters" such as lakes, ponds, and streams, extends to the upward limit of the OHWM or the upward extent of any adjacent wetland. The OHWM on a non-tidal water is:

- the "line on shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR Section 328.3[e]).

Wetlands are defined as: "...those areas that are inundated or saturated by surface or ground water at a frequency and duration to support a prevalence of vegetation adapted for life in saturated soil conditions" (33 CFR Section 328.8 [b]). Wetlands usually must possess hydrophytic vegetation (i.e., plants adapted to inundated or saturated conditions), wetland hydrology (e.g., topographic low areas, exposed water tables, stream channels), and hydric soils (i.e., soils that are periodically or permanently saturated, inundated or flooded) to be regulated by the Corps pursuant to Section 404 of the Clean Water Act.

One of the Supreme Court rulings that will likely remain under the new rule, once it is finalized, was established in 2001 in Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers. In this case, the U.S. Supreme Court [148 L. Ed. 2d 576 (2001) (SWANCC)] ruled that the Corps exceeded its authority under the Clean Water Act when it regulated discharges of fill material into "isolated" waters used as habitat by migratory birds. Accordingly, waters (including wetlands) that are not connected hydrologically to navigable waters are not subject to regulation by the Corps.

Another Supreme Court decision also significantly changes how the Corps defines waters of the United States. On June 19, 2006 the United States Supreme Court, in a "four-one-four" decision, addressed the extent of Clean Water Act jurisdiction over wetlands adjacent to tributaries of navigable waters. In two consolidated cases, *Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers*, a five-Justice majority of the Court remanded the case to the Sixth circuit for further consideration. The Court was unable to produce a majority vote in favor of any one jurisdictional standard for the Sixth Circuit to apply (or for the regulated community to follow). Instead, Justice Scalia authored a plurality opinion that would significantly narrow the reach of federal wetlands jurisdiction, while Justice Kennedy, concurring in the judgment only, concluded that the appropriate test for jurisdiction over wetlands was the presence of a "significant nexus" between wetlands and "navigable waters" in the traditional sense. The remaining four Justices, in a dissenting opinion by Justice Stevens, would have upheld the Corps of Engineers' assertion of jurisdiction and would have affirmed the Sixth Circuit's decision. When no opinion garners at least five votes, lower courts follow the concurrence that reached the result on the narrowest grounds. Here, that is Justice Kennedy's opinion. Unfortunately, Justice Kennedy did not provide specific guidance about the extent of federal jurisdiction over wetlands that are adjacent to tributaries of navigable waters.

Justice Kennedy concluded that the Clean Water Act applies only to those wetlands with a "significant nexus" to "navigable waters in the traditional sense." A significant nexus exists when a wetland, "either alone or in combination with similarly situated lands in the region, significantly affect[s] the chemical, physical, and biological integrity" of factually navigable waters. Under Supreme Court precedent, wetlands adjacent to navigable waters meet this test. For wetlands located near tributaries of navigable waters, however, each wetland demands a case-by-case jurisdictional inquiry. We know that a "mere hydrological connection" is not enough in all cases, and that "speculative or insubstantial" effects on water quality will not suffice to satisfy the test. [Preceding text excerpted from a newsletter prepared by Briscoe, Ivester, and Bazel LLP]. The Corps of Engineers and the Environmental Protection Agency jointly prepared an Instructional Guidebook to aid Corps field staff in completing the new “Approved Jurisdictional Determination Form,” and is intended to be used as the U.S. Army Corps of Engineers Regulatory National Standard Operating Procedures for conducting an approved jurisdictional determination.

11.1.1 Permitting Corps Jurisdictional Areas

To remain in compliance with Section 404 of the Clean Water Act, project proponents and property owners (applicants) are required to be permitted by the Corps prior to discharging or otherwise impacting waters of the United States. In many cases, the Corps must visit a proposed project area (to conduct a “jurisdictional determination”) to confirm the extent of area falling under their jurisdiction prior to authorizing any permit for that project area. Typically, at the time the jurisdictional determination is conducted, applicants (or their representative) will discuss the appropriate permit application that would be filed with the Corps for permitting the proposed impact(s) to “waters of the United States.”

Pursuant to Section 404, the Corps normally provides two alternatives for permitting impacts to the type of waters of the United States found in the project area. The first alternative would be to use Nationwide Permit(s) (NWP). The second alternative is to apply to the Corps for an

Individual Permit (33 CFR Section 235.5(2)(b)). The application process for Individual Permits is extensive and includes public interest review procedures (i.e., public notice and receipt of public comments) and must contain an "alternatives analysis" that is prepared pursuant to Section 404(b) of the Clean Water Act (33 U.S.C. 1344(b)). The alternatives analysis is also typically reviewed by the federal EPA and thus brings another resource agency into the permitting framework. Both the Corps and EPA take the initial viewpoint that there are practical alternatives to the proposed project if there would be impacts to waters of the U.S., and the proposed permitted action is not a water dependent project (e.g., a pier or a dredging project). Alternative analyses therefore must provide convincing reasons that the proposed permitted impacts are unavoidable. Individual Permits may be available for use in the event that discharges into regulated waters fail to meet conditions of NWP(s).

NWPs are a type of general permit administered by the Corps and issued on a nationwide basis that authorize minor activities that affect Corps regulated waters. Under NWP, if certain conditions are met, the specified activities can take place without the need for an individual or regional permit from the Corps (33 CFR, Section 235.5[c][2]). In order to use NWP(s), a project must meet 27 general nationwide permit conditions, and all specific conditions pertaining to the NWP being used (as presented at 33 CFR Section 330, Appendices A and C). It is also important to note that pursuant to 33 CFR Section 330.4(e), there may be special regional conditions or modifications to NWPs that could have relevance to individual proposed projects. Finally, pursuant to 33 CFR Section 330.6(a), Nationwide permittees may, and in some cases must, request from the Corps confirmation that an activity complies with the terms and conditions of the NWP intended for use (*i.e.,* must receive "verification" from the Corps).

Prior to finalizing design plans, the applicant needs to be aware that the Corps maintains a policy of "no net loss" of wetlands (waters of the United States) from project area development. Therefore, it is incumbent upon applicants that propose to impact Corps regulated areas to submit a mitigation plan that demonstrates that impacted regulated areas would be recreated (*i.e.,* impacts would be mitigated). Typically, the Corps requires mitigation to be "in-kind" (i.e., seasonal wetlands would be filled, mitigation would include seasonal wetland mitigation), and at a minimum of a 1:1 replacement ratio (i.e., one acre or fraction there of recreated for each acre or fraction thereof lost). Often a 2:1 replacement ratio is required if the Permittee is responsible for the mitigation. In some cases, the Corps allows "out-of-kind" mitigation if the compensation site has greater value than the impacted site. Finally, there are many Corps approved wetland mitigation banks where wetland mitigation credits can be purchased by applicants to meet mitigation compensation requirements. Mitigation banks have defined service areas and the Corps may only allow their use when a project would have minimal impacts to wetlands.

11.1.2 Applicability to the Proposed Project

The Corps initially confirmed the extent of its jurisdiction over the then-proposed 40-acre San Marin Business Park on September 23, 1999. Zander Associates took the original delineation map and had it reverified and the Corps reauthorized the map on September 4, 2013. In November 2018 and January 2019, First Carbon Solutions prepared a Revised Jurisdictional Delineation Map for the San Marin Business Park project and on May 22, 2019, the Corps field verified and confirmed this jurisdictional map. This Corps map is a Preliminary Jurisdictional Determination map (or PJD) and does not expire. Thus, it is still valid today. According to the

valid jurisdictional map, there are 7 wetland features and one drainage feature (other waters) on the WCJA property, totaling 1.71 acres. Further, M&A conducted wetland delineations on the Former Lands of Wright property on February 4 and November 12, 2020. A PJD map was verified by the Corps on January 14, 2021. There are two wetland features on the Former Lands of Wright property, totaling 0.044-acre.

The current proposed Least Environmentally Damaging Practicable Alternative (LEDPA) and Overall Map of Wetland Impact Areas dated February 1, 2022, created by CBG Civil Engineers has been designed to decrease the amount of wetland areas being impacted by the proposed project. The project as proposed would impact approximately 0.39-acre of waters of the United States from the construction of a wooden pedestrian bridge, a bio-retention basin and a road crossing as either a standard culvert, an arched open bottom culvert, or a span bridge design. It will be necessary to apply to the Corps for a permit to fill 0.39-acre of the confirmed wetlands. As mitigation is necessary for any impacts (fill) to the wetlands, the applicant is proposing to create wetlands onsite at a ratio prescribed by the resource agencies at the time the permits for the project are issued. It is expected that the required wetland creation ratio for impacts would be between 1:1 and 2:1 (that is, mitigation:impacts). City conditions of project approval for wetland mitigation should remain consistent with agency issued permits. Additionally, sufficient BMPs (such as silt fencing, hay wattles, and construction fencing) would need to be installed prior to project grading and construction around the drainage feature and the remainder of the seasonal wetlands onsite that are not proposed to be impacted to protect them from site activities. See the Impacts and Mitigation Measures section for details.

11.2 California Regional Water Quality Control Board (RWQCB)

11.2.1 Section 401 of the Clean Water Act

The SWRCB and RWQCB regulate activities in "waters of the State" (which includes wetlands) through Section 401 of the Clean Water Act. While the Corps administers a permitting program that authorizes impacts to waters of the U.S., including wetlands and other waters, any Corps permit authorized for a proposed project would be inoperative unless it is a NWP that has been certified for use in California by the SWRCB, or if the RWQCB has issued a project specific certification of water quality. Certification of NWPs requires a finding by the SWRCB that the activities permitted by the NWP will not violate water quality standards individually or cumulatively over the term of the permit (the term is typically for five years). Certification must be consistent with the requirements of the federal Clean Water Act, the CEQA, the CESA, and the SWRCB's mandate to protect beneficial uses of waters of the State. Any denied (i.e., not certified) NWPs, and all Individual Corps permits, would require a project specific RWQCB certification of water quality. Where a project will result in dredge or fill of non-federal waters of the State, the RWQCB will authorize those fills through waste discharge requirements issued under the Porter Cologne Water Quality Control Act.

On April 2, 2019, the SWRCB adopted a State-level definition of "wetlands," which is a broader definition than the federal definition in that unvegetated areas may be considered a wetland water of the State. As a part of the same policy, the SWRCB adopted permit procedures and standards governing the discharge of dredged or fill material into wetlands and other waters of the State. The policy includes, among other things, requirements for analyses to identify the least environmentally

damaging practicable alternative (LEDPA) and compensatory mitigation standards including a minimum 1:1 ratio for wetlands and streams, and full functional replacement of all waters on top of this minimum where applicable. The policy, which governs both Section 401 certifications and Waste Discharge Requirements (WDRs), is now in effect.

11.2.2 Applicability to the Proposed Project

Since the RWQCB does not have a formal method for technically defining what constitutes waters of the State, the RWQCB defers to the Corps' determination. On May 16, 2019, the Corps field reconfirmed the extent of its Clean Water Act jurisdiction over the original 40-acre project site and took jurisdiction over 1.71 acres of waters of the United States. Additionally, in January 2021, the Corps confirmed jurisdiction over an additional 0.044-acre of seasonal wetlands on the Former Lands of Wright property. These total 1.75 acres would also be considered waters of the State by the RWQCB and subject to this agency's jurisdiction. The current proposed Least Environmentally Damaging Practicable Alternative (LEDPA) and Overall Map of Wetland Impact Areas dated February 1, 2022 created by CBG Civil Engineers has been designed to decrease the amount of wetland areas being impacted by the proposed project. The project will impact 0.39-acre of waters of the State. These impacts will result from the construction a road crossing of either a standard culvert, an arched open bottom culvert, or a span bridge design. Additionally, a wooden pedestrian foot bridge is proposed to be constructed over the drainage on the project site to connect two community areas. As such, a Clean Water Act Section 401 permit is required from the RWQCB for the proposed project.

M&A Principal Biologist Ms. Sarah Lynch discussed the current LEDPA, the wetland impacts and proposed mitigation with Ms. Nicole Fairley from the RWQCB most recently on December 3, 2021 regarding the wetland impacts and mitigation. Ms. Lynch and Ms. Fairley discussed that the low resource value wetlands onsite will be temporarily impacted as part of an enhancement opportunity to create new wetlands in the area which will have greater functions and services. Ms. Nicole Fairley agreed that the current proposed project layout and a proposed 1:1 wetland mitigation ratio is likely an acceptable mitigation ratio for the project's impacts since onsite mitigation (wetland creation) is proposed and is preferable to the RWQCB compared to offsite mitigation or the purchase of mitigation credits. However, since at this time we do not know what mitigation ratio the Corps will require, mitigation will be between a 1:1 and 2:1 ratio as prescribed by the resource agencies at the time the permits for the project are issued. City conditions of project approval for wetland mitigation should remain consistent with agency issued permits.

Please also refer to the applicability section of the RWQCB administered Porter-Cologne Water Quality Control Act below for other applicable actions that may be imposed on the project by the RWQCB.

11.2.3 Porter-Cologne Water Quality Control Act

The uncontrolled discharge of pollutants into impaired water bodies is considered particularly detrimental. According to the EPA, **sediment is one of the most widespread pollutants contaminating U.S. rivers and streams**. Sediment runoff from construction sites is 10 to 20 times greater than from agricultural lands and 1,000 to 2,000 times greater than from forest lands (EPA 2005). Consequently, the discharge of stormwater from large construction sites is regulated

by the RWQCB under the Clean Water Act and California's Porter-Cologne Water Quality Control Act.

The Porter-Cologne Water Quality Control Act, Water Code § 13260, requires that "any person discharging waste, or proposing to discharge waste, that could affect the waters of the State to file a report of discharge" with the RWQCB through an application for waste discharge (Water Code Section 13260(a)(1). The term "waters of the State" is defined as any surface water or groundwater, including saline waters, within the boundaries of the State (Water Code § 13050(e)). It should be noted that pursuant to the Porter-Cologne Water Quality Control Act, the RWQCB also regulates "isolated wetlands," or those wetlands considered to be outside of the Corps' jurisdiction (see Corps Section above).

The RWQCB generally considers filling in waters of the State to constitute "pollution." Pollution is defined as an alteration of the quality of the waters of the State by waste that unreasonably affects its beneficial uses (Water Code §13050(1)). The RWQCB litmus test for determining if a project should be regulated pursuant to the Porter-Cologne Water Quality Control Act is if the action could result in any "threat" to water quality.

The RWQCB requires complete pre- and post-development Best Management Practices (BMPs) for any portion of the project site that is developed. This means that a water quality treatment plan for the pre- and post-developed project site must be prepared and implemented. Preconstruction requirements must be consistent with the requirements of the National Pollutant Discharge Elimination System (NPDES). That is, a *Stormwater Pollution Prevention Plan* (SWPPP) must be developed prior to the time that a site is graded (see NPDES section below). In addition, a post construction BMPs plan, or a Stormwater Management Plan (SWMP) must be developed and incorporated into any site development plan.

11.2.4 Applicability to The Proposed Project

Reasonable care will be required when constructing the proposed project to be sure that adequate pre- and post-construction Best Management Practices Plan (BMPs) are incorporated into the project implementation plans. Such BMPs, if correctly installed and maintained, would keep the project in compliance with the Porter-Cologne Water Quality Control Act.

The project will be responsible for implementing both a preconstruction and construction-based Storm Water Pollution Prevention Plan (SWPPP) and a post-construction SWMP as necessary to comply with the NPDES and the City of Novato's MS4 Phase II NPDES requirements. All stormwater runoff currently flows through existing, double 48-inch storm drains underneath Redwood Boulevard and Highway 101. Since it is a requirement for pre-treatment of stormwater in accordance with MS4 (discussed in the section below), the development plan has incorporated bioretention treatment areas into its design so that stormwater is treated prior to being released into the storm drains and offsite. Additionally, during project construction it is important for the project proponent to have the components of a SWPPP and a SWMP in place; these documents are typically prepared by the project civil engineer. Please see the sections below for further discussion on site disturbance (grading) and stormwater management.

12. STATE WATER RESOURCES CONTROL BOARD (SWRCB)/RWQCB – STORMWATER MANAGEMENT

12.1 Construction General Permit

While federal Clean Water Act NPDES regulations allow two permitting options for construction related stormwater discharges (individual permits and General Permits), the SWRCB has elected to adopt only one statewide Construction General Permit at this time that will apply to all stormwater discharges associated with construction activity, except from those on Tribal Lands, in the Lake Tahoe Hydrologic Unit, and those performed by the California Department of Transportation (CalTrans).

The Construction General Permit requires all dischargers where construction activity disturbs greater than one acre of land or those sites less than one acre that are part of a common plan of development or sale that disturbs more than one acre of land surface to:

1. Develop and implement a SWPPP which specifies BMPs that will prevent all construction pollutants from contacting stormwater with the intent of keeping all products of erosion from moving off site into receiving waters.

2. Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation. Achieve quantitatively-defined (i.e., numeric) pollutant-specific discharge standards, and conduct much more rigorous monitoring based on the project's projected risk level.

3. Perform inspections of all BMPs.

This Construction General Permit is implemented and enforced by the nine RWQCBs. It is also enforceable through citizens' suits and represents a dramatic shift in the SWRCB's approach to regulating new and redevelopment sites, imposing new affirmative duties and fixed standards on builders and developers.

Types of Construction Activity Covered by the Construction General Permit

- clearing,
- grading,
- disturbances to the ground such as stockpiling, or excavation that results in soil disturbances of at least one acre or more of total land area.

Construction activity that results in soil disturbances to a smaller area would still be subject to this General Permit if the construction activity is part of a larger common plan of development that encompasses greater than one acre of soil disturbance, or if there is significant water quality impairment resulting from the activity.

Construction activity does not include:

- routine maintenance to maintain original line and grade,
- hydraulic capacity, or original purpose of the facility,

- nor does it include emergency construction activities required to protect public health and safety.

The Construction General Permit includes several "post-construction" requirements. These requirements entail that site designs provide no net increase in overall site runoff and match pre-project hydrology by maintaining runoff volume and drainage concentrations. To achieve the required results where impervious surfaces such as roofs and paved surfaces are being increased, developers must implement non-structural off-setting BMPs, such as landform grading, site design BMPs, and distributed structural BMPs (bioretention cells, rain gardens, and rain cisterns). This "runoff reduction" approach is essentially a SWRCB-imposed regulatory requirement to implement Low Impact Development ("LID") design features. Volume that cannot be addressed using non-structural BMPs must be captured in structural BMPs that are approved by the RWQCB.

Improving the quality of site runoff is necessary to improve water quality in impaired and threatened streams, rivers, and lakes (that is, water bodies on the EPA's 303(d) list). The RWQCB prioritizes the water bodies on the 303(d) list according to potential impacts to beneficial uses. Beneficial uses can include a wide range of uses, such as nautical navigation; wildlife habitat; fish spawning and migration; commercial fishing, including shellfish harvesting; recreation, including swimming, surfing, fishing, boating, beachcombing, and more; water supply for domestic consumption or industrial processes; and groundwater recharge, among other uses. The State is required to develop action plans and establish Total Maximum Daily Loads (TMDLs) to improve water quality within these impaired water bodies. The TMDL is the quantity of a pollutant that can be safely assimilated by a water body without violating the applicable water quality standards.

Pursuant to the Clean Water Act, the RWQCB regulates construction discharges under the NPDES. The project sponsor of construction or other activities that disturb more than one acre of land must obtain coverage under NPDES Construction General Permit Order 2009-0009-DWQ, administered by the RWQCB.

12.1.1 Applicability to The Proposed Project

To obtain coverage under the SWRCB administered Construction General Permit, the applicant (typically through its civil engineer) must electronically file a number of permit-related compliance documents (Permit Registration Documents (PRDs), including a Notice of Intent (NOI), a risk assessment, site map, signed certification, SWPPP, Notice of Termination (NOT), NAL exceedance reports, and other site-specific PRDs that may be required. The PRDs must be prepared by a Qualified SWPPP Practitioner (QSP) or Qualified SWPPP Developer (QSD) and filed by a Legally Responsible Person (LRP) on the RWQCB's Stormwater Multi-Application Report Tracking System (SMARTS). (QSDs are typically civil engineers, professional hydrologists, engineering geologists, or landscape architects.) Once filed, these documents become immediately available to the public for review and comment. At a minimum, the SWPPP shall identify BMPs for implementation during project construction that are in accordance with the applicable guidance and procedures contained in the California Stormwater Quality Association's *California Stormwater Best Management Practices Handbook* (2015).

Construction stormwater BMPs are intended to minimize the migration of sediments offsite. They can include:

- covering soil stockpiles,
- sweeping soil from streets or other paved areas,
- performing site-disturbing activities in dry periods,
- planting vegetation or landscaping quickly after disturbance to stabilize soils.

Other typical stormwater BMPs include erosion reduction controls such as:

- hay bales, water bars, covers, sediment fences, sensitive area access restrictions, vehicle mats in wet areas, geotextile blankets, fiber rolls, temporary slope drains, mulching of exposed areas, vehicle mats in wet areas, and other erosion-reducing features, and retention/settlement ponds.

Excavation and other soil-disturbing activities associated with the project could potentially affect water quality as a result of erosion of sediment. In addition, leaks from construction equipment; accidental spills of fuel, oil, or hazardous liquids used for equipment maintenance; and accidental spills of construction materials are all potential sources of pollutants that could degrade water quality.

Stormwater runoff from the site flows southeast into twin 48-inch culverts that pass underneath Redwood Boulevard and Highway 101 and then empty into a marsh east of Highway 101. That marsh ultimately drains to San Pablo Bay and then San Francisco Bay; each of these bays is listed on the RWQCB's 303(d) list of impaired water bodies.

12.2 RWQCB Municipal Stormwater Permitting Programs

The federal Clean Water Act was amended in 1987 to address urban stormwater runoff pollution of the nation's waters. In 1990, the EPA promulgated rules establishing Phase 1 of the NPDES stormwater program. The Phase 1 program for Municipal Separate Storm Sewer System (MS4s) requires operators that serve populations of 100,000 or greater to implement a stormwater management program to control polluted discharges from these MS4s. While Phase 1 of the municipal stormwater program has focused on large urban areas, Phase 2 of the municipal stormwater program was promulgated by the EPA for smaller urban areas including non-traditional Small MS4s, which are governmental facilities such as military bases, public campuses, and prison and hospital complexes.

MS4 permits require the discharger (or dischargers that are permitted by the MS4 permittees) to develop and implement a SWMP with the goal of reducing the discharge of pollutants to the maximum extent practicable (MEP). MEP is the performance standard specified in Section 402(p) of the Clean Water Act. The management programs specify which BMPs will be used to address certain program areas. The program areas include public education and outreach; illicit discharge detection and elimination; construction and post-construction; and good housekeeping for municipal operations. In general, medium and large municipalities are required to conduct chemical monitoring, though small municipalities are not.

12.2.1 NPDES C.3 REQUIREMENTS

The NPDES C.3 requirements went into effect for any project (public or private) that is "deemed complete" by the City or County (Lead Agency) on or after February 15, 2005, and which will result in the creation or replacement (other than normal maintenance) of at least 10,000 square feet of impervious surface area (roofs, streets, patios, parking lots, etc.). Provision C.3 requires the onsite treatment of stormwater prior to its discharge into downstream receiving waters. Note that these requirements are in addition to the existing NPDES requirements for erosion and sedimentation controls during project construction that are typically addressed through acquisition of coverage under the SWRCB administered Construction General Permit. The C.3 requirements are typically required to be implemented by MS4 permittees (and their constituencies).

Projects subject to Provision C3 must include the capture and onsite treatment of all stormwater from the site prior to its discharge, including rainwater falling on building rooftops. Project applicants are required to implement appropriate source control and site design measures and to design and implement stormwater treatment measures in order to reduce the discharge of stormwater pollutants to the *maximum extent practicable.* While the Clean Water Act does not define "maximum extent practicable," the SWMPs required as a condition of the municipal NPDES permits identify control measures (i.e., BMPs) and, where applicable, performance standards, to establish the level of effort required to satisfy the maximum extent practicable criterion. It is ultimately up to the professional judgment of the reviewing municipal staff in the individual jurisdictions to determine whether a project's proposed stormwater controls will satisfy the maximum extent practicable criterion. However, there are numeric criteria used to ensure that treatment BMPs have been adequately sized to accommodate and treat a site's stormwater. The C3 requirements are quite extensive, and their complete explanation is not provided here. However, the following are minimums that should be understood and adhered to:

- The applicant must provide a detailed and realistic site design *and impervious surface area calculations*. This site design *and calculations* will be used by the Lead Agency (City or County) to determine/*verify* the amount of impervious surface area that is being created or replaced. It should include all proposed buildings, roads, walkways, parking lots, landscape areas, etc., that are being created or redeveloped. If large (greater than 10,000 square feet) lots are being created an effort will need to be made to determine the total impervious surface area that could be created on that parcel. For example, if only a portion of the lot is shown as a "building envelope" then the lead agency will need to consider that a driveway will have to be constructed to access the envelope and that the envelope will then be developed as shown. If the C.3 thresholds are met (creation/redevelopment of 10,000 square feet of impervious surface area), a Stormwater Control Plan (SWCP) (if required by the Lead Agency, or whatever steps for compliance with Provision C3 are required locally) must accompany the application.

- If a SWCP is required by the Lead Agency for the project it must be stamped by a Licensed Civil Engineer, Architect, or Landscape Architect.

12.2.2 APPLICABILITY TO THE PROPOSED PROJECT

The City of Novato is an MS4 permittee and thus, is required to enforce development of a project specific SWMP that incorporates pre- and post-construction BMPs.

12.3 California Department of Fish and Wildlife Protections

12.3.1 SECTION 1602 OF CALIFORNIA FISH AND GAME CODE

Pursuant to Section 1602 of the California Fish and Game Code: "An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, unless all of the following occur:

(1) CDFW receives written notification regarding the activity in the manner prescribed by CDFW. The notification shall include, but is not limited to, all of the following:
   (A) A detailed description of the project's location and a map.
   (B) The name, if any, of the river, stream, or lake affected.
   (C) A detailed project description, including, but not limited to, construction plans and drawings, if applicable.
   (D) A copy of any document prepared pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.
   (E) A copy of any other applicable local, State, or federal permit or agreement already issued.
   (F) Any other information required by CDFW" (Fish & Game Code 2014).

Please see Section 1602 of the current California Fish and Game Code for further details.

Please also note that while not stated in the regulations above, the CDFW typically considers its jurisdiction to include riparian vegetation (that is, the trees and bushes growing along the stream). Thus, any proposed activity in a natural stream channel that would substantially adversely affect an existing fish and/or wildlife resource, including its riparian vegetation, would require entering into a Streambed Alteration Agreement (SBAA) with the CDFW prior to commencing with work in the stream. However, prior to authorizing such permits, the CDFW typically reviews an analysis of the expected biological impacts, any proposed mitigation plans that would be implemented to offset biological impacts and engineering and erosion control plans.

12.3.2 APPLICABILITY TO THE PROPOSED PROJECT

The proposed project includes the development of a road crossing over the drainage on the project site, as well as a wooden pedestrian bridge crossing the drainage to connect two community areas on either side. This drainage has a bed, bank and channel and thus, meets the CDFW's criteria as a regulated feature under Section 1602 of California Fish and Game Code. The bridge and road crossings discussed above would require prior authorization from the CDFW (entering into a SBAA). The 'A' Street road crossing that is proposed to be constructed over the drainage would either be a standard culvert, an arched open bottom culvert, or a span bridge design. The wooden pedestrian footbridge is proposed to span from the top of one bank to the top of the other bank. The road crossing design and the pedestrian foot bridge have not been

finalized at this time so the exact impact amounts have not yet been calculated but it is known that there will be a minor amount of impact to the channel from these crossings. These would be the only impacts to the drainage as the remainder of the drainage would be protected from project impacts by a minimum 10-foot building setback that averages 25 feet along the drainage, except for a few minor encroachments on this buffer. Accordingly, prior to the time the road crossing, pedestrian foot bridge and the limited number of minor encroachments into the minimum 10-foor building setback can be constructed, a permit will be required from the CDFW pursuant to Section 1602 of the Fish and Game Code. In order for the CDFW to process a Section 1602 SBAA, the City of Novato will have to adopt the project pursuant to the CEQA, and upon adoption file a Notice of Determination (NOD) with the State Clearing House. ***It is mandatory that the City of Novato pay the Fish and Game Filing Fee as part of the NOD filing. CDFW requires proof that the Fish and Game Filing Fee has been paid prior to processing a 1602 Streambed Alteration Agreement.***

13. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) REGULATIONS

A CEQA lead agency must determine if a proposed activity constitutes a project requiring further review pursuant to the CEQA. Pursuant to CEQA, a lead agency would have to determine if there could be significant adverse impacts to the environment from a proposed project. Typically, if within the city limits, the city would be the CEQA lead agency. If a discretionary permit (i.e., conditional use permit) would be required for a project (e.g., an occupancy permit must be issued), the lead agency typically must determine if there could be significant environmental impacts. This is usually accomplished by an "Initial Study." If there could be significant environmental impacts, the lead agency must determine an appropriate level of environmental review prior to approving and/or otherwise permitting the impacts. In some cases, there are "Categorical Exemptions" that apply to the proposed activity; thus, the activity is exempt from CEQA. The Categorical Exemptions are provided in CEQA. There are also Statutory Exemptions in CEQA that must be investigated for any proposed project. If the project is not exempt from CEQA, the lowest level of review typically reserved for projects with no significant effects on the environment would be for the lead agency to prepare a "Negative Declaration." If a proposed project would have only minimal impacts that can be mitigated to a level of no significance pursuant to the CEQA, then a "Mitigated Negative Declaration" (MND) is typically prepared by the lead agency. Finally, those projects that may have significant effects on the environment, or that have impacts that can't be mitigated to a level considered less than significant pursuant to the CEQA, typically must be reviewed via an Environmental Impact Report (EIR). All CEQA review documents are subject to public circulation, and comment periods.

Section 15380 of CEQA defines "endangered" species as those whose survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. "Rare" species are defined by CEQA as those who are in such low numbers that they could become endangered if their environment worsens; or the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in FESA. The CEQA Guidelines also state that a project will normally have a significant effect on the environment if it will "substantially affect a rare or endangered species

of animal or plant or the habitat of the species." The significance of impacts to a species under CEQA, therefore, must be based on analyzing actual rarity and threat of extinction to that species despite its legal status or lack thereof.

13.1 Applicability to the Proposed Project

This report has been prepared as a Biology section that is suitable for incorporation by the CEQA lead agency (in this case, the City of Novato) into a CEQA review document such as a MND or an EIR. This document addresses potential impacts to species that would be defined as endangered or rare pursuant to Section 15380 of the CEQA.

14. IMPACTS ANALYSIS

Below the criteria used in assessing impacts to Biological Resources are presented.

14.1 Significance Criteria

A significant impact is determined using CEQA and CEQA Guidelines. Pursuant to CEQA §21068, a significant effect on the environment means a substantial, or potentially substantial, adverse change in the environment. Pursuant to CEQA Guideline §15382, a significant effect on the environment is further defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. Other federal, State, and local agencies' considerations and regulations are also used in the evaluation of significance of proposed actions.

Direct and indirect adverse impacts to biological resources are classified as "significant," "potentially significant," or "less than significant." Biological resources are broken down into four categories: vegetation, wildlife, threatened and endangered species, and regulated "waters of the United States" and/or stream channels.

14.1.1 Thresholds of Significance

14.1.1.1 Plants, Wildlife, Waters

In accordance with Appendix G (Environmental Checklist Form) of the CEQA Guidelines, implementing the project would have a significant biological impact 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 CDFW 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 CDFW or USFWS.

- 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.

- 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 policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

- Conflict with the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved local, regional, or State HCP.

14.1.1.2 Waters of the United States and State.

Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the Corps regulates the discharge of dredged or fill material into waters of the U.S., which includes wetlands, as discussed in the bulleted item above, and also includes "other waters" (stream channels, rivers) (33 CFR Parts 328 through 330). Substantial impacts to Corps regulated areas on a project site would be considered a significant adverse impact. Similarly, pursuant to Section 401 of the Clean Water Act, and to the Porter-Cologne Water Quality Control Act, the RWQCB regulates impacts to waters of the State. Thus, substantial impacts to RWQCB regulated areas on a project site would also be considered a significant adverse impact.

14.1.1.3 Stream Channels

Pursuant to Section 1602 of the California Fish and Game Code, the CDFW regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream which the CDFW typically considers to include riparian vegetation. Any proposed activity that would result in substantial modifications to a natural stream channel would be considered a significant adverse impact.

15. IMPACT ASSESSMENT AND PROPOSED MITIGATION

In this section we discuss potential impacts to sensitive biological resources including nesting birds and waters of the U.S./State. We follow each impact with a mitigation prescription that when implemented would reduce impacts to the greatest extent possible. This impact analysis is based on the Schematic Site Plan Valley Oaks prepared by William Hezmalhalch Architects, Inc., October 21, 2022.

15.1 Impact BIO-1 Development of the Project Would Have a Potentially Significant Adverse Impact on Nesting Birds Including White-tailed Kite (Potentially Significant)

Red-tailed Hawk (*Buteo jamaicensis*), Red-shouldered Hawk (*Buteo lineatus*), Great Horned Owl (*Bubo virginianus*), and White-tailed Kite (*Elanus leucurus*) are all known from the area and could nest on the project site. Common songbirds (passerine birds) could also nest on the project site. All of these birds are protected under the Migratory Bird Treaty Act (50 CFR 10.13) and their eggs and young are protected under California Fish and Game Code Section 3503, 3503.5, and 3513. Any project-related impacts to these species would be considered significant adverse impacts. Potential impacts to these species from the proposed project include disturbance

to nesting birds and possibly death of adults and/or young. No nesting birds have been identified on the proposed project site; however, in the absence of current surveys confirming or negating nesting activity, it must be concluded that impacts to nesting birds from the proposed project would be ***potentially significant pursuant to CEQA.*** This impact could be mitigated to a level considered less than significant.

15.2 Mitigation Measure BIO-1. Impacts to Nesting Birds

To avoid impacts to nesting birds, mitigation should follow the measures prescribed in the City of Novato's Housing Element EIR, Mitigation Measure 3.3-2. This mitigation measure prescribed nesting season surveys and non-disturbance buffers that must be established while the birds are nesting. *At least two surveys should be conducted no more than 15 days prior to the initiation of construction activities, including vegetation clearing* if this work would commence between February 1st and August 31st. The nesting survey should include an examination of all trees onsite, and within 500 feet of the project site (i.e., within a zone of influence of nesting birds) if access is possible. The zone of influence includes those areas outside the project site where birds could be disturbed by earth-moving vibrations and/or other construction-related noise.

In the event that nesting birds are found on the project site, in offsite improvement corridors, or the immediate vicinity, the project proponent, in accordance with the City's Housing Element EIR Mitigation Measure 3.3-2, should:

- Locate and map the location of the nest site. Within 2 working days of the surveys prepare a report and submit to the City and CDFW;
- A no-disturbance buffer of 250 feet should be established or smaller buffer as determined by a qualified biologist in the field that is of sufficient size to protect the nesting attempt;
- On-going weekly surveys should be conducted to ensure that the no disturbance buffer is maintained. Construction can resume when a qualified biologist has confirmed that the birds have fledged.

In the event of destruction of a nest with eggs, the qualified biologist should immediately notify the CDFW. The qualified biologist should coordinate with the CDFW to have the injured nestlings transferred to a wildlife rehabilitation center.

No construction or earth-moving activity should occur within any established nest protection buffer prior to September 1 unless it is determined by a qualified ornithologist/biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones, or that the nesting cycle is otherwise completed. At the end of the nesting cycle, and fledging from the nest by its occupants, as determined by a qualified biologist, temporary nesting buffers may be removed, and construction may commence in established nesting buffers without further regard for the nest site. ***Implementation of these mitigation measures would reduce impacts to nesting birds to a level regarded as less than significant pursuant to CEQA.***

15.3 Impact BIO-2. Bats –Tree Removal and Site Development May Have a Potentially Significant Impact on Townsend's Big Eared Bat and Pallid Bat (Potentially Significant)

The trees and barn (quonset hut) onsite may provide roosting and maternity habitat for special-status bats including the Townsend's Big Eared Bay and the Pallid Bat. These bat species are designated by the State as "species of special concern." In accordance with the CEQA Guidelines (Section 15380) which protects "rare" and "endangered" species as defined by CEQA (species of special concern meet this CEQA definition), impacts to these bat species would be considered a **potentially significant adverse impact**. Potential impacts to special-status bats from the proposed project include loss of maternity and/or roosting habitat, death of individual adult bats and/or young. This impact could be mitigated to a less than significant level.

15.4 Mitigation Measure BIO-2. Bats

In order to avoid impacts to special-status bat species, a biologist should survey trees and the quonset hut 15 days prior to commencing with any removal or demolition. All bat surveys should be conducted by a biologist with known experience surveying for bats. If no special-status bats are found during the surveys, then there would be no further regard for these bat species.

If special-status bat species are found on the project site a determination should be if there are young bats present. If young are found roosting in any tree or building, impacts to the tree or building should be avoided until the young have reached independence. A non-disturbance buffer fenced with orange construction fencing should also be established around the maternity site. The size of the buffer zone should be determined by a qualified bat biologist at the time of the surveys. If adults are found roosting in a tree or building on the project site but no maternal sites are found, the following measures should be undertaken to avoid impacting the bats:

Tree Trimming and/or removal should only be conducted during seasonal periods of bat activity: between August 31 and October 15, when bats would be able to fly and feed independently, and between March 1 and April 15 to avoid hibernating bats, and prior to the formation of maternity colonies.

No work periods: April 16 to August 30 and October 16 and February 28th if bats are present.

Any trees that will be removed, and that the biologist has identified as having potentially suitable bat roost habitat, should be removed using a two-day phased removal method:

- On day one, in the afternoon, limbs and branches should be removed using chainsaws only. Limbs with cavities, crevices, and deep bark fissures should be avoided.
- On day two, the rest of the tree should be removed under the direct supervision of the biologist.

If tree removal must occur outside of the seasonal activity periods mentioned above (i.e., between October 16 and February 28/29, or between April 16 and August 30), then a qualified biologist, one with at least two years of experience surveying for bats, should do preconstruction surveys within 14 days of starting work. If the qualified biologist finds evidence of bat presence

during the surveys, then he/she should develop a plan for removal and exclusion, in conjunction with CDFW.

This mitigation measure would reduce the project's impact to special-status bats to a level considered less than significant.

15.5 Impact BIO-3. Development of the Proposed Project Would Have a Potentially Significant Impact on Waters of the United States and/or State (Potentially Significant)

The proposed project would result in impacts to 0.39-acre of wetlands and other waters of the U.S./State that fall under Corps' and RWQCB jurisdiction pursuant to Sections 404 and 401 of the Clean Water Act, respectively. Impacts to waters of the U.S./State would occur from the construction of roads and building pads in mapped jurisdictional wetlands. Additionally, a road crossing for 'A' Street would be necessary over the drainage on the project site. The proposed road crossing would ideally be a culverted road crossing which would shade a small section of the drainage, but which would allow natural flow in the drainage to continue. Alternative road crossings that may be considered would be a span bridge or an arch bottom culvert. A wooden pedestrian foot bridge is also proposed to be constructed across the drainage to connect two community areas on site. The final road crossing and the pedestrian foot bridge designs have not been determined but will be by the time permits are applied for.

Impacts of 0.39-acre of waters (which includes wetlands) under Corps' and RWQCB jurisdiction would be regarded as a **significant adverse impact**. Such an impact could be mitigated to a level considered less than significant.

15.6 Mitigation Measure BIO-3. Impacts to Waters of the United States and/or State

Impacts to waters of the U.S. and/or State can be reduced to less-than-significant levels through various means, including avoidance, minimization of impacts, and mitigation compensation. Based on the most recent Corps confirmed map dated June 20, 2019, jurisdictional waters will be avoided by the project where possible. Because full avoidance of waters of the U.S./State is not possible, potential impacts should be minimized to the extent feasible through maximum avoidance, mitigation through onsite wetland creation, and enhancement of preserved wetlands. Impacts should also be minimized by the use of BMPs to protect preserved wetlands and ensure water quality in wetlands and other waters within the watershed. These practices can include installing orange construction fencing, silt fencing, hay or gravel wattles, and other protective measures. During project construction, a biological monitor should be onsite to monitor the integrity of preserved wetlands and other waters.

For those wetland areas that cannot be avoided, permits from the Corps and RWQCB should be acquired that allows the removal of specified wetlands and other waters. Mitigation compensation wetlands should be created and enhanced to replace those wetlands permanently affected by project activities. The proposed mitigation is onsite creation of wetlands for the potentially impacted 0.39-acre of seasonal wetland. These created wetlands would resemble the wetlands that would be impacted but would have greater functions and services than those wetlands affected by the project (known as in-kind replacement).

The currently proposed LEDPA dated February 1, 2022 by CBG Civil Engineers has been designed to decrease the amount of wetland/other water areas being impacted by the proposed project. M&A Principal Biologist, Ms. Sarah Lynch discussed the proposed LEDPA, and the resultant wetland impacts and proposed mitigation with Ms. Nicole Fairley from the RWQCB most recently on December 3, 2021. Ms. Lynch and Ms. Fairley discussed that the marginally functioning wetlands onsite that provide the least amount of functions and services would be temporarily impacted as part of an enhancement opportunity to create new wetlands in the area which will have greater functions and services. Ms. Nicole Fairley agreed that the currently proposed LEDPA and a proposed 1:1 wetland mitigation ratio is likely an acceptable mitigation ratio for the project's impacts to waters of the State since onsite mitigation is proposed and is preferable to the RWQCB compared to offsite mitigation or the purchase of mitigation credits.

However, since M&A has not discussed the proposed project with the Corps and we cannot confirm if this agency will allow a 1:1 mitigation ratio or will ask for a 2:1 mitigation ratio for impacts to waters of the U.S., mitigation for all impacted wetlands will be between 1:1 and 2:1 ratio as prescribed by the resource agencies at the time the permits for the project are issued. City conditions of project approval for wetland mitigation should remain consistent with agency issued permits. Mitigation requirements would be based upon the existing conditions of the regulated area(s) impacted. If there are impacts to wetlands, adequate compensation would include creating wetlands at a suitable location that:

- remain inundated or saturated for sufficient duration to support hydrophytic vegetation;
- exhibit plant and invertebrate species richness comparable to existing wetlands;
- Topsoils should be removed from pools that would be impacted and placed into the re-created pools. These topsoils would contain a seed bank of the impacted pool plant species which would germinate with fall/winter hydration of the re-created pools.

Minimum requirements for mitigating impacts to wetlands include:

- Replacement of impacted wetlands at a 1:1 ratio. For permanent wetland impacts, wetlands can be replaced at a minimum ratio for one acre created for each acre, or fraction thereof, permanently impacted.
- Creation of in perpetuity preservation. The Corps and other regulatory agencies generally require that wetlands not impacted by the proposed project and any new wetlands created to mitigate project impacts be set aside in perpetuity, either through deed restrictions or conservation easements.
- Establishment of a five-year monitoring program to monitor the progress of the wetland mitigation toward an established goal. At the end of each monitoring year, an annual report will be submitted to the Corps, RWQCB and other resource agencies that permitted the project. This report will document the hydrological and vegetative

conditions of the mitigation wetlands and will recommend remedial measures as necessary to correct deficiencies.

- In lieu of creating compensation wetlands, as approved by the Corps and RWQCB, the applicant may purchase mitigation credits from an approved mitigation bank at a 1:1 ratio or as otherwise required by the Corps and RWQCB at the time permits are issued.

Aside from the minimum replacement ratio and in perpetuity protection, the Corps and the RWQCB may provide additional conditions and stipulations for permits. Any other conditions that are stipulated for wetland impacts by the Corps and/or RWQCB should also become conditions of project approval. ***Implementation of the measures described above would reduce potentially significant impacts to waters of the U.S./State to a level considered less-than-significant pursuant to the CEQA.***

15.7 Impact BIO-4. Development of the Project Would Have a Significant Adverse Impact on Heritage Trees (Significant)

According to the *Valley Oaks Trees Proposed for Removal Exhibit 4A* created by CSW/Stuber-Stroeh Engineering Group, Inc. dated October 20, 2022 (Exhibit C) and the *Further Updated Gurka Tree Inventory* dated October 14, 2022, 13 heritage trees are proposed for removal, and an additional 3 heritage trees are proposed for potential removal. Out of the 13 heritage trees proposed for removal, eight are valley oak trees (*Quercus lobata*) ranging from diameter at breast height (DBH) of 28-35 inches. Two silver dollar gum trees (*Eucalyptus cinerea*) are proposed for removal and are both multi-stem trees adding up to greater than 24-inch DBH. One coast live oak (*Quercus agrifolia*) at 27" DBH, one Monterey cypress (*Cypresses macrocarpa*) at 26" DBH, and one black oak (*Quercus kelloggii*) at 29" DBH are also proposed for removal. The three trees proposed for *potential* removal are all valley oak trees. The removal or alteration of these trees would require a permit from the City of Novato. Subsequent mitigation (replacement tree planting) would also likely be required if these trees were to be impacted. ***This impact to heritage trees is a significant impact pursuant to CEQA***. This impact could be mitigated to a less than significant level.

15.8 Mitigation Measure BIO-4. Impacts to Heritage Trees

The City of Novato regulates the removal or alteration of trees to preserve scenic beauty, maintain property values, minimize erosion problems, and maintain the attractiveness of the Novato area. The removal or alteration of a heritage tree requires the applicant to apply for a permit from the City of Novato. In addition to the application for the permit, the applicant would need to submit a site plan showing property boundaries and the locations of trees proposed to be removed, a list of all trees to be removed and a statement setting forth the reasons why trees need to be removed. Subsequent mitigation (replacement tree planting) would also likely be required if heritage trees were impacted on the project site, which would require the applicant to provide a description and plan for replacement planting.

For heritage trees that would <u>not be</u> removed, but impacts to the dripline could not be avoided, then protections to the dripline and the tree trunk must be in place during all grading and construction work to ensure that impacts are minimized to the extent possible.

1. Orange construction fencing should be installed around the outer edge of the tree's dripline prior to commencing with any earth-moving work on the project site.

2. Hay wattles (no monofilament netting; wildlife friendly hay wattles) should be wrapped around the trees' trunks from ground level up to a height of 8 feet to protect the trunk from accidental impacts with vehicles/construction equipment.

3. When it is necessary to work underneath the trees' dripline at any point in the project, the orange fencing *should not* be removed but rather moved inward the minimum necessary, closer to the tree trunk, but left in place to prevent equipment from going beyond the necessary work area.

4. Protective measures stated above should be included on all engineering plans (construction drawings, grading plans, utility plans, etc.) and all site personnel should be aware of the tree protections in place.

5. A Certified Arborist should be onsite during any work within the tree(s)' dripline to ensure that all necessary protection measures are in place and care is being taken when working in proximity to the trunk, disturbing roots, and branches. Any other protection measures prescribed by the project's Certified Arborist should become conditions of project approval.

By implementing these mitigation measures, impacts to heritage trees from the proposed project will be reduced to a less than significant level.

15.9 Impact BIO-5. Development of the Project Would Have a Significant Impact on CDFW Fish and Game Code Section 1602 Jurisdictional Areas (Significant)

The drainage on the project site is a channel with a bed and bank, and as such falls under the CDFW's jurisdiction pursuant to Section 1602 of the California Fish and Game Code. The proposed project will result in impacts to this drainage during the construction of a road crossing on the south end of the drainage, as illustrated on the Wetland Impact Exhibits Wetland Area 2, prepared by CBG dated February 1, 2022 (Exhibit D). A wooden pedestrian foot bridge is also proposed to be constructed to connect two community areas on either side of the drainage.

Impacts to Section 1602 jurisdictional areas would be regarded as significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to CEQA.

15.10 Mitigation Measure BIO-5. Impacts to Section 1602 Jurisdictional Areas

Impacts to a drainage channel within CDFW's Section 1602 jurisdiction, as illustrated on Exhibit D, would occur during the installation of a road crossing over the main drainage channel on the project site. The 'A' Street overpass that is proposed to be constructed over the drainage would either be a standard culvert, an arched open bottom culvert, or a span bridge; the exact design has not been finalized. There is no riparian habitat in or near the area of impact. A pedestrian foot

bridge would also be constructed on the project site, upstream of the road crossing. This foot bridge would not impact riparian vegetation either. The remainder of the drainage would not be impacted, as an average 25-foot setback, and at least a 10-foot setback is proposed along the remainder of the drainage. The applicant proposes to enhance the drainage on the project site to mitigate for any impacts from the road crossing and pedestrian crossing.

Accordingly, prior to the time the road crossing and pedestrian crossing can be constructed, a permit will be required from the CDFW pursuant to Section 1602 of the Fish and Game Code. In order for the CDFW to process a Section 1602 Streambed Alteration Agreement, the City of Novato will have to adopt the project pursuant to the CEQA, and upon adoption file a Notice of Determination (NOD) with the State Clearing House. All Fish and Game Filing Fees must be paid at the time the NOD is filed if they were not filed upon the initiation of the CEQA review.

In addition, the project proponent will implement appropriate BMPs to prevent construction-related impacts that could introduce de minimus fill or other pollutants into the drainage on the project site. These measures include the installation of wildlife-friendly hay wattles and/or silt fence that will prevent unintended de minimus fill impacts to the drainage while the road overpass is constructed. In addition, orange silt fencing should be installed at the top-of-bank of the drainage to prevent unintended human and equipment traffic adjacent to the drainage. Finally, the dripline of all protected trees within the drainage on the project site, if near work areas, should be protected via the installation of orange construction fencing.

The project proponent may satisfy this mitigation by providing the City of Novato with a fully executed copy of a SBAA with the CDFW that includes these, or other functionally equivalent, BMPs. The project proponent will implement the conditions of the executed SBAA.

Implementation of these measures would reduce significant impacts to Section 1602 jurisdictional areas to a level considered less-than-significant pursuant to the CEQA.

16. LITERATURE CITED

Baldwin D.H, Goldman D.H., Keil D.J., Patterson R, Rosatti T.J., Wilken D.H. (ed.). 2012. The Jepson Manual Vascular Plants of California: Second Edition. University of California Press, Berkeley. 1568 pps.

Barbour, Michael G., Keeler-Wolf, Todd and Schoenherr, Allan A. 2007. Terrestrial Vegetation of California, 3rd edition. University of California Press. Berkeley and Los Angeles, CA.

Beier, P., & Loe, S. (1992). In my experience: a checklist for evaluating impacts to wildlife movement corridors. Wildlife Society Bulletin (1973-2006), 20(4), 434-440.

Bulger, John B., Norman J. Scott Jr, and Richard B. Seymour. "Terrestrial activity and conservation of adult California red-legged frogs Rana aurora draytonii in coastal forests and grasslands." *Biological conservation* 110.1 (2003): 85-95.

California Department of Fish and Game. 2000. Guidelines for assessing the effects of proposed projects on rare, threatened, and endangered plants and natural communities. (Revision of 1983 guidelines.) Sacramento, CA, 2 pp.

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website https://www.rareplants.cnps.org [accessed 5 April 2022].

CDFW (California Department of Fish and Wildlife). 2016. Complete list of amphibian, reptile, bird and mammal species in California. Published September 2008; updated May 2016.

CDFW (California Department of Fish and Wildlife). 2018. Protocols for surveying and evaluating impacts to special-status native plant populations and sensitive natural communities. State of California. California Natural Resources Agency. Department of Fish and Wildlife. March 20, 2018. 12 pps.

CNDDB (California Natural Diversity Data Base). 2022. RareFind 5. Computer printout for special-status species within a 3-mile radius of the project site. California Natural Heritage Division, California Department of Fish and Wildlife, Sacramento, CA.

CNPS (California Native Plant Society). 2001. Inventory of rare and endangered plants of California (sixth edition). Rare plant scientific advisory committee, David P. Tibor, convening editor. California Native Plant Society. Sacramento, CA. x+338 pps.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

First Carbon Solutions. 2019. Revised Jurisdictional Delineation Map for San Marin Business Park, Novato, California.

Launer, A. E., Murphy, D. D., Hoekstra, J. M., & Sparrow, H. R. 1992. The endangered Myrtle's silverspot butterfly: present status and initial conservation planning. *J. Res. Lepidoptera*, *31*, 132-46.

Pavlik, B.M., P.C. Muick, S. Johnson, and M. Popper. 1991. Oaks of California. Cachuma Press and California Oak Foundation publishers. 184 pages. Describes the history and ecology of California oaks.

University of California, Davis, California Soil Resource Lab; University of California, Division of Agriculture and Natural Resources; Natural Resources Conservation Service. 2019. SoilWeb. University of California; USDA-NRCS. https://data.nal.usda.gov/dataset/soilweb. Accessed 2022-03-29.

U.S. Army Corps of Engineers. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2). Ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-06-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

USDA. 2006. Field Indicators of Hydric Soils in the United States. Version 6.0 G.W. Hurt and L.M Vasilas (eds.) USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

USDA. Natural Resources Conservation Service. 2018 (https://sdmdataaccess.sc.egov.usda.gov).

USFWS (U.S. Fish and Wildlife Service). 1997. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for Nine Plants From the Grasslands or Mesic Areas of the Central Coast of California. Final Rule. Federal Register: October 22, 1997 (Volume 62, Number 204)

Waddell, K.L.; Barrett, T.M. 2005. Oak woodlands and other hardwood forests of California, 1990s. PNW-RB-245. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 94 p

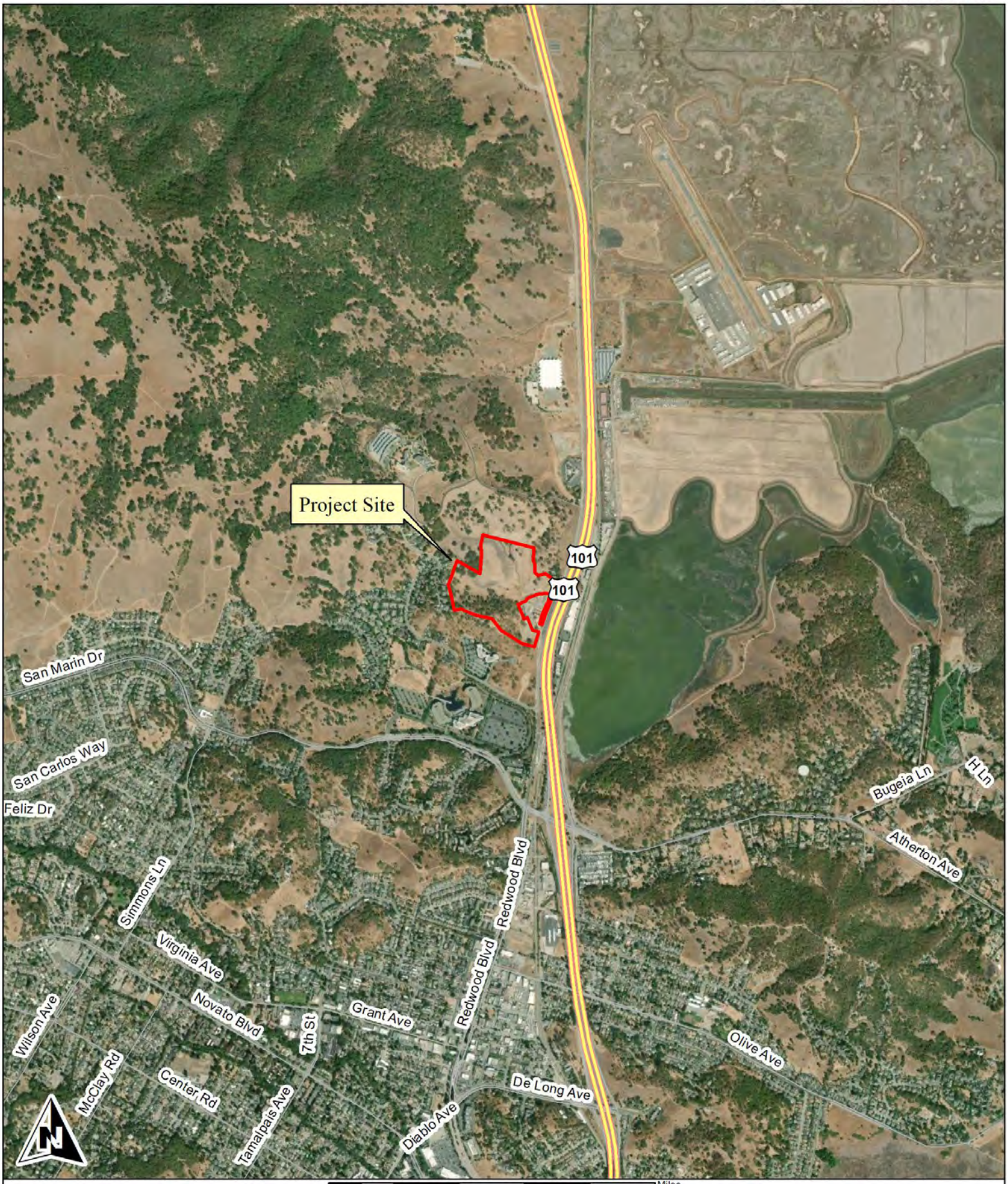
Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White. 1990a. California's wildlife, volume II, birds. State of California, the Resources Agency, Department of Fish and Game, Sacramento, California.



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Figure 1. Valley Oaks Project Site
Regional Map
City of Novato, California

County: Marin
Map Preparation Date: March 29, 2022



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Figure 2. Valley Oaks Project Site
Location Map
City of Novato, California

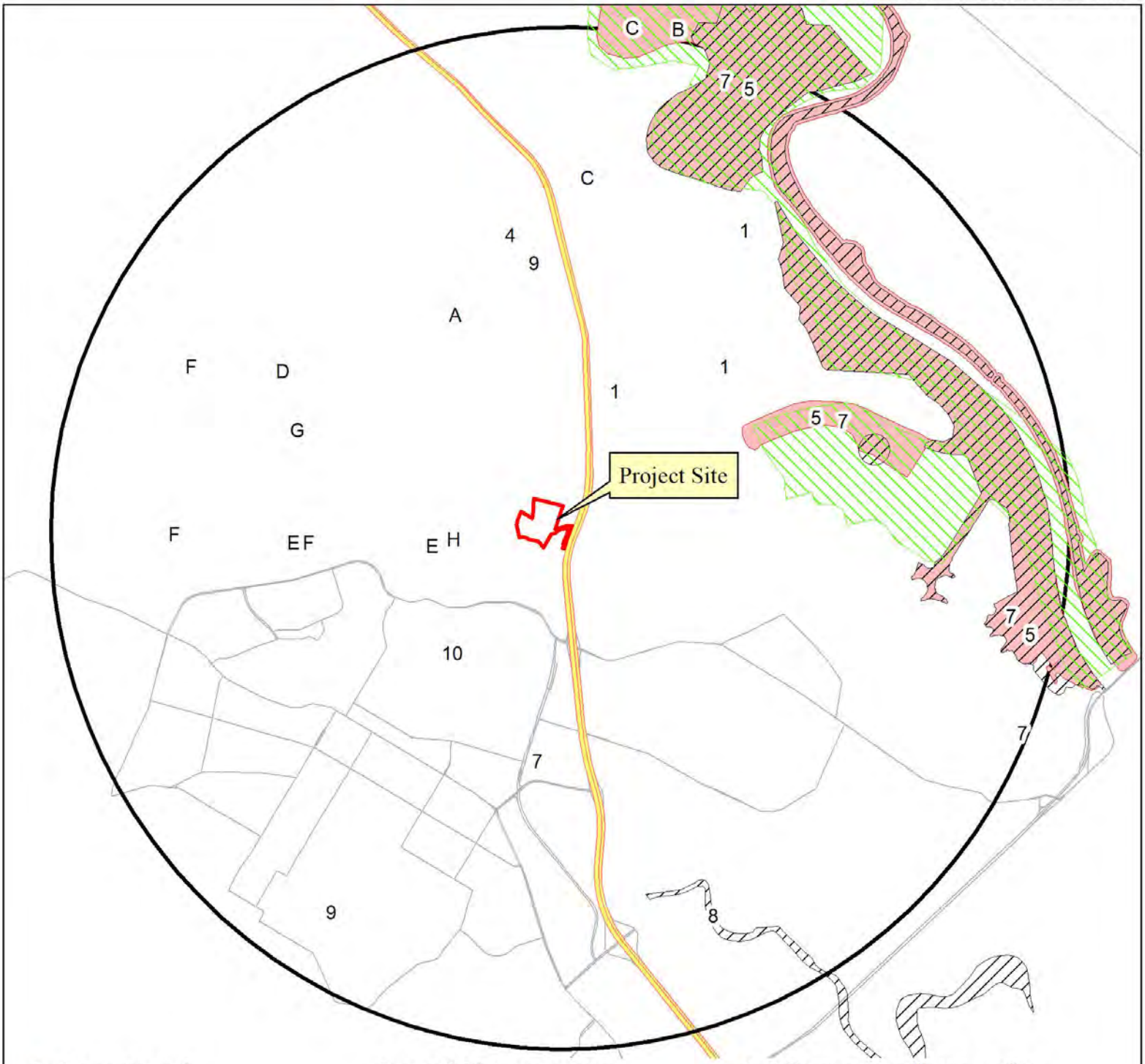
38.128266 -122.568569
Land Grant
7.5-Minute Petaluma River quadrangle
Aerial Photograph Source: ESRI
Map Preparation Date: October 25, 2022



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Figure 3. Aerial Photograph of the
Valley Oaks Project Site
City of Novato, California

Aerial Photograph Source: ESRI
Map Preparation Date: October 25, 2022



1 Burrowing owl
California black rail
California Ridgway's rail
4 Pallid bat
5 Saltmarsh common yellowthroat
Salt-marsh harvest mouse
7 San Pablo song sparrow
8 Tidewater goby
9 Townsend's big-eared bat
10 White-tailed kite
A *Amorpha californica var. napensis*
B *Chloropyron maritimum ssp. palustr*
C *Chloropyron molle ssp. molle*
D *Eriogonum luteolum var. caninum*
E *Fritillaria liliacea*
F *Hesperolinon congestum*
G *Navarretia leucocephala ssp. bakeri*
H *Streptanthus anomalus*

N

0 0.5 1 2 3 Miles

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Figure 4. Closest Known Special-Status Species Within 3 Miles of the Valley Oaks Project Site

Map Preparation Date: March 14, 2022
3-Mile Radius
Source: CDFW, California Natural Diversity Data Base, 2022

Table 1

Plants Observed at the Valley Oaks Project Site

Ferns and Allies

Dryopteridaceae

Dryopteris arguta	Wood fern

Polypodiaceae

Polypodium caifornicum	California polypody

Pteridaceae

Pentagramma triangularis	Goldenback fern

Gymnosperms

Cupressaceae

**Cupressus sp.*	Cypress

Angiosperms - Dicots

Anacardiaceae

Toxicodendron diversilobum	Poison-oak

Apiaceae

**Daucus carota*	Queen Anne's lace
Lomatium utriculatum	Bladder parsnip
Perideridia kelloggii	Kellogg's yampah
Sanicula bipinnata	Poison sanicle
Sanicula bipinnatifida	Purple sanicle
Sanicula crassicaulis	Gamble weed
**Torilis nodosa*	Knotted hedge-parsley

Apocynaceae

Asclepias fascicularis	Narrow-leaf milkweed

Asteraceae

Achillea millefolium	Common yarrow
Agoseris grandiflora var. grandiflora	Large-flower agoseris
**Anthemis cotula*	Mayweed
Artemisia douglasiana	California mugwort
Baccharis pilularis subsp. pilularis	Baccharis
**Carduus pycnocephalus subsp. pycnocephalus*	Italian thistle
**Carduus tenuiflorus*	Plumeless thistle
**Centaurea calcitrapa*	Purple starthistle
**Centaurea melitensis*	Tocalote
**Centaurea solstitialis*	Yellow starthistle
**Cirsium vulgare*	Bull thistle
**Cotula australis*	Australian brass-buttons
**Cotula coronopifolia*	Brass-buttons
**Dittrichia graveolens*	Stinkwort
Eurybia radulina	Broad-leaf aster
Grindelia hirsutula	Hirsute gumplant
Hemizonia congesta subsp. lutescens	Tarweed

Table 1

Plants Observed at the Valley Oaks Project Site

Hesperevax sparsiflora subsp. sparsiflora	Dwarf hesperevax
**Hypochaeris glabra*	Smooth cat's-ear
**Hypochaeris radicata*	Rough cat's-ear
Leontodon sp.	Hawkbit
**Logfia gallica*	Narrowleaf cottonrose
Madia gracilis	Slender tarweed
Micropus californicus var. californicus	Cottontop
**Pseudognaphalium luteoalbum*	Everlasting cudweed
Psilocarphus tenellus	Slender woolly-marbles
**Senecio vulgaris*	Common groundsel
**Silybum marianum*	Milk thistle
**Soliva sessilis*	Field burrweed
**Sonchus asper subsp. asper*	Prickly sow-thistle
**Sonchus oleraceus*	Common sow-thistle
Wyethia angustifolia	Narrowleaf mules ears
Wyethia glabra	Mules ears
Wyethia sp.	Mule's ears
Xanthium spinosum	Spiny cocklebur
Boraginaceae	
Amsinckia intermedia	Common fiddleneck
Amsinckia sp.	Fiddleneck
Cynoglossum grande	Grand hound's tongue
Plagiobothrys bracteatus	Bracted popcornflower
Brassicaceae	
**Brassica nigra*	Black mustard
**Brassica rapa*	Field mustard
**Capsella bursa-pastoris*	Shepherd's purse
Cardamine californica	Milk maids
Cardamine oligosperma	Few-seed bittercress
**Lepidium latifolium*	Broadleaf pepperweed
**Raphanus sativus*	Wild radish
**Sinapis arvensis*	Wild mustard
**Sisymbrium altissimum*	Tumble mustard
Caprifoliaceae	
Symphoricarpos albus var. laevigatus	Common snowberry
Symphoricarpos mollis	Creeping snowberry
Caryophyllaceae	
**Cerastium glomeratum*	Mouse-ear chickweed
**Silene gallica*	Windmill-pink
**Spergula arvensis*	Stickwort
Spergularia macrotheca	Beach sand-spurrey
**Stellaria media*	Common chickweed
Celastraceae	
**Maytenus boaria*	Mayten tree

* Indicates a non-native species

Table 1

Plants Observed at the Valley Oaks Project Site

Chenopodiaceae	
**Atriplex prostrata*	Hastate orache
Convolvulaceae	
Calystegia subaucaulis subsp. subaucaulis	Hill morning-glory
**Convolvulus arvensis*	Bindweed
Crassulaceae	
**Crassula tillaea*	Mossy pygmy-weed
Cucurbitaceae	
Marah fabacea	Wild cucumber
Fabaceae	
Acmispon wrangelianus	Common trefoil
**Genista monspessulana*	French broom
Lathyrus vestitus var. vestitus	Wild pea
Lupinus bicolor	Bicolored lupine
**Medicago polymorpha*	California burclover
**Medicago sativa*	Alfalfa
Trifolium albopurpureum	Rancheria clover
Trifolium ciliolatum	Foothill clover
**Trifolium dubium*	Little hop clover
**Trifolium glomeratum*	Clustered clover
**Trifolium hirtum*	Rose clover
Trifolium microdon	Thimble clover
Trifolium oliganthum	Few-flowered clover
**Trifolium subterraneum*	Subterranean clover
**Trifolium tomentosum*	Woolly clover
**Vicia benghalensis*	Purple vetch
**Vicia sativa*	Common vetch
Fagaceae	
Quercus agrifolia var. agrifolia	Coast live oak
Quercus berberidifolia	Scrub oak
Quercus douglasii	Blue oak
Quercus kelloggii	California black oak
Quercus lobata	Valley oak
Quercus wislizeni var. wislizeni	Interior live oak
Geraniaceae	
**Erodium botrys*	Broad-leaf filaree
**Erodium moschatum*	White-stem filaree
**Geranium dissectum*	Cut-leaf geranium
**Geranium molle*	Dove's-foot geranium
Juglandaceae	
Juglans hindsii	Northern California black walnut
Lamiaceae	
**Lamium amplexicaule*	Deadnettle
**Mentha pulegium*	Pennyroyal

* Indicates a non-native species

Table 1

Plants Observed at the Valley Oaks Project Site

Stachys ajugoides	Bugle hedge-nettle
Stachys rigida var. quercetorum	Hedge nettle
Lauraceae	
Umbellularia californica	California bay
Lythraceae	
**Lythrum hyssopifolia*	Hyssop loosestrife
Montiaceae	
Calandrinia menziesii	Red maids
Claytonia parviflora	Miner's lettuce
Claytonia perfoliata	Miner's lettuce
Myrsinaceae	
**Lysimachia arvensis*	Scarlet pimpernel
Myrtaceae	
**Eucalyptus tereticornis*	Forest red gum
Onagraceae	
Clarkia purpurea subsp. quadrivulnera	Four spot
Taraxia ovata	Sun cup
Orobanchaceae	
Castilleja attenuata	Valley tassels
Castilleja exserta	Purple Owl's Clover
**Parentucellia viscosa*	Yellow glandweed
Triphysaria pusilla	Owl's-clover
Oxalidaceae	
**Oxalis pes-caprae*	Bermuda buttercup
Plantaginaceae	
Plantago erecta	Plantain
**Plantago lanceolata*	English plantain
Polemoniaceae	
Leptosiphon bicolor	Bicolored linanthus
Leptosiphon parviflorus	Linanthus
Polygonaceae	
**Polygonum aviculare*	Common knotweed
**Rumex acetosella*	Sheep sorrel
**Rumex crispus*	Curly dock
**Rumex pulcher*	Fiddle dock
Primulaceae	
Dodecatheon sp.	Shooting star
Primula hendersonii	Mosquito bills
Ranunculaceae	
Ranunculus californicus	California buttercup
**Ranunculus muricatus*	Spiny-fruit buttercup

* Indicates a non-native species

Table 1

Plants Observed at the Valley Oaks Project Site

Rhamnaceae

Frangula californica subsp. californica	California coffeeberry

Rosaceae

Aphanes occidentalis	Western lady's-mantle
**Cotoneaster sp.*	Cotoneaster
Drymocallis glandulosa	Glandular cinquefoil
Fragaria vesca	Wood strawberry
Malus sp.	Apple tree
Oemleria cerasiformis	Oso berry
Rosa spithamea	Coast ground rose
Rubus ursinus	California blackberry

Rubiaceae

Galium aparine	Goose grass
**Galium murale*	Tiny bedstraw
Galium porrigens var. porrigens	Climbing bedstraw
**Sherardia arvensis*	Field madder

Salicaceae

**Populus alba*	White poplar

Sapindaceae

Aesculus californica	California buckeye

Saxifragaceae

Lithophragma affine	Woodland star
Lithophragma parviflorum var. parviflorum	Woodland star
Micranthes californica	California saxifrage

Urticaceae

**Urtica urens*	Dwarf nettle

Angiosperms -Monocots

Agavaceae

Chlorogalum pomeridianum var. pomeridianum	Soap plant
Chlorogalum purpureum var. purpureum	Purple amole

Iridaceae

Sisyrinchium bellum	Western blue-eyed grass

Juncaceae

Juncus bufonius	Toad rush
Juncus mexicanus	Mexican rush
Juncus tenuis	Slender rush
Luzula comosa var. comosa	Common wood-rush

Liliaceae

Fritillaria affinis	Checker lily

Poaceae

**Aira caryophyllea*	Silver European hairgrass

* Indicates a non-native species

Table 1

Plants Observed at the Valley Oaks Project Site

**Avena barbata*	Slender wild oat
**Brachypodium distachyon*	Purple falsebrome
**Briza maxima*	Rattlesnake grass
**Briza minor*	Small quaking grass
**Bromus diandrus*	Ripgut grass
**Bromus hordeaceus*	Soft chess
**Bromus madritensis subsp. madritensis*	Foxtail chess
**Crypsis schoenoides*	Swamp pricklegrass
**Cynosurus echinatus*	Dogtail Grass
Distichlis spicata	Saltgrass
Elymus glaucus	Blue wildrye
Elymus triticoides	Creeping wildrye
**Festuca bromoides*	Brome fescue
Festuca microstachys	Small fescue
**Festuca perennis*	perennial ryegrass
Hordeum brachyantherum	Meadow barley
**Hordeum marinum subsp. gussoneanum*	Mediterranean barley
**Hordeum murinum subsp. leporinum*	Hare barley
Koeleria macrantha	Junegrass
Melica imperfecta	Small-flowered melic
**Phalaris aquatica*	Harding grass
**Phalaris paradoxa*	Paradox canary-grass
**Poa annua*	Annual bluegrass
**Polypogon monspeliensis*	Annual beard grass
Stipa pulchra	Purple needlegrass
**Triticum aestivum*	Wheat
Themidaceae	
Brodiaea elegans subsp. elegans	Harvest brodiaea
Dichelostemma capitatum subsp. capitatum	Blue dicks
Dichelostemma congestum	Forktoothed ookow
Dichelostemma multiflorum	Wild hyacinth
Triteleia hyacinthina	White brodiaea
Triteleia laxa	Ithuriel's spear

* Indicates a non-native species

Table 2
Wildlife Species Observed on the Campus Properties Valley Oaks Project Site

Amphibians	
Sierran treefrog	*Pseudacris sierra*
Reptiles	
Western fence lizard	*Sceloporus occidentalis*
Skilton's skink	*Plestiodon skiltonianus skiltonianus*
Birds	
Northern flicker	*Colaptes auratus*
Great egret	*Ardea alba*
Turkey vulture	*Cathartes aura*
Red-shouldered hawk	*Buteo lineatus*
Red-tailed hawk	*Buteo jamaicensis*
Merlin	*Falco columbarius*
Wild turkey	*Meleagris gallopavo*
Wilson's snipe	*Gallinago delicata*
Mourning dove	*Zenaida macroura*
Anna's hummingbird	*Calypte anna*
Acorn woodpecker	*Melanerpes formicivorus*
Nuttall's woodpecker	*Picoides nuttallii*
killdeer	*Colaptes auratus*
Pacific-slope flycatcher	*Empidonax difficilis*
Black phoebe	*Sayornis nigricans*
Say's phoebe	*Sayornis saya*
Western kingbird	*Tyrannus verticalis*
California scrub jay	*Aphelocoma californica*
Tree swallow	*Tachycineta bicolor*
Cliff swallow	*Petrochelidon pyrrhonota*
Barn swallow	*Hirundo rustica*
Oak titmouse	*Baeolophus inornatus*
White-breasted nuthatch	*Sitta carolinensis*
Bewick's wren	*Thryomanes bewickii*
Ruby-crowned kinglet	*Regulus calendula*
Western bluebird	*Sialia mexicana*
Northern mockingbird	*Mimus polyglottos*
Lincoln's sparrow	*Melospiza lincolnii*
White-crowned sparrow	*Zonotrichia leucophrys*
Golden-crowned sparrow	*Zonotrichia atricapilla*
Dark-eyed junco	*Junco hyemalis*
Red-winged blackbird	*Agelaius phoeniceus*
Brewer's blackbird	*Euphagus cyanocephalus*
House finch	*Haemorhous mexicanus*
Pine siskin	*Carduelis pinus*
Lesser goldfinch	*Spinus psaltria*
American goldfinch	*Spinus tristis*
House sparrow	*Passer domesticus*

Table 2
Wildlife Species Observed on the Campus Properties Valley Oaks Project Site

Mammals	
Western gray squirrel	*Sciurus griseus*
Columbian black-tailed deer	*Odocoileus hemionus ssp. columbianus*

Table 3

Special-Status Plant Species Known to Occur within 3 Miles of the Valley Oaks Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Brassicaceae					
Streptanthus anomalus Mt. Burdell jewelflower	Fed: State: CNPS: Rank 1B.1	May-June	Serpentine grassland	Closeset record for this species located 0.3 miles west of the project site (Occurrence No. 1).	None. No serpentine soils occur onsite. Not observed during appropriately timed surveys.
Fabaceae					
Amorpha californica napensis Napa false indigo	Fed: - State: - CNPS: Rank 1B.2	April-July	Broadleaved upland forest (openings); chaparral, cismontane woodland. 150-2000 m.	Closest record for this species located 0.9 miles north of the project site (Occurrence No. 34).	None. Suitable woodland habitat occurs onsite but not observed during appropriately timed surveys.
Liliaceae					
Fritillaria liliacea Fragrant fritillary	Fed: - State: - CNPS: Rank 1B.2	February-April	Coastal prairie; coastal scrub; valley and foothill grassland; [often serpentinite].	Closest record for this species located 0.58 miles west of the project site (Occurrence No. 82)	None. Suitable grassland habitat occurs onsite but not on serpentine soils. Not observed during appropriately timed surveys.
Linaceae					
Hesperolinon congestum Marin dwarf flax	Fed: FT State: CT CNPS: Rank 1B.1	April-July	Chaparral; valley and foothill woodland; [serpentinite].	Closest record for this species located 1.5 miles west of the project site (Occurrence No. 25).	None. No serpentine soils occur onsite. Not observed during appropriately timed surveys.
Orobanchaceae					
Chloropyron maritimum palustre Point Reyes salty bird's-beak	Fed: - State: - CNPS: Rank 1B.2	June-October	Marshes and swamps (coastal salt).	Closest record for this species located 3.2 miles north of the project site (Occurrence No. 61).	None. No salt marsh occurs onsite.

Table 3

Special-Status Plant Species Known to Occur within 3 Miles of the Valley Oaks Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Chloropyron molle molle Soft bird's-beak	Fed: FE State: CR CNPS: Rank 1B.2	July-September	Marshes and swamps (coastal salt).	Closest record for this species located 2.0 miles north of the project site (Occurrence No. 5).	None. No salt marsh occurs onsite.
Polemoniaceae					
Navarretia leucocephala bakeri Baker's navarretia	Fed: - State: - CNPS: Rank 1B.1	May-July	Cismontane woodland; lower montane coniferous forest; meadows (mesic); valley and foothill grassland; vernal pools.	Closest record for this species located 1.7 miles west of the project site (Occurrence No. 13).	None. Suitable grassland habitat occurs onsite but not observed during appropriately timed surveys.
Polygonaceae					
Eriogonum luteolum caninum Tiburon buckwheat	Fed: - State: - CNPS: Rank 1B.2	June-September	Chaparral; coastal prairie; valley and foothill grassland; [serpentinite].	Closest record for this species located 1.6 miles northwest of the project site (Occurrence No. 25).	None. No serpentine soils occur onsite. No species of Eriogonum observed onsite.

Table 3

Special-Status Plant Species Known to Occur within 3 Miles of the Valley Oaks Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate
CSC - California Species of Special Concern

CNPS:
Rank 1A - Presumed extinct in California
Rank 1B - Plants rare, threatened, or endangered in California and elsewhere
Rank 1B.1 - Seriously endangered in California (over 80% occurrences threatened/ high degree and immediacy of threat)
Rank 1B.2 - Fairly endangered in California (20-80% occurrences threatened)
Rank 1B.3 - Not very endangered in California (<20% of occurrences threatened or no current threats known)

CNPS Continued:
Rank 2 - Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 2A - Extirpated in California, common elsewhere
Rank 2B.1 - Seriously endangered in California, but more common elsewhere
Rank 2B.2 - Fairly endangered in California, but more common elsewhere
Rank 2B.3 - Not very endangered in California, but more common elsewhere
Rank 3 - Plants about which we need more information (Review List)
Rank 3.1 - Plants about which we need more information (Review List) Seriously endangered in California
Rank 3.2 - Plants about which we need more information (Review List) Fairly endangered in California
Rank 4 - Plants of limited distribution - a watch list

Table 4

Special-Status Wildlife Species Known to Occur Within 3 Miles of the Valley Oaks Project Site

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Fish				
Tidewater goby *Eucyclogobius newberryi*	Fed: FE State: CSC Other:	Brackish water habitats along the California coast from Agua Henionda Lagoon, San Diego County to the mouth of the Smith River.	The closest record for this species is located approximately 2.1 miles south of the project site (Occurrence No. 20).	None. No suitable habitat on the project site. No impact expected.
Birds				
White-tailed Kite *Elanus leucurus*	Fed: State: FP Other:	Found in lower foothills and valley margins with scattered oaks and along river bottomlands or marshes adjacent to oak woodlands. Nests in trees with dense tops.	The closest record for this species is located approximately 0.8 miles southwest of the project site (Occurrence No. 8).	Moderate. Suitable nesting habitat occurs on the project site. Preconstruction surveys will be conducted prior to construction activities. No impact expected. See text.
California black rail *Laterallus jamaicensis coturniculus*	Fed: -- State: CT Other:	Inhabits salt marshes bordering larger bays. Prefers tidal salt marshes of pickleweed.	The closest record for this species is located approximately 1.33 miles east of the project site (Occurrence No. 90).	None. No suitable habitat on the project site. No impact expected.
California Ridgway's rail *Rallus obsoletus obsoletus*	Fed: FE State: CE Other:	Inhabits salt water and brackish marshes with tidal sloughs in San Francisco Bay. Prefers dense pickleweed for cover, but forages for invertebrates along mud-bottomed sloughs.	The closest record for this species is located approximately 1.94 miles east of the project site (Occurrence No. 116).	None. No suitable habitat on the project site. No impact expected.
Western Burrowing Owl *Athene cunicularia hypugaea*	Fed: -- State: CSC Other:	Found in 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.	The closest record for this species is located approximately 0.8 miles north of the project site (Occurrence No. 718). This was a winter record of a transient owl.	None. No burrows on the project site. No burrowing owls have been observed during multiple surveys. No impact expected.
Salt marsh common yellowthroat *Geothlypis trichas sinuosa*	Fed: - State: CSC Other:	Resident of freshwater and salt water marshes in the San Francisco Bay region. Requires thick, continuous cover for foraging and tall grasses, tules, or willows for nesting.	The closest record for this species is located approximately 1.4 miles east of the project site (Occurrence No. 88).	None. No suitable habitat on the project site. No impact expected

Table 4

Special-Status Wildlife Species Known to Occur Within 3 Miles of the Valley Oaks Project Site

Species	*Status	Habitat	Closest Locations	Probability on Project Site
San Pablo song sparrow *Melospiza melodia samuelis*	Fed: -- State: CSC Other:	More properly known as Samuels Song Sparrow. Resident of salt marshes along the north side of San Francisco and San Pablo Bays. Inhabits tidal sloughs in the California marshes; nests in grindelia bordering slough channels.	The closest record for this species is located approximately 1.2 miles south of the project site (Occurrence No. 43).	None. No suitable habitat on the project site. No impact expected
Mammals				
Townsend's big-eared bat *Corynorhinus townsendii*	Fed: -- State: CSC Other: -	Occurs in humid coastal regions of northern and central California. Roosts in limestone caves, lava tubes, mines, and buildings. Extremely sensitive to disturbance.	The closest record for this species is located approximately 1.5 miles north of the project site (Occurrence No. 121).	Low. Some suitable nesting habitat occurs on the project site. Preconstruction surveys will be conducted prior to construction activities. No impact expected. See text.
Pallid bat *Antrozous pallidus*	Fed: - State: CSC Other:	Occurs in deserts, grasslands, shrublands, woodlands, and forests. Most common in dry habitats with rocky areas for roosting. Roosts in caves, crevices, mines, and occasionally hollow trees. Night roosts in open areas such as porches and open buildings.	The closest record for this species is located approximately 1.64 miles north of the project site (Occurrence No. 3).	Low. Some suitable nesting habitat occurs on the project site. Preconstruction surveys will be conducted prior to construction activities. No impact expected. See text.
Salt marsh harvest mouse *Reithrodontomys raviventris*	Fed: FE State: CE Other:	Inhabits saline marshes in the San Francisco Estuary. Prefers pickleweed marshes. Requires higher areas for escaping high water.	The closest record for this species is located approximately 1.5 miles east of the project site (Occurrence No. 18).	None. No suitable habitat on the project site. No impact expected

Table 4

Special-Status Wildlife Species Known to Occur Within 3 Miles of the Valley Oaks Project Site

Species	*Status	Habitat	Closest Locations	Probability on Project Site

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate
FPD - Federally Proposed for delisting

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate

State:
CSC - California Species of Special Concern
FP - Fully Protected
WL - Watch List. Not protected pursuant to CEQA

** This frog is listed as “endangered” in the east/southern Sierra, west/central, and southern California coasts and “threatened” in the Northern Sierra and Feather River. This frog is not protected pursuant to CESA on the northern coast of California (all counties from Marin and Solano Counties north to Oregon boarder).



VALLEY OAKS NORTH AREA 1, 2 AND 3 - UNIT SUMMARY

Unit Type	QTY	QTY Market Rate per Area #			TOTAL QTY Market Rate	QTY BMR per Area #			TOTAL QTY BMR	# of Bdrm includes JADU where applicable	# of Bath includes JADU where applicable	JADU's	Garage	Est. Unit Sq.Ft. per Dwelling (+/-). (Include JADU)	Total Unit Sq.Ft. (+/-)
		V01	V02	V03		V01	V02	V03							
Plan 1-Duet	12	2	2	0	4	4	0	4	8	4	2.5	0	2-Car Garage	1,900	22,800
Plan 2-SFD	19	3	3	10	16	2	0	1	3	4	2.5	16	2-Car Garage	2,500	47,500
Plan 3-SFD	22	4	5	12	21	0	0	1	1	5	3.5	21	2-Car Garage	2,800	61,600
Plan 4-SFD	8	2	2	4	8	0	0	0	0	5	3.5	8	2-Car Garage	3,000	24,000
Total	**61**	**11**	**12**	**26**	**49**	**6**	**0**	**6**	**12**	**274**	**-**	**45**	**-**	**-**	**155,900**

Note: JADU are available on Plans 2, 3 and Plan 4.
A JADU will convert 1-Bedroom and 1 Bathroom within the primary unit into an accessory dwelling unit with a kitchnette.

VALLEY OAKS SOUTH - UNIT SUMMARY

Unit Type	QTY				TOTAL QTY Market Rate				TOTAL QTY BMR	# of Bdrm	# of Bath	JADU's	Garage	Est. Unit Sq.Ft. per Dwelling (+/-). (Include Roof Deck)	Total Unit Sq.Ft. (+/-)
Unit 1	5				3				2	3	2.5	N/A	2-Car Garage	1,800	9,000
Unit 1X	4				4				0	3	2.5	N/A	2-Car Garage	1,850	7,400
Unit 2	7				5				2	3	3	N/A	2-Car Garage	2,000	14,000
Unit 2X	4				4				0	3	3	N/A	2-Car Garage	2,100	8,400
Total	**20**				**16**				**4**	**48**	**-**		**-**	**-**	**38,800**

Note:

VALLEY OAKS TOTAL PROJECT UNIT SUMMARY

	QTY				TOTAL QTY Market Rate				TOTAL QTY BMR			JADU's			Total Unit Sq.Ft. (+/-)
Total	**81**				**65**				**16**			**45**			**194,700**

Note:

VEHICLE PARKING SUMMARY

Required Parking (s. 19.30.040, Table 3-7)

	Total Homes/ Units	Required Spaces/Du	Total Required
Single-Family dwellings	60	2	120
Multi-Family dwellings	0	2 Bedroom unit - 2 spaces	0
	20	>3 Bedroom unit - 2.2 spaces	44
Guest Parking (Multi-family only) [1]		Additional 1 space for each 3 units	7
Total Parking Spaces			**171**

Provided Parking

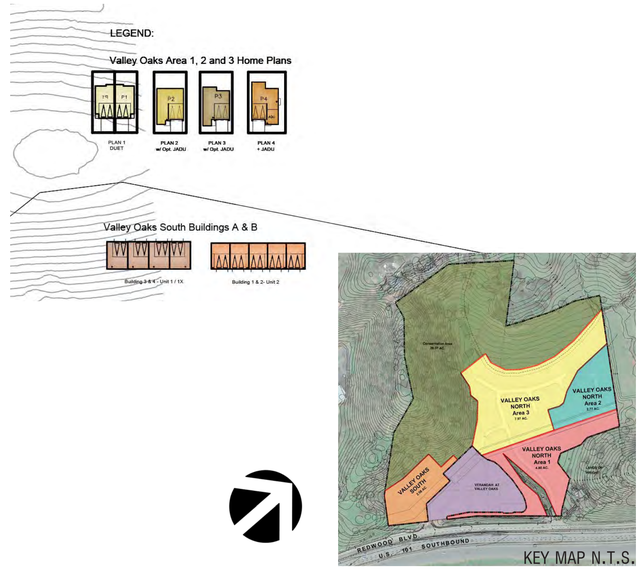
	VO NORTH	VO SOUTH	Total Provided
Garage Spaces (min. 10' x 20')	120	40	160
Driveway (Off Street)	120	0	120
On-Street / Parallel Space (8' x 24')	33	0	0
Standard Parking spaces (9' x 19') [1]	0	10	0
Total Parking Spaces	**273**	**50**	**323**

BICYCLE PARKING SUMMARY

Number of Bicycle Spaces Required (s. 19.30.090)

	Total Provided Vehicle Spaces	Bicycle Required Spaces	Total Required
Multi-Family dwellings [2]	50	10% of the provided vehicle spaces	5

Note:
[1] Per Section 19.30.060 Disabled / Handicapped Parking Requirements, and Section 11298 of the Uniform Building Code and the Federal Accessibility Guidelines.
[2] Per section 19.30.090.A.1 Bicycle Parking and Support Facilities



NOTE: REFERENCE SWA LANDSCAPE PLAN FOR DETAIL.

SCHEMATIC SITE PLAN

VALLEY OAKS

NOVATO, CA

SP3

0 50 100 200

CAMPUS PROPERTY GROUP

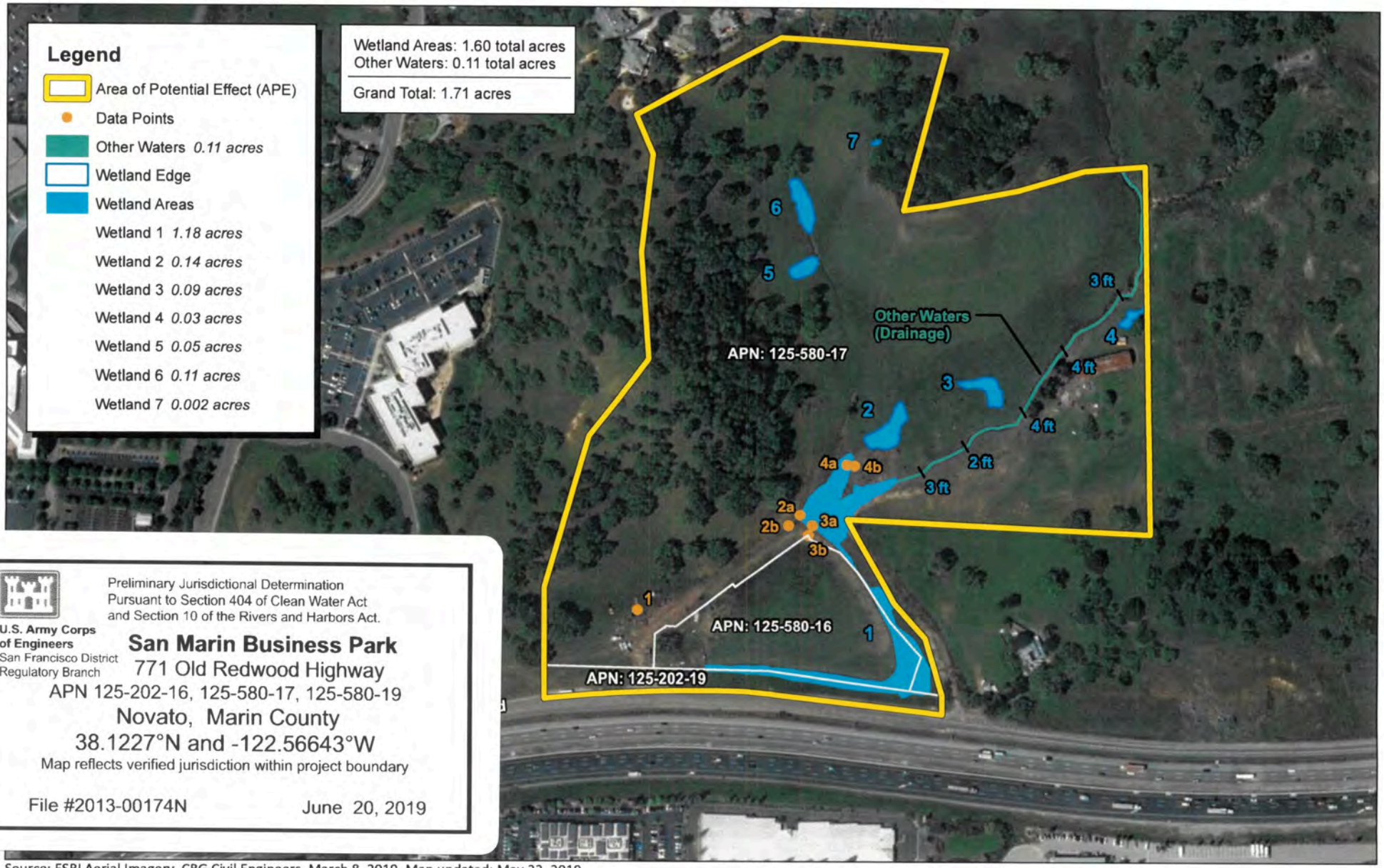
CARLSON, BARBEE & GIBSON, Inc. CIVIL ENGINEERS • SURVEYORS • PLANNERS

WHA. ARCHITECTS . PLANNERS . DESIGNERS

CSW ST2 swa

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ARCHITECTS . PLANNERS . DESIGNERS
WHA.
ORANGE COUNTY . LOS ANGELES . BAY AREA . SACRAMENTO



Preliminary Jurisdictional Determination
Pursuant to Section 404 of Clean Water Act
and Section 10 of the Rivers and Harbors Act.

U.S. Army Corps of Engineers
San Francisco District
Regulatory Branch

San Marin Business Park

771 Old Redwood Highway
APN 125-202-16, 125-580-17, 125-580-19
Novato, Marin County
38.1227°N and -122.56643°W
Map reflects verified jurisdiction within project boundary

File #2013-00174N June 20, 2019

Source: ESRI Aerial Imagery. CBG Civil Engineers, March 8, 2019. Map updated: May 22, 2019.
ACE Inspection on May 16, 2019. Confirmed by the Corps (Roberta Morgenstern) on May 16, 2019.
Note: Wetland Edge as determined by FCS using GPS in field survey.

FIRSTCARBON SOLUTIONS™

350 175 0 350
Feet

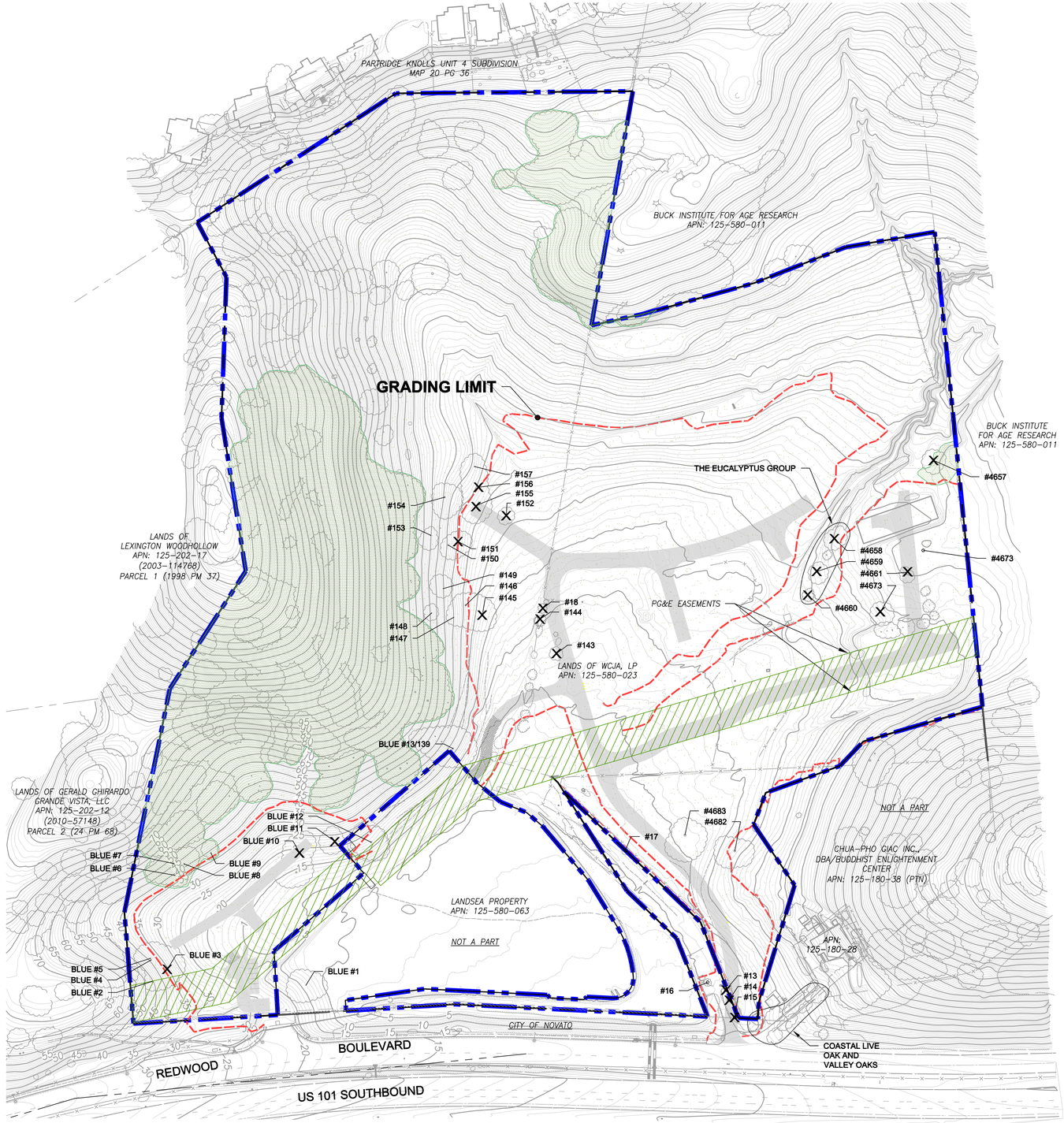
Aquatic Resources Map

44000005 • 05/2019 | aquatic_resources_map.mxd

LANDS AT REDWOOD BOULEVARD AND BLACK JOHN ROAD, NOVATO
APNS: 125-580-16, 125-580-17, 125-202-19
CITY OF NOVATO, CALIFORNIA

KEY	LEGEND
	NON-NATIVE ANNUAL GRASSLAND
	MIXED OAK WOODLAND
#100	INVENTORIED TREE
#100	TREE PROPOSED FOR REMOVAL
#100	TREE PROPOSED FOR POTENTIAL REMOVAL

REFERENCE:
NOVATO MUNICIPAL CODE, CHAPTER IX - LAND SUBDIVISION, TENTATIVE MAPS
9-7.002 2 B.2. (t)
SPECIES, TRUNK, DIAMETER, AND DRIP LINE OF ALL TREES SIX INCHES OR MORE IN TRUNK DIAMETER (30 INCHES OR MORE IN CIRCUMFERENCE) MEASURED 24 INCHES ABOVE GROUND LEVEL.



Graphic Scale (in feet)
100 0 100 200
1 inch = 100 ft.

APPLICANT:

MICHAEL R. HOOPER
CAMPUS PROPERTIES, LLC
PO BOX 1613
GLEN ELLEN, CA 95442
(415) 298 7571

OWNERS:

APN: 125-580-023
WCJA, LP C/O
MICHAEL R. HOOPER
CAMPUS PROPERTIES, LLC
P.O. BOX 564
LARKSPUR, CA 94977
(415) 298 7571

APN: 125-180-038 (PTN)
WCJA, LP C/O
MICHAEL R. HOOPER
CAMPUS PROPERTIES, LLC
P.O. BOX 564
LARKSPUR, CA 94977
(415) 298 7571

Rev	Date	Description	Designed	Drawn	Checked
-	10/20/2022	SUBMITTED FOR REVIEW			

CSW | ST2
CSW/Stuber-Stroeh Engineering Group, Inc.
Civil & Structural Engineers | Surveying & Mapping | Environmental Planning
Land Planning | Construction Management
45 Leveroni Court
Novato, CA 94949
tel: 415.883.9850
fax: 415.883.9835
http://www.cswst2.com

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City	NOVATO
County	MARIN
State	CALIFORNIA

VALLEY OAKS

TREES PROPOSED FOR REMOVAL

Prepared Under the Direction of:

Sheet
EXH 4A

Scale:	1" = 100'
Date:	10/20/2022
Project Number:	20.10.140
Plan File:	

Z:\Shared\Projects\Apps\Novato\Projects\2010\145-SB\BP Phase Two\DWG\Sheets\Constraint Maps\EXA4-TREE REMOVAL EXHIBIT.dwg 10/24/2022 - 11:03 AM ibaker 13.50\2

EXISTING WETLAND AREA #7
PER FIRSTCARBON SOLUTIONS
JURISDICTION MAP (MARCH 2019)
0.002 AC±

EXISTING WETLAND AREA #6
PER FIRSTCARBON SOLUTIONS
JURISDICTION MAP (MARCH 2019)
0.11 AC±

EXISTING WETLAND AREA #5
PER FIRSTCARBON SOLUTIONS
JURISDICTION MAP (MARCH 2019)
0.05 AC±

EXISTING WETLAND AREA #4
PER FIRSTCARBON SOLUTIONS
JURISDICTION MAP (MARCH 2019)
0.03 AC±

EXISTING TOP OF BANK
PER MONK & ASSOCIATES

EXISTING OTHER WATERS
PER FIRSTCARBON SOLUTIONS
JURISDICTION MAP (MARCH 2019)
0.11 AC±

EXISTING WETLAND AREA #3
PER FIRSTCARBON SOLUTIONS
JURISDICTION MAP (MARCH 2019)
0.09 AC±

WETLAND AREA 3
(SEE SHEET 4)

EXISTING WETLAND AREA #2
PER FIRSTCARBON SOLUTIONS
JURISDICTION MAP (MARCH 2019)
0.14 AC±

EXISTING "OTHER WATERS"

WETLAND AREA 2
(SEE SHEET 3)

EXISTING WETLAND AREA #1
PER FIRSTCARBON SOLUTIONS
JURISDICTION MAP (MARCH 2019)
1.18 AC±

WETLAND AREA 1
(SEE SHEET 2)

VALLEY OAKS

PROJECT BOUNDARY

EXISTING WETLAND AREA W1
PER MONK & ASSOCIATES
DELINEATION MAP (JANUARY 2021)
0.015 AC±

EXISTING WETLAND AREA W2
PER MONK & ASSOCIATES
DELINEATION MAP (JANUARY 2021)
0.029 AC±

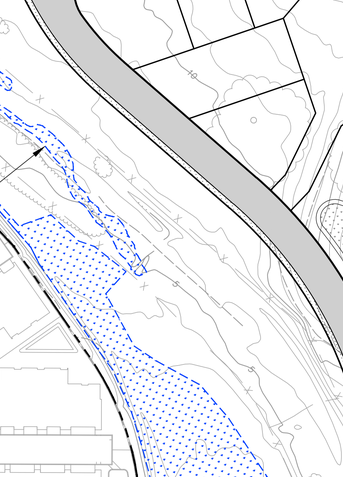
VALLEY OAKS
SOUTH

VERANDAH AT
VALLEY OAKS

REDWOOD BOULEVARD

HIGHWAY 101

WETLAND IMPACTS SUMMARY		
TOTAL WETLANDS IMPACTED (DECEMBER 3, 2021 PLAN)	TOTAL WETLANDS IMPACTED (JANUARY 20, 2021 PLAN)	DIFFERENCE
17,720 SF (0.41 AC)	16,790 SF (0.39 AC)	930 SF (0.02 AC)



VICINITY MAP
NOT TO SCALE

OVERALL MAP OF WETLAND IMPACT AREAS

VALLEY OAKS

CITY OF NOVATO MARIN COUNTY CALIFORNIA

SCALE: 1"=50' DATE: FEBRUARY 1, 2022

0 50 100 150

cbg CIVIL ENGINEERS ▪ SURVEYORS ▪ PLANNERS
SAN RAMON ▪ (925) 866-0322
ROSEVILLE ▪ (916) 788-4456
WWW.CBANDG.COM

SHEET NO. 1 OF 4 SHEETS

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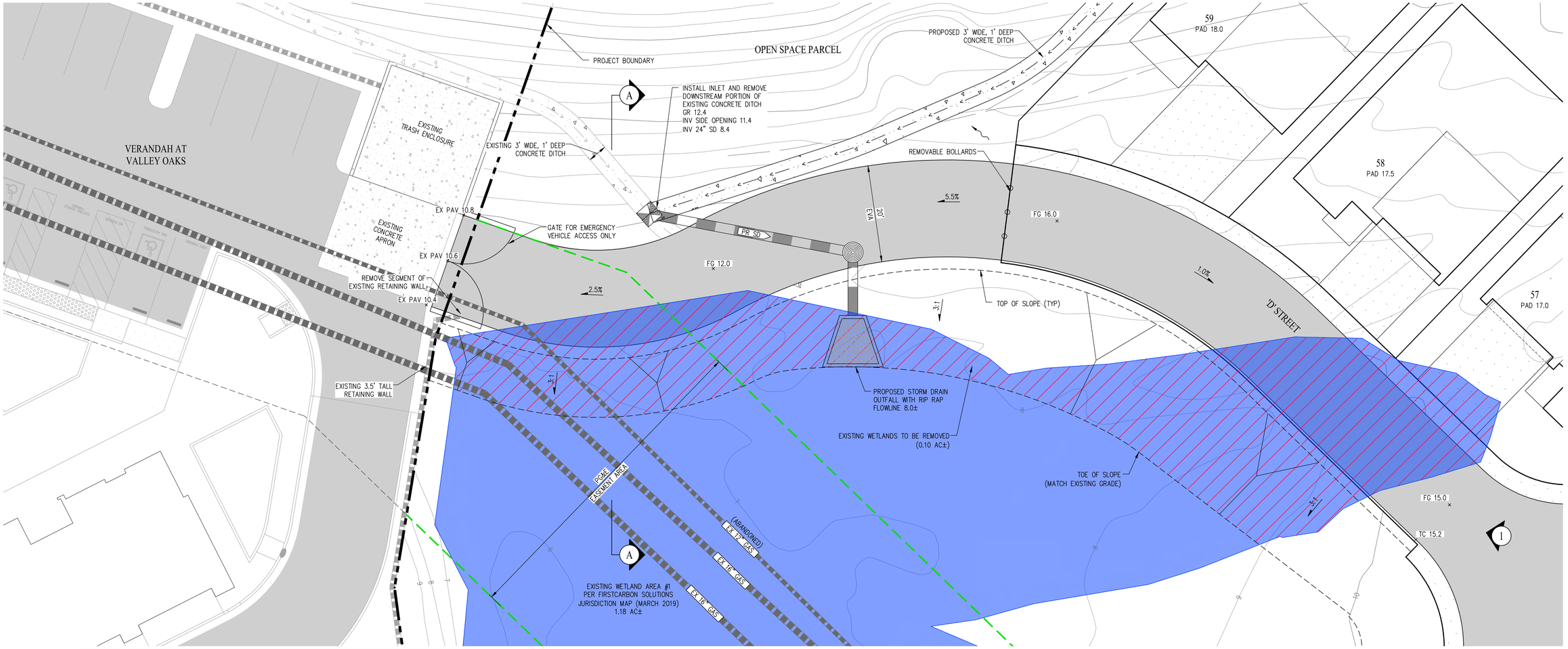
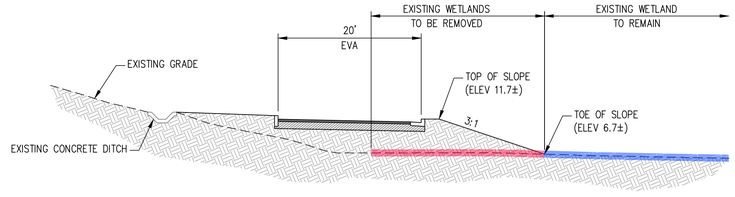




PHOTO 1 (FROM NORTH)



SECTION A
SCALE: 1"=10'

WETLAND IMPACT EXHIBITS
WETLAND AREA 1
VALLEY OAKS

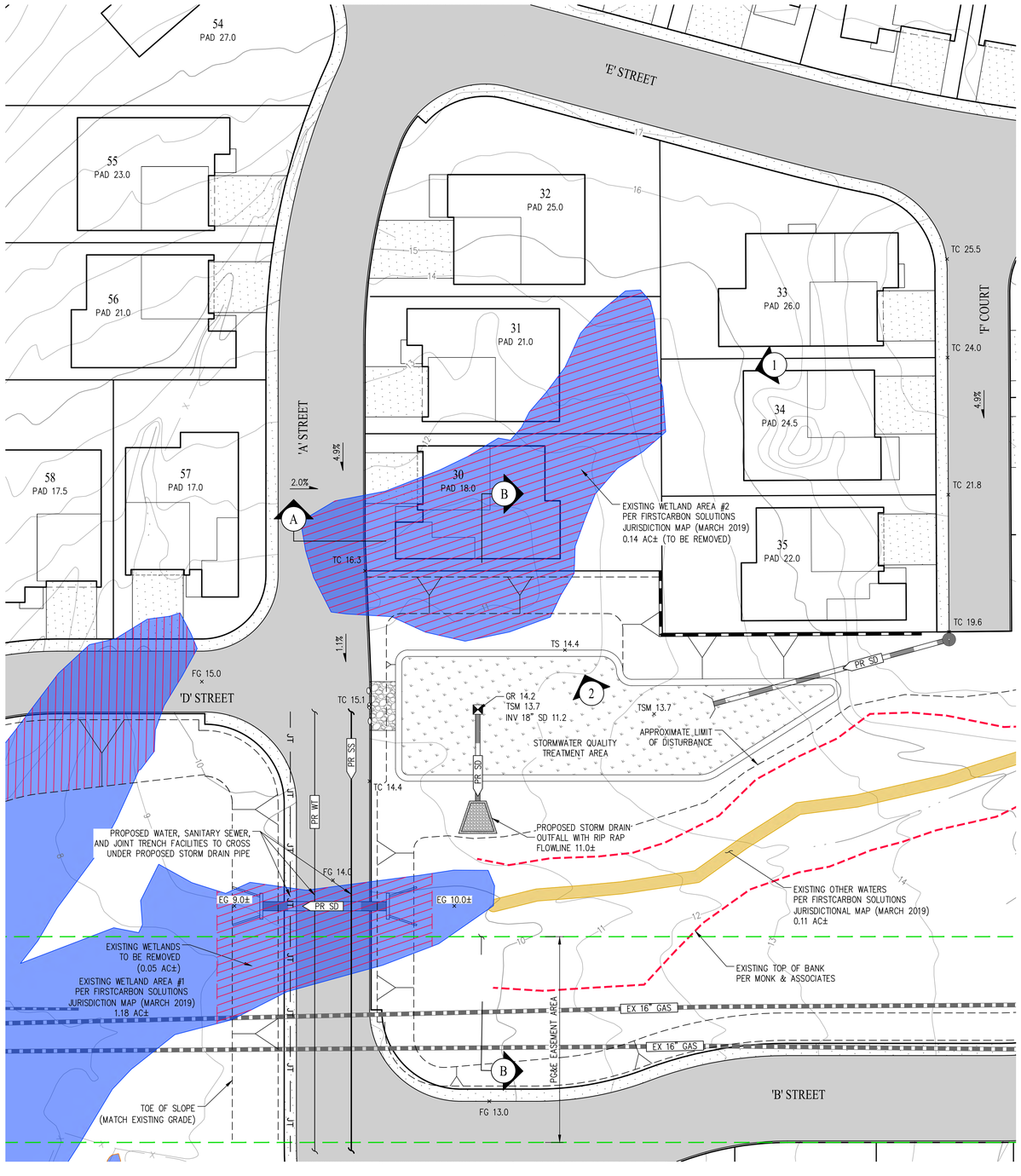
CITY OF NOVATO MARIN COUNTY CALIFORNIA
SCALE: 1"=10' DATE: FEBRUARY 1, 2022

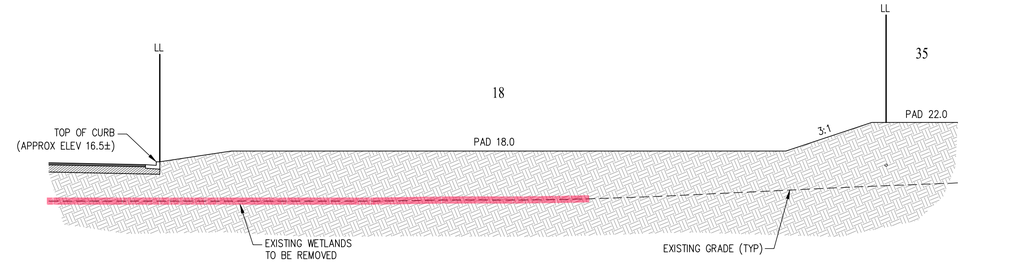
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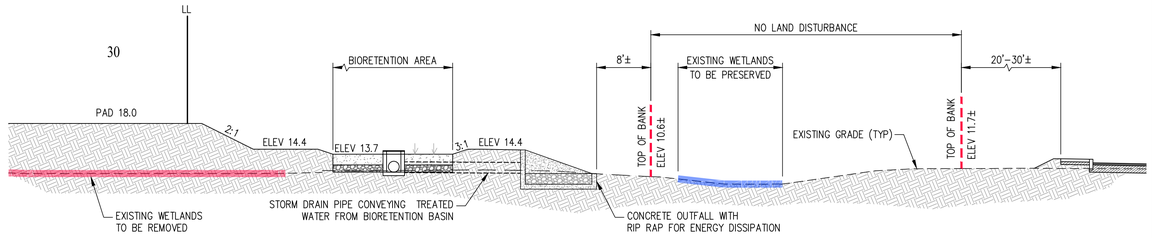
SHEET NO. 2 OF 4 SHEETS

F:\2935-010\ACAD\EXHIBITS\LEDPA ALTERNATIVES\XB-WETLAND IMPACT AREA 1.DWG





SECTION A
SCALE: 1"=10'



SECTION B
SCALE: 1"=10'



PHOTO 1 (FROM NORTH)



PHOTO 2 (FROM EAST)

WETLAND IMPACT EXHIBITS

WETLAND AREA 2

VALLEY OAKS

CITY OF NOVATO MARIN COUNTY CALIFORNIA

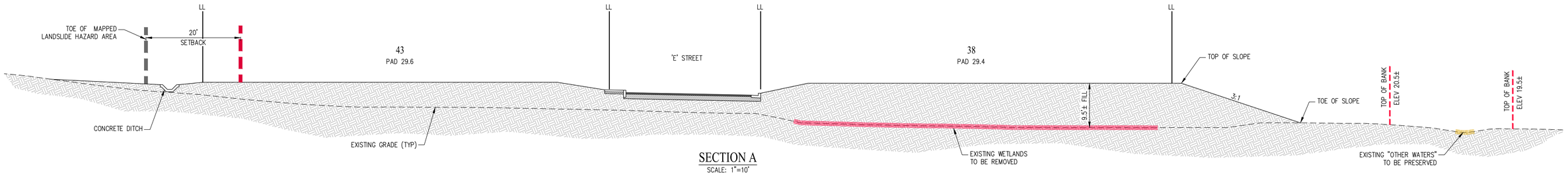
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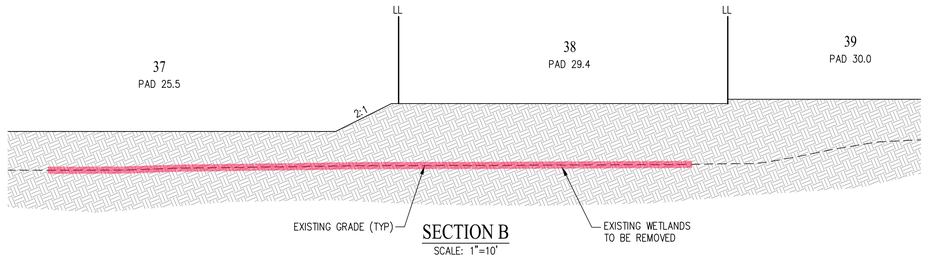
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ROSEVILLE ▪ (916) 788-4456
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SHEET NO. 3 OF 4 SHEETS

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SECTION A
SCALE: 1"=10'



SECTION B
SCALE: 1"=10'

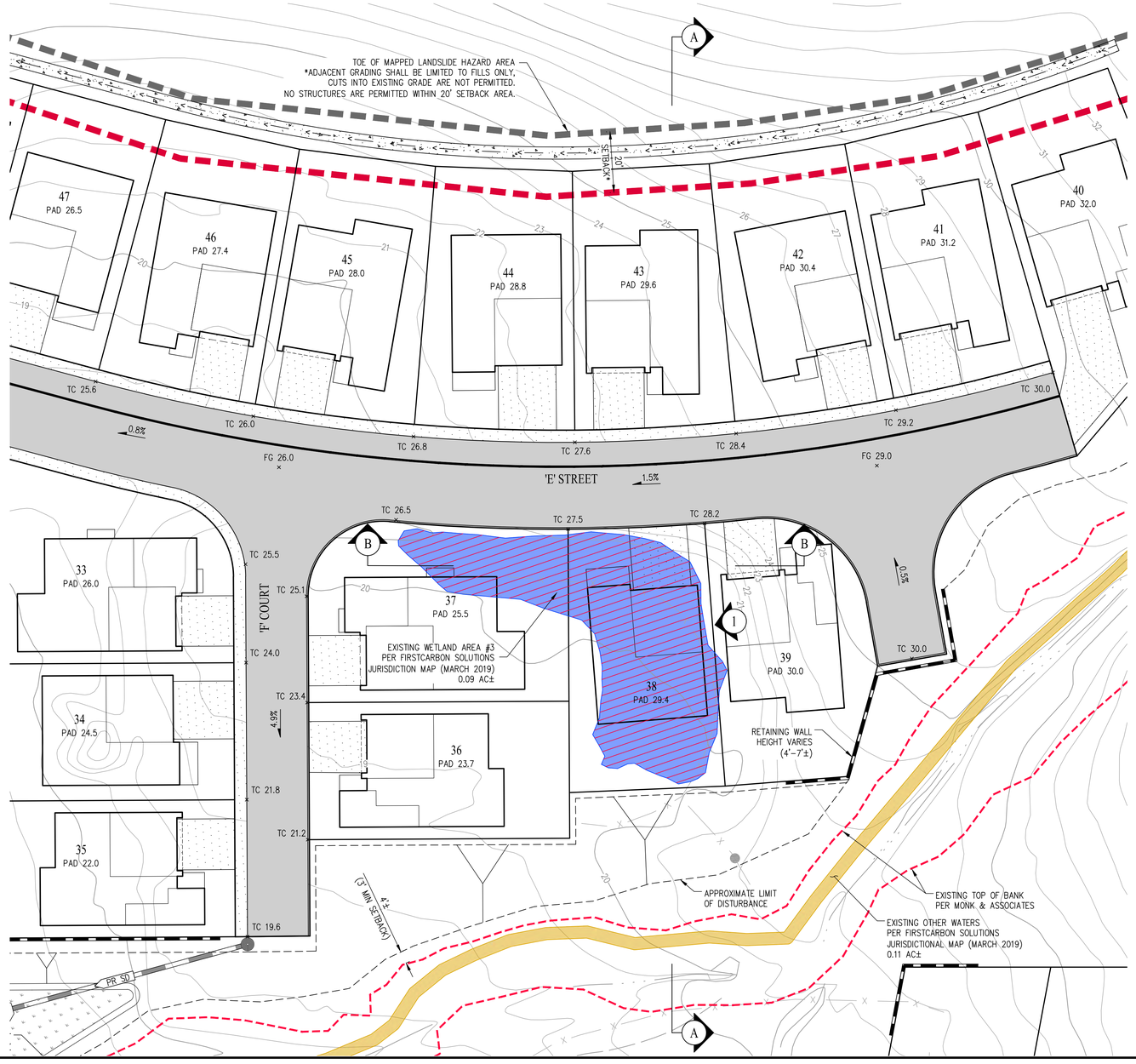




PHOTO 1 (FROM NORTH)

WETLAND IMPACT EXHIBITS
WETLAND AREA 3
VALLEY OAKS

CITY OF NOVATO MARIN COUNTY CALIFORNIA

SCALE: 1"=20' DATE: FEBRUARY 1, 2022

0 20 40 60

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SHEET NO. 4 OF 4 SHEETS

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A CULTURAL RESOURCES INVENTORY OF THE PROPOSED VALLEY OAKS SUBDIVISION, NOVATO, MARIN COUNTY, CALIFORNIA

SUBMITTED BY

William Roop, M.A., RPA, ARCHAEOLOGICAL RESOURCE SERVICE

SUBMITTED FOR

Michael Hooper, Campus Properties

December 26, 2022 **A.R.S. Project 22011**

INTRODUCTION

As requested and authorized, Archaeological Resource Service has conducted an archaeological evaluation of the parcel described below. The following basic tasks were accomplished as part of this project:

1. A check of the information on file with our office and the Regional Office of the California Historical Resources Information System, to determine the presence or absence of previously recorded historic or prehistoric cultural resources,
2. A check of appropriate historic references to determine the potential for historic era archaeological deposits, and;
3. Contact with the Native American Heritage Commission to determine the presence or absence of listed Sacred Lands within the project area;
4. Contact with all appropriate Native American organizations or individuals designated by the Native American Heritage Commission as interested parties for the project area;
5. A surface reconnaissance of all accessible parts of the project area to locate any visible signs of potentially significant historic or prehistoric cultural deposits.
6. Preparation of a report describing the work accomplished, the results of the research, and making appropriate recommendations for further action, if warranted.

PROJECT DESCRIPTION

The project evaluated here is located in Marin County assessor's parcel 125-580-23, the lower reaches of APN 125-180-38, 100 Inkston Road and the Pinkston Road right of way. The parcel consists of about 39 acres of open land. The Campus Properties Group proposes to construct a housing project within the approximately 39 acre property. The cultural resources evaluation has been undertaken to determine the presence or absence of potentially significant cultural resources within the project area.

PROJECT LOCATION

The project area is located at APN 125-580-23, the lower reaches of APN 125-180-38, 100 Pinkston Road and the Pinkston Road right of way, Novato, Marin County, California. The parcel consists of about 39 acres of open land bounded by agricultural properties, Highway 101 and urban areas to the south.

The project area lies in the Mexican era land grants of Olompali and Novato, within unsectioned land of Township 4 North, Range 7 West, Mt. Diablo Base and Meridian. The Universal Transverse Mercator Grid coordinates to the approximate center of the project area, as determined by measurement from the USGS 7.5' Petaluma River, California Quadrangle Map (1954 (photorevised 1968 and 1973) are: 4220200 Meters North, 537775 Meters East, Zone 10

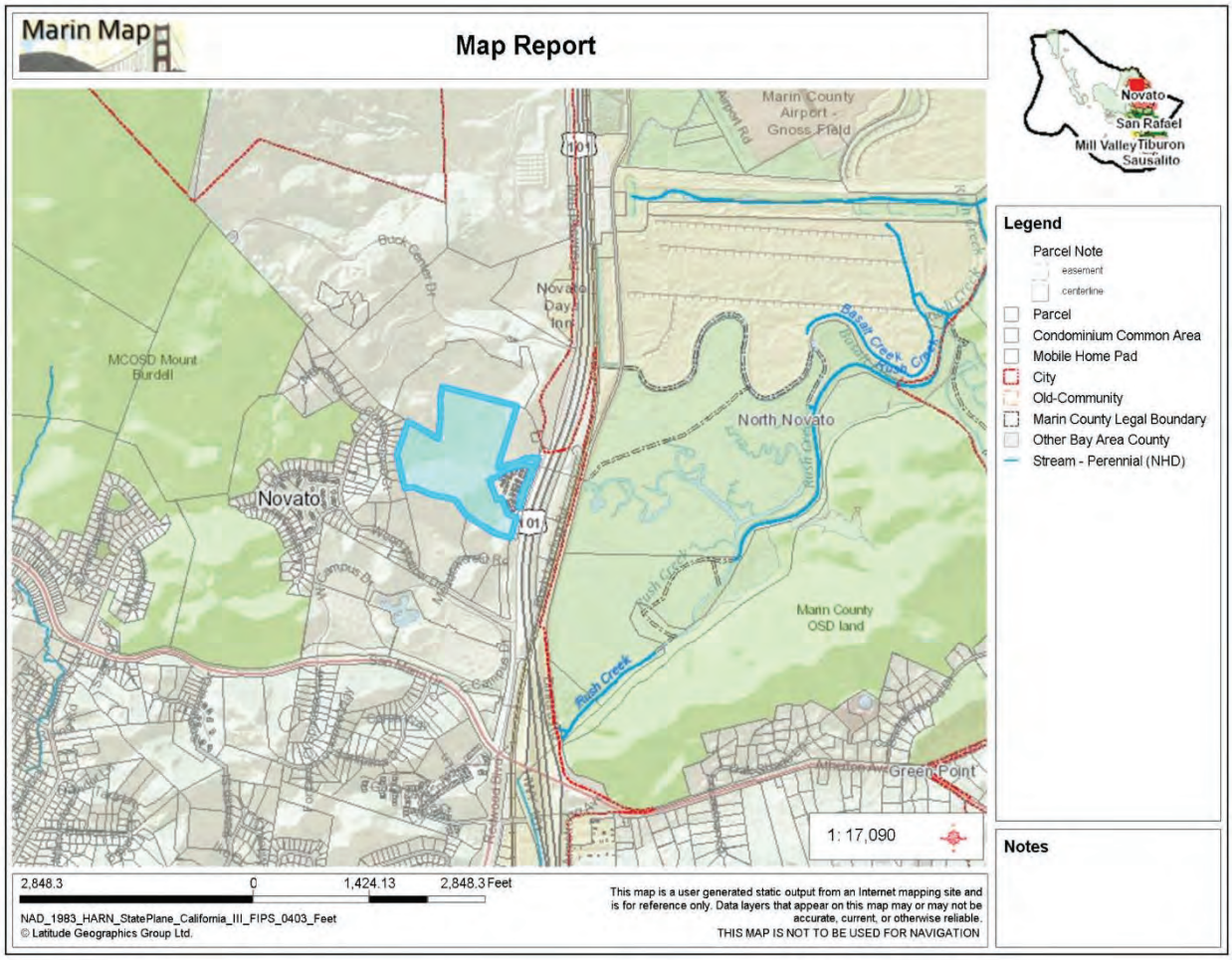


FIGURE 1 -- THE PROJECT LOCATION ON THE MARIN GIS MAP

The project location is marked by the blue overlay. A small addition of about two acres has been added adjacent on the west to Redwood Drive and north of the entrance road. See Figure 2.

AREA OF POTENTIAL EFFECT (APE)

The area of potential effect for archaeology is the entire property as shown on Figure 2. The property boundary is the boundary of the APE. The Verandah Subdivision, shown as a triangular enclosure within the boundary of the current project is not a part of the APE for this project. The Verandah project is a different project evaluated under its own environmental procedures.

REGULATORY SETTING

This project is undertaken to meet federal standards for an historic properties inventory. The intent of the archaeological investigation has been to identify any properties potentially eligible to the National Register of Historic Places, and to make recommendations appropriate to the further evaluation of identified sites, buildings, structures or objects identified by the project.

FEDERAL REGULATIONS

The undertaking will be subject to a Section 106 review under the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR Part 800. The NHPA directs federal agencies to take into account the effects of proposed activities on historic properties and give the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. Historic properties are properties that are included in the National Register of Historic Places or that meet the criteria for the National Register.

In order to be included or qualify for the National Register a property, structure or site must possess significance in American history, architecture, archaeology, engineering or culture, and must be associated with an important historic context and retain historic integrity of those features necessary to convey its significance. The resource should possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet any of the following criteria:

a) Is associated with events that have made a significant contribution to the broad patterns of our history; or

b) Is associated with the lives of persons important in our past; or

c) Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possesses high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or

d) Has yielded, or may be likely to yield, information important in prehistory or history.

The historic properties evaluation described herein will attempt to identify all recorded cultural resources within the project area and evaluate their potential eligibility for inclusion in the National Register of Historic Places (NRHP).

As of July 2015, two new classes of California cultural resources have been defined. Tribal cultural resources and Tribal cultural landscapes can be any of a variety of cultural sites as defined by the individual tribe. These resources, once identified, are treated as significant resources under CEQA. It is not clear what treatment is required under federal regulations.

STATE REGULATIONS

All previously recorded prehistoric and historic resources located within the project area should be identified and evaluated using criteria established in the California Environmental Quality Act (CEQA) (14 CCR 15064.5 and PRC 21084.1). Significant historical resources need to be addressed before environmental mitigation guidelines are developed and approved. A “significant historical resource” (including both a prehistoric and historic resource) is one that is found eligible for listing in the California Register of Historical Resources. As per Title 14, California Code of Regulations Section 15064.5, historical resources are those that are:

- Listed in, or eligible for listing in, the California Register of Historic Resources (Public Resources Code 5024.1, Title 14 CCR, Section 4850 et. seq.);
- Listed in, or eligible for listing in, the National Register of Historic Places (CRHR);
- Included in a local register of historical resources, as defined in an historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resource 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 lead agency’s determination is supported by substantial evidence in light of the whole record.

Additionally, historical resources and historic districts designated or listed as city or county landmarks or historic properties or districts pursuant to any city or county ordinance can also be listed in the California Register, if the criteria for listing under the ordinance have been determined by the Office of Historic Preservation to be consistent with California Register criteria adopted by the commission (pursuant to Section 5024.1(e) of the PRC).

A resource may be listed as an historical resource in the California Register if it has integrity and meets any of the following National Register of Historic Places criteria:

1) Is associated with events that have made a significant contribution to the broad patterns of our history; or
2) Is associated with the lives of persons important in our past; or
3) Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possesses high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
4) Has yielded, or may be likely to yield, information important in prehistory or history.

CEQA (PRC 21083.2) also distinguishes between two classes of archaeological resources: archaeological sites that meet the definition of a historical resource as above, and “unique archaeological resources.” A “unique archaeological resource” has been defined in CEQA as an archaeological artifact, object, or site about which 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:

1) Contains information needed to answer important scientific research questions and that there is a demonstratable public interest in that information,
2) Has a special and particular quality such as being the oldest of its type or the best available example of its type, or
3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Buildings, sites, structures, objects, and districts representative of California and United States history, architecture, archaeology, engineering, and culture convey significance when they also possess integrity of location, design, setting, materials, workmanship, feeling, and association. A resource has integrity if it retains the characteristics that were present during the resource’s period of significance. Enough of these characteristics must remain to convey the reasons for its significance.

The fact that a resource is not listed in, or determined to be eligible for listing in the CRHR, or included in a local register of historical resources (pursuant to Section 5020.1(k) of the PRC), or identified in an historical resources survey (meeting the criteria in Section 5024.1(g) of the PRC) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC sections 5020.1(j) or 5024.1.

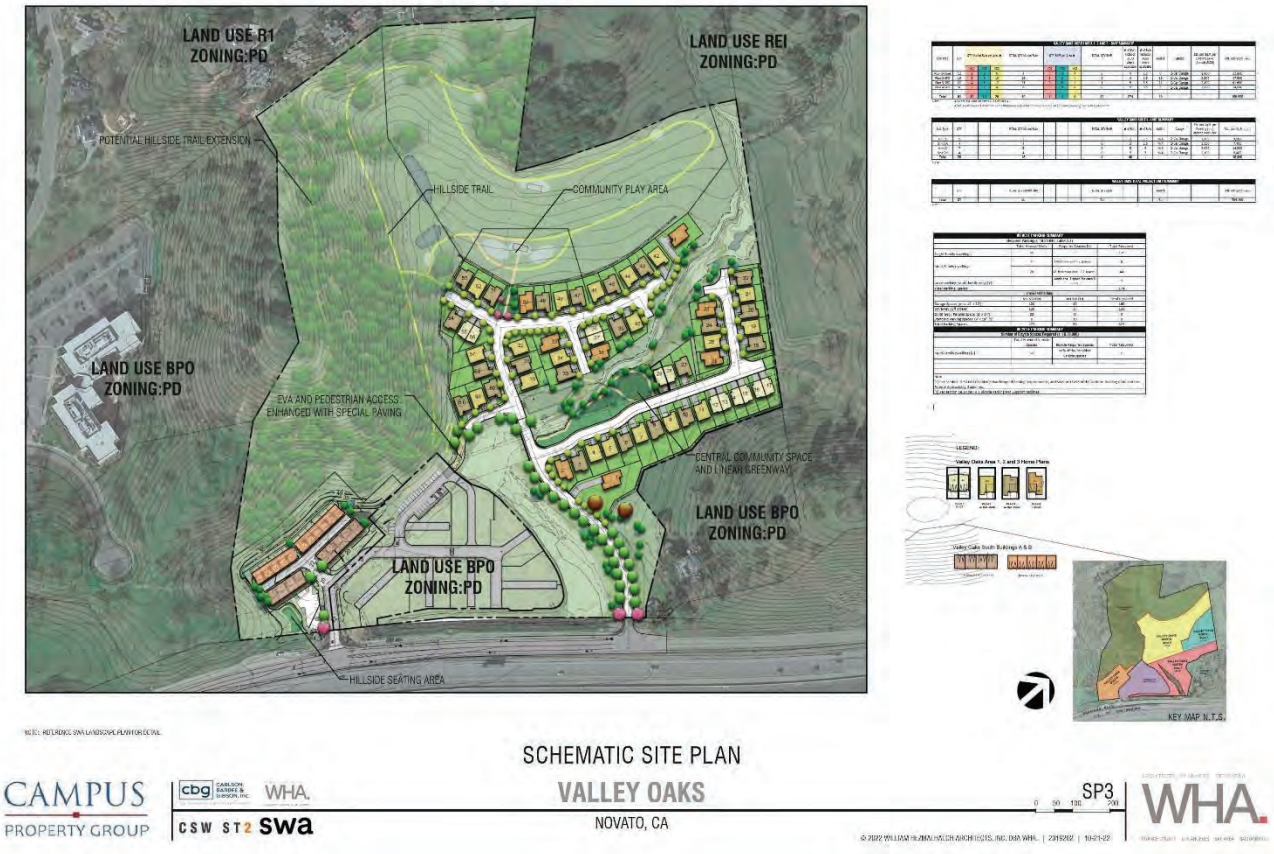


FIGURE 2 -- PRELIMINARY PROJECT PLANS

These are the development plans evaluated for this project. North is to the right. Note the small addition where the entrance road to Redwood Drive is located. The parcel boundary, as shown on this map, forms the boundary of the APE.

- Listed in, or eligible for listing in, the National Register of Historic Places (CRHR);
- Included in a local register of historical resources, as defined in an historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resource 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 lead agency's determination is supported by substantial evidence in light of the whole record.

Additionally, historical resources and historic districts designated or listed as city or county landmarks or historic properties or districts pursuant to any city or county ordinance can also be listed in the California Register, if the criteria for listing under the ordinance have been determined by the Office of Historic Preservation to be consistent with California Register criteria adopted by the commission (pursuant to Section 5024.1(e) of the PRC).

A resource may be listed as an historical resource in the California Register if it has integrity and meets any of the following National Register of Historic Places criteria:

5) Is associated with events that have made a significant contribution to the broad patterns of our history; or
6) Is associated with the lives of persons important in our past; or

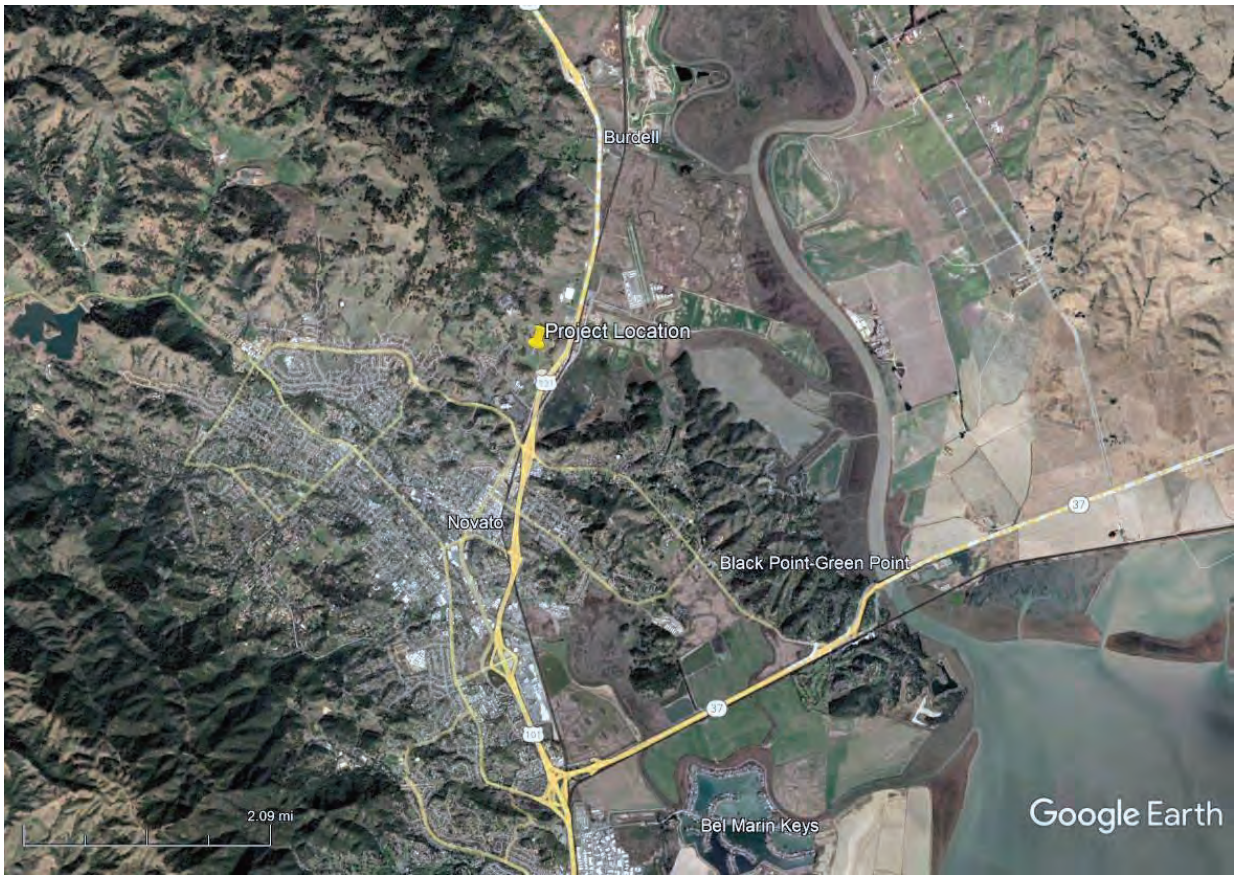


FIGURE 3 -- THE PROJECT LOCATION ON GOOGLE EARTH

The project lies in open ground north of the community of Novato

7) Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possesses high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or

8) Has yielded, or may be likely to yield, information important in prehistory or history.

CEQA (PRC 21083.2) also distinguishes between two classes of archaeological resources: archaeological sites that meet the definition of a historical resource as above, and "unique archaeological resources." A "unique archaeological resource" has been defined in CEQA as an archaeological artifact, object, or site about which 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:

4) Contains information needed to answer important scientific research questions and that there is a demonstratable public interest in that information,

5) Has a special and particular quality such as being the oldest of its type or the best available example of its type, or

6) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Buildings, sites, structures, objects, and districts representative of California and United States history, architecture, archaeology, engineering, and culture convey significance when they also possess integrity of location, design, setting, materials, workmanship, feeling, and association. A



FIGURE 4 -- A CLOSER VIEW FROM GOOGLE EARTH

North is to the right. The project area is dominated by alluvial soils being carried from the hills to the west (top of picture). The light area at the bottom of the photo is the Verandah at Valley Oaks project, which was evaluated separately from the current project.

resource has integrity if it retains the characteristics that were present during the resource's period of significance. Enough of these characteristics must remain to convey the reasons for its significance.

As of July 2015, two new classes of resources have been defined. Tribal cultural resources and Tribal cultural landscapes can be any of a variety of cultural sites as defined by the individual tribe. These resources, once identified, are treated as significant resources under CEQA.

The fact that a resource is not listed in, or determined to be eligible for listing in the CRHR, or included in a local register of historical resources (pursuant to Section 5020.1(k) of the PRC), or identified in an historical resources survey (meeting the criteria in Section 5024.1(g) of the PRC) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC sections 5020.1(j) or 5024.1.

SACRED LANDS INVENTORY / NATIVE AMERICAN CONSULTATION

The California Native American Heritage Commission (NAHC) works to identify, catalogue, and protect places of special religious or social significance, graves, and cemeteries of Native Americans per the authority given the Commission in Public Resources Code 5097.9. The Native American Heritage Commission was contacted on April 11, 2022 requesting a check of the Sacred Sites database and the identity of any tribes or individuals that should be contacted regarding the subject property.

The agency responded on May 25, indicating that a Native American sacred site was not present within the project area. It was recommended that the Federated Indians of Graton Rancheria be contacted along with Guidiville Rancheria, for further information.

On May 25 letters were sent to Ms. Buffy McQuillen, Tribal Historic Preservation Officer for the Federated Indians of Graton Rancheria and to Mr. Donald Duncan, Tribal Historic Preservation Officer for Guidiville Rancheria requesting additional information or recommendations that the tribes wished to share regarding the potential for a sacred site within the property. No response has been received to date.

RESULTS OF LITERATURE CHECK

The literature check indicates that the property next door, adjacent to Redwood Boulevard was examined in 1979 (Mabry 1979) and again in 2016 (Shoup 2016) and no significant cultural resources were observed in either evaluation.

Mabry investigated a large area, apparently about 68 acres, for the San Marin Commerce Park, which was never built and which forms a part of the project site. Her project area included the project being built currently along Redwood Drive, the current project area as well as the valley to the northwest and west, and extended several hundred yards south to Wood Hollow Drive. Mabry (1979) reported no cultural resources, but did report an area of archaeological sensitivity in the northwest corner of the project area. Her report states:

> *The results of the mixed strategy survey indicate that no archaeological sites were in evidence by surface examination, and that the probability of subsurface evidence is low. One area of high potential aboriginal utilization exists in the igneous bedrock outcropping in the northwest corner of the project area (the southwest corner of the horse ranch). The hill which dominates this corner lies outside the project area. The southeastern slope, however, extends into the project area from the 75 foot to the 105 foot contours. This area of scattered basalt lithics was intensively surveyed and no evidence of aboriginal utilization was found. No further investigation is recommended (Mabry 1979:3).*

The igneous outcrop and scattered broken rocks may be the source area for the broken food processing implements found north of the intermittent drainage on the north side of his project area by Shoup (2016).

The project area examined by Shoup (2016), now under construction as the Verandah at Valley Oaks project, was found to consist of a large area of filled land that was a former marsh. Fill soil is at least nine feet thick. Two areas were identified that contained historic and prehistoric artifacts that were obviously transported from another location. In his evaluation, Shoup states:

> *Prehistoric and historic archaeological materials are present in the project area. However, such materials within the Project area are clearly redeposited from another, unknown location. As such, the Project Area does not appear to meet criterion 4/D (potential to yield information important to prehistory or history of the local area, California or the nation. The project area, therefore, does not appear to contain historical resources as defined in California Code of Regulations §15064.5* (Shoup 2016:21).

Shoup undertook a thorough examination of previous maps, aerial photos and satellite images to reconstruct the physical history of the property. His research clearly indicates that the former marsh land had been filled between 1973 and 1982. Shoup reports that the initial fill was deposited as part of the expansion of Highway 101 Additional photographs indicate that the spoils piles with artifacts appeared on the project site between 2010 and 2012. Shoup undertook a thorough search of maps, aerial photographs and satellite images to reconstruct the landfill history of the property. After a discussion of land ownership and usage since about 1840 to the present, his summary of the filling of the area states:

When the first USGS 7.5' quadrangle was prepared in 1954, the Project Area was shown below mean sea level, suggesting it was still tidal marsh at that date. By 1968, additions to the homestead complex northwest of the Project Area had been made, including the addition of the Quonset hut visible today. US-101 was constructed in its current alignment between 1965 and 1973 (USGS 1968, 1973, and see Figure 6[1]).

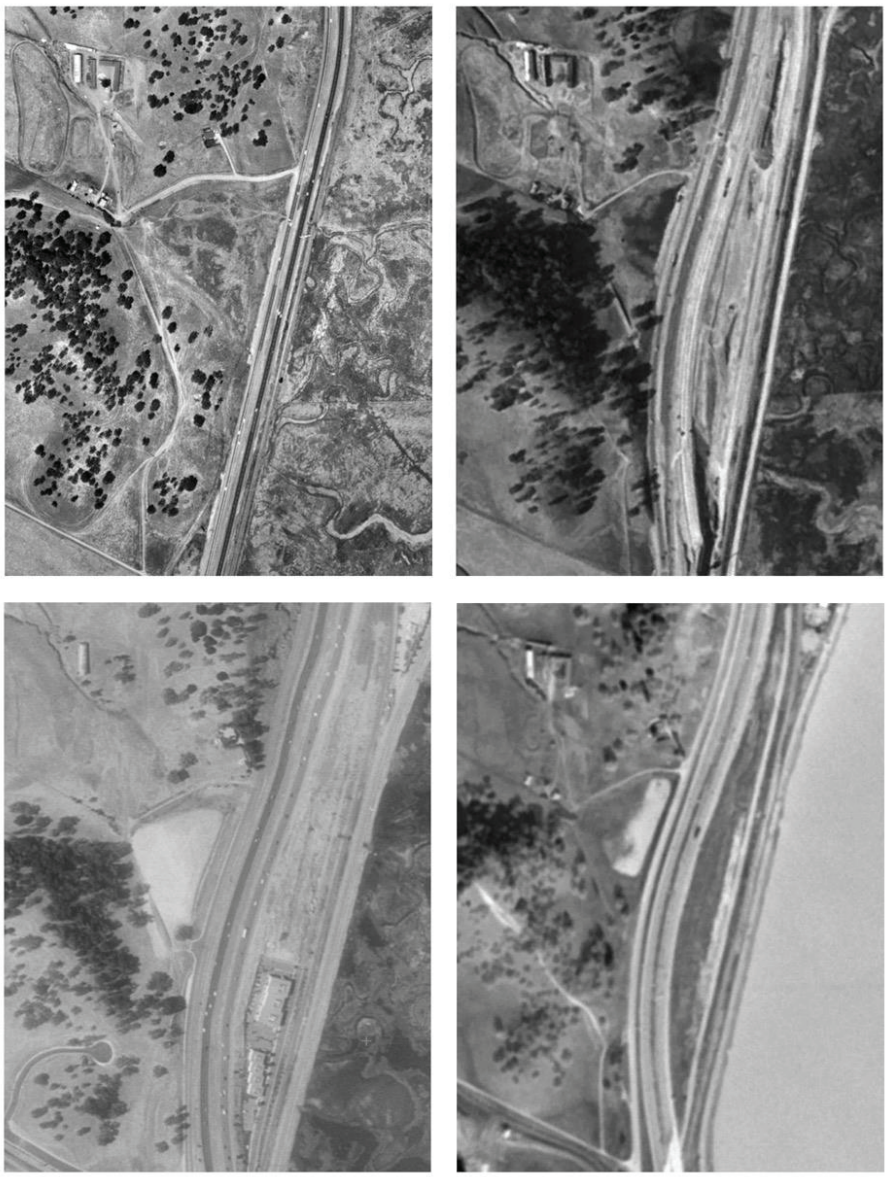


FIGURE 5 -- FIGURE SIX OF SHOUP, 2016

Aerial Photographs of Shoup's Project Area, 1965-1992 Clockwise from upper left: 1965, 1973, 1982, 1992. The project evaluated here can be seen immediately north of Shoup's project area. Note change in appearance of both Project Areas between 1982 and 1992.

Aerial photographs (Figure 6) show that the level pad of soil that currently covers most of the Project Area was deposited between 1973 and 1982. By 1993, the pad of imported soil had reached its current extent. The corral at the southern end of the Project Area was constructed between 1993 and 2002. The spoils piles at the southern end of the level area within the Project Area were deposited between September 2010 and February 2012 (Figure 7). Today, the area surrounding the Project Area is undeveloped for approximately ¼ mile to the west. To the north is the unpaved Black John Road, with a private residence (constructed in the 1960s) on the hillside beyond. The eastern boundary of the site is the Redwood Boulevard, which runs immediately adjacent to the SMART tracks and US-101. Beyond the highway is a public storage facility at 300 Rush Landing Road. South of the Project Area is undeveloped

[1] Figure 6 of Shoup, next Page

> *land and the BioMarin medical clinic at 100 Wood Hallow Drive (700 feet southwest). A buried PG&E gas pipeline runs along the western edge of the site* (Shoup, 2016:12-14).

Shoup's investigation revealed a third locus of archaeological material, this one on the north side of Rush Creek, to the north of the current project area. Shoup observed several large fragments of Native American food grinding implements along the northern side of the current Rush Creek flow north of the project area. The artifacts were found on native soil and not on the fill soil area. It is not clear whether the artifacts were *in situ* or they had been carried downstream by high stream flows. No other indications of cultural resources were observed beyond the broken grinding implements. The condition of the tools appears to indicate that these were not functional implements, but the broken remnants of once functional tools. Given the strength of the hydraulic flows during high rain periods, it is not unlikely, despite their size, that these fragments were carried to their present location by flowing water.

The Novato Housing Element, completed in 2013 contains several standard mitigation measures for proposed projects. Among these are the following requirements for cultural resources:

> ***Mitigation Measure 3.4-1****: As part of the City of Novato's design review and entitlement process for any development on AHO Sites 1, 2, 3, 4, and 5 and the emergency shelter site, the project applicant shall have a project-specific cultural resources report prepared by a qualified archaeologist. As part of the cultural resources report, the report preparer shall contact the Federated Indians of the Graton Rancheria to determine if there are any known prehistoric resources of interest to the Graton Rancheria on the site. If any potentially eligible resources are identified, then the archaeologist shall identify mitigation recommendations. The City and Project applicant shall consider the recommendations and the project applicant shall implement all measures deemed feasible and appropriate by the City and sufficient to reduce the impact to less than significant. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, and other appropriate measures. The implementation of mitigation shall be formally documented in writing and submitted to the City Planning Department as verification that the mitigation has occurred.*
>
> ***Mitigation Measure 3.4-2:*** *As part of the City of Novato's design review and entitlement process for any development on the AHO site containing CA-MRN-678 (formerly CA-MRN-352), the project applicant shall design future development to avoid CA-MRN-678 consistent with General Plan CI Program 30.4.*

Responses to these requirements are in the conclusions section, below.

The Wood Hollow Hotel project has been proposed on land to the south of the current project area. The hotel site was evaluated by Rincon Consultants, Inc. of Monterey in 2017 (Haas 2017). They undertook a pedestrian survey of the entire hotel property, a records search at the Northwest Information Center, and contacted the Federated Indians of Graton Rancheria. In summary of the literature check, Haas states:

> *The NWIC records search identified six previously recorded cultural resources within a 0.5-mile radius of the project site, none of which are located within the project site. Of the resources within the search radius, five are prehistoric and one is historic. The nearest resource to the project site, CA-MRN-502, is a prehistoric shell midden with at least one human burial and is located approximately 0.45 kilometers (0.28 miles) from the project site. The site was likely a habitation site and contains obsidian and chert debitage, utilized flakes and tools, ground stone, and hearths. Additionally, 24 previously conducted cultural resources studies were identified within a 0.5-mile radius of the project site, six of which were located within the project site. However, none of these studies identified cultural resources within the current project site* (Haas 2017:2).

Haas undertook outreach to the Federated Indians of Graton Rancheria (FIGR) regarding the potential presence of important tribal cultural properties within the hotel site. Rincon Consultants successfully contacted Ms. Buffy McQuillen, Tribal Historic Preservation Officer for the Federated Indians of Graton Rancheria. Ms Haas reports that:

> *Ms. McQuillen asked what mitigation measures were being recommended for the project and inquired about what kind of subsurface testing had occurred within the project site. She suggested archaeological monitoring of any geotechnical activities within the project site to identify the presence of any cultural resources prior to project construction. Ms. McQuillen requested to be sent a copy of this technical memorandum upon its completion* (Haas 2017:2).

No sacred sites important to FIGR were reported in the hotel site.

The cultural resource investigation resulted in a negative finding. The report states:

The results of the cultural resources records search, Native American outreach, and intensive pedestrian field survey concluded that no known cultural resources exist within the project site (Haas 2017:3).

The report went on to note the presence of several important archaeological sites in about 0.5 miles of the hotel site, and made several recommendations for the hotel project. The specific recommendations are:

> *However, five prehistoric archaeological sites are known to exist within a half-mile radius of the project site, include one with a human burial located 0.45 kilometers (0.28 miles) from the project site. Due to the proximity of a habitation site with a known human burial and the proximity to natural resources including oak trees and fresh water, the project site is considered to have moderate sensitivity for archaeological resources. Thus, Rincon recommends a Worker's Environmental Awareness Program (WEAP) to educate construction personnel on*



FIGURE 6: MAP FROM MILLIKEN ET AL. (1995:100)

Showing the boundaries of the various tribal groups of the San Francisco Bay Area.

the potential for encountering archaeological resources and archaeological and Native American monitoring of project ground-disturbing activities. Rincon recommends additional measures in the case of unanticipated discoveries of cultural resources and/or human remains during the course of project execution. Each of these measures is discussed in further detail below. Rincon recommends a finding of ***less than significant impact to historical resources with incorporation of mitigation measures*** *under CEQA* (Haas 2017:3).

ETHNOGRAPHIC SETTING

The hospitable climate, hydrology, and abundant natural resources of the San Francisco Bay area offered an attractive environment for human habitation during ancient times. Several historically known Native American groups are reported to have lived in territories contiguous to the San Francisco Bay. All of Marin County and southern Sonoma County were inhabited by the Coast Miwok. Various groups of Costanoans occupied the San Francisco peninsula, the South Bay, and the shoreline areas of the East Bay. The area around Mt. Diablo and lands to the north and east were occupied by the Bay and Plains Miwok (Milliken et al. 2007:100). The territory of the Wappo and the Patwin was located northeast of the Coast Miwok.

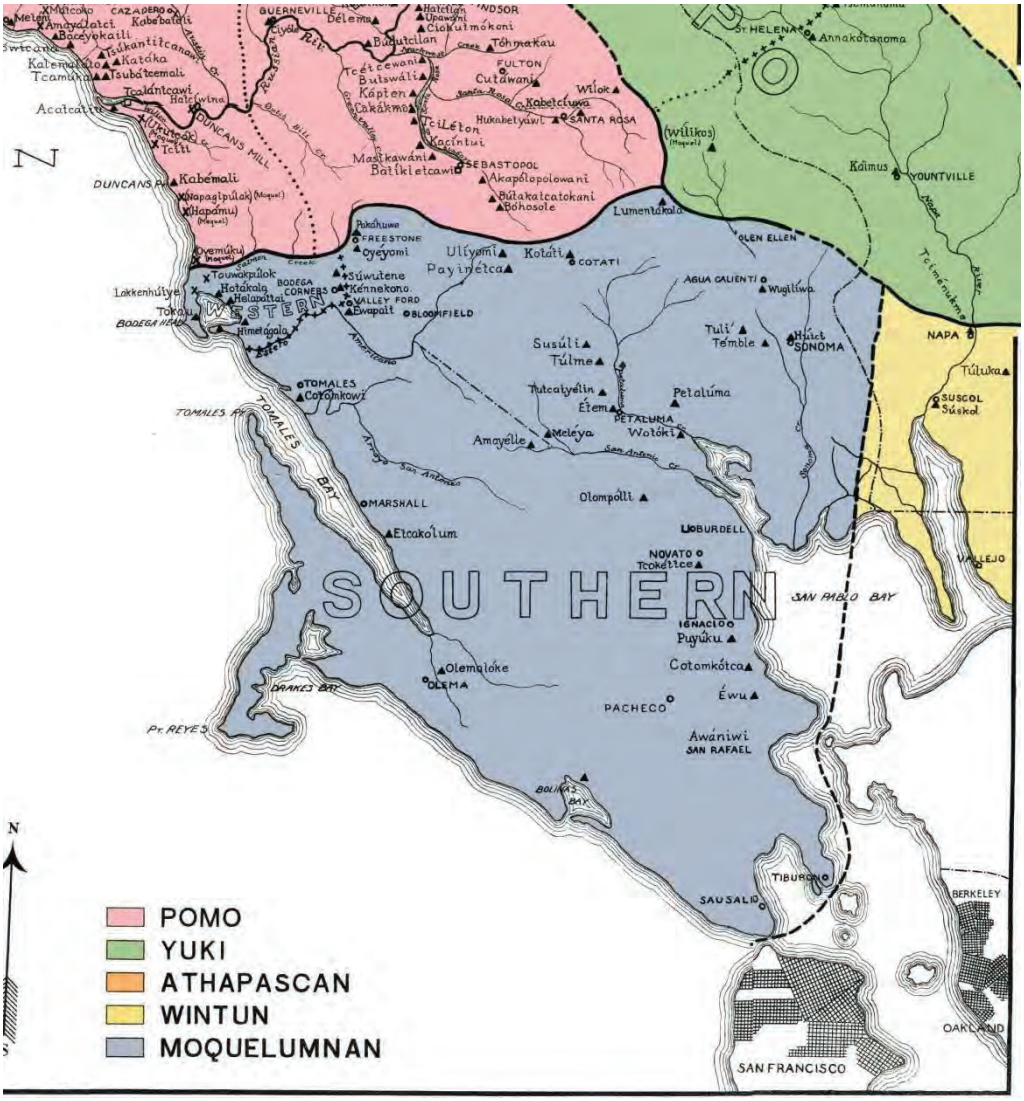


FIGURE 7 -- PART OF BARRETT'S MAP OF ETHNOGRAPHIC TERRITORIES

Barrett used a now obsolete reference to the Coast Miwok, calling them Moquelumnan. This is due to the linguistic similarities between Coast and Sierran Miwok speakers. Novato lies just above the "R" in SOUTHERN.

The Coast Miwok occupied a territory divorced from the other Miwok groups who occupied the western slopes of the Sierra, the San Joaquin Valley, and the south shore of Suisun Bay in the area surrounding Mt. Diablo. To explain the physical separation of the Coast Miwok from other Miwok groups Kroeber (1925:272) suggested that they are "ancient emigrants of enterprise to the west, or remnants of a once wider distribution of the group. The latter conjecture seems perhaps more plausible;" but Kroeber believed that linguistic affinity notwithstanding, the Coast Miwok were more culturally similar to the Pomo than to the Eastern Miwok (1925:275).

Linguistically the Miwok languages belong to the Penutian language family, which also includes the various Wintun and Patwin, Yokuts, Maidu and Costanoan languages. The Coast Miwok are members of a sub-branch of the Yok-Utian language family of the broader Penutian language stock. The other members of this sub-branch are the Costanoan (or "Ohlonean") peoples. Linguistic evidence suggests that the Miwok-Costanoan sub-branch first arrived in the San Francisco Bay Area about 4,000 years ago, pushing out earlier Hokan-speaking groups, possibly peoples related to the Pomo or Wappo. Moratto (1984) suggested that the Berkeley Pattern archaeological assemblage, which appears roughly the same time, is representative of a possible fusion between Hokan and Utian cultural elements (cited in Milliken et al. 2007).

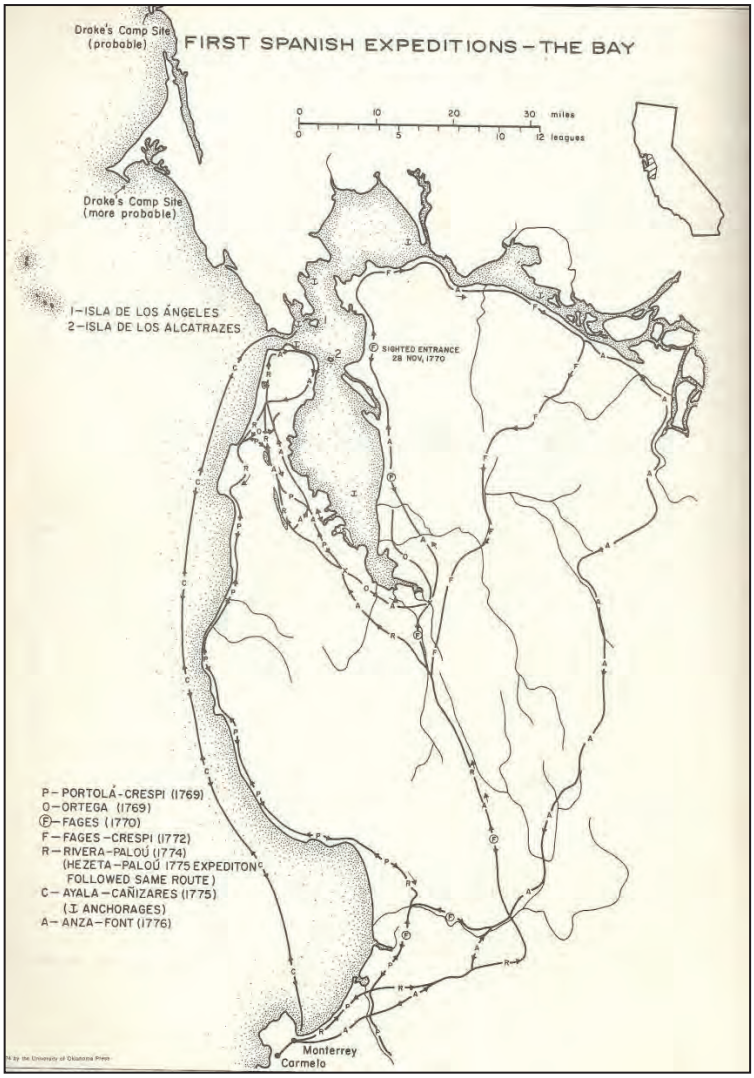


FIGURE 8: MAP OF THE FIRST SPANISH EXPEDITIONS OF THE BAY AREA

The map shows Ayala's 1775 anchorages in Richardson Bay, San Pablo Bay, the Carquinez Straits and Suisun Bay (Beck and Haase 1974).

The Coast Miwok occupied all of Marin County and southern Sonoma County; and within this territory was a dialectic division between the Western-Bodega Miwok (*Olamentko*) and the Southern Marin, or *Hookooeko* tribe, who spoke the Southern Marin dialect with some linguistic differences between valley and coastal peoples (Kelly 1978: 414). Kroeber (1925) believed this distinction to be unimportant. Merriam (1907) discusses a third group from the northern area of Southern Marin Valley known as the *Lekahtewutko*. More recently, Randall Milliken identified the area around San Rafael and Point San Pedro as having been occupied by the *Aguasto* tribe. The Richardson Bay area and the surrounding communities of Sausalito, Mill Valley, Belvedere and Tiburon are now recognized as having been occupied by the *Huimen* tribe, a branch of the Coast Miwok (Goerke 2007: 10).

Little is known about the late prehistoric Coast Miwok compared to other indigenous California groups, and what is known comes from a diverse range of sources including accounts from early contact, Mission records, and archaeological and ethnographic research.

The Coast Miwok based their subsistence around a hunting-and-gathering economy that took advantage of both marine and terrestrial resources. Up to seven species of acorns provided the main vegetable staple, while a number of other nuts, berries, seeds, kelp and seaweed were also relied upon. Black-tailed deer and Tule elk were the chief big game animals, but a number of other mammals and birds, including antelope, bears, sea lions and sea otters, squirrels, rabbits and a variety of inland and shore birds, were also on the menu. Shellfish, including abalone, oyster, mussel and clam species, were also important to the diet and exchange economy, as their shells provided material for both currency and as decorative ornaments. Obsidian was a valuable resource for all prehistoric Californians, who used it to fashion spear points, arrowheads, knives, scrapers, and other cutting implements. The only obsidian source in Marin County is located at Burdell Mountain, but this source was likely “not suitable for tool manufacture, and has not been detected in archaeological collections” (Jackson 1989: 82). Instead, the obsidian used by the Coast Miwok comes primarily from the Annadel and Napa Valley sources, located in Sonoma County and Napa County respectively.

The Miwok divided themselves into small autonomous village communities (referred to as tribelets by anthropologists) that made use of designated tracts of land, although larger, permanent settlements are also known to have existed. Small communities moved around within their areas, and sometimes, with permission, across the territories of other groups in order to take advantage of the range of seasonally available subsistence and exchange resources, as well as to visit places of religious importance. While some locations were used only on occasion for specific purposes, others were used year-round and reflect a variety of economic and ritual activities. Larger semi-permanent and permanent villages consisted of single or multi-family, circular, conical or domed huts (covered with grass or redwood bark) surrounding a large, circular, semi-subterranean ceremonial house, or dancehall. Sweathouses, of similar design to the ceremonial house, were also common. Sociopolitical organization within village communities was non-egalitarian, meaning that differences in status or rank between individuals existed. Most tribelets



FIGURE 9 -- LOOKING NORTHWEST TOWARD THE BUCK CENTER

had a headman or chief, known as the *hoipu*, and one or two headwomen, called *maien*. These individuals held high status within the group as organizers of various political, social, and religious activities (Slaymaker 1974).

The first European contact with the Coast Miwok appears to have been in 1579, when Sir Francis Drake stopped to repair his ship, the *Golden Hinde*, at Drakes Bay in the Point Reyes vicinity. While their ship was repaired a member of Drake's crew kept a journal in which he described the people they encountered and interacted with during their stay. Sixteen years later Sebastian Cermeño's galleon, the San Agustin, ran aground at roughly the same place, Drake's Bay, and again there is documentation of relations with the indigenous people; and in 1603 Sebastian Vizcaino's ship landed off Tomales Point. There seems to be no further contact with Europeans until late 1769 when Agustin Portola is said to have "discovered" San Francisco Bay from a point in San Mateo County, an event that signaled the beginning of the European conquest of the area.

Six years after Portola, on August 5, 1775 Captain Juan Manuel de Ayala sailed his ship, the *San Carlos*, into San Francisco Bay with a crew of 30 men, including sailors, officers, a surgeon, a priest and a cook. The San Carlos dropped anchor in Richardson Bay, off what is now known as Sausalito. The morning after their first anchorage in San Francisco Bay Ayala's men rowed their longboat into Richardson Bay where they encountered a Coast Miwok (*Huimen*) village. The priest, Santa Maria, wrote about this initial contact and kept a journal describing other interactions over their forty-four days stay. The ship made several anchorages in the bay as they continued into the San Pablo Bay, through the Carquinez Straits and into Suisun Bay. Betty Goerke, in her recently released book called Chief Marin (2007), provides a good narrative about the contact



FIGURE 10 -- VIEW TO THE EAST ACROSS THE PROJECT AREA

Looking southwest from a point near the southern limit of the evaluation. The inspection was carried to the base of the trees on the left side of the photo. Verandah at Valley Oaks can be seen under construction in the distance.

between this group of Spanish explorers and the Natives they encountered. The map in Figure 8 shows the expedition route and anchorages of Captain Ayala and of other early Spanish explores.

Coast Miwok culture became severely disrupted 30 years later following the establishment of the Alta California missions, including the Mission San Francisco de Asís (1776; also known as Mission Dolores), Mission San Rafael Archángel (1817) and the Mission San Francisco Solano in Sonoma (1823). The priests at Mission Dolores first focused on converting Indians of the San Francisco Peninsula and those in the East Bay, but by 1800 and 1803 the population of Coast Miwok speakers at Mission Dolores increased by 900 percent, from 45 to 450. Later, between 1816 and 1817, a large number of Olompali and Petaluma area Miwok were baptized and split between Mission Dolores and Mission San Jose (Milliken 2006). By 1817 Coast Miwok people made up half of the Indian population at Mission Dolores. Mission San Rafael, was established as a place for sick Indians from Mission Dolores to recuperate. The institution rapidly grew into a mission in its own right soon after its initial establishment.

In the early years of the twentieth century the ethnographer S.A. Barrett traveled around the North Bay region interviewing Native Americans and gathering data to record the linguistic boundaries of native groups and the locations of both active and old village sites before the information was lost completely (Barrett 1908). His overall purpose was to reconstruct the cultural geography and social relationships of the various native groups that had formerly inhabited the region. Although Barrett was able to locate a number of old and current village sites in the central and northern Miwok territory, none were recorded for the territory south of San Rafael. This is in part due to the fact that at the time of Barrett's study, the remaining six Miwok speakers all came from the northern Marin and southern Sonoma County coastal area and there were really no southern Marin Miwok left who were knowledgeable about their indigenous culture. This scarcity was no doubt a direct result of the rapid relocation and de-socialization of the Miwok during the missionization process.



FIGURE 11 – LOOKING SOUTHWEST ACROSS THE PROJECT

Th buildings under construction in the distance lie within the Verandah At Valley Oaks area evaluated by Shoup, and discussed above.

The Native American people who resided within Novato in the ethnographic period are known today as the Coast Miwok. They are currently represented by the Federated Indians of Graton Rancheria. The Coast Miwok were speakers of a Penutian language. The Penutian people appear to have exploited the wetland areas in particular. Wetland plants and shellfish from the ocean and bays were gathered for food. Birds and mammals were hunted for meat. In the historic period the Coast Miwok occupied an area that includes modern day Marin County and southern Sonoma County north to around Duncans Point and Glen Ellen (Kelly 1978; Barrett 1908). Although no ethnographic villages are recorded or tentatively plotted on the current project area, a few were recorded in the greater Novato region. The closest previously recorded ethnographic villages were *tcoke' ttce*, *olompali*, and *chokeche*. All the sites are located at least a half miles distance from the current project area.

Tcoke' ttce was noted by S.A. Barrett in 1909 as,

> *at the foot of low hills about half a mile south of the town of Novato… The vicinity of this village was early known as Novato, a term evidently derived from the Spanish colloquialism, novato or novata, signifying new or anything just begun…The Indians in this vicinity seem also to have been known by the name of Novato (Barret 1909:309).*

The village of O*lompali,* was located at the current site of the state park of Olomali. The village of *chokeche* is noted on a map as just south of the town of Novato (Kroeber 1925).

Native American habitation sites throughout most of Sonoma and Marin Counties are marked by the presence of midden soil deposits, a result of the buildup of organic debris. Marine shells and animal bone are located within the middens, having been discarded after being cooked and the meat consumed at the habitation sites. The manufacturing of chipped stone tools has left behind a scatter of "flakes" of the chipped material at most sites. Other types of prehistoric activity areas include bedrock milling features (mortar depressions) or boulders containing petroglyphs (rock art). Isolate artifacts are found along trails or from hunting losses. An area near Indian Valley College has been recorded as a Native trail based on the linear distribution of broken tools, flakes



FIGURE 12 – LOOKING EASTERLY NEAR THE OLD QUONSET HUT

The hut lies on the northern edge of the property. The property boundary lies behind and to the left of the building.

of obsidian, and other culturally modified materials. A similar area has been noted east of Stage Gulch in Sonoma County.

METHODS AND RESULTS OF SURFACE EXAMINATION

The cultural resource evaluation has resulted in a negative finding. A negative result indicates that no artifacts or potentially significant cultural features were observed.



FIGURE 13 -- ANOTHER VIEW OF THE QUONSET HUT

The building has no floor and has been functioning as a barn for many years.

The entire parcel was examined in a pedestrian survey. Beginning at the eastern end of the property, the team walked a series of relatively parallel east-west transects spaced about five meters apart. The transects were modified to avoid trees and other obstructions, but generally covered the entire property where the ground could be observed. Where available, rodent mounds and disturbed soil were examined for indications of subsurface artifacts or features.

Vegetation cover over the property consists mainly of invasive grasses with scattered trees. Grass coverage is relatively thick, but soils could be observed between the plants from a vertical perspective.

The property does contain a water source, an intermittent creek crosses the northwest corner of the property, but no other attractants for settlement were identified. The property was undoubtedly within the hunting and gathering range of local Native Americans, but no evidence of Native American use of the parcel has been observed.

INTERPRETATION OF RESULTS

No significant or potentially significant artifacts, archaeological deposits, or features have been identified within the project area. Based on a review of available literature on the prehistoric and historic resources of the area as well as a field survey it appears that the proposed subdivision will not impact known cultural resources. No examined areas of the parcel indicated the presence of potentially significant cultural resources.

We know that there were prehistoric populations within the local vicinity, however there is no sign that they were actively occupying the land within the project area. Artifacts that are typically associated with prehistoric sites include human-modified stone, shell, bone, or other cultural materials such as charcoal, ash, and burnt rocks that indicate food procurement or processing activities. Prehistoric domestic features include firepits, hearths, or house/floor depressions whereas human skeletal remains in a prepared pit or depression in a culturally modified soil deposit typically represent mortuary features. Historic artifacts can encompass a wide range of physical deposits, such as glass, charcoal, nails, ceramics, gun-shells, as they can potentially

include all byproducts of human land use greater than 50 years of age. None of these potential physical indications of a site were observed.

The general area was likely utilized for usable plants and aquatic animals that reside within wetlands before the area was later turned into a pasture for cattle in the 19th Century. There is a minute potential for the discovery of isolated tools or artifacts that were lost by previous inhabitants of the region. The potential for discovery of artifact concentrations in very low and unlikely to occur



FIGURE 14 -- TYPICAL PROJECT AREA SOILS

This buff colored alluvial soil is not culturally modified. No indications of Native American settlement or use were observed in any of the soils of the project area.

CONCLUSIONS

No indication of a scientifically significant cultural deposit has been observed at any location in the project area. Examination of native soils throughout the project area has resulted in a negative finding for cultural resources.

This report responds to the requirements of Mitigation Measure 3.4-1 and 3.4-2 of the Novato Housing Element.

The first measure, 3.4-1, requires a site specific cultural resources evaluation by a qualified archaeologist and contact with The Federated Indians of Graton Rancheria to determine the presence or absence of any significant prehistoric cultural sites recognized by the tribe. A Registered Professional Archaeologist has conducted an archaeological inventory of the entire project area and no scientifically significant cultural resources have been identified. The Federated Indians of Graton Rancheria have been contacted by letter but have not responded.

The entire project area has been subject to an intensive archaeological surface inspection. Non-significant features have been found, but no scientifically significant cultural resources have been identified in the cultural resource evaluation conducted for this property.

Measure 3.4-2 does not apply to the project area. This measure requires the protection of an archaeological site that lies along Novato Creek, much closer to downtown Novato than the present project area. No threat to CA-MRN-352, more recently rerecorded as CA-Mrn-678 exists from this project.

RECOMMENDATIONS

It is considered relatively unlikely that artifacts or features will be encountered during work in the soils of the parcel. The following procedures are recommended on the low possibility that artifacts or features are encountered in these soils. These recommendations should be implemented as general procedures to be followed when other instructions are lacking. The term "Company", when capitalized, means the entity sponsoring the construction of the project.

1. **All employees or others on the job site should be told that no artifacts are to be removed from the area except through authorized procedures. In this usage "artifacts" means any item over fifty (50) years of age.** It should be made clear to all individuals and companies associated with any project that any artifacts found in the course of work are the property of the Company. It is not up to the contractor to determine what the Company considers important. When defining artifacts so closely, the Company retains the ability to determine whether or not to bring in an archaeologist to examine the find. As a general rule, artifacts greater than 100 years of age should be considered important unless a specific evaluation determines otherwise. Artifacts greater than fifty years old, but less than 100 years old should be considered important enough to be evaluated, but generally, the process of recording the discovery location will be an adequate "mitigation" of any potential negative impacts. Artifacts less than fifty years old are only important if they associate with a specific historic event of recognized significance.
2. **Any artifacts that are found on or near the project area are to be turned over to, or brought to the attention of, the inspector, project manager, or the discoverer's immediate supervisor**. The most workable situation would probably see the individual workers turning things into their immediate supervisor, who would report the discovery to their superior. The project archaeologist should go to the discovery location and determine that the artifact is not part of a larger deposit. This may not be obvious. If the inspector is satisfied that other artifacts will not be found in the location, the artifact should be removed from the area and work continued. If the inspector cannot make the determination, an archaeologist should examine the area and make appropriate recommendations. Often, if a major archaeological site is found, it will be apparent to all that an important discovery has been made. More subtle deposits require professional evaluation to determine their importance.
3. **Whenever any artifact is found or reported, a tag should be included that indicates the following**:

- the identity of the finder and the date of discovery,
- the identity of the inspector or other responsible individual to whom the artifact is given,
- a description of the location where the artifact was found, such as the approximate distance and direction to the nearest measured point, identification of a point on the building plans, or other reliable, accurate method,

- a description of the artifact that will allow it to be identified if the tag and artifact are separated.

4. **If the inspector carries a supply of small plastic baggies and 3x5 cards this process will be very simple.** For large artifacts the tag can be attached with string or tape. Wrapping large artifacts with survey tape and writing on the tape is acceptable. The important thing is that the information be kept with the artifact. If the project is going to involve extensive excavation or ground disturbance, it is more likely that artifacts will be found. In these instances, preprinted cards can be used that prompt for the appropriate information.



FIGURE 15 -- LOOKING WEST ACROSS THE PROJECT AREA

The intermittent creek flows through the center of the photo, with an overflow area to the right. The project area continues to the right of the intermittent creek beyond the fence line. Ground stone implements on a neighboring property were found beyond the fence line toward the tractor in the right background.

The artifact, if portable, should be transported to a safe location where it can be kept until it can be inspected by an archaeologist. When removed by the inspector or other responsible person, the artifact should be transported to a location such as the Company office where it can be kept under secure conditions. At the beginning of the project, the location for artifacts to be brought, and the responsible individuals they can be turned over to, should be identified by the Project Manager. A log of artifacts should be maintained at the storage location.

In the unlikely event that a concentration of artifacts or culturally modified soil deposits including trash pits older than fifty years of age are discovered at any time during any drilling or earth disturbing activities within the property, all work should be halted in the vicinity of the find and a qualified archaeologist should be contacted immediately to make an evaluation. If warranted by the discovery of a concentration of artifacts or soil deposits, further work in the discovery area should be monitored by an archaeologist.

Artifacts that are typically found associated with prehistoric sites include humanly modified stone, shell, bone or other cultural materials such as charcoal, ash and burned rock indicative of food procurement or processing activities. Prehistoric domestic features include hearths, firepits, or house floor depressions, whereas typical mortuary features are represented by human skeletal

remains. Historic artifacts potentially include all by-products of human land use greater than 50 years of age.

Although highly unlikely, if human remains are encountered, all work must stop in the immediate vicinity of the discovered remains and the County Coroner and a qualified archaeologist must be notified immediately so that an evaluation can be performed. If the remains are deemed to be Native American and prehistoric, the Native American Heritage Commission must be contacted by the Coroner so that a "Most Likely Descendant" can be designated.

REFERENCES CONSULTED

Ambro, Richard (Holman & Associates)

1991 A Report on Archival Research, Surface Reconnaissance and a Hand Augering program: Identification of Prehistoric and Historic Cultural Resources – Phase 1, within the Area of Potential Effect of the South Novato Boulevard Improvement Project – Diablo Avenue to Rowland Boulevard in Novato, Marin County, California. Report prepared by Holman & Associates for City of Novato, Engineering Department. Report on file at the Northwest Information Center of the California Historical Resources Information System (hereafter NWIC) under S-12506.

Berkland, James O.

1969 Geology of the Novato Quadrangle, Marin County, California. Unpublished Master of Science thesis, Department of Geology, California State University, San Jose.

Bieling, David (Holman & Associates)

1994 Report on Monitoring Activities and Archaeological Investigations for the South Novato Boulevard Improvement Project, Novato, Marin County, California. Report on file at the NWIC under S-16465.

Chattan, Cassandra (ARS)

2001 A Cultural Resources Evaluation of 10.5 acres located on Marion Avenue, APN 141-130-32, Novato, Marin County, California. ARS 01-016. Unpublished report on file at the NWIC, CHRIS under S-23801.

Chattan, Cassandra, Cassandra Michaud, and Katherine Flynn (Archaeological Resource Service)

1994 Cultural Resources Evaluation of parcel located at 2049 Center Road, Novato, Marin County, California. ARS Project #94-046. Report on file at the NWIC under S-16588.

Chavez, David

1981 Archaeological survey of portions of Novato Boulevard. Report on file at the NWIC under S-02499.

1999 Archaeological Resources Investigations for the Proposed "Taco Bell" Project at 930 Seventh Street, Novato, California. Report on file at the NWIC under S-22337. Survey of the reported location of CA-Mrn-340 (on Novato Blvd.); not confirmed.

Clark, Matthew, Randy Wiberg, and Richard Ambro (Holman and Associates)

1992 Evaluation Report of Test Excavations at Sites CA-Mrn-329 and CA-Mrn-530/530E for the National Register of Historic Places Eligibility for the Novato Creek Flood Control Project, Marin County, California. Report on file at the NWIC under S-14285.

Duddy, Margaret (Archaeological Resource Service)

1982 Letter report to Frank Golsalves regarding archaeological monitoring of improvements to the Novato Fair Shopping Center, Novato. ARS Project #82-013.

Flynn, Katherine (Archaeological Resource Service)
1977a (Survey of the proposed) SWC Financial Center Building located in the northwest corner of Novato Boulevard and Tamalpais Avenue (APN 140-039-39 & 40), City of Novato (letter report). ARS Project #77-112. Report on file at the NWIC under S-00867.

1977b (Survey of the proposed) Hyde Park Professional Center, Novato. ARS Project #77-111. Report on file at the NWIC under S-00868.

1980a Archaeological Reconnaissance of 2+-acre parcel, "The Pentagon" development near Tresch Triangle, South Novato Boulevard, Novato, California (letter report). ARS Project #79-124/80-006. Report on file at the NWIC under S-01889.

1980b Archaeological Reconnaissance of 3.6+ acre parcel located on west side of Canyon Road, south of Hill Road (APN 146-110-21 & 51), Novato, California. ARS Project #80-034. Report on file at the NWIC under S-02056.

1980c Archaeological Auger Program at the Pentagon property, South Novato Blvd. above Center Road, Novato, APN 140-131-19 (letter report). ARS Project #80-006. Report on file at the NWIC under S-02307.

1984a Letter report dated June 14, 1984 to Dick Scott, Engineering Division, City of Novato, in regards the "Archaeological Study of Area of Potential Environmental Impact, Proposed Improvements to Novato Boulevard between Grant and Eucalyptus Avenues, Novato (FAU Project 73-019)". ARS Project #84-03. Report on file at the NWIC under S-06481.

1984b Archaeological Survey of the Southern and Northern Additions to the Novato Fair Shopping Center, Novato, California. ARS Project #84-016. Report on file at the NWIC under S-06482. [This report discusses two prehistoric sites, the "Lost Luggage" or CA-Mrn-529 site and the Diablo Bridge Site or CA-Mrn-530.]

1991 Archaeological Survey of proposed Diablo Condominiums, Diablo Avenue and Center Road, Novato (letter report). ARS Project #91-037. Report on file at the NWIC under S-13423.

1997 Letter dated February 20, 1997 to James R. Brooks, Evergreen Pacific Corporation regarding "Assisted Living Facility, APN 140-131-22, 23 & 24, (formerly the Diablo Condominium Project or ARS #91-037).

Haas, Hannah
2017 Cultural Resources Assessment For The Wood Hollow Hotel Project, Marin County, Novato, California. Appendix F of the Wood Hollow Hotel EIR, City of Novato.

Holman, Miley, Matthew Clark, and Randy Wiberg (Holman and Associates)
1983 A Preliminary Archaeological Reconnaissance of the proposed Novato Flood Control Project, Marin County, California. Report on file at the NWIC under S-06497.

Holman and Associates
1987 Archaeological Resources of Novato Creek, Warner Creek and Arroyo Avichi inside the Marin County Flood Control District Improvement Area. Report on file at the NWIC under S-19537.

Hoover, Mildred B., Hero E. Rensch, and Ethel G. Rensch
1966 **Historic Spots in California**. Third Edition by William N. Abeloe, Stanford University Press, Stanford.

Kelly, Isabel
1978 Coast Miwok. In William Sturtevant (editor, 1978), **Handbook of North American Indians**, Volume 8, **California**, Robert F. Heizer (volume editor), pp. 350-360. Smithsonian Institution, Washington D.C.

King, Thomas F.
1966 Beneath the Bulldozers: Experiments in Mechanized Archaeology at Mrn-192, Novato, California. Manuscript #4 prepared by the Northwestern California Archaeological Society. Unpublished manuscript on file at ARS, Petaluma. [Also see John McBeath 1966 or Treganza report about damage to Mrn-192.]

Koenig, Heidi and Brad Brewster (Environmental Science Associates)
2011 Cultural Resource Report for the North Bay Water Reuse Authority North Bay Recycling Program in Marin, Sonoma, and Napa Counties. Unpublished report on file at the NWIC, CHRIS under S-39171.

Kroeber, Alfred
1925 **Handbook of the Indians of California**. Bureau of American Ethnology, Bulletin 78. Smithsonian Institution, Washington D.C.

Mabry, Theo
1979 Archaeological Recofds Search and Reconnaissance Survey, San Marin Business Park, Novato, CA. Report prepared by Archaeological Planning Collaborative, Newport Beach. Ms on file with the NWIC under S-01622.

McAlester, Virginia and Lee McAlester
1984 **A Field Guide to American Houses**. Alfred A. Knopf, Inc., New York.

McBeath, John
1967 Archaeology of the Novato By-pass Site, Marin County, California. Prepared for the Interpretive Services, Division of Beaches and Parks for the California Division of Highways. Unpublished report on file at the NWIC, CHRIS under S-00003. [This report concerns the salvage excavation of CA-Mrn-192.]

Miller, Teresa
1976 Identification and Recording of Prehistoric Petroglyhs in Marin and Related Bay Area Counties. Unpublished Master of Arts thesis submitted to San Francisco State University. Unpublished document on file at ARS.

Miller, Teresa and Katherine Flynn
1976 Site record form on CA-Mrn-450. Unpublished site record form on file at NWIC< CHRIS under site trinomial designation.

Munro-Fraser, J. P.
1880 **History of Marin County, California**. Published by Alley, Bowen & Co., San Francisco. Republished by Charmaine Burdell Veronda. Petaluma.

Nelson, N. C.
1907 Field notes on the following numbered prehistoric archaeological sites: 174, 175, 175a/320, 176, 191, and 192. Unpublished field notes on file at the U. C. University at Berkeley, Department of Anthropology, Archaeological Research Facility.

1909 **The Shellmounds of the San Francisco Bay Region**. University of California Publications in American Archaeology and Ethnology 7:309-356. Berkeley.

Nichols, Donald R. and Nancy C. Wright
1971 Preliminary Map of Historic Margins of Marshland, San Francisco Bay, California. Open file Report, San Francisco Bay Region Environmental and Resources Planning Study, Basic Data Contribution No. 9. U.S. Department of the Interior Geological Survey, Menlo Park.

Price, Barry
1980 Archaeological Survey of the Novato Fair Shopping Center (letter report). ARS Project #80-048. Report on file at the NWIC under S-02157.

Reuter, Priscilla
1979 Archaeological survey on proposed development on 5 acres on South Novato Boulevard, Novato. Report on file at the NWIC under S-01617.

Rice, Salem
1973 Geology and Geologic Hazards of the Novato Area, Marin County, California. California Division of Mines and Geology Preliminary Report 21, Sacramento.

Roop, William (Archaeological Resource Service)
1978 Letter report to Henry Hicks regarding the results of a subsurface test procedure on the site of the proposed Hyde Park Professional Center, 1700 block of Novato Boulevard, Novato. ARS Project #78-013.

1980 A Surface Reconnaissance of an approximately 2-acre area located at the east corner of the intersection of Seventh Avenue and Novato Boulevard in the land grant of Novato, California (letter report). ARS Project #78-117. Report on file at the NWIC under S-01312.

1989 Cultural Resources Evaluation of the Proposed Nelson Lube and Oil Center, Novato, California (letter report). ARS Project #89-050. Report on file at the NWIC under S-11511.

1991 A Cultural Resources Evaluation of the Creekside Development Plan, Novato, California. ARS Project #91-021.

Scott, Richard
1990a South Novato Boulevard Improvement Project between Rowland Boulevard and Diablo Avenue – Project 85-020: A Summary of Development Including Utilities and Roadway Related Improvements within the Area of Potential Impact. This information is included in report by Ambro (1990).

1990b Historic Property survey report for the Proposed South Novato Boulevard Improvement Project, Rowland Buevard to Diablo Avenue, City of Novato, Marin County, California. Report on file at the NWIC under S-12954. [Although this report purports to describe 'historic resources,' the document also discusses the following prehistoric sites, Mrn-171, -359, -498, 529, and –530.]

Shoup, Daniel
2016 Cultural Resource Survey Report, Laurel Ridge Senior Apartments Project, Novato, California. Archaeological Historical Consultants, Oakland.

Stillinger, Robert and Jane Stillinger
1984 An Archaeological Survey of the Proposed extensison of the Novato Improvement Project #73-019, Novato, California. Report on fileat the NWIC under S-07121.

Strother, Eric (ARS)
1999 A Cultural Resources Evaluation of the Proposed "Tamalpais Hills" Project, Novato, Marin County, California. ARS Project #99-077. Report on file at the NWIC under S-22870.

Sturtevant, William (editor)
1978 **Handbook of North American Indians**. Volume 8, California, Robert F. Heizer (volume editor). Smithsonian Institution. Washington D. C.

Tiley, Shelly, Dwight Simons, K. R. Bethard, Sunshine Psota, Jo Markwyn, and Jack Meyer with contributions by David Glover, Leslie Glover, Tim Carpenter, Dan Camboia, and Maria Bowen.
2003 Surface and Subsurface Archaeological Survey Report and Phase 1.5 Augering Program for the Marin/Sonoma Narrows Project along Highway 101, Marin and Sonoma Counties, California. Mrn-101 P. M. 18.6/27.7; Son-101 P. M. 0.0/7.7. Prepared by the Archaeological Research Center, Department of Anthropology, California State University, Sacramento for California Department of Transportation, District 04, Oakland, CA. Caltrans/CSU Interagency Agreement No. 04-A1021, Task Order 01, EA-264000. Unpublished report on file at the NWIC, CHRIS under S-39520.

Treganza, Adan
1962 Letter (regarding the) Justification for Salvage Archaeological Excavation of Mrn-192, Novato, California. Unpublished report on file at the NWIC, CHRIS under S-12940.

Ungemach, Mary Rodgers
1988 **Novato Township: Land Ownership to World War II**. Novato Historical Guild, Novato, California.

APPENDIX 1— SIGNIFICANCE IN THE EVALUATION OF CULTURAL RESOURCES AS HISTORIC PROPERTIES

To be significant an archaeological site must qualify for registration as an “historic resource” the following criteria must be met for this listing:

> *An archeological site may be considered an historical resource if it is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California (PRC § 5020.1(j)) or if it meets the criteria for listing on the California Register (14 CCR § 4850). CEQA provides somewhat conflicting direction regarding the evaluation and treatment of archeological sites. The most recent amendments to the CEQA Guidelines try to resolve this ambiguity by directing that lead agencies should first evaluate an archeological site to determine if it meets the criteria for listing in the California Register. If an archeological site is an historical resource (i.e., listed or eligible for listing in the California Register) potential adverse impacts to it must be considered, just as for any other historical resource (PRC § 21084.1 and 21083.2(l)). If an archeological site is not an historical resource, but meets the definition of a “unique archeological resource” as defined in PRC § 21083.2, then it should be treated in accordance with the provisions of that section.*

If an archaeological site does not qualify for listing, the directive is clear. The Public Resources Code states:

> *(4) If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or EIR, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.*

APPENDIX 2 – PROFESSIONAL STANDARDS FOR CONSULTANTS

Secretary of the Interior's Standards

The minimum professional qualifications in archeology are a graduate degree in archeology, anthropology, or closely related field plus:

1. At least one year of full-time professional experience or equivalent specialized training in archeological research, administration or management;

2. At least four months of supervised field and analytic experience in general North American archeology; and

3. Demonstrated ability to carry research to completion.

In addition to these minimum qualifications, a professional in prehistoric archeology shall have at least one year of full-time professional experience at a supervisory level in the study of archeological resources of the prehistoric period. A professional in historic archeology shall have at least one year of full-time professional experience at a supervisory level in the study of archeological resources of the historic period.



VALLEY OAKS
NOVATO, CALIFORNIA

GEOTECHNICAL EXPLORATION

SUBMITTED TO
Mr. Michael Hooper
WCJA, LP
P.O. Box 1613
Glenn Ellen, CA 95442

PREPARED BY
ENGEO Incorporated

January 12, 2023
Revised January 20, 2023

PROJECT NO.
15401.002.000

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ENGEO
Expect Excellence

Project No.
15401.002.000

January 12, 2023
Revised January 20, 2023

Mr. Michael Hooper
WCJA, LP
P.O. Box 1613
Glenn Ellen, CA 95442

Subject: Valley Oaks
Redwood Boulevard
Novato, California

GEOTECHNICAL EXPLORATION

Dear Mr. Hooper:

We are pleased to submit this geotechnical report for the Valley Oaks project, which was prepared as outlined in our agreement dated August 29, 2022. We characterized the subsurface conditions at the site to develop our conclusions and recommendations for planning, design, and construction of the proposed residential development.

In our opinion, from a geotechnical engineering viewpoint, the site is suitable for the proposed residential development, provided the recommendations in this report are properly incorporated into design plans, specifications, and implemented during construction. The main geotechnical considerations for the proposed development include undocumented existing “man-made” fill, presence of highly expansive soil, slope stability, compressible colluvial soil, and strong ground motions. We present our recommendations to address these geotechnical considerations and others for the planned development in the accompanying report.

Our experience and that of our profession clearly indicate that the risk of costly design, construction, and maintenance problems can be significantly lowered by retaining the design geotechnical engineering firm to review the project plans and specifications and provide geotechnical observation and testing services during construction. If you have any questions or comments regarding this report, please call and we will be glad to discuss them with you.

Sincerely,

ENGEO Incorporated

Justin Qiu

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TABLE OF CONTENTS

LETTER OF TRANSMITTAL

1.0 INTRODUCTION 1

1.1 PURPOSE AND SCOPE 1
1.2 PROJECT LOCATION, DESCRIPTION, AND PROPOSED DEVELOPMENT 1
1.3 AERIAL PHOTOGRAPH REVIEW 2
1.4 PREVIOUS GEOTECHNICAL DOCUMENTS 2

2.0 FINDINGS 3

2.1 SUPPLEMENTAL FIELD EXPLORATION 3

2.1.1 Test Pits 3
2.1.2 Borings 3

2.2 GEOLOGY AND SEISMICITY 4

2.2.1 Regional Geology 4
2.2.2 Site Geology 4
2.2.3 Seismicity 4

2.3 SURFACE CONDITIONS 5
2.4 SUBSURFACE CONDITIONS 5

2.4.1 Artificial Fill (Qaf) 6
2.4.2 Pleistocene to Holocene Alluvium (Qal) 6
2.4.3 Landslide Deposits (Qls) 6
2.4.4 Colluvium (Qc) 6
2.4.5 Franciscan Complex (KJf) 6

2.5 GROUNDWATER CONDITIONS 6
2.6 LABORATORY TESTING 7
2.7 SEISMIC HAZARDS 7

2.7.1 Ground Rupture 7
2.7.2 Ground Shaking 8
2.7.3 Liquefaction 8
2.7.4 Lateral Spreading 9

2.8 SOIL CORROSION POTENTIAL 9

3.0 CONCLUSIONS 10

3.1 UNDOCUMENTED EXISTING FILL 10
3.2 EXPANSIVE SOIL 10

4.0 EARTHWORK RECOMMENDATIONS 10

4.1 GENERAL DEMOLITION AND SITE CLEARING 11
4.2 EXISTING FILL 11
4.3 SLOPE STABILITY AND STABILIZATION MEASURES 11
4.4 REMEDIAL GRADING MEASURES 12

4.4.1 Remove and Replace 13
4.4.2 Debris Catchments 13
4.4.3 Creekbank Area 13
4.4.4 Fill Slope Gradients 13
4.4.5 Toe Keyways 13
4.4.6 Subdrains 14

TABLE OF CONTENTS (Continued)

4.5 COLLUVIUM REMOVAL 14
4.6 PUMPING AND OVERLY WET SOIL CONDITIONS 14
4.7 ACCEPTABLE ENGINEERED FILL AND PLACEMENT 15
4.7.1 Landscape Areas 15
4.8 UNDERGROUND UTILITY BACKFILL 16
4.9 CUT/FILL TRANSITION OR CUT LOTS 16
4.10 DIFFERENTIAL FILL THICKNESS 16

5.0 FOUNDATION RECOMMENDATIONS 17

5.1 POST-TENSIONED MAT FOUNDATIONS 17
5.2 FOUNDATION SUBGRADE MOISTURE VAPOR REDUCTION 17
5.3 2022 CBC SEISMIC DESIGN PARAMETERS 18
5.4 SECONDARY SLABS-ON-GRADE 18

6.0 RETAINING WALLS 19

6.1 SOIL PRESSURES 19
6.2 RETAINING WALL FOOTINGS 20
6.3 RETAINING WALL DRAINAGE 20
6.4 BACKFILL 20

7.0 PAVEMENT DESIGN 21

7.1 FLEXIBLE PAVEMENT 21
7.2 RIGID PAVEMENT 21
7.3 CUTOFF CURBS 21
7.4 PAVEMENT SUBGRADE PREPARATION 22
7.5 SURFACE DRAINAGE 22
7.6 STORMWATER INFILTRATION AND BIORETENTION 22
7.7 LANDSCAPING CONSIDERATION 23

8.0 CONSTRUCTION MONITORING 23

9.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS 24

SELECTED REFERENCES

FIGURES

APPENDIX A – Boring Logs

APPENDIX B – Laboratory Test Data

APPENDIX C – Test Pit Logs (ENGEO, 2020)

APPENDIX D – Corrosivity Results (CERCO Analytical, 2022)

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

ENGEO prepared this geotechnical report for design for design and construction of the proposed Valley Oaks project in Novato, California. As outlined in our agreement dated August 29, 2022, you authorized ENGEO to conduct the following scope of services.

- Exploration plan development
- Subsurface field exploration
- Soil laboratory testing
- Data analysis and development of geotechnical conclusions and recommendations
- Report preparation

This report was prepared for the exclusive use of our client and project consultants for the design of this project. If changes are made in the character, design, or layout of the development, we must be contacted to review the conclusions and recommendations contained in this report to evaluate whether modifications are recommended. This document may not be reproduced in whole or in part by any means whatsoever, nor may it be quoted or excerpted without our express written consent, or as allowed by contract.

1.2 PROJECT LOCATION, DESCRIPTION, AND PROPOSED DEVELOPMENT

For our use, we received the following documents.

- Campus Property Group; Combined Team Submittal, Valley Oaks, Novato, California; October 20, 2022.
- CBG Civil Engineers; Civil Engineers Vesting Tentative Map (VTM), Valley Oaks, Novato, California; October 20, 2022.

The roughly 15-acre site, identified as Marin County Assessor's Parcel Number 125-580-023 and a portion of 125-180-038, is in Novato, California. It is bound by Redwood Boulevard to the northeast and southeast, the Verandah at Valley Oaks townhome development to the east, and open undeveloped space along the remaining perimeter. The site is currently occupied by light vegetation, trees, and a dirt road.

The VTM shows the planned development to include 61 single-family residential lots in the northern portion of the site, and 20 multi-family townhouse units in the southeastern corner of the property. The plans also show paved driving lanes, sidewalks, landscaping, underground utilities, and bioretention basins as part of the proposed improvements.

We understand that site grading will involve up to approximately 11 feet of design cut, and approximately 8 feet of design fill to achieve finished grade. Structural loads are yet to be determined; however, we assume that structural loads will be representative for this type of construction.

1.3 AERIAL PHOTOGRAPH REVIEW

We reviewed historical aerial photographs for the site and local vicinity. Aerial photographs as early as 1952 show the site occupied by trees at the southwestern corner of the site and two dirt roads cutting through both parcels. The nearby US-101 and Redwood Boulevard was realigned sometime between 1969 and 1975 to curve into the wetlands in the current configuration that is seen in the present day. In the 1993 photograph, the parcel that would become Verandah at Valley Oaks was graded and leveled. The site remained relatively unchanged between the 1993 photograph and our exploration in 2022.

1.4 PREVIOUS GEOTECHNICAL DOCUMENTS

We reviewed eight past geotechnical reports by other consultants in proximity or within limits of the project site.

1. Cooper-Clark and Associates. 1978. Preliminary Geotechnical Investigation, Proposed 54-Acre Industrial Development, Nunes Ranch, Novato, California. July 7, 1978. Job No. 1950-C.
2. Herzog & Associates. 1982. Geotechnical Investigation, San Marin Commerce Park, Novato, California. April 28, 1982. Job No. 134.41.
3. Kleinfelder. 1998. Preliminary Geotechnical Investigation; Parcels 1 and 2, Wood Hollow Drive and Redwood Boulevard, Novato, California. September 24, 1998. Job No. 41-7449-01.
4. Kleinfelder. 1999. Geotechnical Investigation Report, Area “E”, San Marin Business Park, Redwood Boulevard, Novato, California. September 8, 1999. Job No. 41-7449-02.
5. Kleinfelder. 2000. Supplemental Geotechnical Investigation, Area E, San Marin Business Park, Redwood Boulevard, Novato, California. October 31, 2000. Project No. 41-7597-01/001.
6. Upp Geotechnology, Inc. 2000. Summary of Observations, Supplemental Geotechnical Investigation, Area E, San Marin Business Park, Redwood Boulevard, Novato, California. November 7, 2000. Project No. 2258.1L1.
7. Kleinfelder. 2001. Deformation Analyses, Area E, San Marin Business Park, Redwood Boulevard, Novato, California. October 19, 2001. Project No. 41-7449-02.
8. Herzog & Associates. 2001. Geotechnical Review, Deformation Analyses, San Marin Business Park, Area E, Novato, California. October 24, 2001. Project No. 728-01-00.

In addition to studies by other consultants, ENGEO performed the following studies and geotechnical updates at this site.

9. ENGEO. 2020. Updated Seismic Deformation Analysis and Supplemental Setback Recommendations, San Marin Area E, Redwood Boulevard, Novato, California; January 27, 2020. Project No. 15401.001.000.
10. ENGEO. 2021. Geotechnical Hazards and Planned Development, Valley Oaks, Redwood Boulevard, Novato, California. May 1, 2021, Revised May 12, 2021. Project No. 15401.001.000.

In our No. 9 study, we performed a deformation analysis to determine structural development setback limits from the ancient landslide limit, and in our No. 10 study we provided a summary of main geotechnical hazards based on review of available geotechnical information within and immediately surrounding the project site.

The focus of our current geotechnical study is to perform supplemental explorations to characterize subsurface conditions in areas not previously explored to develop our conclusions and recommendations for planning, design, and construction of the proposed residential development.

2.0 FINDINGS

2.1 SUPPLEMENTAL FIELD EXPLORATION

2.1.1 Test Pits

In 2020, we observed the excavation of 14 test pits at the locations shown on the Site Plan (Figure 2). Our field representative observed the test pit excavation and logged the subsurface conditions at each location. The maximum depth penetrated by the test pits was 17 feet below ground surface. We used the field logs to develop the report logs in Appendix C. The logs depict the subsurface conditions at the exploration locations for the time of exploration; however, subsurface conditions may vary with time.

2.1.2 Borings

In 2022, we retained the services of a drilling subcontractor who provided a crew operating a track-mounted drill rig to advance eight borings using 6-inch-diameter hollow-stem auger drilling methods. We advanced borings to depths ranging from 9½ to 30½ feet bgs. We obtained soil samples at various depth intervals using either standard penetration test (SPT) samplers with a 2-inch outside diameter (O.D.) split-spoon sampler, California Modified samplers with 2½-inch inside diameter (I.D.) fitted with sampling liners, and Shelby tubes with a 3-inch I.D. We advanced the driven samplers with an automatic trip, 140-pound hammer with a 30-inch free fall and recorded the penetration of the sampler in the field as the number of blows needed to drive the sampler 18 inches in 6-inch increments. The boring log shows the number of blows required for the last 1 foot of penetration, or the number of blows per depth of penetration for samples that met driving refusal. We did not adjust the blow counts shown on the boring logs using any energy correction or sample size factors. When sampler driving was difficult, penetration was recorded only as inches penetrated for 50 hammer blows.

The boring logs are presented in Appendix A. The logs depict interpreted subsurface conditions within the borings at the time the exploration was conducted. The stratification lines on our logs represent the approximate boundaries between soil types and the actual material transitions may be more gradual. Subsurface conditions at other locations may differ from the conditions noted at these boring locations.

The approximate locations of our explorations are shown on Figure 2 and presented in cross sections in Figure 3. We selected the exploration locations to supplement previous explorations and fill gaps in the data near potential geologic hazards. The locations of our explorations are approximately located, and we estimated their locations using consumer-grade global positioning system (GPS) and their proximity to existing site features; therefore, the locations shown should be considered accurate only to the degree implied by the method used. We permitted our explorations with Marin County Environmental Health.

2.2 GEOLOGY AND SEISMICITY

2.2.1 Regional Geology

The site is located near the northwest margin of San Pablo Bay, in the Coast Ranges geomorphic province of California. The Coast Ranges comprise a system of northwest-trending, fault-bounded mountain ranges and intervening valleys that trend approximately parallel to the right-lateral transform boundary between the North American and Pacific Plates. The present geology of the Coast Ranges are the result of deformation and deposition along the tectonic boundary between the North American plate and the Pacific plate. Plate boundary fault movements are largely concentrated along the well-known fault zones, which in the Bay Area include the San Andreas, Hayward-Rodgers Creek, and Calaveras Faults, as well as other lesser-known faults. Bedrock in the Coast Ranges consists of igneous, metamorphic, and sedimentary rocks that range in age from Jurassic to Pleistocene.

2.2.2 Site Geology

The general topography in the site vicinity is characterized by flat-lying areas of marsh extending east to the Petaluma River and a series of uplifted ridges with intervening valleys to the north and west. The valley is cut by a stream running approximately north/south on the eastern side of the site, with steep channel banks. Most of the site is relatively flat and underlain by alluvial and colluvial deposits as mapped by Wagner (2002).

According to Wagner et al., (2002), the easternmost portion of the site consists of Holocene bay mud (Qhbm), which has recently been buried under engineered fill placed prior to and during grading for the Verandah development (aka Novato 80). The central portion of the site is mapped as undivided latest Pleistocene to Holocene alluvium. The alluvium is described as relatively un-dissected fan, terrace, and basin deposits. Colluvium is mapped within the swales and near the base of slope at the northern, western, and southern portions of the site. Colluvium is described as unconsolidated and unsorted weathered rock fragments accumulated on or at the base of slopes. Relatively shallow bedrock is present on the slopes at the southwestern portion of the site. Bedrock at the site is mapped as Franciscan Complex schist, phyllite, and semi schist (Wagner, 2002).

Wentworth (1975) maps a massive landslide complex on the hillslopes located west and north of the site. Further discussion of the depth and impact of the landslide complexes are described in Sections 2.4 and 4.3.

2.2.3 Seismicity

The San Francisco Bay Area contains numerous active faults. Figure 6 shows the approximate location of active and potentially active faults and significant historic earthquakes mapped within the San Francisco Bay Region. An active fault is defined by the state as one that has had surface displacement within Holocene time, about the last 11,000 years (Hart and Bryant, 1997).

To identify nearby active faults that can generate strong seismic ground shaking at the site, we utilized the United States Geological Survey (USGS) Unified Hazard Tool* and disaggregated the hazard at 1 second for a return period of 2,475 years.

The nearest active fault with a significant contribution (greater than 1 percent) to the overall seismic hazard at the site is the Northern trace of the Hayward fault, approximately 6.2 miles away. Other nearby faults capable of producing significant ground shaking at the site are shown in Table 2.2.3-1.

TABLE 2.2.3-1: Active Faults Capable of Producing Significant Ground Shaking at the Site Latitude: 37.42450 Longitude: -122.07953

SOURCE	R_{RUP}		MOMENT MAGNITUDE M_W
	(km)	(miles)	
Hayward (No) [9]	9.9	6.2	7.3
San Andreas (North Coast) [3]	21.6	13.4	7.9
Rodgers Creek – Healdsburg [1]	11.5	7.1	6.8

*USGS Unified Hazard Tool - Edition: Dynamic Conterminous U.S. 2014 (update) (v4.2.0)

These results represent sources contributing at least 1 percent to the seismic hazard at the site for the peak ground acceleration and for the given return period. Gridded or areal sources are not presented; however, these sources did not contribute more than 1 percent to the seismic hazard for the peak ground acceleration and for the given return period.

The Uniform California Earthquake Rupture Forecast (UCERF3, 2014) evaluated the 30-year probability of a Moment Magnitude 6.7 or greater earthquake occurring on the known active fault systems in the Bay Area. The UCERF3 generated an overall probability of 72 percent for the San Francisco Region.

2.3 SURFACE CONDITIONS

According to the Vesting Tentative Map (VTM) prepared by CBG Civil Engineers, site elevations range from Elevation +5 feet (NGVD 29) at the intersection of Redwood Boulevard and Pinkston Road near the eastern portion of the site up to Elevation +75 feet at the western portion of the site.

The site is overlain by light vegetation and several trees. In the northern portion of the site (“Valley Oaks North”), a dirt road starts at the east and terminates at a one-story building in the north. The one-story building is surrounded by various debris.

A PG&E easement is clearly delineated at the southeastern portion of the Valley Oaks North area, and wetlands are present in the northwestern and southeastern portion of Valley Oaks North.

2.4 SUBSURFACE CONDITIONS

The main geologic units encountered in our subsurface exploration are described in the following sections.

Figures 3 and 4 present the geologic cross-sections and geologic map based on the previously discussed field exploration activities. Consult the Site Plan and exploration logs for specific subsurface conditions at each location. We include our exploration logs in Appendix A and test pit logs in Appendix C. The logs contain the soil or rock type, color, consistency, and visual classification in general accordance with the Unified Soil Classification System. The logs graphically depict the subsurface conditions encountered at the time of the exploration.

2.4.1 Artificial Fill (Qaf)

Artificial or existing “man-made” fill was encountered in the north and east portion of the site in explorations conducted by ENGEO. The fills range in thickness from approximately 3½ to 5 feet.

2.4.2 Pleistocene to Holocene Alluvium (Qal)

Alluvial deposits were observed in explorations at the northern and eastern portions of the site. This stratum generally consisted of stiff to hard sandy clay with some gravel. Borings terminated in the underlying bedrock encountered alluvial deposits extending to the top of rock. Relatively loose deposits of alluvium are considered susceptible to liquefaction. Further analysis of liquefaction potential is included in Section 2.7.3.

2.4.3 Landslide Deposits (Qls)

Landslide deposits were encountered in Borings 3-B1 and 3-B6 as well as Test Pits 2-TP1 through 2-TP6 and 2-TP11 through 2-TP13. The stratum generally consisted of lean clay with various amounts of sand and gravel. The locations of the landslides are shown in Figure 2.

Landslide 1, at the southwestern end of the site, generally consisted of very stiff to hard lean clay and sandy lean clay to a depth of approximately 12 feet bgs.

Landslide 2, at the northwestern portion of the site, is a recently active, shallow landslide that has occurred within the older massive, deep-seated landslide complex located west of the site. The younger, shallower landslide (Qls) generally consists of lean and fat clay and extends from approximately 4 feet bgs to 14 feet bgs. The older, deeper landslide (Qols) generally consists of lean clay, clayey sand, and sandstone, and extends from approximately 20 feet bgs to at least the depth of exploration at 31½ feet bgs.

2.4.4 Colluvium (Qc)

Colluvium deposits were observed in explorations throughout the site. This stratum consists of slope sediments, largely clay and sand with variable amounts of gravel, and was encountered overlying Franciscan Formation schist to depths of up to 23½ feet below ground surface.

2.4.5 Franciscan Complex (KJf)

Franciscan Complex bedrock was observed in borings and test pits throughout the site at depths of approximately 3½ to 16 feet below ground surface. Bedrock encountered in these explorations generally consisted of metamorphic rock, such as Franciscan Complex comprised of schist; however, ENGEO borings made note of observed claystone and sandstone at the material contact.

2.5 GROUNDWATER CONDITIONS

We did not encounter static groundwater in any of our borings during site exploration. We reviewed previous geotechnical and environmental reports available within the site’s vicinity, and we provide a summary of groundwater measurements collected as part of these investigations in the table below. Subsurface explorations within the vicinity of the site mapped groundwater to be between approximately 10 and 20 feet bgs as noted in the table below.

TABLE 2.5-1: Groundwater Observations

EXPLORATION LOCATION	MEASUREMENT BY	APPROX. DEPTH TO GROUNDWATER (feet)	APPROXIMATE CORRESPONDING GROUNDWATER ELEVATION (feet NGVD 88)
B-13	Cooper-Clark & Associates (1978)	7	3.7
B-14		7½	3.7
B-16		10	1.7
B-18		13½	0.7
B-19		7¾	15.7
B-23		16	24.7
B-7	Donald Herzog & Associates (1982)	6	33.7

We assume a conservative groundwater level of 15 feet below the ground surface (bgs) for design based on historical groundwater data and previous explorations. Fluctuations in the level of groundwater may occur due to variations in rainfall, irrigation practice, and other factors not evident at the time measurements were made.

2.6 LABORATORY TESTING

We performed laboratory tests on select soil samples to evaluate their engineering properties, which include the laboratory test and standard procedures shown in Table 2.6-1, including reference to the report appendix where results are provided.

TABLE 2.6-1: Laboratory Testing

SOIL CHARACTERISTIC	TESTING METHOD	LOCATION OF RESULTS
Natural Unit Weight and Moisture Content	ASTM D7263	Appendix A
Atterberg Limits	ASTM D4318	Appendix B
Particle-Size Distribution	ASTM D6913	Appendix B
Sieve and Hydrometer	ASTM D422	Appendix B
Triaxial Compression – Unconsolidated, Undrained	ASTM D2850	Appendix B
Unconfined Compression Test	ASTM D2166	Appendix B

2.7 SEISMIC HAZARDS

Potential seismic hazards resulting from a nearby moderate to major earthquake can generally be classified as primary and secondary. The primary effect is ground rupture, also called surface faulting. Common secondary seismic hazards include ground shaking, ground lurching, liquefaction, lateral spreading, and tsunami. The following sections present a discussion of these hazards as they apply to the site. Based on topographic and lithologic data, seiches are low to negligible at the site.

2.7.1 Ground Rupture

Since there are no known active faults crossing the property and the site is not located within an Earthquake Fault Zone (Figure 5), ground rupture is unlikely at the subject property.

2.7.2 Ground Shaking

An earthquake of moderate to high magnitude generated within the San Francisco Bay Region could cause considerable ground shaking at the site, like that which has occurred in the past. To mitigate the shaking effects, structures should be designed using sound engineering judgment and the latest California Building Code (CBC) requirements, as a minimum. Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead-and-live loads. The code-prescribed lateral forces are generally considered to be substantially smaller than the comparable forces that would be associated with a major earthquake. Therefore, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake; however, it is reasonable to expect that a well-designed and well-constructed structure will not collapse or cause loss of life in a major earthquake (SEAOC, 1996).

2.7.3 Liquefaction

Soil liquefaction results from a loss of strength during cyclic loading, such as imposed by earthquakes. Soil most susceptible to liquefaction is clean, loose, saturated, uniformly graded fine-grained sand. Empirical evidence indicates that loose to medium-dense gravel, silty sand, low-plasticity silt, and some low-plasticity clay is also potentially liquefiable.

Seismically induced settlement can be generally subdivided into two categories for granular soil: (1) settlement because of liquefaction of saturated or nearly saturated soil and (2) dynamic densification of non-saturated soil. Research has also shown that low-plasticity cohesive soil can also undergo post-seismic settlement.

Deformation of the ground surface is a common result of liquefaction. Vertical settlement may result from densification of the deposit or volume loss from venting to the ground surface. Densification occurs as excess pore pressures dissipate, resulting in vertical settlement at the ground surface.

Clay-like (cohesive) soil can also develop excess pore pressures during cyclic loading, but generally do not reach zero effective stress and are typically considered non-liquefiable (Robertson, 2009); however, clay-like soil can deform during cyclic earthquake loading and experience volumetric strains and post-earthquake reconsolidation. The volumetric strains for clay-like soil are generally small compared to cohesionless soil (sand-like), since clay-like soil often retains some original soil structure.

We assessed the potential for fine-grained soil to experience liquefaction and cyclic softening using correlations developed by Boulanger and Idriss (2008) and Bray and Sancio (2006) with samples collected from our borings. Based on the results of laboratory testing and the screening criteria presented by Bray and Sancio, we assessed that clay at the site is generally non-liquefiable (or subject to cyclic softening) based on the natural water content and plasticity.

We considered a Maximum Considered Earthquake (MCE_G) Peak Ground Acceleration (PGA_M) value of 0.69g based on the 2022 California Building Code with an earthquake magnitude of 7.3 based on a 2-percent in 50 years disaggregation, and a groundwater level of 15 feet below existing grade. We performed our analyses of liquefaction potential using the methods proposed by Seed (2003) and Idriss and Boulanger (2008).

Based on the consistency of the soil materials encountered during our exploration and the results from our SPT-based liquefaction analysis, the potential for liquefaction of the site soil at the project site is negligible.

2.7.4 Lateral Spreading

Lateral spreading involves lateral ground movements caused by seismic shaking. These lateral ground movements are often associated with a weakening or failure of an embankment or soil mass overlying a layer of liquefied sand or weak soil. Since the site soil is not considered to have a liquefaction potential, the risk of lateral spreading at the site is low to negligible.

2.8 SOIL CORROSION POTENTIAL

We collected representative near-surface soil samples during our exploration. We submitted the samples to a California state-certified analytical lab for determination of redox potential, pH, resistivity, sulfide, sulfate, and chloride. The results are summarized in the table below.

TABLE 2.8-1: Corrosivity Test Results

SAMPLE LOCATION	REDOX (mV)	pH	RESISTIVITY (OHMS-CM)	SULFIDE (MG/KG)	CHLORIDE (MG/KG)	SULFATE (MG/KG)
3-B7 at 5.5 feet	340	7.62	4,200	-	22	23

The current CBC references the 2014 American Concrete Institute Manual, ACI 318-14, Chapter 19, Section 19.3.1.1 for structural concrete requirements. Based on the test results and ACI criteria, the tested soil would classify as ‘Not Applicable – S0’ for sulfate exposure; there is no requirement for cement type or water-cement ratio for this category. It should be noted, however, that the structural engineering design requirements for concrete may result in more stringent concrete specifications.

Based on the resistivity measurements, the soil is moderately corrosive to buried metal piping. The reported values of chloride concentration do not pose a significant impact to metal or concrete. Additional corrosivity analysis and brief evaluation are provided in the laboratory test result report by CERCO and included in Appendix D.

The recommendations provided are for general reference. If it is desired to investigate this further, we recommend a corrosion consultant be retained to evaluate whether specific corrosion recommendations are advised for the project.

3.0 CONCLUSIONS

In our opinion from a geotechnical engineering viewpoint, the site is suitable for the proposed residential development, provided the recommendations in this report are properly incorporated into design plans, specifications, and implemented during construction. The main geotechnical considerations for the proposed development include undocumented existing "man-made" fill, presence of highly expansive soil, slope stability, compressible colluvial soil, and strong ground motions. We present our recommendations to address these geotechnical considerations and others for the planned development in the following sections of this report.

3.1 UNDOCUMENTED EXISTING FILL

Our field exploration identified areas of the site underlain by existing undocumented fills. The fills were encountered in Borings 3-B3 and 3-B7 at the northern portion of Valley Oaks North. Undocumented existing fill may also be present at the site, and susceptible to excessive total and differential settlement, especially under new fill or building loads. We include recommendations for site demolition and fill removal in Section 4.0.

3.2 EXPANSIVE SOIL

Our explorations generally encountered surficial clayey soil with a plasticity index (PI) ranging from 22 to 51, which is considered medium to very highly expansive potential when subject to variations in moisture content. Samples collected generally indicate that the near-surface soil in most of the site generally consists of fat clay and lean clay with sand.

Expansive soil can change in volume with changes in moisture. It can shrink or swell and cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. Building damage due to volume changes associated with expansive soil can be reduced by: (1) deepening conventional shallow footings to below the zone of significant seasonal moisture fluctuation, (2) using a rigid mat foundation that is designed to resist the settlement and heave of expansive soil, or (3) blanketing the footprint of the building pad with non-expansive soil. We provide foundation recommendations in Section 5.0 of this report.

Successful performance of structures on expansive soil requires special attention during construction. It is imperative that exposed soil be kept moist prior to placement of concrete for foundation construction. It can be difficult to remoisturize clayey soil without excavation, moisture conditioning, and recompaction.

We also provide specific grading recommendations for compaction of clay soil at the site. The purpose of these recommendations is to reduce the swell potential of the clay by compacting the soil at a high moisture content and controlling the amount of compaction. Expansive soil mitigation recommendations are presented in Sections 4.0 and 5.0 of this report.

4.0 EARTHWORK RECOMMENDATIONS

The relative compaction and optimum moisture content of soil, rock, and aggregate base (AB) referred to in this report are based on the most recent ASTM D1557 test method. Compacted soil is not acceptable if it is unstable. It should exhibit only minimal flexing or pumping, as observed by a representative of our firm. As used in this report, the term "moisture condition" refers to adjusting the moisture content of the soil by either drying if too wet or adding water if too dry.

4.1 GENERAL DEMOLITION AND SITE CLEARING

Areas to be developed should be cleared of surface and subsurface deleterious materials, including existing building foundations, slabs, buried utility and irrigation lines, pavements, debris, and designated trees, shrubs, and associated roots. Excavations extending below planned finished site grades should be cleaned and backfilled with suitable material compacted to the recommendations presented in this report. We should be retained to observe and test backfilling operations. All existing undocumented fill, and soft, loose, or compressible soil in areas to be graded should be removed to competent native soil within the footprint of the buildings and laterally extending 5 feet beyond, as evaluated by our representative. Following clearing, the site should be stripped to remove surface organic materials. Strippings may be used in the landscape fill if considered suitable by the landscape architect and owner.

4.2 EXISTING FILL

As stated previously, existing fill was found up to 5 feet thick at the site, likely due to prior land development. Where existing fill is located within the limits of any buildings or structures, we recommend removing and recompacting existing fill material to competent native material below the building/structure subgrade. In any other improvement areas, the upper 24 inches at the base of the subexcavation or exposed subgrade should be scarified, moisture conditioned (as needed), and compacted in accordance with Section 4.7. If it is desired to leave existing fill in place without recompaction in areas to be developed with walkways or other improvements, minor distress/settlement should be expected, and additional maintenance should be anticipated in the future.

4.3 SLOPE STABILITY AND STABILIZATION MEASURES

As described in Sections 2.2 and 2.4, several of the slopes immediately above the proposed development have landslide deposits and scarps. Minor sloughing can be expected on the hillslopes to the west, as is indicated by the current presence of colluvium deposits.

To evaluate slope stability and remedial grading, we selected soil strength parameters for use in analyses based on field explorations and laboratory testing from previous and current studies. A summary of the strength parameters used in our slope stability analyses are presented below.

TABLE 4.3-1: Summary of Strength Parameters

MATERIAL	STRENGTH CONDITION	STRENGTH PARAMETERS	
		COHESION (psf)	FRICTION ANGLE (degrees)
Engineered Fill	Long Term (Effective Strength)	50	28
	Short Term (Total Strength)	50	28
Landslide Debris	Long Term (Effective Strength)	0	17
	Short Term (Total Strength)	200	19
Landslide Shear Plane	Long Term (Effective Strength)	0	15
	Short Term (Total Strength)	0	17
Undocumented Fill	Long Term (Effective Strength)	100	13
	Short Term (Total Strength)	1000	0
Colluvium and Alluvium Deposits	Long Term (Effective Strength)	100	25
	Short Term (Total Strength)	2000	0
Franciscan Bedrock	Long Term (Effective Strength)	2000	12
	Short Term (Total Strength)	5000	0

We performed limit equilibrium slope stability analyses for both static (long-term) and pseudo-static (short-term) conditions for proposed grading. We performed the analyses on Cross-Sections A-A' and B-B' using the computer program SLIDE Version 9.020 with circular surfaces.

We performed the static (long-term) and pseudo-static (short-term) slope stability analyses in general accordance with guidelines provided in the California Geological Survey's SP 117A (2008). A seismic coefficient (k) of 0.20g was used to model slope stability under seismic shaking conditions using the simplified methods of Blake et al. (2002). This seismic coefficient was developed using a PGA of 0.69g, a moment magnitude of 7.3, less than 10 km, and a threshold displacement of 15 centimeters (approximately 6 inches). The piezometric surface used in our analysis is based on groundwater levels obtained from previous explorations. The results of our stability analysis for the analyzed cross-sections show computed Factors of Safety (FOS) above 1.5 for long-term "static stability" and FOS above 1.0 for short-term "seismic stability". Based on the method used for evaluating seismic stability, we estimated seismic deformation along the project site to be less than the generally acceptable limits of less than 15 centimeters (6 inches) and will generally manifest outside the limits of grading. The estimated 6 inches of seismic displacement is an estimate only. According to SP117A, slopes with a pseudo-static stability factor greater than 1.0, considering a seismic coefficient determined based on a 6-inch displacement criterion, are considered stable and correspond to limited landslide movement and damage.

Based on the method used for evaluating seismic stability, we estimated seismic deformation along the project site to be less than the generally acceptable limits of less than 15 centimeters (6 inches) and will generally manifest outside the limits of grading. The estimated 6 inches of seismic displacement is an estimate only. According to SP117A, slopes with a pseudo-static stability factor greater than 1.0, considering a seismic coefficient determined based on a 6-inch displacement criterion, are considered stable and correspond to limited landslide movement and damage.

The generally accepted minimum factors of safety for static (long-term) and seismic (short-term) loading are 1.5 and 1.0, respectively. The resulting factors of safety for each cross-section are summarized in Table 4.3-2.

TABLE 4.3-2: Cross-section Factors of Safety

CROSS-SECTION	FAILURE DIRECTION	FACTOR OF SAFETY	
		STATIC	SEISMIC
A-A'	Left-To-Right	2.4	1.5
B-B'	Left-To-Right	2.1	1.2

4.4 REMEDIAL GRADING MEASURES

Slope stabilization measures will be required where building limits are adjacent to the mapped landslides as shown in Figure 2. Based on the VTM, a landslide repair will be required on the natural slopes of Valley Oak North to the northwest behind Lots 41, 42, and 43, and on the natural slope to the south adjacent to Lot 53. A remedial grading plan clarifying our geotechnical recommendations will be provided under separate cover once 40-scale project plans have been finalized.

4.4.1 Remove and Replace

The landslides may be repaired by constructing a keyway to remove and replace landslide debris with engineered fill using remedial grading measures with keyways and subdrains as described in Sections 4.4.4, 4.4.5, and 4.4.6. In remedial slope grading areas, the finished slope should be graded to approximately re-create the existing slope contours and to conform as much as possible with adjacent natural slopes.

All cut slopes should be viewed by the Engineering Geologist during slope grading for adverse bedding, seepage, or bedrock conditions that may affect slope stability. If adverse geologic conditions are detected during grading of the cut slopes, overexcavation and reconstruction of these slopes as fill slopes may be necessary. Track rolling to compact faces of slopes is not sufficient. Periodic maintenance may be required at the replaced landslide area to maintain buttress integrity.

4.4.2 Debris Catchments

As an alternative to removing and replacing landslide debris, catchment walls may be used along portions of the building pads on Lots 41, 42, 43 and 53 where they border adjacent slopes. Walls may not be required if pad grading provides a catchment space via rear yard slopes or retaining walls.

Debris catchment walls should be a minimum of 6 feet high for Lots 41 through 43, and 9 feet high for Lot 53. They should be designed in accordance with Section 7.1 for the level backfill condition. The final design of walls or catchments should be reviewed by ENGEO when detailed 40-scale project plans are prepared. All debris catchment walls, or designated catchment areas will require periodic maintenance, consisting of the removal and disposal of accumulated slope detritus. Proper access to the catchment areas behind walls should be provided for removal of slide debris and raveled material.

4.4.3 Creekbank Area

Provided structural setbacks are determined to be adequate and safe for planned development, geotechnical corrective grading for creek bank areas is not anticipated; however, slope stability and mitigation should be evaluated if development areas encroach deep creek bank areas.

4.4.4 Fill Slope Gradients

In general, cut and fill slopes should be constructed no steeper than 2:1 (horizontal:vertical). Steeper configurations are possible when reinforced with geogrid. Fill slope construction should include keyways, benching, and subdrainage (Figure 7). All cut slopes should be evaluated by a certified engineering geologist to evaluate cut slope stability. The contractor is responsible to construct temporary construction slopes in accordance with Cal/OSHA requirements.

4.4.5 Toe Keyways

Cut slopes and transition slopes are planned within the project site. We recommend constructing a keyway at the toe of fill slopes and reconstructed cut and cut-fill transition slopes. All fills should be adequately keyed into firm natural materials unaffected by shrinkage cracks. Construct a minimum 20-foot-wide key inward from the toe of the new slope. Extend the key at least 5 feet below original grade into firm competent soil/rock, as evaluated by us. Slope the key bottom at least 2 percent downward toward the heel of the key. We may recommend deeper keys based on actual soil/rock conditions observed during construction.

Slope keys or benches should be constructed above toe keys as filling progresses. Unless otherwise recommended by the geotechnical engineer, such keys should be placed at vertical height intervals of not less than 5 feet and should be excavated into firm competent soil or bedrock. The actual size of the keyways will be determined by the engineering geologist in the field during grading. Keyways will also be required at the toes of slopes where debris benches are required.

All keyway excavations should be examined and approved by the engineering geologist during grading for extents of landslide removal, adverse bedding, seepage, or bedrock conditions that may affect slope stability. If adverse geologic conditions are detected during grading, additional recommendations may be necessary. Typical minimum key sizes and typical keyway subdrains are shown in Figure 7.

4.4.6 Subdrains

Subsurface drainage systems should be installed in all keyways and in swales or natural drainage ways, which are to be filled. The approximate locations of the recommended subdrains should be shown on the final 40-scale grading plans.

Drainage courses, which are to be filled, should be provided with adequate subsurface drainage prior to placement of any fill. Swales should be cleaned to a firm soil or rock base. A subdrain should then be installed through the center of the subexcavation. Desiccated, cracked surface clay, and slumping soil located along the swale areas should be removed, and the slopes should be benched prior to the placement of fill. Actual limits of subexcavation should be determined in the field at the time of grading by the geotechnical engineer.

Additional subdrains should be added where seepage or wet conditions are encountered during excavation. Subdrain systems should consist of a minimum 6-inch-diameter perforated pipe encased in an 18-inch minimum thickness of Caltrans Class 2 permeable material or coarse rock wrapped in geotextile filter fabric. Typical subdrain details are shown in Figure 7.

Discharge from the subdrains will generally be low but in some instances may be continuous. Subdrains should outlet into the storm drain system or other approved outlets, and their locations should be documented for future maintenance.

4.5 COLLUVIUM REMOVAL

In general, compressible landslide debris and colluvium within the building limits should be removed. We recommend removing and recompacting existing landslide and colluvium material in the upper 3 feet below the building/structure subgrade, or as evaluated by our field representative. We anticipate that select areas will be removed during keyway construction and replaced by engineered fill.

4.6 PUMPING AND OVERLY WET SOIL CONDITIONS

Overly wet soil conditions, indicated by pumping, can result in difficulty during site grading work and unsatisfactory performance of improvements founded on this material. In our experience, we anticipate that excess moisture may be encountered below areas currently covered by blacktop. The contractor should also anticipate encountering excessively overly wet soil moisture conditions during winter or spring grading, or during or following periods of rain. In addition, wet soil conditions may be found when excavation depths approach groundwater depth. Wet soil can make proper compaction difficult or impossible. Wet soil conditions can be mitigated by:

1. Frequent spreading and mixing during warm dry weather,
2. Mixing with drier materials,
3. Mixing with a lime, lime-flyash, or cement product, or
4. Stabilizing with aggregate or geotextile stabilization fabric, or both.

4.7 ACCEPTABLE ENGINEERED FILL AND PLACEMENT

On-site soil and bedrock is suitable as fill material provided it is processed to remove concentrations of organic material (soil which contains more than 3 percent organic content by weight), debris, and particles greater than 8 inches in maximum dimension. We should be informed when imported materials are planned for the site. Imported soil fill materials for use as general fill or low-expansive import should meet the above requirements and have a plasticity index of less than 20, and at least 20 percent passing the No. 200 sieve. Alternatively, imported aggregate base or quarry fines is a suitable low-expansive import material. We should sample and test proposed imported soil fill materials at least 5 days prior to delivery to the site. Environmental sampling and testing of potential import soil sources should also be submitted to us for review.

After removal of any loose soil, the exposed non-yielding surface of areas to receive fill or to be left at grade, should be scarified to a depth of 12 inches, moisture conditioned, and recompacted to provide adequate bonding with the initial lift of fill. The loose lift thickness should not exceed 8 inches or the depth of penetration of the compaction equipment used, whichever is less. The following compaction control requirements should be applied to all fill, including backfill, except for landscape areas.

TABLE 4.7-1: Compaction Control Requirements

FILL LOCATION	MATERIAL TYPE	REQUIRED RELATIVE COMPACTION** (%)	MINIMUM MOISTURE CONTENT (percentage points above optimum)
General Fill	Expansive*	87 to 92	4
	Low-Expansive*	90	2
Pavement and Flatwork Subgrade*	Expansive*	90	4
	Low-Expansive*	95	1
Pavement and Flatwork Aggregate Base	Class 2 Aggregate Base	95	0

* Expansive: PI greater than 20
Non- to Low-Expansive: PI less than 20
** Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density of the same material.

4.7.1 Landscape Areas

The contractor should compact finish subgrade in accordance with recommendations in this report to a minimum relative compaction of 85 percent. We recommend that all site preparation, including demolition and stripping, be performed under the observation of our qualified field representative.

4.8 UNDERGROUND UTILITY BACKFILL

The contractor is responsible for conducting trenching and shoring in accordance with Cal/OSHA requirements. Project consultants involved in utility design should specify pipe-bedding materials. Exercise care where utility trenches are located beside foundation areas. Locate utility trenches constructed parallel to foundations entirely above a plane extending down from the lower edge of the footing at an angle of 45 degrees. Provide utility companies and landscape architects with this information.

Where utility trenches cross underneath buildings or cross perimeter building foundations, we recommend that a plug be placed within the trench backfill to prevent the normally granular bedding materials from acting as a conduit for water to enter beneath the building. The plug should be constructed using sand cement slurry (minimum 28-day compressive strength of 500 psi) or relatively impermeable native soil for pipe bedding and backfill. We recommend that the plug extend for a distance of at least 3 feet in each direction from the point where the utility enters the building perimeter.

Use well-graded import less than ¾ inch in maximum dimension for pipe zone backfill (i.e., material beneath and immediately surrounding the pipe). Use fine- to medium-grained sand or a well-graded mixture of sand and gravel for pipe zone backfill import material. Avoid using this material within 2 feet of finish grades. In general, avoid using uniformly graded gravel for pipe or trench zone backfill due to the potential for migration of: (1) soil into the relatively large void spaces present in this type of material; and (2) water along trenches backfilled with this type of material. Native soil for trench zone backfills (i.e., material placed between the pipe zone backfill and the ground surface) should be compacted in accordance with recommendations in Fill Placement in this report.

Jetting of backfill is not an acceptable means of compaction. We may allow thicker loose lift thicknesses, based on acceptable density test results, where increased effort is applied to rocky fill or for the first lift of fill over pipe bedding.

4.9 CUT/FILL TRANSITION OR CUT LOTS

Building pads constructed in cuts may encounter variably expansive subsurface conditions in the near-surface soil and rock; these pads may therefore be subject to damaging differential soil movements. Building pads that transition from cut to fill within the building pad area also can experience differential soil movements.

We recommend such building pads be reconstructed to create uniform subgrade conditions. This can be accomplished by subexcavating the soil on the building pads to a minimum depth of 3 feet below finished pad grade on cut lots or lots constructed over cut-and-fill transitions and replacing the subexcavated material with uniformly mixed compacted fill. The subexcavation should be performed over the entire flat pad area. Compacted fill used to replace subexcavated soil should be placed in accordance with Section 4.7. We present overexcavation recommendations in Section 4.10 to mitigate the effects of differential materials located under a structure.

4.10 DIFFERENTIAL FILL THICKNESS

Differential building movements may result from conditions where building pads have significant differentials in fill thickness. We recommend that the differential fill thickness across any lot be no greater than 10 feet. Local subexcavation of soil material and replacement with compacted fill may be needed to achieve this recommendation.

5.0 FOUNDATION RECOMMENDATIONS

Based on our experience and the anticipated building types, the proposed structures can be founded on a post-tensioned mat foundation given the seismic settlement that may occur and the presence of highly expansive soil. The following sections outline our recommendations for design of the anticipated foundation types.

5.1 POST-TENSIONED MAT FOUNDATIONS

The proposed residential structures may be supported on a post-tensioned (PT) mat foundation bearing on prepared native soil or engineered fill. PT mats may be designed for an average allowable bearing pressure of up to 1,000 pounds per square foot (psf) for dead-plus-live loads with maximum localized bearing pressures of 1,500 psf at column or wall loads. The allowable bearing pressures can be increased by one-third for wind or seismic loads. PT mats should be designed using the criteria presented in Table 5.1-1 below.

TABLE 5.1-1: Post-Tensioned Mat Design Recommendations

CONDITION	CENTER LIFT	EDGE LIFT
Edge Moisture Variation Distance, e_m (feet)	7.8	4.4
Differential Soil Movement, y_m (inches)	1.5	2.3

The above values are based on the procedure presented by the Post-Tensioning Institute “Design of Post-Tensioned Slabs-on-Ground” Third Edition, including appropriate addenda (2013). PT mats should be underlain with a moisture reduction system as recommended in Section 5.2. In addition, moisture conditioning of the building foundation subgrade should be to a moisture content at least 3 percentage points above optimum immediately prior to foundation construction. The subgrade should not be allowed to dry prior to concrete placement. We also recommend that we be retained to observe the pre-pour moisture conditions to check that our report recommendations have been followed.

5.2 FOUNDATION SUBGRADE MOISTURE VAPOR REDUCTION

When buildings are constructed with concrete slab-on-grade floors, including PT mats, water vapor from beneath the slab will migrate through the slab and into the building. This water vapor can be reduced but not stopped. Vapor transmission can negatively affect floor coverings and lead to increased moisture within a building. When water vapor migrating through the slab would be undesirable, we recommend the following to reduce, but not stop, water vapor transmission upward through the slab-on-grade.

1. A moisture retarder system should be constructed directly beneath the slab-on-grade that consists of the following.

    a. Vapor retarder membrane sealed at all seams and pipe penetrations and connected to all footings. Vapor retarders should conform to Class A vapor retarder in accordance with ASTM E 1745, latest edition, “Standard Specification for Plastic Water Vapor Retarders used in Contact with Soil or Granular Fill under Concrete Slabs.” The vapor retarder should be **underlain by**

    b. 4 inches of clean crushed rock to act as a capillary break. Crushed rock should have 100 percent passing the ¾-inch sieve and less than 5 percent passing the No. 4 sieve. If a PT mat is used, this capillary break may be omitted.

2. Concrete should have a concrete water-cement ratio of no more than 0.50.
3. Inspection and testing should be performed during concrete placement to check that the proper concrete and water cement ratio are used.
4. The slab should be moist cured for a minimum of 3 days or use of other equivalent curing specified by the structural engineer should be implemented.

The structural engineer should be consulted as to the use of a layer of clean sand or pea gravel (less than 5 percent passing the U.S. Standard No. 200 Sieve) placed on top of the vapor retarder membrane to assist in concrete curing. If a sand or pea gravel is used above the vapor retarder membrane along with a PT mat, the edge of the mat should be thickened to cut off water getting in between the slab and the membrane. The thickened edge should be as thick as the sand or pea gravel layer and at least 12 inches wide.

5.3 2022 CBC SEISMIC DESIGN PARAMETERS

Based on the subsurface conditions encountered in our explorations and seismic shear-wave data, we characterize the site as Site Class C in accordance with the 2022 CBC. We provide the CBC seismic parameters based on the United States Geological Survey's (USGS) Seismic Design Maps in Table 5.3-1.

TABLE 5.3-1: 2022 CBC Seismic Design Parameters, Latitude: 38.0247° Longitude: -121.8674°

PARAMETER	VALUE
Site Class	C
Mapped MCE_R Spectral Response Acceleration at Short Periods, S_S (g)	1.5
Mapped MCE_R Spectral Response Acceleration at 1-second Period, S_1 (g)	0.6
Site Coefficient, F_a	1.2
Site Coefficient, F_v	1.4
MCE_R Spectral Response Acceleration at Short Periods, S_{MS} (g)	1.8
MCE_R Spectral Response Acceleration at 1-second Period, S_{M1} (g)	0.84
Design Spectral Response Acceleration at Short Periods, S_{DS} (g)	1.2
Design Spectral Response Acceleration at 1-second Period, S_{D1} (g)	0.56
MCE_G Peak Ground Acceleration adjusted for Site Class effects, PGA_M (g)	0.69
Long period transition-period, T_L (sec)	12

5.4 SECONDARY SLABS-ON-GRADE

Secondary slabs-on-grade should be designed specifically for their intended use and loading requirements. Cracking of conventional slabs should be expected due to concrete shrinkage. Slabs-on-grade should be reinforced for control of cracking, and frequent control joints should be provided to control the cracking. Reinforcement should be designed by the structural engineer. In our experience, welded wire mesh may not be sufficient to control slab cracking. As a minimum, we recommend secondary slabs-on-grade should be reinforced with No. 3 bars spaced 18 inches on center each way.

Secondary slabs-on-grade should have a minimum thickness of 4 inches. The City of Novato may have different requirements within their right-of-way. If desired to further reduce the effects of expansive soil, exterior slabs can be constructed with thickened edges extending at least beneath the granular material into compacted soil to reduce water infiltration. Slabs should slope away from the buildings at a slope of at least 2 percent to prevent water from flowing toward the building.

6.0 RETAINING WALLS

6.1 SOIL PRESSURES

Unrestrained walls constructed on level and sloped foreground should be designed for active lateral fluid pressure as provided below.

TABLE 6.1-1: Active Earth Pressure

BACKFILL SLOPE CONDITION	ACTIVE PRESSURE (pcf)
Level	50
4:1	55
3:1	60
2:1	70

Passive pressures acting on foundations and keyways may be assumed as 350 pounds per cubic foot (pcf) provided that the area in front of the retaining wall is level for a distance of at least 10 feet or three times the depth of foundation and keyway, whichever is greater. The upper 1 foot of soil should be excluded from passive pressure computations unless it is confined by pavement or a concrete slab. The friction factor for sliding resistance may be assumed as 0.30.

The above lateral earth pressures assume level backfill conditions and sufficient drainage behind the walls to prevent any build-up of hydrostatic pressures from surface water infiltration and/or a rise in the groundwater level. If adequate drainage is not provided, we recommend that an additional equivalent fluid pressure of 40 pcf be added to the values recommended above for both restrained and unrestrained walls. Damp-proofing of the walls should be included in areas where wall moisture would be problematic.

Seismic conditions also need to be considered in the design of any unrestrained walls greater than 6 feet in height. Under seismic conditions, the active incremental seismic force along the face of a retaining wall should be added to the static active pressures and can be calculated as follows.

$$\Delta P = 14 \times H^2 \text{ (level backfill slope)}$$

H is the design height of the wall (in feet) and ΔP is the active incremental seismic force in pounds per foot of the wall. This force has a horizontal direction and should be applied at 0.3 x H from the base of the wall. Since seismic loading requires soil movement, the evaluation of the seismic case should consist of adding the seismic increment to the active soil pressure for all wall types. If retaining walls greater than 6 feet in height are planned with sloping backfill conditions, we can provide active incremental seismic forces upon request.

6.2 RETAINING WALL FOOTINGS

The site retaining walls can be supported on spread footings. Passive pressures acting on foundations and keyways may be assumed as 375 pcf provided that the area in front of the retaining wall is level for a distance of at least 10 feet or three times the depth of foundation and keyway, whichever is greater. The upper 1 foot of soil should be excluded from passive pressure computations unless it is confined by pavement or a concrete slab.

The friction factor for sliding resistance may be assumed as 0.30. It is recommended that retaining wall footings be designed using an allowable bearing pressure of 3,000 psf in firm native materials or fill. The footings should be at least 36 inches below lowest adjacent grades.

For walls located within 10 feet from the top of downhill slope, the retaining wall should be extended to a depth measuring horizontally at least 10 feet to the slope face.

6.3 RETAINING WALL DRAINAGE

Either graded rock drains or geosynthetic drainage composites should be constructed behind the retaining walls to reduce hydrostatic lateral forces. For rock drain construction, we recommend two types of rock drain alternatives.

1. A minimum 12-inch-thick layer of Class 2 Permeable Filter Material (Caltrans Specification 68-2.02F) placed directly behind the wall, or
2. A minimum 12-inch-thick layer of washed, crushed rock with 100 percent passing the ¾-inch sieve and less than 5 percent passing the No. 4 sieve. Envelop rock in a minimum 6-ounce, nonwoven geotextile filter fabric.

For both types of rock drains:

1. The rock drain should be placed directly behind the walls of the structure.
2. The rock drains should extend from the wall base to within 12 inches of the top of the wall.
3. A minimum of 4-inch-diameter perforated pipe (glued joints and end caps) should be placed at the base of the wall, inside the rock drain and fabric, with perforations placed down.
4. The pipe should be placed at a gradient at least 1 percent to direct water away from the wall by gravity to a drainage facility.

We should review and approve geosynthetic composite drainage systems prior to use.

6.4 BACKFILL

Backfill behind the retaining walls should be placed and compacted in accordance with Section 4.7. Use light compaction equipment within 5 feet of the wall face. If heavy compaction equipment is used, the walls should be temporarily braced to avoid excessive wall movement.

7.0 PAVEMENT DESIGN

7.1 FLEXIBLE PAVEMENT

Based on our experience with the soil in the vicinity of the site, it is our opinion that a preliminary R-value of 5 is applicable for design. Using estimated Traffic Indices for various pavement loading requirements, we developed the following recommended pavement sections using Topic 633 of the 2019 Caltrans Highway Design Manual (including the asphalt factor of safety), presented in the table below.

TABLE 7.1-1: Recommended Asphalt Concrete Pavement Sections

TRAFFIC INDEX	ASPHALT CONCRETE (inches)	CLASS 2 AGGREGATE BASE (inches)
5	3	10
6	3½	13
7	4	16
8	5	18

Note: Class 2 AB material with a minimum R-value of 78

The civil engineer should determine the appropriate traffic indexes based on the estimated traffic loads and frequencies. These sections are for estimating purposes only. Actual sections to be used should be based on R-value tests performed on samples of actual subgrade materials recovered at the time of grading. Pavement construction and all materials should comply with the requirements of the Standard Specifications of the State of California Department of Transportation, civil engineer, and appropriate public agency.

7.2 RIGID PAVEMENT

Concrete pavement sections can be used to resist heavy loads and turning forces in areas such as fire lanes or trash enclosures. Final design of rigid pavement sections, and accompanying reinforcement, should be performed based on estimated traffic loads and frequencies. We recommend the following minimum design sections for rigid pavements.

- A minimum section of 6 inches of Portland Cement concrete should be used over 6 inches of Caltrans Class 2 AB.
- Concrete pavement should have a minimum 28-day compressive strength of 3,500 psi.
- Control joint spacing should be in accordance with Portland Cement Association guidelines.

7.3 CUTOFF CURBS

Overly wet pavement subgrade or AB can cause premature failure or increased maintenance of asphalt concrete pavements. This condition often occurs where landscape areas directly abut and drain toward pavements. If desired to install pavement cutoff barriers, they should be considered where pavement areas lie downslope of any landscape areas that are to be sprinklered or irrigated and should extend to a depth of at least 4 inches below the baserock layer. Cutoff barriers may consist of deepened concrete curbs or deep-root moisture barriers.

If reduced pavement life and greater than normal pavement maintenance is acceptable to the owner, then the cutoff barrier may be eliminated.

7.4 PAVEMENT SUBGRADE PREPARATION

Finished subgrade and AB should be compacted in accordance with Section 4.7. AB should meet the requirements for ¾-inch maximum Class 2 AB in accordance with Section 26-1.02B of the latest Caltrans Standard Specifications.

7.5 SURFACE DRAINAGE

The project civil engineer is responsible for designing surface drainage improvements. Regarding geotechnical engineering issues, we recommend that finish grades be sloped away from buildings and pavements to the maximum extent practical to reduce the potentially damaging effects of expansive soil. The latest California Building Code Section 1804.4 specifies minimum slopes of 5 percent away from foundations. Where lot lines or surface improvements restrict meeting this slope requirement, we recommend that specific drainage requirements be developed. As a minimum, we recommend the following.

1. Roof downspouts should discharge into closed conduits and direct away from foundations to appropriate drainage devices.
2. Water should not be allowed to pond near foundations, pavements, or exterior flatwork.

7.6 STORMWATER INFILTRATION AND BIORETENTION

We encountered moderately to highly expansive clay near the ground surface. Thus, the existing site soil is not expected to have adequate permeability for stormwater infiltration, unless subdrains are installed. We recommend assuming little stormwater infiltration will occur through the existing site soil.

If bioretention areas are implemented, we recommend that, when practical, they be planned a minimum of 5 feet away from property lines and structural site improvements, such as buildings, streets, retaining walls, and sidewalks/driveways. When this is not practical, bioretention areas located within 5 feet of structural site improvements can either:

1. Be constructed with structural side walls capable of withstanding the loads from the adjacent improvements, or
2. Incorporate filter material compacted to between 85 and 90 percent relative compaction (ASTM D1557, latest edition) and a waterproofing system designed to reduce the potential for moisture transmission into the subgrade soil beneath the adjacent improvement.

In addition, site improvements located adjacent to bioretention areas that are underlain by baserock, sand, or other imported granular materials, should be designed with a deepened edge that extends to the bottom of the imported material underlying the improvement.

Where adjacent site improvements include buildings greater than three stories, streets steeper than 3 percent, or design elements that will experience lateral loads (such as from impact or traffic), additional design considerations may be required. In addition, although not recommended, if trees are to be planted within bioretention areas, HDPE Tree Boxes that extend below the bottom of the bioretention system should be installed to reduce potential impact to subdrain systems that may be part of the bioretention area design. For this condition, the waterproofing system should be connected to the HPDE Tree Box with a waterproof seal.

Given the nature of bioretention systems and possible proximity to improvements, we recommend that we be retained to review design plans and provide testing and observation services during the installation of linings, compaction of the filter material, and connection of designed drains.

It should be noted that the contractor is responsible for conducting all excavation and shoring in a manner that does not cause damage to adjacent improvements during construction and future maintenance of the bioretention areas. As with any excavation adjacent to improvements, the contractor should minimize the exposure time such that the improvements are not detrimentally impacted.

7.7 LANDSCAPING CONSIDERATION

As the near-surface soil is highly expansive, we recommend greatly restricting the amount of surface water infiltration near structures, pavements, flatwork, and slabs-on-grade. This may be accomplished by:

- Selecting landscaping that requires little or no watering, especially within 3 feet of structures, slabs-on-grade, or pavements.
- Using low precipitation sprinkler heads.
- Regulating the amount of water distributed to lawn or planter areas by installing timers on the sprinkler system.
- Providing surface grades to drain rainfall or landscape watering to appropriate collection systems and away from structures, slabs-on-grade, or pavements.
- Preventing water from draining toward or ponding near building foundations, slabs-on-grade, or pavements.
- Avoiding open planting areas within 3 feet of the building perimeter.

We recommend that these items be incorporated into the landscaping plans.

8.0 CONSTRUCTION MONITORING

Our experience and that of our profession clearly indicate that the risk of costly design, construction, and maintenance problems can be significantly lowered by retaining the design geotechnical engineering firm to:

1. Review the final grading and foundation plans and specifications prior to construction to evaluate whether our recommendations have been implemented, and to provide additional or modified recommendations, as needed. This also allows us to check if any changes have occurred in the nature, design, or location of the proposed improvements and provides the opportunity to prepare a written response with updated recommendations.
2. Perform construction monitoring to check the validity of the assumptions we made to prepare this report. Earthwork operations should be performed under the observation of our representative to check that the site is properly prepared, the selected fill materials are satisfactory, and that placement and compaction of the fills has been performed in accordance with our recommendations and the project specifications. Sufficient notification to us prior to earthwork is important.

If we are not retained to perform the services described above, then we are not responsible for any party's interpretation of our report (and subsequent addenda, letters, and verbal discussions).

9.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

This report presents geotechnical recommendations for design of the proposed residential development located in Novato, California. If changes occur in the nature or design of the project, we should be allowed to review this report and provide additional recommendations, if any. It is the responsibility of the owner to transmit the information and recommendations of this report to the appropriate organizations or people involved in design of the project, including but not limited to developers, owners, buyers, architects, engineers, and designers. The conclusions and recommendations contained in this report are solely professional opinions and are valid for a period of no more than 2 years from the date of report issuance.

We strived to perform our professional services in accordance with generally accepted principles and practices currently employed in the area; there is no warranty, express or implied. There are risks of earth movement and property damages inherent in building on or with earth materials. We are unable to eliminate all risks; therefore, we are unable to guarantee or warrant the results of our services.

This report is based upon field and other conditions discovered at the time of report preparation. We developed this report with limited subsurface exploration data. We assumed that our subsurface exploration data are representative of the actual subsurface conditions across the site. Considering possible underground variability of soil and groundwater, additional costs may be required to complete the project. We recommend that the owner establish a contingency fund to cover such costs. If unexpected conditions are encountered, we must be notified immediately to review these conditions and provide additional and/or modified recommendations, as necessary.

If any hazardous materials are encountered during construction, the proper regulatory officials must be notified immediately.

SELECTED REFERENCES

American Concrete Institute (ACI). 2014. Building Code Requirements for Structural Concrete (ACI 318-14). ACI Committee 318 Structural Building Code.

American Society of Civil Engineers (ASCE). 2016. Minimum Design Loads for Buildings and Other Structures, ASCE Standard, ASCE/SEI 7-16.

Boulanger, R. W., & Idriss, I. M. 2008. Soil liquefaction during earthquake. Engineering monograph, EERI, California, USA, 266.

Bryant, W. A., & Hart, E. W. 2007. Fault-Rupture Hazard Zones in California: Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps. California Geological Survey Special Publication 42, 41.

California Building Code. 2019.

California Department of Transportation (Caltrans). 2018. Highway Design Manual

Cooper-Clark and Associates. 1978. Preliminary Geotechnical Investigation, Proposed 54-acre Industrial Development, Nunes Ranch, Novato, California. July 7, 1978. Project No. 1950-C.

ENGEO. San Marin Area E Deformation Analysis, Novato, California. January 27, 2020. Project No. 15401.001.000.

ENGEO. Geotechnical Hazards and Planned Development, Valley Oaks, Novato, California. May 1, 2021, Revised May 12, 2021. Project No. 15401.001.000.

Herzog & Associates. Geotechnical Investigation, San Marin Commerce Park, Novato, California; April 28, 1982. Job No. 134.41.

Herzog Geotechnical Consulting Engineers. 2001. Geotechnical Review, Deformation Analyses, San Marin Business Park, Area E Novato, California. October 24, 2001.

Kleinfelder. 1999. Geotechnical investigation, Office and Hotel Project, Eastern Portions of Parcel Adjacent to Redwood Boulevard, Novato, California. March 9, 1999.; Job No. 41-7475-01.

Kleinfelder. 1998. Preliminary Geologic Investigation, Parcels 1 and 2, Wood Hollow Drive and Redwood Boulevard, Novato, California. September 24, 1998. Project No. 41-7449-01.

Kleinfelder. 1999. Final Geotechnical Investigation, Office Building Project, Corner of Wood Hollow Drive and Redwood Boulevard, Novato, California. January 20, 1999. Project No. 41-7449-03.

Kleinfelder. 2001. Deformation Analyses, Area E, San Marin Business Park, Redwood Boulevard, Novato, California. October 19, 2001. Project No. 41-7449-02.

Mikola, R.G., Candia, G., and Sitar, N. 2013. Seismic Earth Pressures on Retaining Structures and Basement Walls. 10th U.S. National Conference on Earthquake Geotechnical Engineering. Anchorage, Alaska.

SELECTED REFERENCES (Continued)

National Association of Corrosion Engineers. 2006. Corrosion Basics an Introduction.

Portland Cement Association. 1995. Thickness Design for Concrete Highway and Street Pavements. 1984, reprinted in 1995.

Post-Tensioning Institute. 2004. Design of Post-Tensioned Slabs-on-Ground, Third Edition.

Seed, R.B., et al. 2003. Recent Advances in Soil Liquefaction Engineering: A Unified and Consistent Framework, Earthquake Engineering Research Center, Report No. EERC 2003-06. University of California, Berkeley.

Structural Engineers Association of California (SEAOC). 1999. Recommended Lateral Force Requirements and Commentary (Blue Book).

Upp Geotechnology, Inc. 2000. Summary of Observations, Supplemental Geotechnical Investigation, Area E, San Marin Business Park, Redwood Boulevard, Novato, California. November 7, 2000. Project No. 2258.1L1.

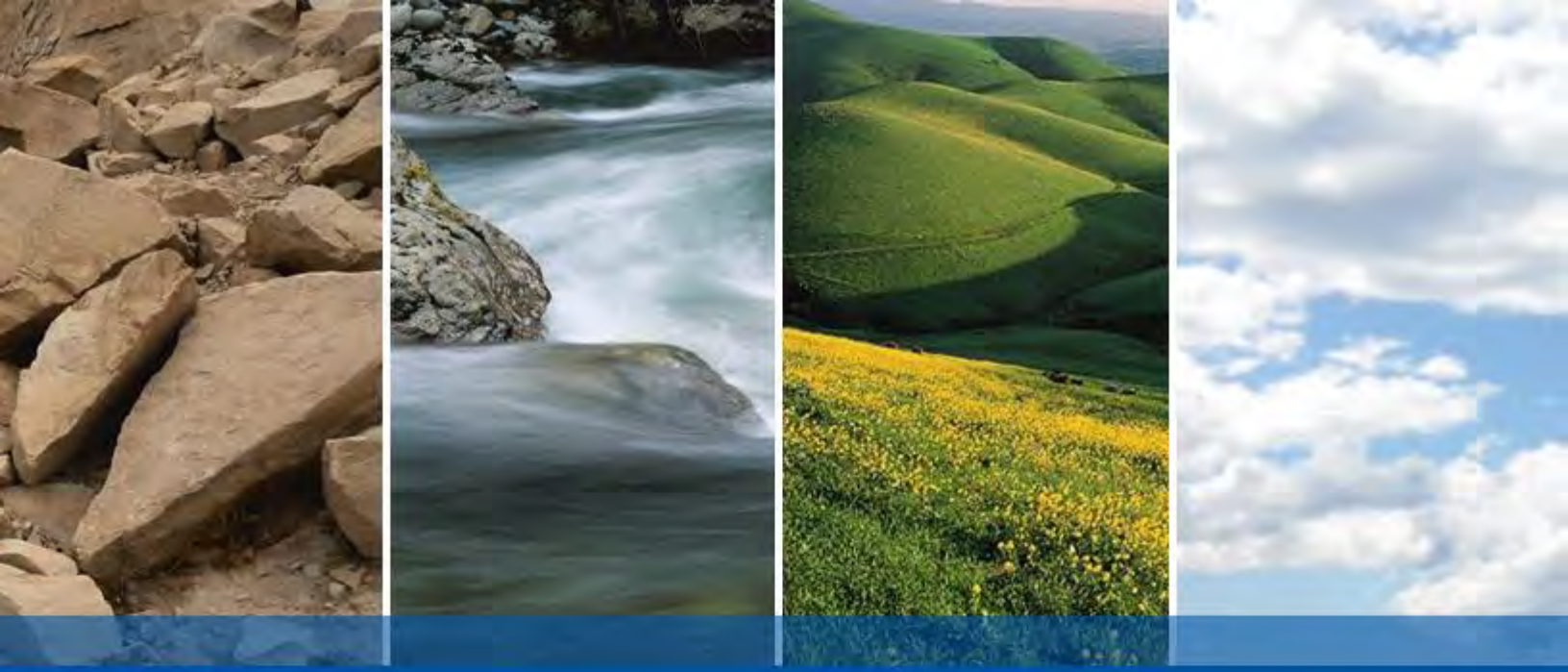
Wagner, D.L., Rice, S.R., Bezore, S., Randolph-Loar, C.E., Allen, J., and Witter, R.C. 2002. Geologic Map of the Petaluma River 7.5' Quadrangle, Marin and Sonoma Counties, California: A Digital Database. California Geologic Survey

Working Group on California Earthquake Probabilities (WGCEP). 2017. A Spatiotemporal Clustering Model for the Third Uniform California Earthquake Repture Forecast (UCERF3_ETAS): Toward an Operational Earthquake Forecast; Bulletin of the Seismological Society of America (2017) 107 (3): pg. 1049-1081.

United States Geological Survey (USGS), Unified Hazard Tool,

https://earthquake.usgs.gov/hazards/interactive/

Youd, T. L. and I. M. Idriss. 2001. Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER and 1998 NCEER/NSF Workshop on Evaluation of Liquefaction Resistance of Soils.



FIGURES

FIGURE 1 – Vicinity Map
FIGURE 2 – Geologic Site Plan
FIGURE 3 – Cross Sections A-A' through C-C'
FIGURE 4 – Regional Geologic Map
FIGURE 5 – Seismic Hazards Zone Map
FIGURE 6 – Regional Faulting and Seismicity Map
FIGURE 7 – Typical Subdrain and Keyway Details



BASEMAP SOURCE: GOOGLE EARTH MAPPING SERVICE, 2021

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VICINITY MAP

VALLEY OAKS

NOVATO, CALIFORNIA

PROJECT NO. :	15401.002.000
SCALE:	AS SHOWN
DRAWN BY: JV	CHECKED BY: TPB

FIGURE NO. 1

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LAYOUT: VICINITY USER: LLEE

ORIGINAL FIGURE PRINTED IN COLOR



EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- 2-TP14 — TEST PIT (ENGEO, 2020)
- TP-15 — TEST PIT (HERZOG, 1982)
- 3-B7 — BORING (ENGEO, 2022)
- B-8 — BORING (HERZOG, 1982)
- B-23 — BORING (CLARK COOPER, 1978)
- C — C' — CROSS SECTION

- Qc — RECENT COLLUVIAL DEPOSITS
- Qal — RECENT ALLUVIAL CHANNEL DEPOSITS
- Qoa — UNDIFFERENTIATED ALLUVIAL TERRACE DEPOSITS
- Qls — LANDSLIDE DEPOSIT
- Qols — OLDER LANDSLIDE
- Qaf — ARTIFICIAL FILL
- Kjf — FRANCISCAN BEDROCK
- — — — GEOLOGIC CONTACT

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FEET

BASE MAP SOURCE: CW/ST2, 2022

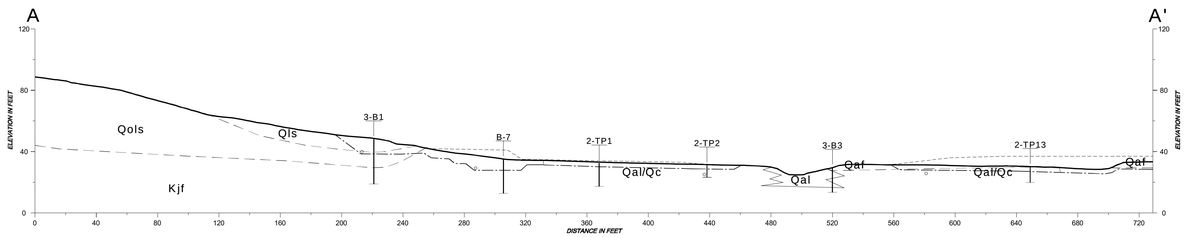
ENGEO Expect Excellence

GEOLOGIC SITE PLAN
VALLEY OAKS
NOVATO, CALIFORNIA

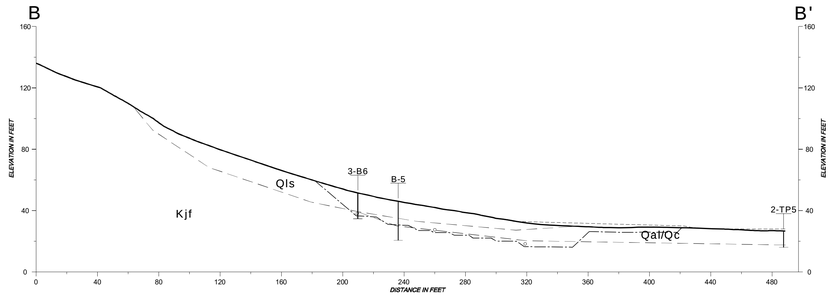
PROJECT NO.: 15401.002.000 | FIGURE NO. 2
SCALE: AS SHOWN
DRAWN BY: JV | CHECKED BY: TPB

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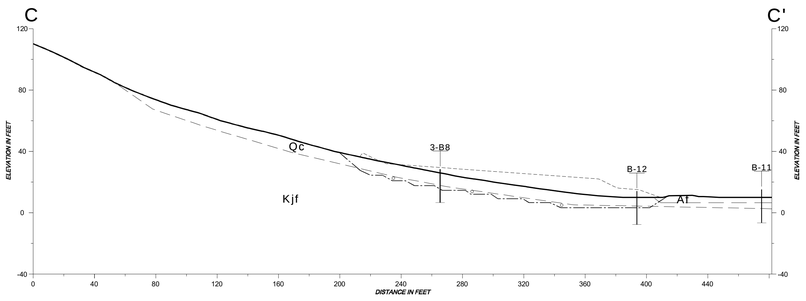
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SECTION A-A'
1"=40'



SECTION B-B'
1"=40'



SECTION C-C'
1"=40'



EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- Qc RECENT COLLUVIAL DEPOSITS
- Qal RECENT ALLUVIAL CHANNEL DEPOSITS
- Qoa UNDIFFERENTIATED ALLUVIAL TERRACE DEPOSITS
- 3-B1 BORING
- B-3 TEST PIT
- Qls LANDSLIDE DEPOSIT
- Qaf ARTIFICIAL FILL
- Kjf FRANCISCAN BEDROCK

ENGEO — Expect Excellence

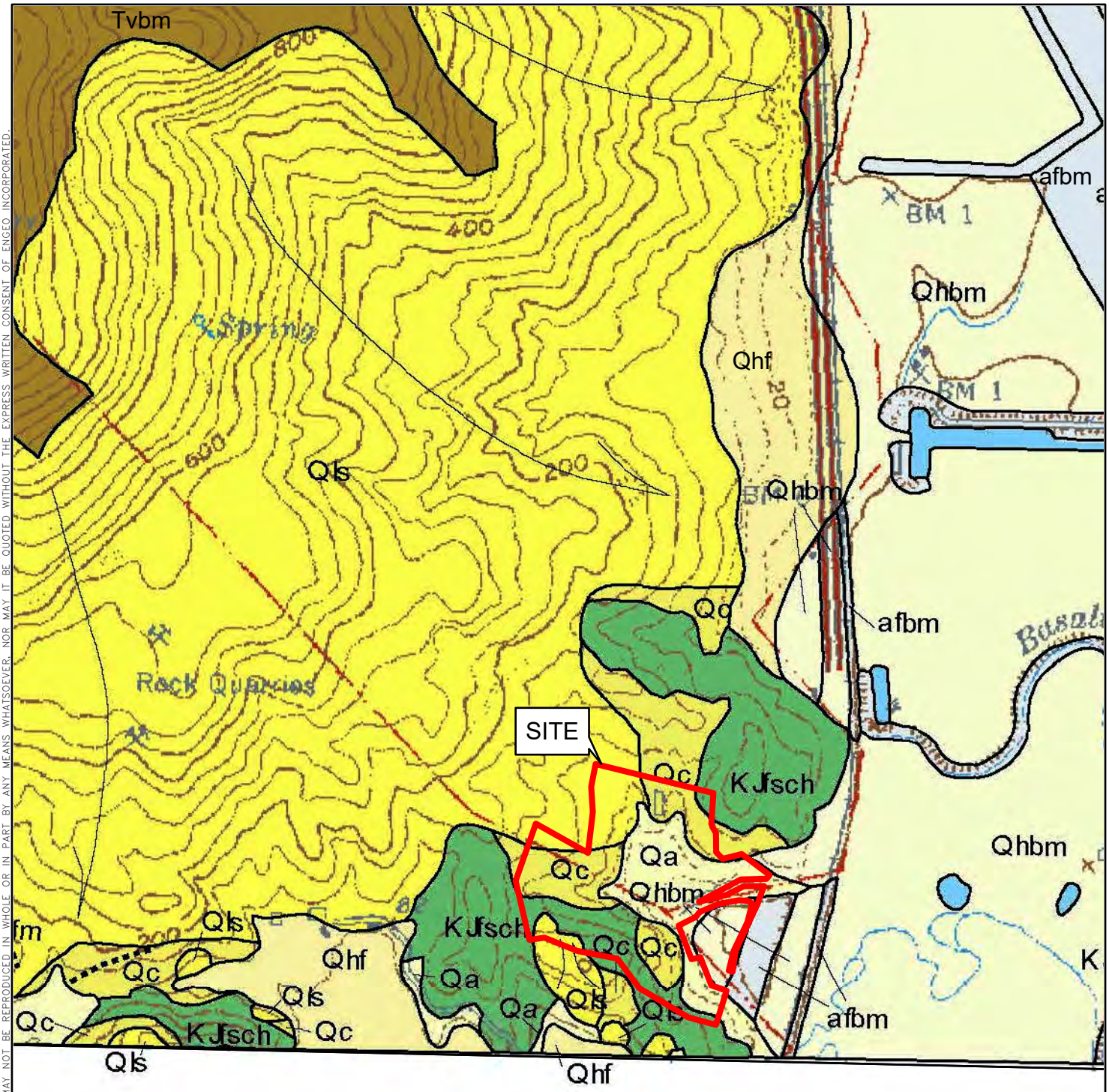
CROSS SECTION
VALLEY OAKS
NOVATO, CALIFORNIA

PROJECT NO.: 15401.002.000
SCALE: AS SHOWN
DRAWN BY: JV
CHECKED BY: TPS

FIGURE NO. 3

ORIGINAL FIGURE PRINTED IN COLOR

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EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

afbm	ARTIFICIAL FILL PLACED OVER BAY MUD
Qhbm	HOLOCENE (<10,000 YEARS) BAY MUD
Qhf	HOLOCENE ALLUVIAL FAN DEPOSITS
Qa	LATEST PLEISTOCENE TO HOLOCENE ALLUVIUM, UNDIVIDED
Qc	COLLUVIUM
Qls	LANDSLIDES
Tvbm	VOLCANIC ROCKS OF BURDELL MOUNTAIN
Kjfsch	FRANCISCAN COMPLEX SCHIST, PHYLLITE, AND SEMISCHIST

N

0 500 1,000

FEET

BASEMAP SOURCE: WAGNER, 2022

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REGIONAL GEOLOGIC MAP

VALLEY OAKS

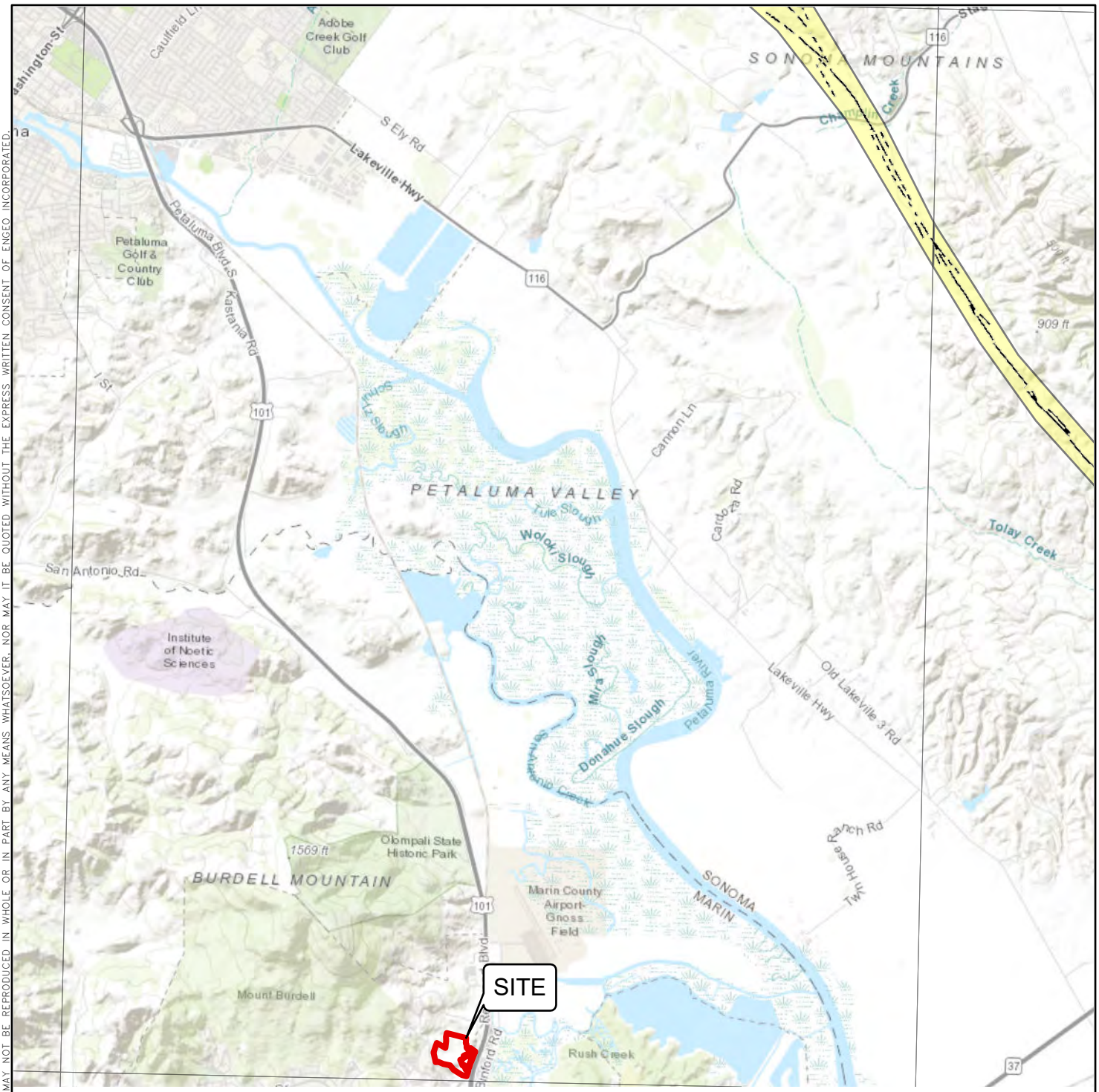
NOVATO, CALIFORNIA

PROJECT NO. :	15401.002.000
SCALE:	AS SHOWN
DRAWN BY: JV	CHECKED BY: TPB

FIGURE NO. 4

PATH: \\ENGEO.COM\FILES\DRAFTING\PROJECTS_14000 TO 15999\15401\15401002000\GEOTECH\GEX\15401002000_GEX.APRX
LAYOUT: GEOLOGIC USER: LLEE

ORIGINAL FIGURE PRINTED IN COLOR



EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- ACCURATELY LOCATED
- INFERRED
- APPROXIMATELY LOCATED
- CONCEALED

EARTHQUAKE FAULT ZONE
ZONE BOUNDARIES ARE DELINEATED BY STRAIGHT-LINE SEGMENTS; THE BOUNDARIES DEFINE THE ZONE ENCOMPASSING ACTIVE FAULTS THAT CONSTITUTE A POTENTIAL HAZARD TO STRUCTURES FROM SURFACE FAULTING OR CREEP SUCH THAT AVOIDANCE AS DESCRIBED IN PUBLIC RESOURCES CODE SECTION 2621.5(A) WOULD BE REQUIRED

N

0 3,000 6,000

FEET

BASEMAP SOURCE: ESRI MAPPING SERVICE
CALIFORNIA DEPARTMENT OF CONSERVATION, CALIFORNIA GEOLOGICAL SURVEY

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SEISMIC HAZARDS ZONE MAP

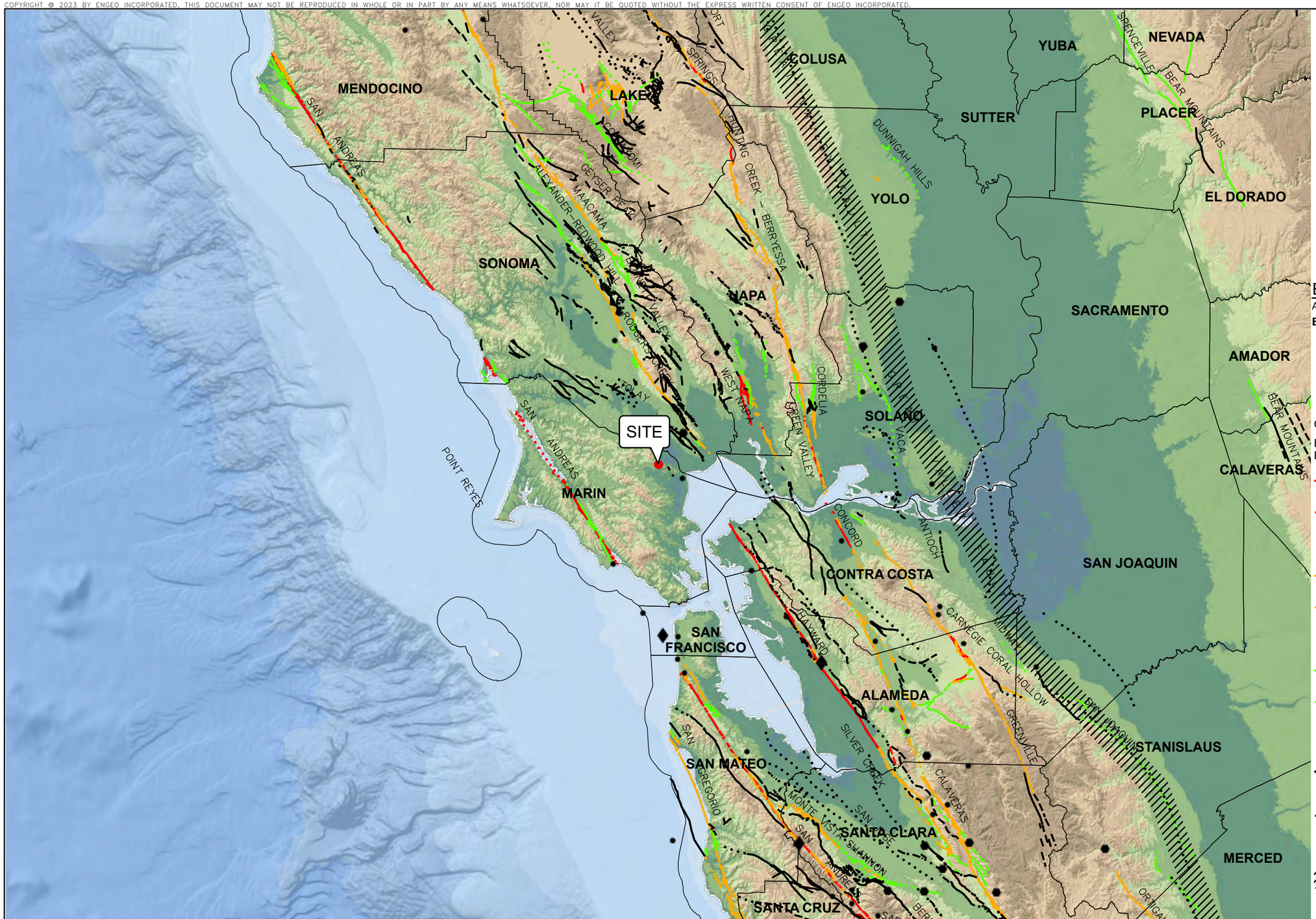
VALLEY OAKS

NOVATO, CALIFORNIA

PROJECT NO. :	15401.002.000
SCALE:	AS SHOWN
DRAWN BY: JV	CHECKED BY: TPB

FIGURE NO. 5

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EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

EARTHQUAKE

- MAGNITUDE 7+
- MAGNITUDE 6-7
- MAGNITUDE 5-6

QUATERNARY FAULTS

BASED ON TIME OF MOST RECENT SURFACE DEFORMATION

- HISTORICAL (<150 YEARS), WELL CONSTRAINED LOCATION
- HISTORICAL (<150 YEARS), MODERATELY CONSTRAINED LOCATION
- HISTORICAL (<150 YEARS), INFERRED LOCATION
- LATEST QUATERNARY (<15,000 YEARS), WELL CONSTRAINED LOCATION
- LATEST QUATERNARY (<15,000 YEARS), MODERATELY CONSTRAINED LOCATION
- LATEST QUATERNARY (<15,000 YEARS), INFERRED LOCATION
- LATE QUATERNARY (<130,000 YEARS), WELL CONSTRAINED LOCATION
- LATE QUATERNARY (<130,000 YEARS), MODERATELY CONSTRAINED LOCATION
- LATE QUATERNARY (<130,000 YEARS), INFERRED LOCATION
- UNDIFFERENTIATED QUATERNARY(<1.6 MILLION YEARS), WELL CONSTRAINED LOCATION
- UNDIFFERENTIATED QUATERNARY(<1.6 MILLION YEARS), MODERATELY CONSTRAINED LOCATION
- UNDIFFERENTIATED QUATERNARY(<1.6 MILLION YEARS), INFERRED LOCATION
- GREAT VALLEY FAULT ZONE

BASE MAP SOURCE
ESRI, GEBCO, DELORME, NATURALVUE
COLOR HILLSHADE IMAGE BASED ON THE NATIONAL ELEVATION DATA SET (NED) AT 30 METER RESOLUTION
U.S.G.S. QUATERNARY FAULT DATABASE, 2020
U.S.G.S. HISTORIC EARTHQUAKE DATABASE (1800-PRESENT)
U.S.G.S OPEN-FILE REPORT 96-705

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REGIONAL FAULTING AND SEISMICITY

VALLEY OAKS

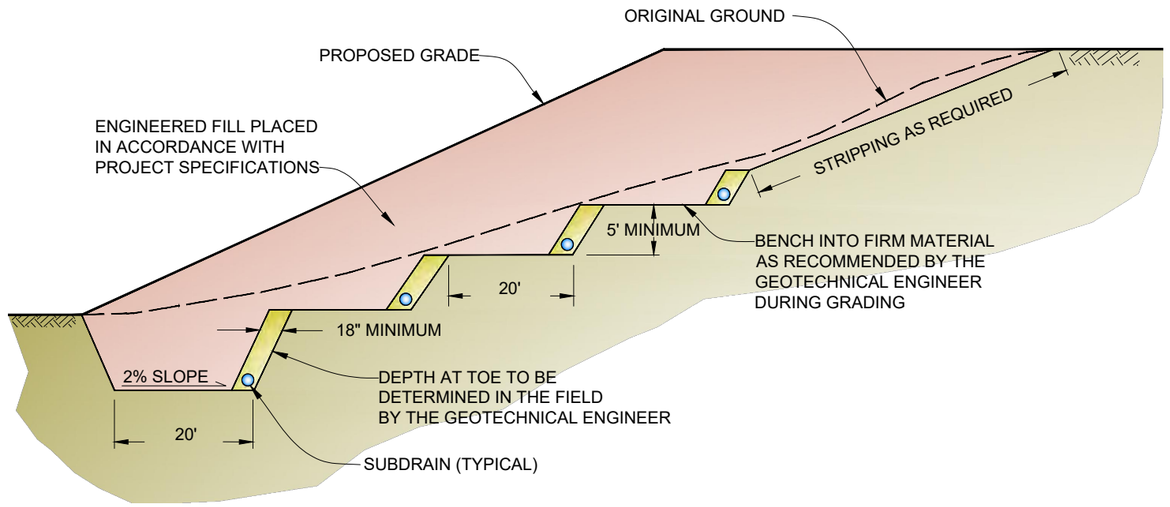
NOVATO, CALIFORNIA

PROJECT NO. : 15401.002.000	FIGURE NO. 6
SCALE: AS SHOWN	
DRAWN BY: JV	CHECKED BY: TPB

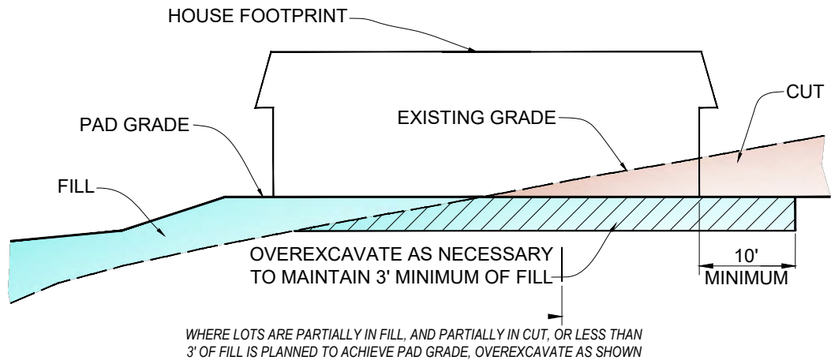
PATH: \\ENGEO.COM\FILES\DRAFTING\PROJECTS_14000 TO 15999\15401\15401002000\GEOTECH\GEX\15401002000_GEX.APRX
LAYOUT: FAULT&SEISMICITY USER: LLEE

ORIGINAL FIGURE PRINTED IN COLOR

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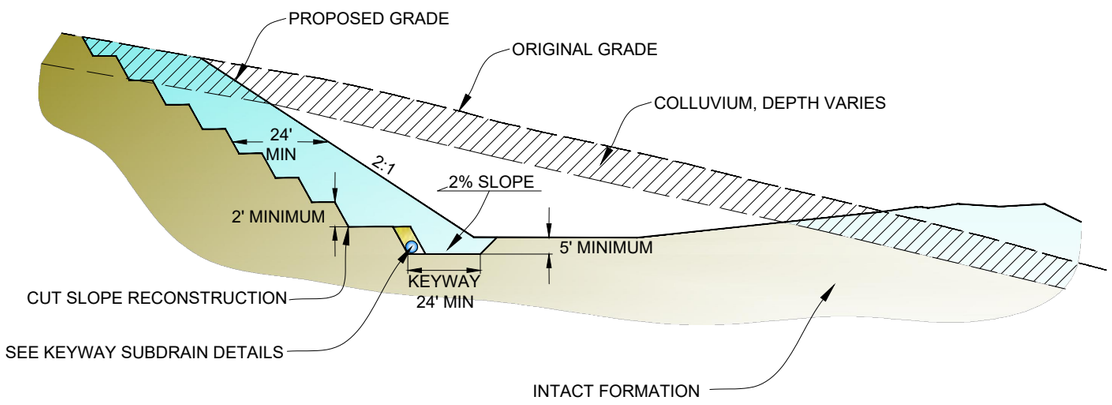


FILL SLOPE

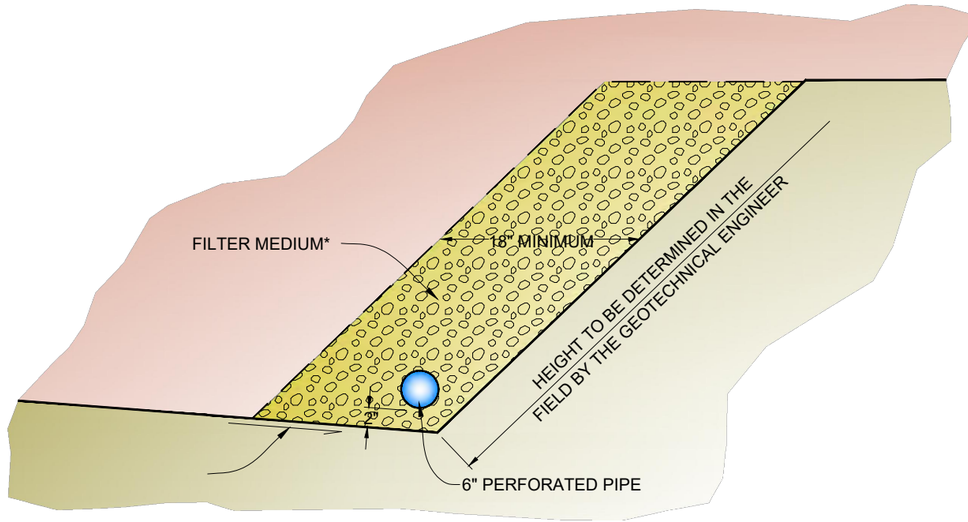


WHERE LOTS ARE PARTIALLY IN FILL, AND PARTIALLY IN CUT, OR LESS THAN 3' OF FILL IS PLANNED TO ACHIEVE PAD GRADE, OVEREXCAVATE AS SHOWN

CUT/FILL TRANSITION LOT AND SHALLOW FILL LOT



2:1 CUT SLOPE REBUILD DETAIL



KEYWAY SUBDRAIN

NOTES:

1. ALL PIPE JOINTS SHALL BE GLUED
2. ALL PERFORATED PIPE PLACED PERFORATIONS DOWN
3. 1% FALL (MINIMUM) ON ALL TRENCHES AND DRAIN LINES

ENGEO Expect Excellence

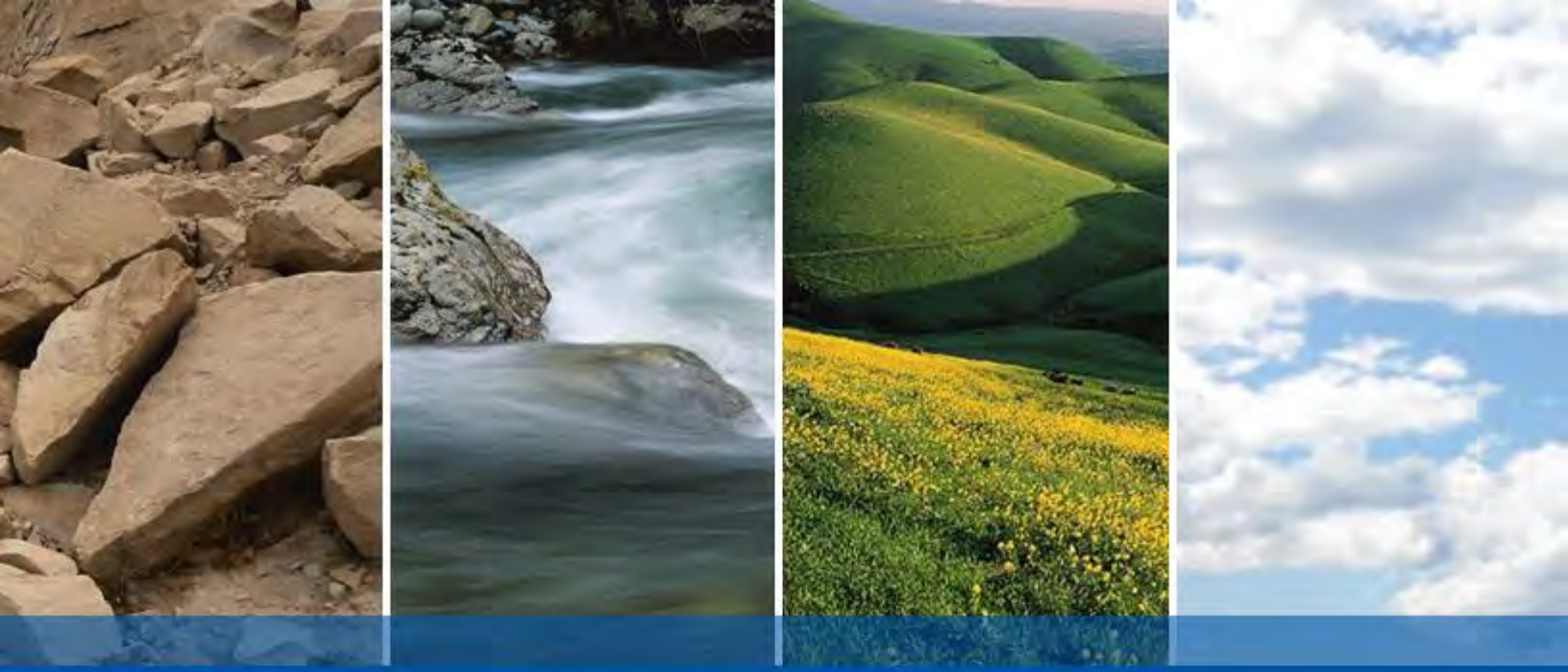
TYPICAL SUBDRAIN AND KEYWAY DETAILS
VALLEY OAKS
NOVATO, CALIFORNIA

PROJECT NO.: 15401.002.000
SCALE: NO SCALE
DRAWN BY: JV
CHECKED BY: TPB

FIGURE NO. 7

FILE PATH: \\engeo.com\files\Drafting\PROJECTS_14000 to 15999\15401\15401002000\Geotech\GEX\15401002000-7-SubdrainKeyway-1122.dwg SAVE DATE: 11/23/2022 1:23:03 PM SAVED BY: llee

ORIGINAL FIGURE PRINTED IN COLOR



APPENDIX A

KEY TO BORING LOGS
BORING LOGS

KEY TO BORING LOGS

MAJOR TYPES			DESCRIPTION
COARSE-GRAINED SOILS MORE THAN HALF OF MAT'L LARGER THAN #200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LESS THAN 5% FINES	GW - Well graded gravels or gravel-sand mixtures GP - Poorly graded gravels or gravel-sand mixtures
		GRAVELS WITH OVER 12 % FINES	GM - Silty gravels, gravel-sand and silt mixtures GC - Clayey gravels, gravel-sand and clay mixtures
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LESS THAN 5% FINES	SW - Well graded sands, or gravelly sand mixtures SP - Poorly graded sands or gravelly sand mixtures
		SANDS WITH OVER 12 % FINES	SM - Silty sand, sand-silt mixtures SC - Clayey sand, sand-clay mixtures
FINE-GRAINED SOILS MORE THAN HALF OF MAT'L SMALLER THAN #200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50 % OR LESS		ML - Inorganic silt with low to medium plasticity CL - Inorganic clay with low to medium plasticity OL - Low plasticity organic silts and clays
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50 %		MH - Elastic silt with high plasticity CH - Fat clay with high plasticity OH - Highly plastic organic silts and clays
	HIGHLY ORGANIC SOILS		PT - Peat and other highly organic soils

For fine-grained soils with 15 to 29% retained on the #200 sieve, the words "with sand" or "with gravel" (whichever is predominant) are added to the group name.

For fine-grained soil with >30% retained on the #200 sieve, the words "sandy" or "gravelly" (whichever is predominant) are added to the group name.

GRAIN SIZES

U.S. STANDARD SERIES SIEVE SIZE					CLEAR SQUARE SIEVE OPENINGS			
200	40	10	4	3/4 "	3"	12"		
SILTS AND CLAYS	SAND			GRAVEL			COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE			

RELATIVE DENSITY

SANDS AND GRAVELS	BLOWS/FOOT (S.P.T.)
VERY LOOSE	0-4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	OVER 50

CONSISTENCY

SILTS AND CLAYS	STRENGTH*
VERY SOFT	0-1/4
SOFT	1/4-1/2
MEDIUM STIFF	1/2-1
STIFF	1-2
VERY STIFF	2-4
HARD	OVER 4

SAMPLER SYMBOLS

- Modified California (3" O.D.) sampler
- California (2.5" O.D.) sampler
- S.P.T. - Split spoon sampler
- Shelby Tube
- Dames and Moore Piston
- Continuous Core
- Bag Samples
- Grab Samples
- NR No Recovery

MOISTURE CONDITION

DRY	Dusty, dry to touch
MOIST	Damp but no visible water
WET	Visible freewater

LINE TYPES

- ———— Solid - Layer Break
- – – – – – Dashed - Gradational or approximate layer break

GROUNDWATER SYMBOLS

- Groundwater level during drilling
- Stabilized groundwater level

(S.P.T.) Number of blows of 140 lb. hammer falling 30" to drive a 2-inch O.D. (1-3/8 inch I.D.) sampler

* Unconfined compressive strength in tons/sq. ft., asterisk on log means determined by pocket penetrometer

ENGEO
Expect Excellence

LOG OF BORING 3-B1

ENGEO Expect Excellence

LATITUDE: 38.1294 LONGITUDE: -122.5692

Geotechnical Exploration
Valley Oaks
Novato, CA
15401.002.000

DATE DRILLED: 10/6/2022
HOLE DEPTH: 30.5 ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (NGVD29): Approx. 49 ft.

LOGGED / REVIEWED BY: M. Farrell / TPB
DRILLING CONTRACTOR: Geo-Ex Subsurface
DRILLING METHOD: Hollow Stem Auger
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Elevation in Feet	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Shear Strength (psf) *field approximation	Unconfined Strength (tsf) *field approximation	Strength Test Type
			FAT CLAY (CH), black to dark brown, medium stiff, moist												
	45					52								>4.5*	PP
5						67								>4.5*	PP
			Increasing fines												
	40					22								4*	PP
														2.5*	PP
10			FAT CLAY (CH), light brown to olive brown, stiff, moist, landslide debris [Qls1]			21							2600*	2.75*	PP+TV
	35		CLAYEY SAND WITH GRAVEL (SC), gray to olive, medium dense, moist, clay and pebbles present												
15						35	73	30	43	49	13.6	112.8	2000*	4*	PP+TV
	30														
20															

LOG - GEOTECHNICAL_SU+QU W/ ELEV 15401_V4.GPJ ENGEO INC.GDT 11/18/22

LOG OF BORING 3-B1

ENGEO Expect Excellence

LATITUDE: 38.1294 LONGITUDE: -122.5692

Geotechnical Exploration
Valley Oaks
Novato, CA
15401.002.000

DATE DRILLED: 10/6/2022
HOLE DEPTH: 30.5 ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (NGVD29): Approx. 49 ft.

LOGGED / REVIEWED BY: M. Farrell / TPB
DRILLING CONTRACTOR: Geo-Ex Subsurface
DRILLING METHOD: Hollow Stem Auger
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Elevation in Feet	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Shear Strength (psf) *field approximation	Unconfined Strength (tsf) *field approximation	Strength Test Type
			LEAN CLAY WITH SAND (CL), gray to greenish black, stiff, decomposed bedrock, decomposed Franciscan bedrock [Qls2]			32									
	25		SANDSTONE, greenish black to bluish black, damp, bedrock landslide [Qls2]												
25						27									
	20														
30						50/6"									
			Boring terminated at 30½ feet below the ground surface. Groundwater was not encountered at time of drilling. Boring backfilled with cement grout.												

LOG OF BORING 3-B2

LATITUDE: 38.12991 LONGITUDE: -122.568474

Geotechnical Exploration
Valley Oaks
Novato, CA
15401.002.000

DATE DRILLED: 10/6/2022
HOLE DEPTH: 21.5 ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (NGVD29): Approx. 37 ft.

LOGGED / REVIEWED BY: M. Farrell / TPB
DRILLING CONTRACTOR: Geo-Ex Subsurface
DRILLING METHOD: Hollow Stem Auger
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Elevation in Feet	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Shear Strength (psf) *field approximation	Unconfined Strength (tsf) *field approximation	Strength Test Type
			LEAN CLAY WITH SAND (CL), brown, medium stiff to stiff, moist [Qc]												
	35					22	45	18	27		9.1	110.8		3*	PP
5			LEAN CLAY WITH SAND (CL), very stiff, moist, decomposed sandstone bedrock fragments			35								>4.5*	PP
	30													3.5*	PP
						36								>4.5*	PP
10			LEAN CLAY (CL), reddish brown, very stiff, moist, iron oxide staining, decomposed bedrock fragments			35					14.2	122		2.4	UC
	25														
15						47								>4.5*	PP
	20		CLAYSTONE, greenish to dark green, highly weathered (WH), damp, moderately sheared, Franciscan formation [Kjf]												
20															

LOG OF BORING 3-B2

Expect Excellence

LATITUDE: 38.12991 LONGITUDE: -122.568474

Geotechnical Exploration
Valley Oaks
Novato, CA
15401.002.000

DATE DRILLED: 10/6/2022
HOLE DEPTH: 21.5 ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (NGVD29): Approx. 37 ft.

LOGGED / REVIEWED BY: M. Farrell / TPB
DRILLING CONTRACTOR: Geo-Ex Subsurface
DRILLING METHOD: Hollow Stem Auger
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Elevation in Feet	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Shear Strength (psf) *field approximation	Unconfined Strength (tsf) *field approximation	Strength Test Type
			CLAYSTONE, greenish to dark green, highly weathered (WH), damp, moderately sheared, Franciscan formation [Kjf]			23									
			Boring terminated at 21½ feet below the ground surface. Groundwater was not encountered at time of drilling. Boring backfilled with cement grout.												

LOG OF BORING 3-B3

LATITUDE: 38.1295 LONGITUDE: -122.5682

Geotechnical Exploration
Valley Oaks
Novato, CA
15401.002.000

DATE DRILLED: 10/6/2022
HOLE DEPTH: 16.5 ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (NGVD29): Approx. 33 ft.

LOGGED / REVIEWED BY: M. Farrell / TPB
DRILLING CONTRACTOR: Geo-Ex Subsurface
DRILLING METHOD: Hollow Stem Auger
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Elevation in Feet	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Shear Strength (psf) *field approximation	Unconfined Strength (tsf) *field approximation	Strength Test Type
			CLAY (CL), brown, medium stiff to stiff, moist [FILL]												
	30		FAT CLAY WITH SAND (CH), brown, stiff, moist, Colluvium [Qc]			24					7.8			0.6	UC
5			LEAN CLAY WITH SAND (CL), dark brown, stiff to very stiff, moist, decomposed rock fragments [Qal]			29					12.3	119.8		4.5*	PP
	25					43							1902.9		UU
10			CLAYSTONE, pale gray, highly weathered (WH), damp, Franciscan formation [Kjf]			50/6"									
	20														
15			White mineralized zones			45									
			Boring terminated at 16½ feet below the ground surface. Groundwater was not encountered at time of drilling. Boring backfilled with cement grout.												

LOG - GEOTECHNICAL_SU+QU W/ ELEV 15401_V4.GPJ ENGEO INC.GDT 11/18/22

LOG OF BORING 3-B4

ENGEO Expect Excellence

LATITUDE: 38.12831 LONGITUDE: -122.56836

Geotechnical Exploration
Valley Oaks
Novato, CA
15401.002.000

DATE DRILLED: 10/7/2022
HOLE DEPTH: 16.5 ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (NGVD29): Approx. 19 ft.

LOGGED / REVIEWED BY: A. Himel / TPB
DRILLING CONTRACTOR: Geo-Ex Subsurface
DRILLING METHOD: Hollow Stem Auger
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Elevation in Feet	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Shear Strength (psf) *field approximation	Unconfined Strength (tsf) *field approximation	Strength Test Type
			SANDY LEAN CLAY (CL), dark brown, stiff, moist, presence of pebbles [Qc]												
			SANDY LEAN CLAY (CL), yellowish brown, hard, moist [Qc]			50/5"				51				>4.5*	PP
	15														
5						50/3"								>4.5*	PP
			LEAN CLAY WITH SAND (CL), light gray, hard, moist [Qc]			78					19.4	112.6			
	10														
10			Increasing sand content, iron oxide staining			47									
	5														
15			CLAYSTONE, highly weathered (WH), damp, Franciscan formation [Kjf]			50/6"									
			Boring terminated at 16½ feet below the ground surface. Groundwater was not encountered at time of drilling. Boring backfilled with cement grout.												

LOG OF BORING 3-B5

LATITUDE: 38.128846 LONGITUDE: -122.56777

Geotechnical Exploration
Valley Oaks
Novato, CA
15401.002.000

DATE DRILLED: 10/6/2022
HOLE DEPTH: 16 ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (NGVD29): Approx. 18 ft.

LOGGED / REVIEWED BY: M. Farrell / TPB
DRILLING CONTRACTOR: Geo-Ex Subsurface
DRILLING METHOD: Hollow Stem Auger
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Elevation in Feet	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Shear Strength (psf) *field approximation	Unconfined Strength (tsf) *field approximation	Strength Test Type
			FAT CLAY (CH), black to very dark brown, very stiff, moist, organic odor [Qc]												
	15					25	69	18	51					>4.5*	PP
5			SANDY LEAN CLAY (CL), brown, stiff to very stiff, moist, decomposed rock fragments [Qc]			36				63				>4.5*	PP
	10					18								2.5*	PP
10						34									
			GREYWACKE, pale gray, highly weathered (WH), damp, Franciscan formation [Kjf]												
	5														
15						50/1"									
			Boring terminated at 16 feet below the ground surface. Groundwater was not encountered at time of drilling. Boring backfilled with cement grout.												

LOG - GEOTECHNICAL_SU+QU W/ ELEV 15401_V4.GPJ ENGEO INC.GDT 11/18/22

LOG OF BORING 3-B6

ENGEO Expect Excellence

LATITUDE: 38.12769 LONGITUDE: -122.569415

Geotechnical Exploration
Valley Oaks
Novato, CA
15401.002.000

DATE DRILLED: 10/6/2022
HOLE DEPTH: 16.5 ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (NGVD29): Approx. 51 ft.

LOGGED / REVIEWED BY: M. Farrell / TPB
DRILLING CONTRACTOR: Geo-Ex Subsurface
DRILLING METHOD: Hollow Stem Auger
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Elevation in Feet	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Shear Strength (psf) *field approximation	Unconfined Strength (tsf) *field approximation	Strength Test Type
	50		LEAN CLAY (CL), yellowish brown, medium stiff, moist												
			SANDY LEAN CLAY (CL), gray mottled with orange, very stiff, moist, decomposed bedrock fragments, landslide debris [Qls]			46				53				>4.5*	PP
5	45					52	42	20	22	68					
						55									
			LEAN CLAY (CL), brown mottled with orange, hard, moist, decomposed bedrock and coarse grained sand present, landslide debris [Qls]			25								>4.5*	PP
10	40														
			SANDSTONE, tan to brown, extremely weak (R0), completely weathered (WC)												
15						49									
	35		Boring terminated at 16½ feet below the ground surface. Groundwater was not encountered at time of drilling. Boring backfilled with cement grout.												

LOG - GEOTECHNICAL_SU+QU W/ ELEV 15401_V4.GPJ ENGEO INC.GDT 11/18/22

LOG OF BORING 3-B7

LATITUDE: 38.12855 LONGITUDE: -122.56691

Geotechnical Exploration
Valley Oaks
Novato, CA
15401.002.000

DATE DRILLED: 10/7/2022
HOLE DEPTH: 17 ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (NGVD29): Approx. 16 ft.

LOGGED / REVIEWED BY: A. Himel / TPB
DRILLING CONTRACTOR: Geo-Ex Subsurface
DRILLING METHOD: Hollow Stem Auger
HAMMER TYPE: 140 lb. Auto Trip

Depth in Feet	Elevation in Feet	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Shear Strength (psf) *field approximation	Unconfined Strength (tsf) *field approximation	Strength Test Type
	15		CLAY WITH SAND (CL), moist [FILL]												
			SANDY SILT (ML), yellowish brown to brown, hard, moist, fine grained sand, presence of pebbles			32				55				>4.5*	PP
5															
	10		Increasing sands content Yellowish brown, hard, moist, decomposed bedrock			38					14.7	108.8		>4.5*	PP
						34									
			SANDY LEAN CLAY WITH GRAVEL (CL), light gray to reddish yellow, very stiff, moist, fine to coarse grained sand												
10															
	5					26									
			LEAN CLAY (CL), yellow to reddish yellow, very stiff, moist, fine to coarse grained sand												
15															
	0		CLAYSTONE, pale gray to dark gray, highly weathered (WH), damp, Franciscan formation [Kjf]			50/4"									
						50/6"									
			Boring terminated at 17 feet below the ground surface. Groundwater was not encountered at time of drilling. Boring backfilled with cement grout.												

LOG OF BORING 3-B8

ENGEO Expect Excellence

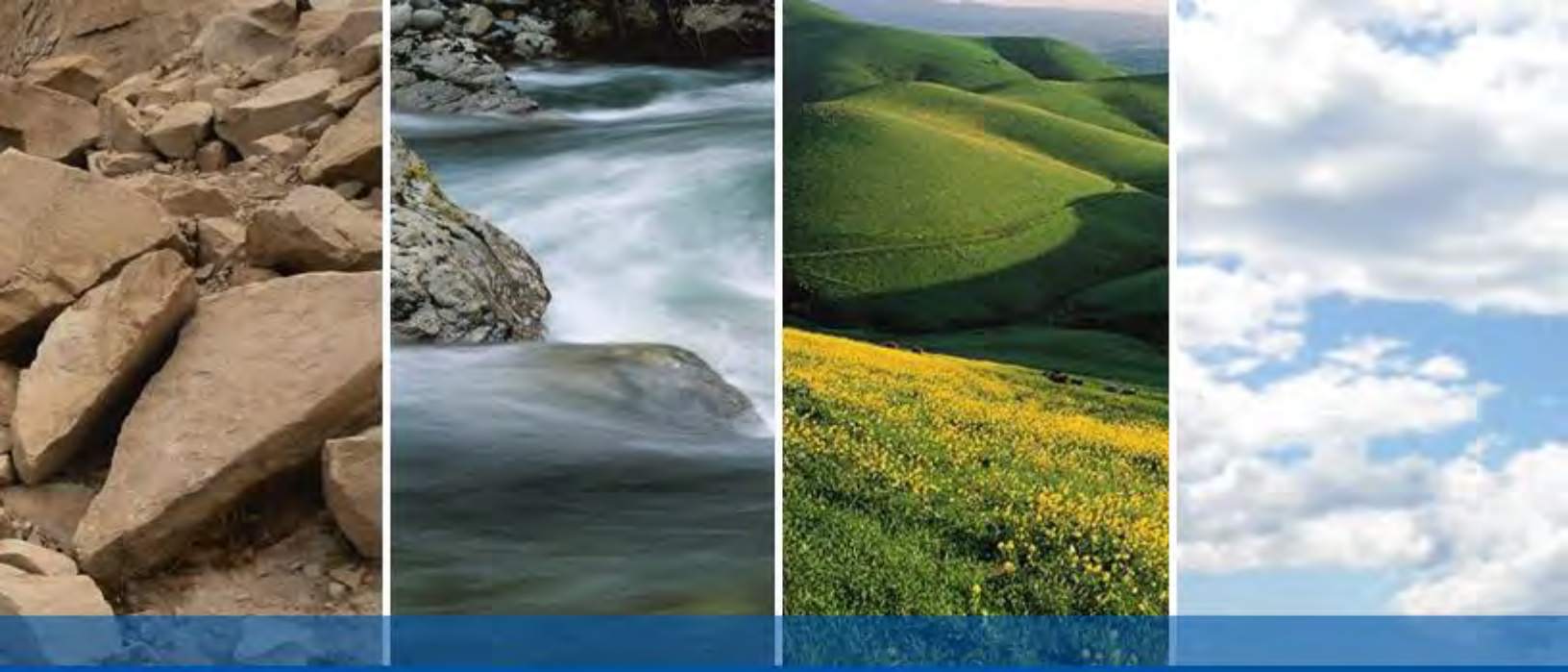
LATITUDE: 38.126459 LONGITUDE: -122.567491

Geotechnical Exploration
Valley Oaks
Novato, CA
15401.002.000

DATE DRILLED: 10/7/2022
HOLE DEPTH: 9.5 ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (NGVD29): Approx. 22½ ft.

LOGGED / REVIEWED BY: A. Himel / TPB
DRILLING CONTRACTOR: Geo-Ex Subsurface
DRILLING METHOD: Hollow Stem Auger
HAMMER TYPE: 140 lb. Auto Trip

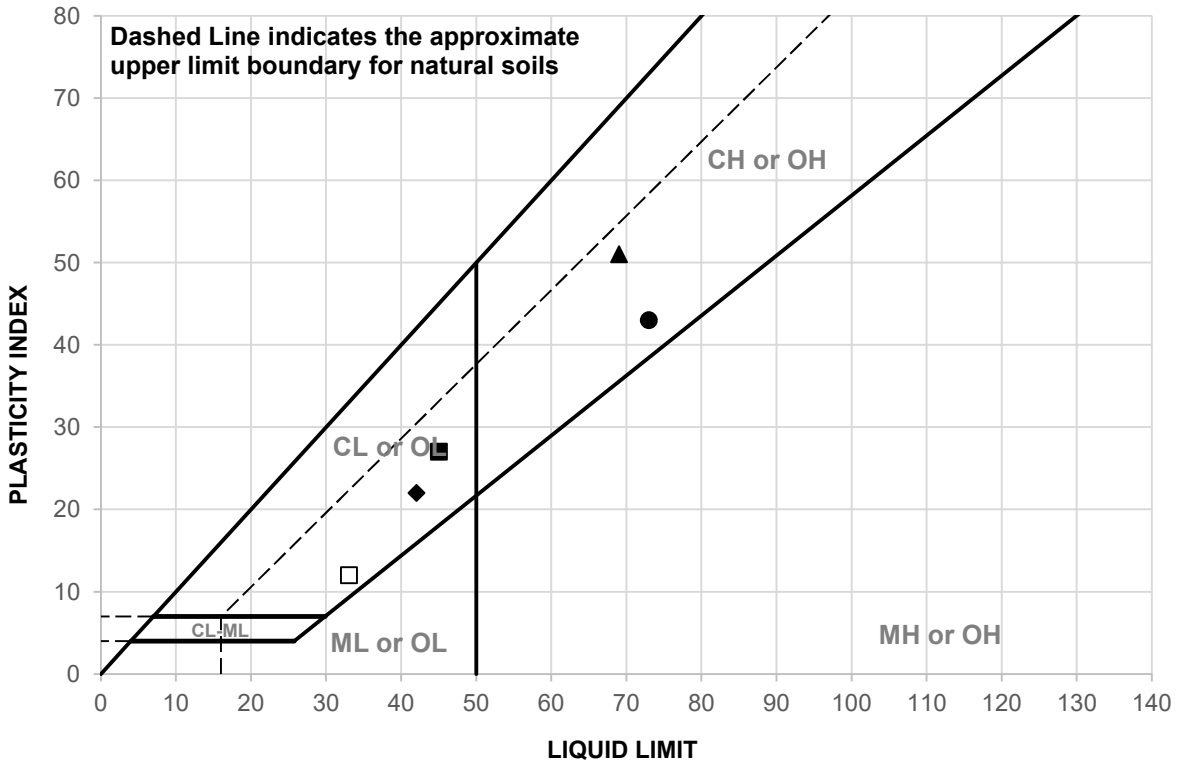
Depth in Feet	Elevation in Feet	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Shear Strength (psf) *field approximation	Unconfined Strength (tsf) *field approximation	Strength Test Type
			CLAY WITH SAND (CL), yellowish brown, stiff, moist, fine grained sand												
	20		SANDY LEAN CLAY WITH GRAVEL (CL), red, hard, moist, fine to coarse grained sand, decomposed bedrock fragments			44	33	21	12	53	9.4	111.7		2.5* >4.5*	PP PP
5			Hard, increasing coarse sand and decomposed bedrock fragments			47									
	15		SANDSTONE, reddish yellow mottled with gray, extremely weak (R0), completely weathered (WC)			30									
			Boring terminated at 9½ feet below the ground surface. Groundwater was not encountered at time of drilling. Boring backfilled with cement grout.												



APPENDIX B

LABORATORY TEST DATA

LIQUID AND PLASTIC LIMITS TEST REPORT
ASTM D4318



	SAMPLE ID	DEPTH (ft)	MATERIAL DESCRIPTION	LL	PL	PI
▲	3-B5@3	3	See exploration log	69	18	51
◆	3-B6@6	6	See exploration log	42	20	22
□	3-B8@3	3	See exploration log	33	21	12
●	3-B1@16	16	See exploration log	73	30	43
■	3-B2@2.5	2.5	See exploration log	45	18	27

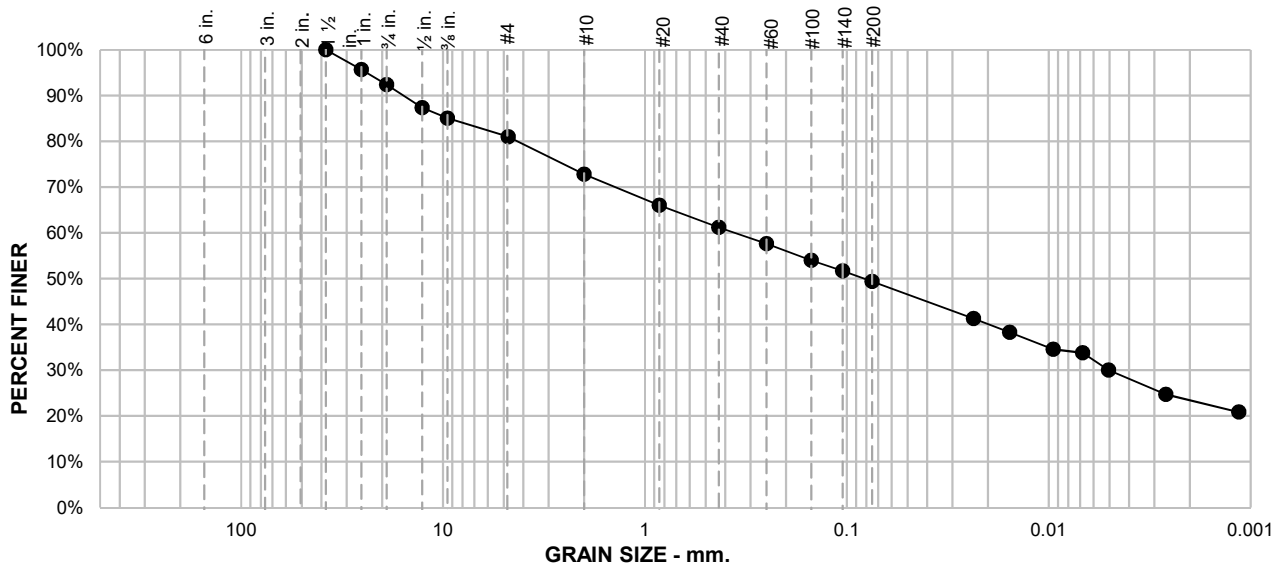
	SAMPLE ID	TEST METHOD	REMARKS
▲	3-B5@3	PI: ASTM D4318, Wet Method	
◆	3-B6@6	PI: ASTM D4318, Wet Method	
□	3-B8@3	PI: ASTM D4318, Wet Method	
●	3-B1@16	PI: ASTM D4318, Wet Method	
■	3-B2@2.5	PI: ASTM D4318, Wet Method	

ENGEO
Expect Excellence

CLIENT: WCJA, LP
PROJECT NAME: Valley Oaks
PROJECT NO: 15401.002.000 PH001
PROJECT LOCATION: Novato, California
REPORT DATE: 11/7/2022
TESTED BY: M. Quasem
REVIEWED BY: W. Miller

PARTICLE SIZE DISTRIBUTION REPORT

ASTM D422



SAMPLE ID: 3-B1@16

DEPTH (ft): 16

% +75mm	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
	7.6	11.4	8.2	11.6	11.8	26.0	23.4

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1-½ in.	100.0		
1 in.	95.7		
¾ in.	92.4		
½ in.	87.3		
⅜ in.	85.1		
#4	81.0		
#10	72.8		
#20	66.0		
#40	61.2		
#60	57.7		
#100	54.0		
#140	51.7		
#200	49.4		
0.0236 mm.	41.3		
0.0156 mm.	38.3		
0.0095 mm.	34.5		
0.0068 mm.	33.8		
0.0050 mm.	30.0		
0.0026 mm.	24.7		
0.0011 mm.	20.9		

SOIL DESCRIPTION

See exploration logs

ATTERBERG LIMITS

PL = LL = PI =

COEFFICIENTS

D_{90} = 15.7409 mm D_{85} = 9.3647 mm D_{60} = 0.3570 mm

D_{50} = 0.0819 mm D_{30} = 0.0050 mm D_{15} =

D_{10} = C_u = C_c =

CLASSIFICATION

USCS =

REMARKS

Silt/clay division of 0.002mm used

* (no specification provided)

ENGEO
Expect Excellence

CLIENT: WCJA, LP

PROJECT NAME: Valley Oaks

PROJECT NO: 15401.002.000 PH001

PROJECT LOCATION: Novato, CA

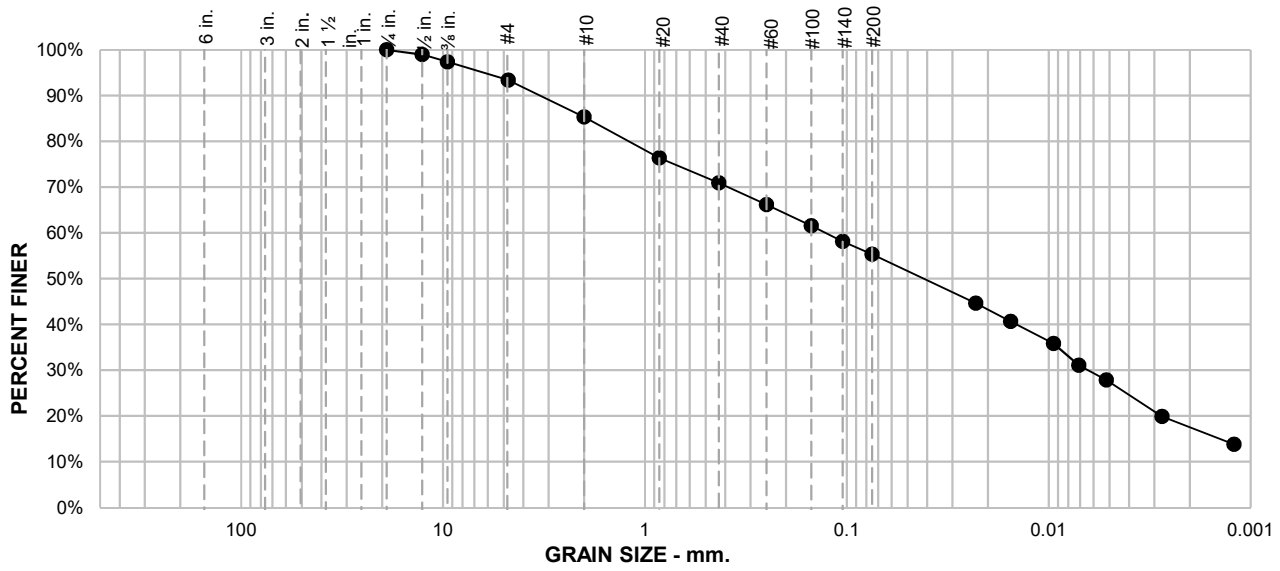
REPORT DATE: 11/4/2022

TESTED BY: W. Miller

REVIEWED BY: M. Quasem

PARTICLE SIZE DISTRIBUTION REPORT

ASTM D422



SAMPLE ID: 3-B7@3

DEPTH (ft): 3

% +75mm	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
		6.6	8.1	14.4	15.5	37.9	17.5

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
¾ in.	100.0		
½ in.	99.0		
⅜ in.	97.4		
#4	93.4		
#10	85.3		
#20	76.4		
#40	70.9		
#60	66.2		
#100	61.5		
#140	58.2		
#200	55.4		
0.0230 mm.	44.6		
0.0154 mm.	40.6		
0.0095 mm.	35.9		
0.0071 mm.	31.1		
0.0052 mm.	27.9		
0.0027 mm.	19.9		
0.0012 mm.	13.8		

SOIL DESCRIPTION

See exploration logs

ATTERBERG LIMITS

PL = LL = PI =

COEFFICIENTS

D_{90} = 3.3038 mm D_{85} = 1.9431 mm D_{60} = 0.1276 mm

D_{50} = 0.0415 mm D_{30} = 0.0064 mm D_{15} = 0.0014 mm

D_{10} = C_u = C_c =

CLASSIFICATION

USCS =

REMARKS

Silt/clay division of 0.002mm used

* (no specification provided)

ENGEO
Expect Excellence

CLIENT: WCJA, LP

PROJECT NAME: Valley Oaks

PROJECT NO: 15401.002.000 PH001

PROJECT LOCATION: Novato, CA

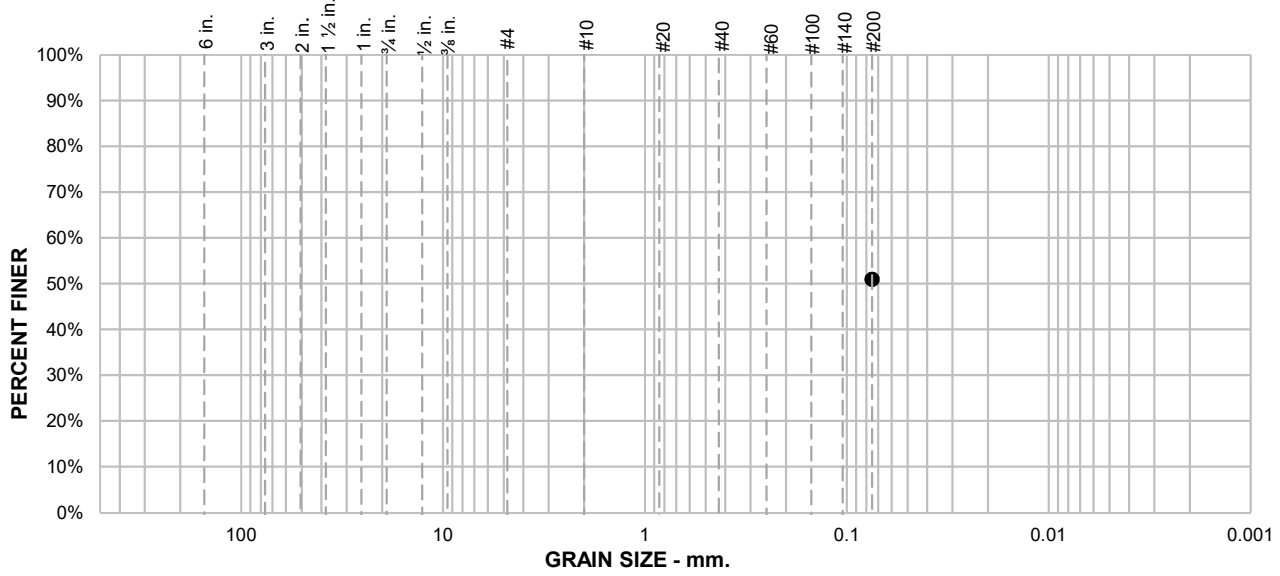
REPORT DATE: 11/4/2022

TESTED BY: W. Miller

REVIEWED BY: M. Quasem

PARTICLE SIZE DISTRIBUTION REPORT

ASTM D1140, Method B



SAMPLE ID: 3-B4@3

DEPTH (ft): 3

% +75mm	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
						50.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	50.9		

SOIL DESCRIPTION

See exploration logs

ATTERBERG LIMITS

PL = LL = PI =

COEFFICIENTS

D_{90} = D_{85} = D_{60} =
D_{50} = D_{30} = D_{15} =
D_{10} = C_u = C_c =

CLASSIFICATION

USCS =

REMARKS

USCS: ASTM D2487

Soak time = 180 min
Dry sample weight = 560 g

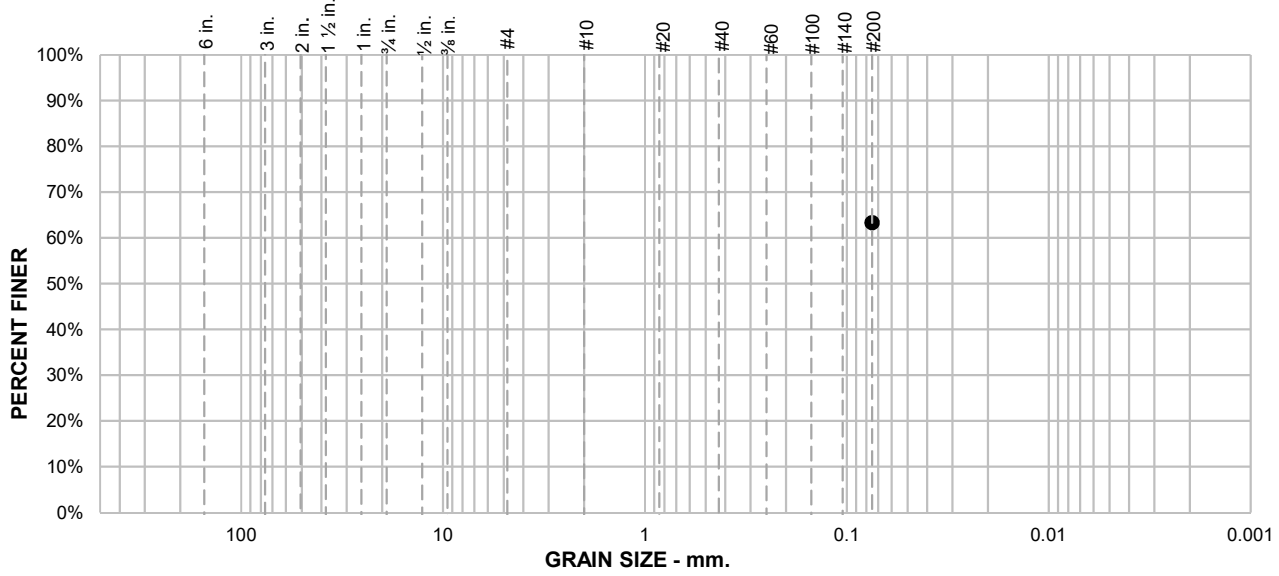
* (no specification provided)

ENGEO
Expect Excellence

CLIENT: WCJA, LP
PROJECT NAME: Valley Oaks
PROJECT NO: 15401.002.000 PH001
PROJECT LOCATION: Novato, CA
REPORT DATE: 11/4/2022
TESTED BY: W. Miller
REVIEWED BY: M. Quasem

PARTICLE SIZE DISTRIBUTION REPORT

ASTM D1140, Method B



SAMPLE ID: 3-B5@5.5

DEPTH (ft): 5.5

% +75mm	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
						63.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	63.3		

SOIL DESCRIPTION

See exploration logs

ATTERBERG LIMITS

PL = LL = PI =

COEFFICIENTS

D_{90} = D_{85} = D_{60} =
D_{50} = D_{30} = D_{15} =
D_{10} = C_u = C_c =

CLASSIFICATION

USCS =

REMARKS

USCS: ASTM D2487

Soak time = 180 min
Dry sample weight = 602.3 g

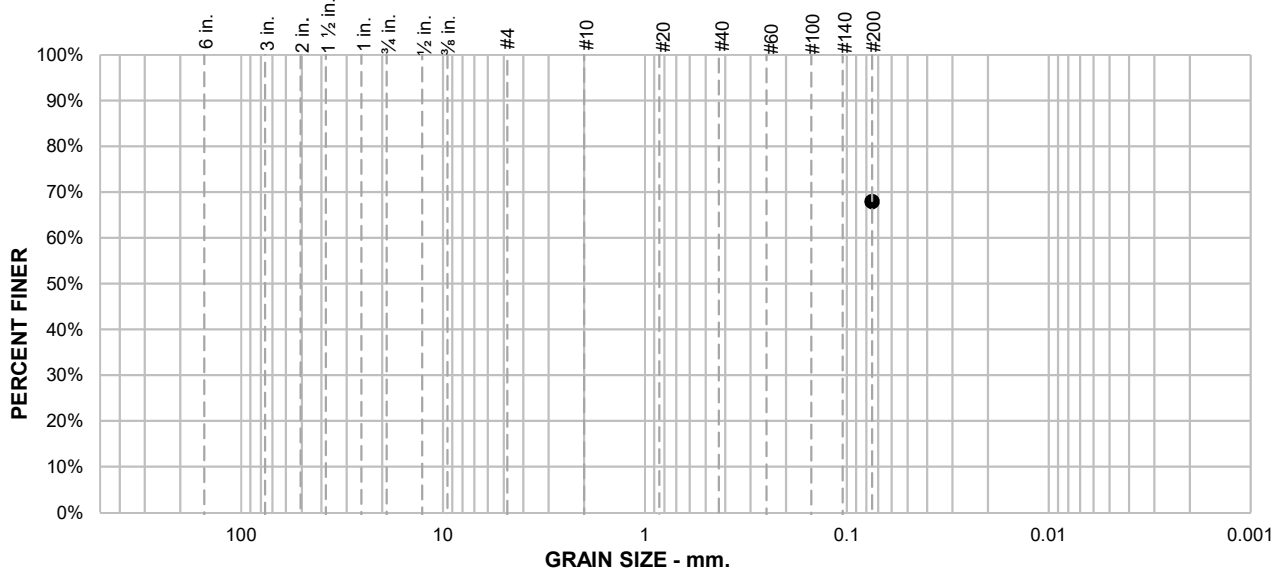
* (no specification provided)

ENGEO
Expect Excellence

CLIENT: WCJA, LP
PROJECT NAME: Valley Oaks
PROJECT NO: 15401.002.000 PH001
PROJECT LOCATION: Novato, CA
REPORT DATE: 11/4/2022
TESTED BY: W. Miller
REVIEWED BY: M. Quasem

PARTICLE SIZE DISTRIBUTION REPORT

ASTM D1140, Method B



SAMPLE ID: 3-B6@5.5

DEPTH (ft): 5.5

% +75mm	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
						67.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	67.9		

SOIL DESCRIPTION

See exploration logs

ATTERBERG LIMITS

PL = LL = PI =

COEFFICIENTS

D_{90} = D_{85} = D_{60} =
D_{50} = D_{30} = D_{15} =
D_{10} = C_u = C_c =

CLASSIFICATION

USCS =

REMARKS

USCS: ASTM D2487

Soak time = 180 min
Dry sample weight = 649.7 g

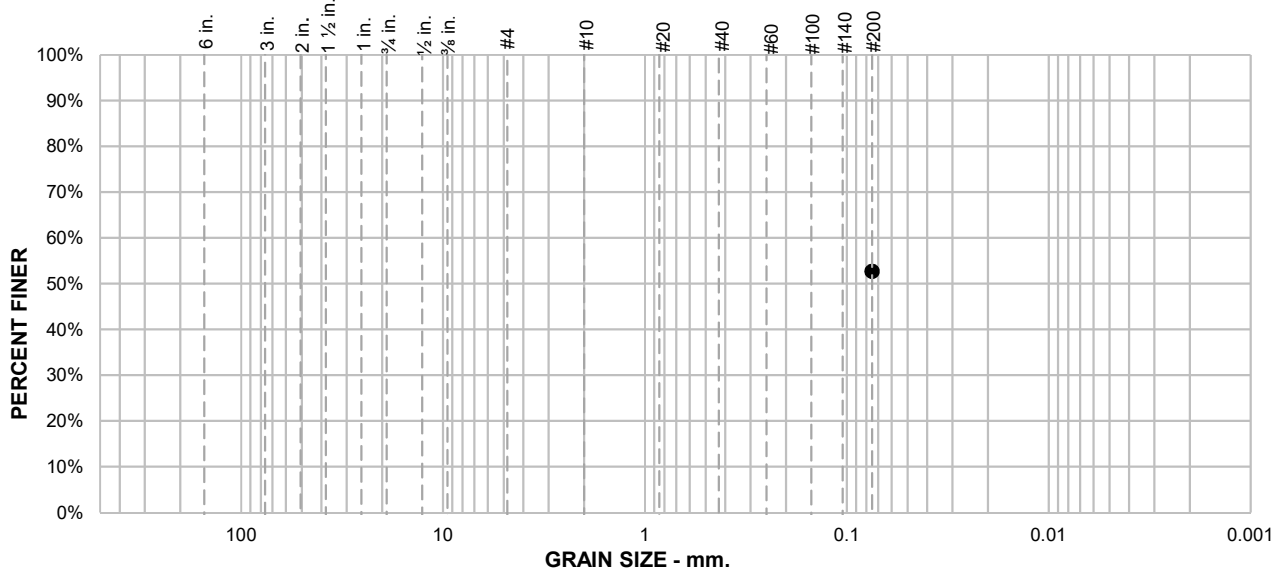
* (no specification provided)

ENGEO
Expect Excellence

CLIENT: WCJA, LP
PROJECT NAME: Valley Oaks
PROJECT NO: 15401.002.000 PH001
PROJECT LOCATION: Novato, CA
REPORT DATE: 11/4/2022
TESTED BY: W. Miller
REVIEWED BY: M. Quasem

PARTICLE SIZE DISTRIBUTION REPORT

ASTM D1140, Method B



SAMPLE ID: 3-B8@2.5

DEPTH (ft): 2.5

% +75mm	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
						52.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	52.7		

SOIL DESCRIPTION

See exploration logs

ATTERBERG LIMITS

PL = LL = PI =

COEFFICIENTS

D_{90} = D_{85} = D_{60} =
D_{50} = D_{30} = D_{15} =
D_{10} = C_u = C_c =

CLASSIFICATION

USCS =

REMARKS

USCS: ASTM D2487

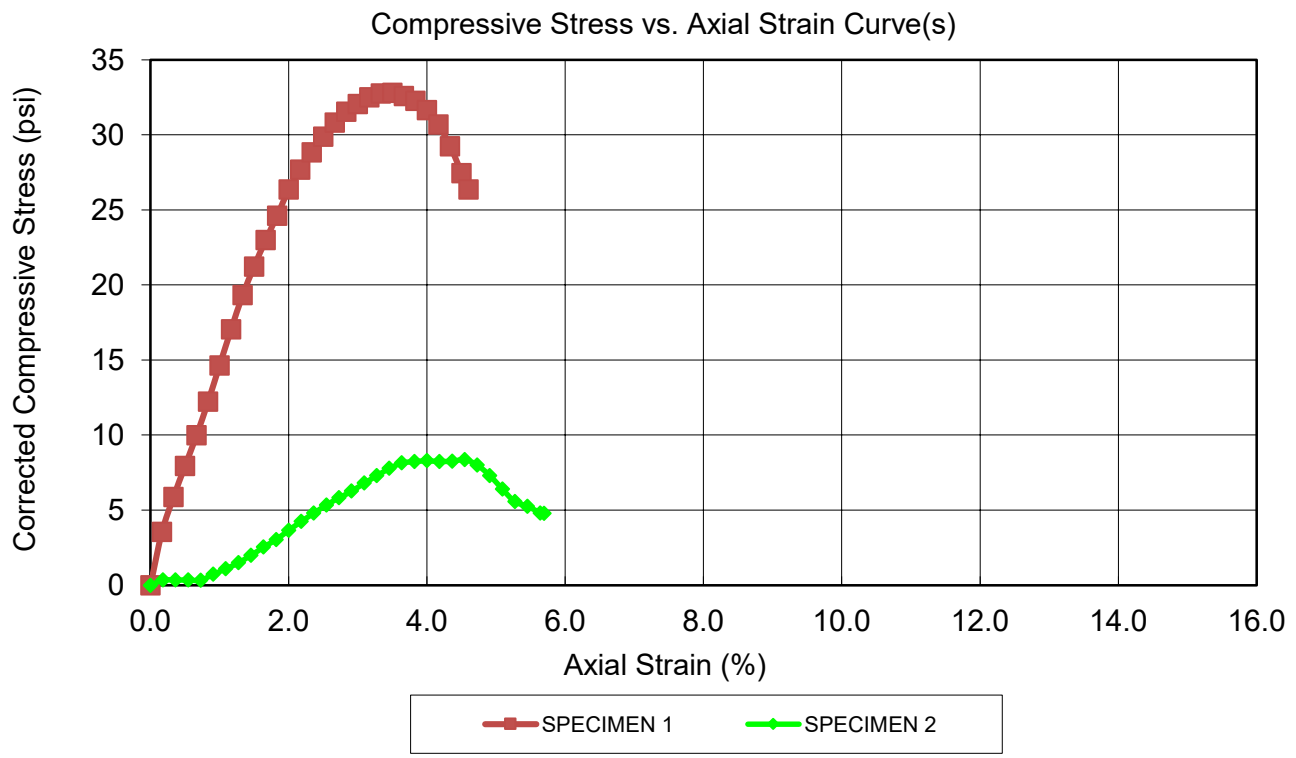
Soak time = 180 min
Dry sample weight = 254.1 g

* (no specification provided)

ENGEO
Expect Excellence

CLIENT: WCJA, LP
PROJECT NAME: Valley Oaks
PROJECT NO: 15401.002.000 PH001
PROJECT LOCATION: Novato, CA
REPORT DATE: 11/4/2022
TESTED BY: W. Miller
REVIEWED BY: M. Quasem

UNCONFINED COMPRESSION TEST REPORT
(ASTM D2166)



BEFORE TEST	SPECIMEN 3-B2@11	SPECIMEN 3-B3@3
Test Moisture Content (%)	14.22	7.81
Dry Density (pcf)	122.0	0.0
Saturation (%)	98.6	0.0
Void Ratio	0.39	0.00
Diameter (in)	2.400	2.380
Height (in)	6.000	5.500
Height-To-Diameter Ratio	2.50	2.31
TEST DATA		
Unconfined Compressive Strength (psi)	32.8	8.4
Undrained Shear Strength (psi)	16.4	4.2
Strain Rate (in/min)	0.050	0.050
Specific Gravity (ASSUMED)	2.720	2.720
Strain at Failure(%)	3.50	4.55
Test Remarks		

SPECIMEN	DESCRIPTION
3-B2@11	See exploration logs
3-B3@3	See exploration logs

PROJECT NAME: Valley Oaks
PROJECT NO: 15401.002.000
CLIENT: WCJA, LP
LOCATION: Novato, CA

Test Date: 11/4/2022
Tested By: M. Quasem
Reviewed By: W. Miller

ENGEO
Expect Excellence

Isotropic Unconsolidated Undrained Triaxial Test
ASTM D2850

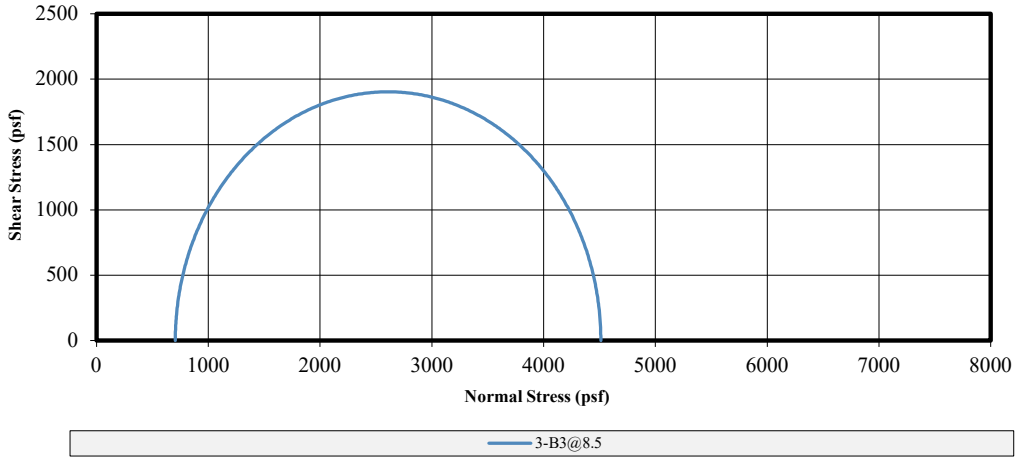
Date: 11/14/22

Checked By: G. Criste

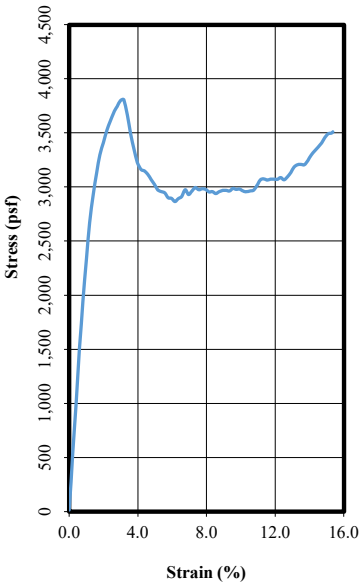
Date: 11/11/2022

Tested By: O. Espinoza

Mohr Circles



Stress-Strain Curve



Before Test	Specimen 3-B3@8.5			
Water Content (%)	6.81			
Dry Density (pcf)	123.80			
Saturation (%)	45.57			
Void Ratio	0.42			
Diameter (in)	2.396			
Height (in)	5.037			
Height-to-Diameter Ratio	2.102			
ASTM D4318 - Wet Method				
Liquid Limit				
Plastic Limit				
ASTM D854 - Assumed				
Specific Gravity	2.820			
After Test	**3-B3@8.5**			
Water Content (%)	6.81			
Saturation (%)	45.56			
Strain Rate (%/min)	0.05			
Peak Deviator Stress (psf)	3805.9			
Axial Strain @ Failure (%)	3.177			
	Cell Pressure			
Cell (psf)	705.6			
Back (psf)	n/a			
	Principle Stresses at Failure			
σ1 (psf)	4511.5			
σ3 (psf)	705.6			
Corrected Peak Deviator Stress				

Mohr-Coulomb Parameters with a Non-zero Friction Angle (Ø≠0)			Cohesion at Failure with a Zero Friction Angle (Ø=0)			
Cohesion, c (psf)	n/a		1902.9			
Friction Angle Ø	n/a		n/a			

Project Information	
Project Name:	Valley Oaks
Project Number:	15401.002.000 PH001
Project Location:	Novato, California
Client:	WCJA, LP
Description:	See exploration logs
Test Remarks:	

ENGEO
Expect Excellence

Isotropic Unconsolidated Undrained Triaxial Test
ASTM D2850

Date: 11/14/22

Checked By: G. Criste

Date: 11/11/2022

Tested By: O. Espinoza

SPECIMEN PHOTOS

SAMPLE NUMBER: 3-B3@8.5	
	

Project Information	
Project Name:	Valley Oaks
Project Number:	15401.002.000 PH001
Project Location:	Novato, California
Client:	WCJA, LP
Description:	See exploration logs
Test Remarks:	

ENGEO Expect Excellence

MOISTURE-DENSITY DETERMINATION REPORT
ASTM D7263

SAMPLE ID	3-B1@15.5	3-B2@2	3-B3@6	3-B4@8.5	3-B7@6	3-B8@3		
DEPTH (ft.)	15.5	2	6	8.5	6	3		
METHOD A OR B	B	B	B	B	B	B		
MOISTURE CONTENT (%)	13.6	9.1	12.3	19.4	14.7	9.4		
DRY DENSITY (pcf)	112.8	110.8	119.8	112.6	108.8	111.7		

SAMPLE ID								
DEPTH (ft.)								
METHOD A OR B								
MOISTURE CONTENT (%)								
DRY DENSITY (pcf)								

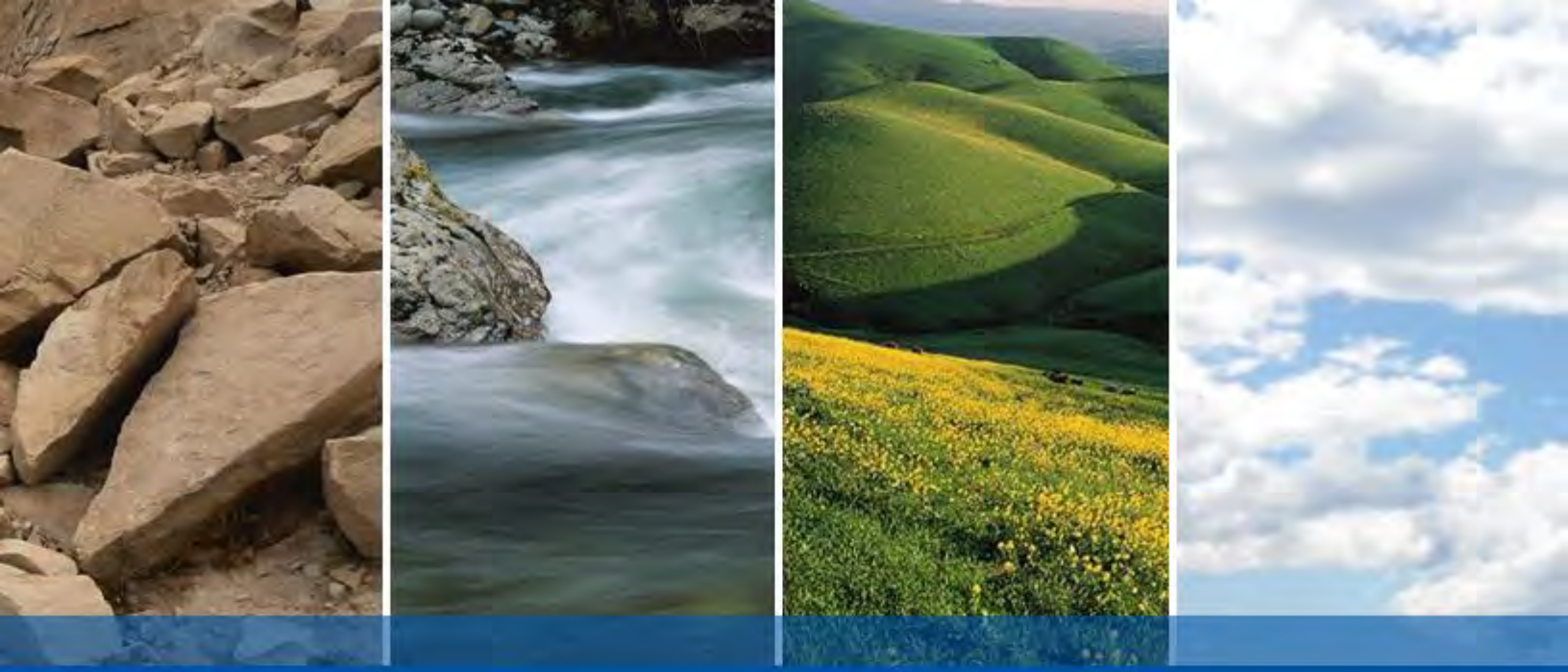
SAMPLE ID								
DEPTH (ft.)								
METHOD A OR B								
MOISTURE CONTENT (%)								
DRY DENSITY (pcf)								

SAMPLE ID								
DEPTH (ft.)								
METHOD A OR B								
MOISTURE CONTENT (%)								
DRY DENSITY (pcf)								

SAMPLE ID								
DEPTH (ft.)								
METHOD A OR B								
MOISTURE CONTENT (%)								
DRY DENSITY (pcf)								

ENGEO
Expect Excellence

CLIENT: WCJA, LP
PROJECT NAME: Valley Oaks
PROJECT NO: 15401.002.000 PH001
PROJECT LOCATION: Novato, CA
REPORT DATE: 11/4/2022
TESTED BY: W. Miller
REVIEWED BY: M. Quasem



APPENDIX C

TEST PIT LOGS
ENGEO (2020)

ENGEO Expect Excellence	TEST PIT LOGS
Valley Oaks Geotechnical Exploration Novato, California 15401.001.000	Logged By: C. Hall Logged Date: December 22, 2020 Equipment: Komatsu 360 Excavator

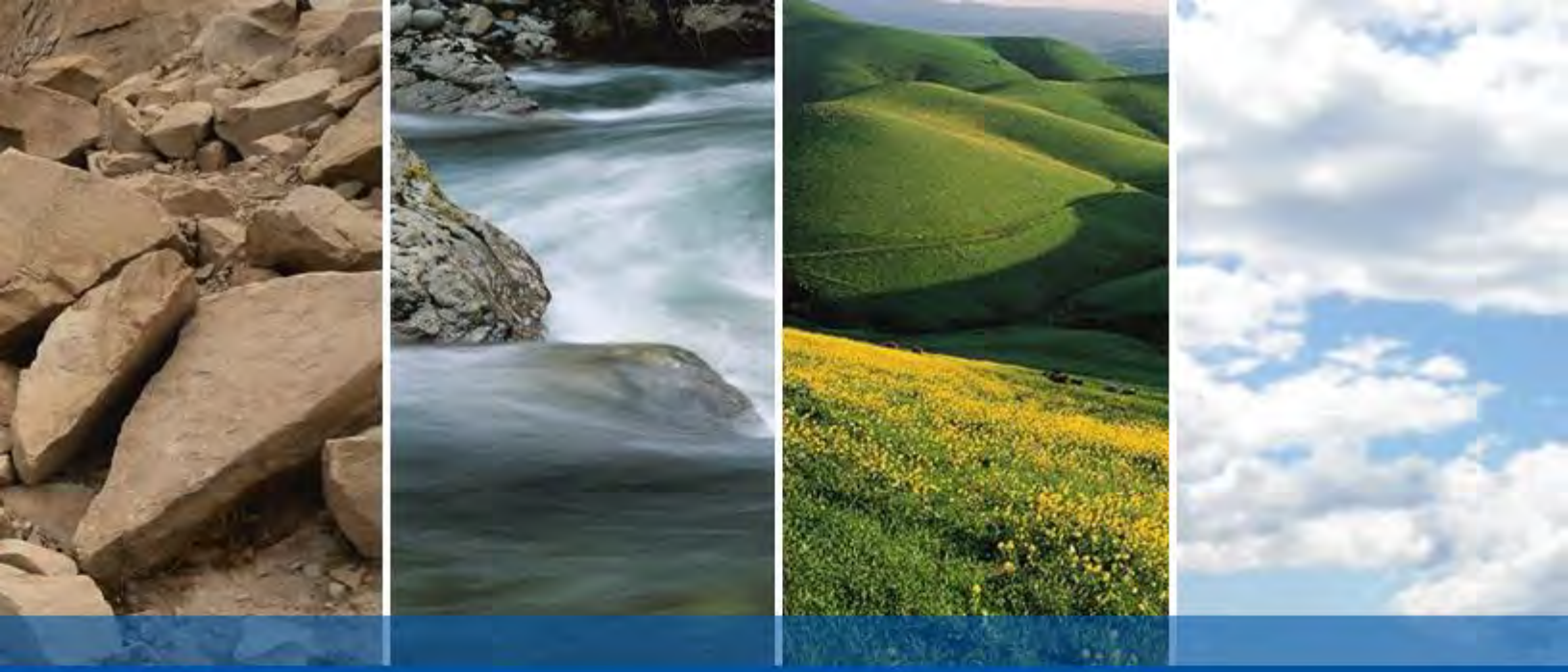
Test Pit Number	Depth (Feet)	Description
2-TP1	0 - 6½	FAT CLAY (CH) with sand, grayish brown, hard (PP ≥ 4.5), damp, desiccation cracks in upper ~18”
	6½ - 7½	Heavy carbonate (?) deposits [Bk Horizon?]
	7½ - 16½	SANDY CLAY (CH), olive to yellowish brown, very stiff (PP = 4.0), moist, angular (Franciscan-derived?) rock fragments [Qls/Qc]
	@ ~15	discrete areas of carbonate deposition
	16½ - 17	GRAVELLY CLAY (CH), olive and reddish yellow, stiff (PP = 1.5 - 2.0), moist [Qls/Qc]
		Bottom of Test Pit at 17’ below ground surface (bgs). Groundwater not encountered at time of exploration.
2-TP2	0 - 5½	FAT CLAY (CH), grayish brown, hard, damp, desiccation cracks in upper ~18”
	5½ - 6½	Heavy carbonate (?) deposits [Bk Horizon?]
	6½ - 10	SANDY CLAY (CH), olive to yellowish brown, very stiff, moist, angular (Franciscan-derived?) rock fragments, well-rounded cobbles [Qls/Qc]
		Bottom of Test Pit at 10’ bgs. Groundwater not encountered at time of exploration.
2-TP3	0 - 4	FAT CLAY (CH), grayish brown, hard (PP ≥ 4.5), damp, desiccation cracking in upper 18”
	4 - 5	Heavy carbonate (?) deposits [Bk Horizon?]
	5 - 10	SANDY CLAY (CH), yellowish brown, stiff, moist [Qls/Qc]
		Bottom of Test Pit at 10’ bgs. Groundwater not encountered at time of exploration.

ENGEO Expect Excellence				TEST PIT LOGS
Valley Oaks Geotechnical Exploration Novato, California 15401.001.000				Logged By: C. Hall Logged Date: December 22, 2020 Equipment: Komatsu 360 Excavator
2-TP4	0	-	4	FAT CLAY (CH), strong brown, hard (PP ≥ 4.5), damp
	4	-	5	Heavy carbonate (?) deposits [Bk Horizon?]
	5	-	8	SANDY CLAY (CL), yellowish brown, stiff, damp to moist, well rounded gravel [Qls/Qc]
	8	-	10	METAMORPHIC ROCKS, gray, strong, moderately to slightly weathered, predominantly schist [Franciscan Bedrock] Bottom of Test Pit at 10’ bgs. Groundwater not encountered at time of exploration.
2-TP5	0	-	4	FAT CLAY (CH), dark grayish brown, hard, damp, desiccation cracks
	4	-	5	Heavy carbonate (?) deposits [Bk Horizon?]
	5	-	8	SANDY CLAY (CL), yellowish brown, stiff, moist, block and matrix with angular gravel and larger Franciscan-derived metagraywacke fragments [Qls]
	8	-	10	METAMORPHIC ROCKS, gray and yellowish brown, strong, moderately to slightly weathered, predominantly schist and metagraywacke, Bedding(?) 155°/35°NE [Franciscan Bedrock] Bottom of Test Pit at 10’ bgs. Groundwater not encountered at time of exploration.

ENGEO Expect Excellence				TEST PIT LOGS
Valley Oaks Geotechnical Exploration Novato, California 15401.001.000				Logged By: C. Hall Logged Date: December 22, 2020 Equipment: Komatsu 360 Excavator
2-TP6	0	-	1½	FAT CLAY (CH), grayish brown, hard (PP ≥ 4.5), damp, desiccation cracks in upper 18”
	1½	-	3	SANDY CLAY (CL), yellowish brown, stiff, moist, gravel [Qc]
	3	-	9½	SANDY CLAY (CL), yellowish brown to reddish brown, stiff, damp, Franciscan (greywacke) fragments, clay clasts, block and matrix, roots, quartz crystals [Qls?]
	9½	-	10	METAMORPHIC ROCKS/MELANGE, gray, weak to moderately strong, moderately weathered, predominantly claystone, schist, metagraywacke [Franciscan Bedrock]
				Bottom of Test Pit at 10’ bgs. Groundwater not encountered at time of exploration.
2-TP7	0	-	1	SANDY CLAY (CH), reddish brown, stiff, moist, rootlets
	1	-	4	CLAYEY SAND (SC), reddish yellow, very dense, moist, roots and rootlets, small gravel, angular lithic fragments [Residual Soil/Qc]
	4	-	7	METAMORPHIC ROCKS/MELANGE, gray and red, strong to weak, moderately weathered, predominantly claystone and metagraywacke with lesser amounts of schist [Franciscan Bedrock]
				Bottom of Test Pit at 7’ bgs. Groundwater not encountered at time of exploration.
2-TP8	0	-	3	FAT CLAY (CH), brown, stiff, damp, roots and rootlets [Qc]
	3	-	10	CLAYEY SAND (SC), reddish yellow, very dense, moist, roots/rootlets, small gravel [Residual Soil/Qc]
	10	-	10½	CLAYSTONE, gray and reddish yellow, weak, highly weathered, fractured [Franciscan Bedrock]
				Bottom of Test Pit at 10½’ bgs. Groundwater not encountered at time of exploration.

ENGEO Expect Excellence				TEST PIT LOGS
Valley Oaks Geotechnical Exploration Novato, California 15401.001.000				Logged By: C. Hall Logged Date: December 22, 2020 Equipment: Komatsu 360 Excavator
2TP-9	0	-	2½	SANDY CLAY (CH), reddish yellow, very stiff, damp, roots/rootlets, small gravel [Qc]
	2½	-	5½	CLAYEY SAND (SC), reddish yellow with olive, very dense, damp, clay sand matrix with claystone fragments [Residual Soil/Qc]
	5½	-	9½	CLAYSTONE, gray weathered to reddish yellow, weak, highly weathered, fractured, rootlets [Franciscan Bedrock] Bottom of Test Pit at 9½' bgs. Groundwater not encountered at time of exploration.
2-TP10	0	-	3½	SANDY CLAY (CH), reddish yellow, hard (PP ≥ 4.5), damp, roots/rootlets
	3½	-	10	METAMORPHIC ROCKS, gray weathered to reddish yellow, weak, highly weathered, roots, predominantly schist [Franciscan Bedrock] Bottom of Test Pit at 10' bgs. Groundwater not encountered at time of exploration.
2-TP11	0	-	2½	LEAN CLAY with SAND AND GRAVEL (CL), brown, hard, slightly moist, coarse- to fine-grained sand, some fine angular gravel, roots and bioturbation [Qc]
	2½	-	8½	FAT CLAY with SAND (CH), dark brown, hard, moist, coarse- to fine-grained sand, fine-subangular gravel [Qc?]
	8½	-	11	SANDY CLAY with GRAVEL (CH), pale olive to olive brown, hard (PP ≥ 4.5), slightly moist, coarse to fine angular gravel consisting of highly to completely weathered sandstone, iron oxide staining, undulating randomly oriented slickenside surfaces, occasional carbonate nodules [Qls debris] Bottom of Test Pit at 11' bgs Groundwater not encountered at time of exploration.
2-TP12	0	-	1	CLAY with SAND (CL), dark brown, hard (PP ≥ 4.5), slightly moist, some medium- to fine-grained sand, rootlets [Qc]
	3½	-	10	SANDY CLAY with GRAVEL, pale olive to olive brown, hard (PP ≥ 4.5), slightly moist, coarse- to fine-grained sand, coarse to fine angular gravel, undulating randomly oriented slickenside surfaces, occasional carbonate nodules, rock clasts consisting of highly to completely weathered sandstone and other unidentifiable rock clasts [Qls debris]

ENGEO Expect Excellence			TEST PIT LOGS
Valley Oaks Geotechnical Exploration Novato, California 15401.001.000			Logged By: C. Hall Logged Date: December 22, 2020 Equipment: Komatsu 360 Excavator
			Bottom of Test Pit at 10’ bgs. Groundwater not encountered at time of exploration.
2-TP13	0 - 1		LEAN CLAY with SAND (CL), brown, hard (PP ≥ 4.5), slightly moist, coarse- to fine-grained sand, some fine angular gravel, rootlets [Qc]
	1 - 3½		FAT CLAY with SAND (CH), dark brown, hard, moist, coarse- to fine-grained sand, fine-subangular gravel [Qc]
	3½ - 11		SANDY CLAY with GRABEL (CH), gray to olive brown, hard (PP ≥ 4.5), slightly moist, coarse- to fine-grained sand, coarse to fine angular gravel, some sub-angular cobble (<5”), undulating randomly oriented slickenside surfaces, abundant irregular shaped carbonate nodules (< 3 mm) [Qls debris]
			Bottom of Test Pit at 11’ bgs Groundwater not encountered at time of exploration.
2-TP14	0 - 1½		SANDY LEAN CLAY with GRAVEL (CL) dark yellowish brown, hard, moist, interbedded coarse-grained sand and fine gravel lenses, rootlets [Qc]
	1½ - 1½		FAT CLAY with SAND (CH), dark brown, hard (PP>4.5), moist, coarse- to fine-grained sand, massive bedding [Qc]
	3½ - 7		FAT CLAY (CH), black, hard, moist, completely weathered rounded clasts with thin clay films, massive bedding, chaotic texture [Qc]
	7 - 12		SANDY FAT CLAY with GRAVEL (CH), reddish brown, hard, moist, coarse- to fine-grained sand, iron oxide staining [Qal?]
	12 - 15		GRAVELLY CLAY (CH), dark yellowish brown, hard, wet, coarse- to fine-grained sand, coarse to fine angular to subrounded gravel, stratified [Qal]
			Bottom of Test Pit at 15’ bgs Groundwater encountered at 10’ bgs.



APPENDIX D

CORROSIVITY TEST RESULTS BY CERCO ANALYTICAL

CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

31 October, 2022

Job No. 2210032
Cust. No. 10169

Mr. Justin Qui
ENGEO Inc.
2010 Crow Canyon Place, Suite 250
San Ramon, CA 94583

Subject: Project No.: 15401.002.000
Project Name: Valley Oaks
Corrosivity Analysis – ASTM Test Methods

Dear Mr, Qui:

Pursuant to your request, CERCO Analytical has analyzed the soil sample submitted on October 19, 2022. Based on the analytical results, this brief corrosivity evaluation is enclosed for your consideration.

Based upon the resistivity measurement, the sample is classified as "moderately corrosive". All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion.

The chloride ion concentration is 22 mg/kg and is determined to be insufficient to attack steel embedded in a concrete mortar coating.

The sulfate ion concentration 23 mg/kg and is determined to be insufficient to damage reinforced concrete structures and cement mortar-coated steel at this location.

The pH of the soil is 7.62, which does not present corrosion problems for buried iron, steel, mortar-coated steel and reinforced concrete structures.

The redox potential is 340-mV which is indicative of potentially "slightly corrosive" soils resulting from anaerobic soil conditions.

This corrosivity evaluation is based on general corrosion engineering standards and is non-specific in nature. For specific long-term corrosion control design recommendations or consultation, please call *JDH Corrosion Consultants, Inc. at (925) 927-6630.*

We appreciate the opportunity of working with you on this project. If you have any questions, or if you require further information, please do not hesitate to contact us.

Very truly yours,
CERCO ANALYTICAL, INC.

for Sheena Moore
J. Darby Howard, Jr., P.E.
President

JDH/jdl
Enclosure

CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

Client: ENGEO, Incorporated
Client's Project No.: 15401.002.000
Client's Project Name: Valley Oaks
Date Sampled: 18-Oct-22
Date Received: 19-Oct-22
Matrix: Soil
Authorization: Chain of Custody

Date of Report: 31-Oct-2022

Job/Sample No.	Sample I.D.	Redox (mV)	pH	Conductivity (umhos/cm)*	Resistivity (100% Saturation) (ohms-cm)	Sulfide (mg/kg)*	Chloride (mg/kg)*	Sulfate (mg/kg)*
2210032-001	3-B7 @ 5.5'	340	7.62	-	4,200	-	22	23

Method:	ASTM D1498	ASTM D4972	ASTM D1125M	ASTM G57	ASTM D4658M	ASTM D4327	ASTM D4327
Reporting Limit:	-	-	10	-	50	15	15
Date Analyzed:	27-Oct-2022	28-Oct-2022	-	27-Oct-2022	-	27-Oct-2022	27-Oct-2022

Sherri Moore
Chemist

* Results Reported on "As Received" Basis
N.D. - None Detected

Quality Control Summary - All laboratory quality control parameters were found to be within established limits

2210032

10169

CHAIN OF CUSTODY RECORD

PROJECT NUMBER:	PROJECT NAME:
15401.002.000	Valley Oaks
SAMPLED BY: (SIGNATURE/PRINT)	
Ashraf Himel	
PROJECT MANAGER:	
Justin Qui	
ROUTING: E-MAIL	ahimel@engeo.com

SAMPLE NUMBER	DATE	TIME	MATRIX	NUMBER OF CONTAINERS	CONTAINER SIZE	PRESERVATIVE	Redox, pH, sulfate, resistivity (100% sat.) chloride	REMARKS REQUIRED DETECTION LIMITS
3-B7 @ 5.5'	10/18/22		Soil	1	Liner	N/A	X	Sample with brief evaluation

	DATE/TIME	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
Ashraf Himel (ahimel@engeo.com)	10/18/22 05:00pm			11-19-22 1:50	Edwin Moore
RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE/TIME	

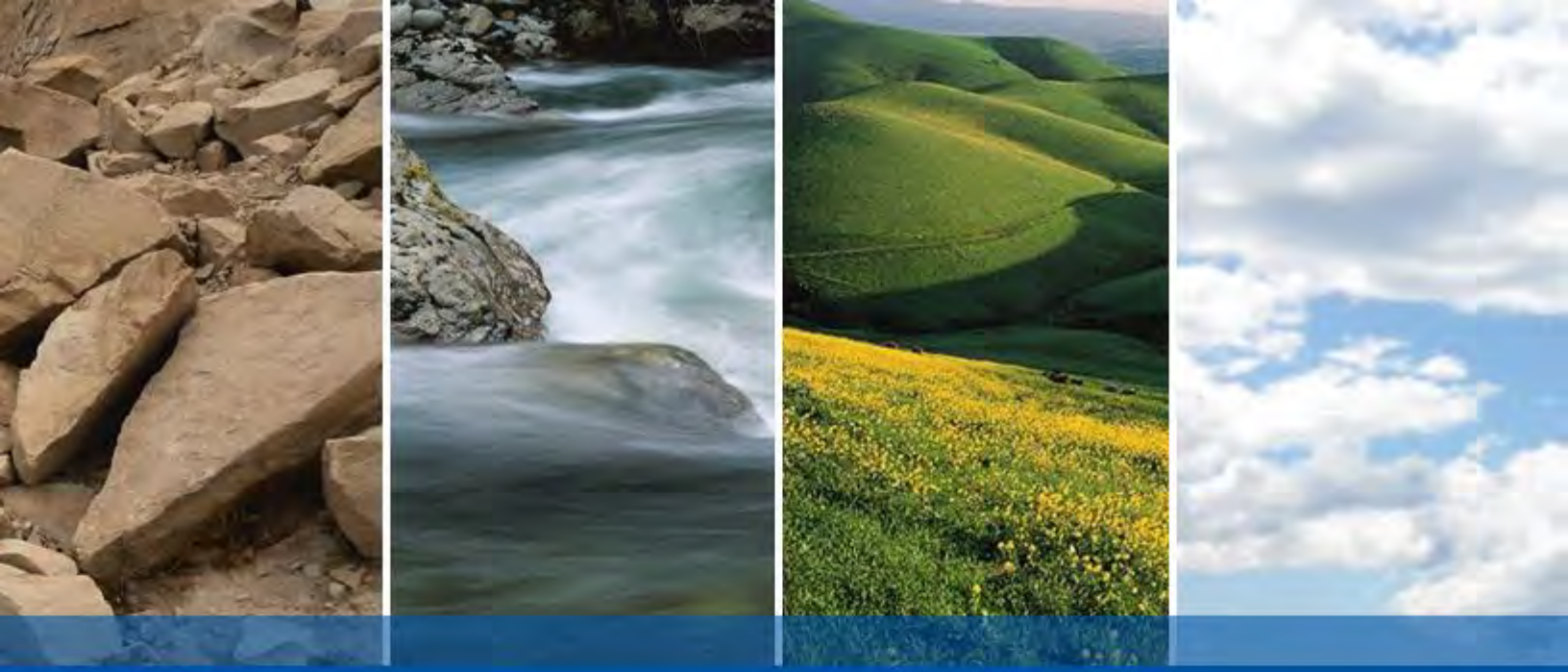
ENGEO INCORPORATED

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SAN RAMON, CALIFORNIA 94583
(925) 837-2973 FAX (888) 279-2698
WWW.ENGEO.COM

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ENGEO

Expect Excellence

Project No.
15401.002.000

August 21, 2023
Revised August 22, 2023

Mr. Michael Hooper
WCJA, LP
P.O. Box 1613
Glenn Ellen, CA 95442

Subject: Valley Oaks
Novato, California

RESPONSE TO REVIEW COMMENTS BY MILLER PACIFIC ENGINEERING GROUP

Dear Mr. Hooper:

The purpose of this letter is to provide our responses to comments by Miller Pacific Engineering Group (MPEG) in their letter (Reference 1) based on their review of our geotechnical reports for the project (References 2 through 4). Provided below are the MPEG comments in italics followed by our response(s).

MPEG Comment 1

The report notes there is an adequate structural setback from the existing creekbanks to account for erosion or creek meander. The geotechnical report should specify the minimum geotechnical setback distance from creek back in case plans change or future structures are constructed.

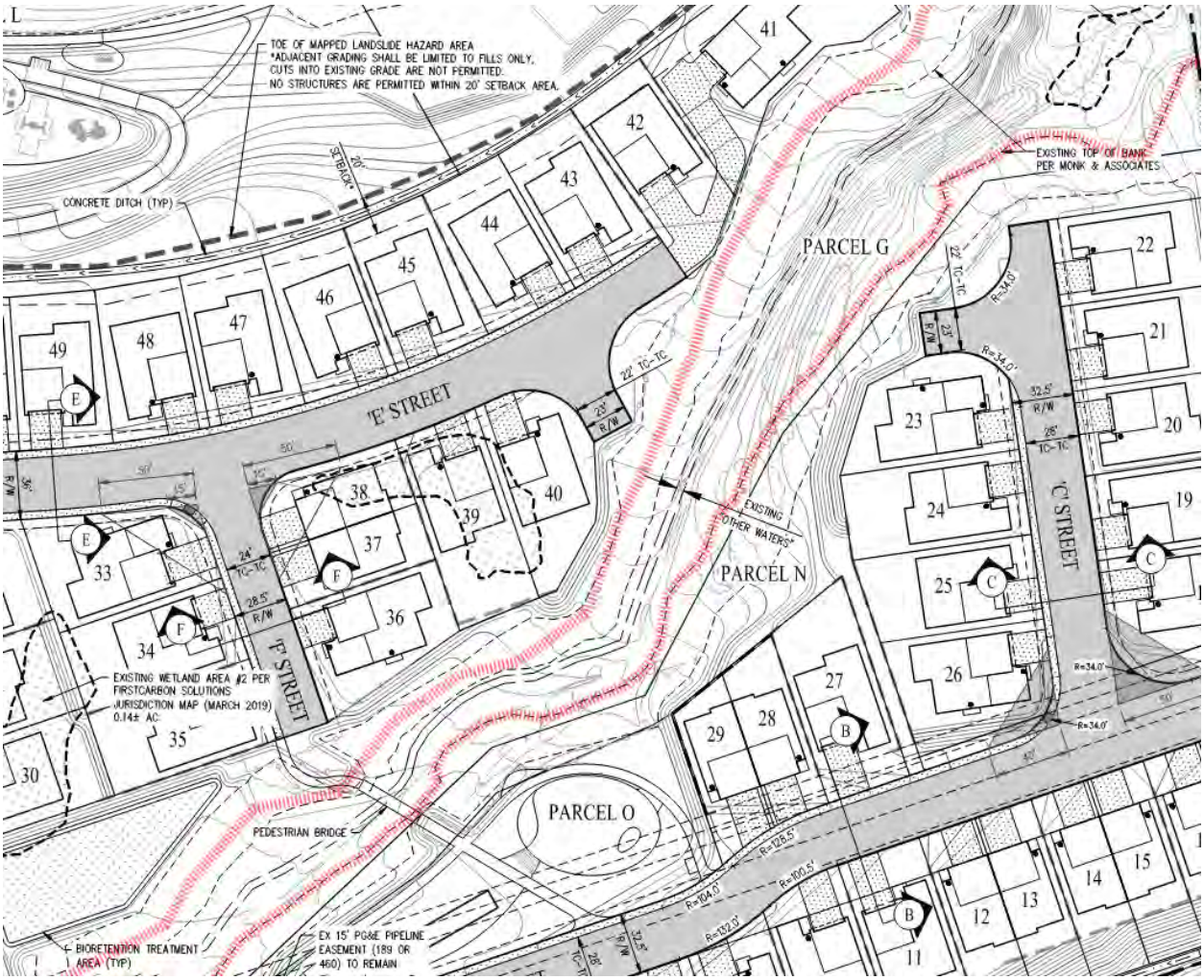
ENGEO Response to Comment 1

The existing drainage swale crosses the site in an east-west general direction, and topographic maps show the depth of the creek to range between 3 to 12 feet. It is our opinion that from a geotechnical viewpoint, the following criteria should be used to determine adequate structural setback from the existing drainage swale banks.

- Permanent house structures should be setback from the drainage swale bank beyond an imaginary projected 3:1 (horizontal: vertical) surface that extends from the elevation of the bed at the toe of swale bank, upward to where the imaginary surface daylights at final grade, or top of the edge of the existing bank, whichever is a greater setback. Exhibit 1 shows the location of recommended geotechnical setback zone based on the 3:1 imaginary projection.

- Local areas of planned site improvements and crossings may encroach on the above-mentioned drainage swale setback. These local crossing locations should be designed and constructed to consider design for creeks (such as hydrology) and scour for improvements (such as headwalls, vehicle and pedestrian crossings) on the swale.

EXHIBIT 1: Geotechnical Setback (Shown in Red)



Comment 2

As typically required, the geotechnical engineer should review the grading and drainage plans, and foundations plans to confirm that the intent of their geotechnical recommendations have been incorporated into the plans.

ENGEO Response to Comment 2

We concur and should review the grading, site improvement, and foundation plans for the project for conformance with our geotechnical report and recommendations.

Comment 3

During construction, the Geotechnical Engineer-of-Record should provide inspection and testing services to confirm subsurface conditions exposed are consistent with the geotechnical design criteria and/or provide supplemental geotechnical recommendation, if needed.

ENGEO Response to Comment 3

We concur and we should provide geotechnical observation and testing as recommended in Reference 4.

If you have any questions or comments regarding this letter, we will be glad to discuss them with you.

ENGEO Incorporated

Justin Qiu, PE

Theodore P. Bayham, GE, CEG

jq/tpb/dt

Attachment: Selected References

SELECTED REFERENCES

1. Miller Pacific Engineering Group. 2023. Planning-Level Peer Review, Valley Oaks, Novato, California. July 13, 2023. File No. 3496.002altr.doc.

2. ENGEO. 2020. Updated Seismic Deformation Analysis and Supplemental Setback Recommendations, San Marin Area E, Redwood Boulevard, Novato, California. January 27, 2020. Project No. 15401.001.000.

3. ENGEO. 2021. Geotechnical Hazards and Planned Development, Valley Oaks (aka Areas D1 and E, San Marin Commerce Park and a portion of 100 Black John Road), Redwood Boulevard, Novato, California. May 1, 2021. Project No. 15401.001.000.

4. ENGEO. 2023. Geotechnical Exploration, Valley Oaks, Novato, California. January 12, 2023, Revised January 20, 2923. Project No. 15401.002.000.

AllWest Environmental

ENVIRONMENTAL SITE ASSESSMENT

Novato Parcels, APNs 125-580-34 & -37, Novato, CA 94945



PREPARED FOR:

WCJA, LP
c/o Campus Properties, LLC
P.O. Box 1613
Glen Ellen, CA 95442

ALLWEST PROJECT 23023.20
February 24, 2023

PREPARED BY:

Belinda P. Blackie, PE
Project Manager

REVIEWED BY:

Marc D. Cunningham
USEPA Environmental Professional
President

2141 Mission Street, Suite 100 | San Francisco, CA 94110 | 415.391.2510

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AllWest Environmental | AllWest1.com

AllWest

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY ..... Page 1

II. FINDINGS, OPINIONS & CONCLUSIONS ..... Page 2

III. ENVIRONMENTAL PROFESSIONALS' DECLARATION ..... Page 2

IV. SCOPE OF WORK AND LIMITATIONS ..... Page 3

V. ENVIRONMENTAL ISSUES MATRIX ..... Page 5

VI. ASSESSMENT FINDINGS ..... Page 6

A. Site Information ..... Page 6
B. Historical Land Use: Site and Vicinity ..... Page 7
C. Physical Characteristics ..... Page 10
D. Natural Hazards ..... Page 11
E. Site Characteristics ..... Page 12
F. Hazardous Materials in Facility and Operational Systems ..... Page 13
G. Hazardous and Non-Hazardous Materials and Wastes ..... Page 13
H. Pollution Sources, Controls and Treatment ..... Page 14
I. Regulatory Database Search ..... Page 14

VII. INFORMATION SOURCES ..... Page 20

ENVIRONMENTAL ACRONYMS

FIGURES
Figure 1: Regional Map
Figure 2: Vicinity Map
Figure 3: Aerial Photograph

PHOTOGRAPHS 1 through 24

APPENDIX A EDR® Reports
Radius Map™
Sanborn Map Report
Aerial Photo Decade Package
Topo Map Report
City Directory Abstract

APPENDIX B Completed Environmental Questionnaire and User-Provided Documents

APPENDIX C Report Author Credentials

APPENDIX D Authorization for Reliance and General Conditions

ENVIRONMENTAL SITE ASSESSMENT

Novato Parcels, APNs 125-580-34 & -37, Novato, CA 94945

I. EXECUTIVE SUMMARY

AllWest has completed an environmental site assessment of the real property referenced above. This assessment was performed in accordance with the scope and limitations of 40 CFR Part 312 Standards and Practices for All Appropriate Inquiry; Final Rule and ASTM E 1527-21 Standard Practice for Environmental Site Assessments (ESA): Phase I Environmental Site Assessment Process. Any data gaps, exceptions to or deletions from these practices are described in Section IV of this report.

This ESA was conducted for WCJA, LP, c/o Campus Properties, LLC, in support of a planned disposition. AllWest conducted a site visit on February 16, 2023.

This executive summary is provided solely for the purpose of overview. Any party who relies on this report must read the full report. The executive summary may omit details, any one of which could be crucial to the proper understanding and risk assessment of the subject matter.

The subject property is located on Assessor's Parcel Numbers (APNs) 125-580-34 and 125-580-37. Zoned PD – Planned District, the subject property is an irregularly-shaped 37.2-acre largely undeveloped property, which includes an approximately 4,000-square-foot Quonset hut structure, fencing, areas of materials storage and vehicle/equipment parking, and a dirt road (Pinkston Road). The subject property is utilized for storage/parking and cattle grazing.

The subject property is sited on the west side of Redwood Boulevard and Interstate 101, along which it has no direct street frontage. Redwood Boulevard is fewer than 50 feet east of the property. There is street frontage along Pinkston Road, a dirt road which is included within the subject property.

Surrounding land use is mixed residential, commercial and undeveloped land. Residential properties of the Partridge Knolls development, the Buck Institute and undeveloped land adjoin the subject property to the north and west. Undeveloped land, an office building, future hotel development and residential properties are south of the subject property. A multi-family residential development, followed by Redwood Boulevard, Interstate 101, and commercial developments adjoin the subject property to the east.

Subject property topography descends moderately from its northern, western and southern edges, where the maximum elevation is approximately 180 feet above mean seal level (msl), towards a low point near the middle of the eastern edge of the property, where the elevation is approximately 20 feet above msl. Surrounding topography is variable, with an overall descending slope towards wetlands of Rush and Basalt Creeks to the east. Groundwater depth is anticipated at 10 feet below ground surface (bgs) or greater, depending upon location, with a groundwater flow direction anticipated generally towards the east.

AllWest assessed the subject property's land use history by reviewing aerial photographs, topographic maps, city directories and other relevant documents. Our land use history review indicates Pinkston Road was present on the property as early as 1914. Two groupings of structures, as well as an additional structure, were present on the northern portion of the property by the early-1940s, including what likely was at least one residence and animal barns. Additional residential and ranch structures were added to the subject property, including a horse arena and track, through the 1970s. The Quonset hut appeared constructed on the subject property in the early-1960s. By the early-1990s, only the Quonset hut remained on the subject property, as it remains today.

Reportable quantities of hazardous materials are not stored at the subject property and are not documented or reported previously. No visual or documentary evidence of existing or former underground storage tanks (USTs) was identified.

A water supply well is present at the subject property. No longer utilized, the pump house has been removed but the well casing reportedly remains.

According to the U.S. Fish and Wildlife Service National Wetlands Inventory, Riverine habitat extends along the seasonal stream which traverses from the northern property line south-southeasterly past the Quonset hut to Redwood Boulevard. Wetland maps for the subject

property documented approximately 1.64 total acres of wetlands in approximately 10 locations across the subject property.

To identify the subject property's potential inclusion on environmental databases, and to evaluate off-site environmental concerns, AllWest reviewed a site-specific radius report provided by Environmental Data Resources, Inc. (EDR). The radius report searched agency lists and databases for recorded sites within the industry standard search radii. EDR also searches selected national collections of business directories. These databases fall within a category of information EDR classifies as "High Risk Historical Records".

The subject property was not listed on the regulatory agency databases searched in EDR's radius report. The database search identified no current or historical releases or other conditions at the subject property appearing likely to have significantly impacted the underlying soil, soil vapor or ground water. The agency database search also identified no surrounding or adjoining sites that appear likely to have significantly impacted the site's soil, soil vapor or ground water resources.

II. FINDINGS, OPINIONS & CONCLUSIONS

AllWest has performed a Phase I Environmental Assessment for the subject property in general conformance with the scope and limitations of ASTM Practice E1527-21 of the property identified as APNs 125-580-34 and -37 in Novato, California. Any exceptions to, or deletions from, this practice are described in Section IV.

This ESA also was conducted in general accordance with 40 CFR Part 312 Standards and Practices for All Appropriate Inquiry; Final Rule and ASTM E 1527-21 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

AllWest has not identified a Recognized Environmental Condition (REC), Controlled REC (CREC) or Historical REC (HREC) at the subject property. No significant data gaps were identified. No further assessment is recommended.

Although not considered RECs, the following environmental conditions and/or non-scope items were identified.

The water production well at the subject property should be appropriately abandoned in accordance with applicable regulatory agency requirements. Considering the property's former building construction dates, including residences and ranch buildings, as well as the age of the existing structure, undocumented heating oil or fuel USTs may remain present. A UST survey of the previously and currently developed areas is recommended.

Many properties with historical structures are found to have residual metals and/or pesticides and herbicides present in soil around the perimeters of the former structures attributable to flaking of lead-based paint (LBP) and the domestic application of pesticides/herbicides. Based on this land use history, AllWest cannot discount the potential for these residual contaminants to remain present in near-surface soils. Since property redevelopment with a more sensitive use is under consideration, soil sampling in targeted areas is recommended to evaluate historical land use related environmental impact.

It is AllWest's professional experience that building materials from historical structures, such as bricks, wood, plaster, etc., may have been buried in former basements or elsewhere during demolition. Other undocumented subsurface items such as septic systems, wells, USTs, etc. may remain present in previously developed areas of the property. Any planned construction/development activities in the historically developed areas of the subject property should anticipate encountering these materials.

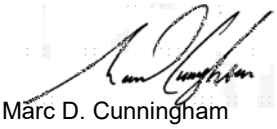
III. ENVIRONMENTAL PROFESSIONALS' DECLARATION

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in 312.10 of 40 CFR 312.10. We have the specific qualifications based on education, training and experience to assess a property of the nature, history, and setting of the subject property.

We have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



Belinda P. Blackie, PE
Project Manager
February 21, 2023



Marc D. Cunningham
USEPA Environmental Professional
February 21, 2023

IV. SCOPE OF WORK AND LIMITATIONS

This Phase I ESA was prepared in accordance with AllWest's February 2023 proposal for the Novato Parcels identified as APNs 125-580-34 and -37 in Novato, California. This assessment was performed in general accordance with industry standard 40 CFR Part 312, except as set forth in the proposal. The work conducted by AllWest is limited to the services agreed to with WCJA, LP c/o Campus Properties, LLC. No other services beyond those explicitly stated should be inferred or are implied.

The objective of this ESA was to evaluate the subject property for conditions indicative of a release or threatened release of hazardous substances on, at, in or to the property. AllWest's professional services were performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable environmental consultants practicing in the location of the subject site at the time of our investigation. This warranty is in lieu of all other warranties, expressed or implied.

Our professional judgment regarding the potential for environmental impacts is based on limited data and our investigation was not intended to be a definitive investigation of contamination at the site. Unless specifically set forth in our proposal, the scope of work did not include groundwater or soil sampling, or other subsurface investigations, a strict compliance audit of the site, or a review of the procedures for hazardous material use, waste storage or handling prior to disposal, or for personnel safety and health training and monitoring procedures, analyses of radon, formaldehyde, lead paint, asbestos and other hazardous materials or indoor air quality, occupational health and safety or wetlands surveys.

Hazardous substances, as a term used throughout this report, are those substances defined as a hazardous substance pursuant to CERCLA 42 USC 9601(14), as interpreted by EPA regulations and the courts, and those defined as hazardous substances by the California Health and Safety Code. Emerging contaminants are excluded.

The purpose of conducting a Phase I ESA is to assess the subject property for conditions indicative of releases, likely releases or threatened releases of hazardous substances on, at, in or to the property resulting from its current, historical and surrounding land use activities. As noted in 40 CFR Part 312, Environmental Assessments are purely qualitative with conclusions drawn from a multitude of sources as evaluated by the environmental professional using professional judgment. Since soil and groundwater data are typically not generated during assessment activities, report conclusions such as "the site is clean" or alternatively "the site is contaminated" cannot be provided.

Recognizing the limitations of the Phase I ESA methodology, AllWest assesses the potential for site contamination using a four-tier probability scale designated as:

Very Low: 1–5% chance of discovering contamination at the site which would result in regulatory mandated remedial investigation and clean-up;

Low: 10% chance of discovering contamination at the site which would result in regulatory mandated remedial investigation and clean-up;

Moderately Low: 20–30% chance of discovering contamination at the site which would result in regulatory mandated remedial investigation and clean-up; and

Moderate: greater than 30% chance of discovering contamination at the site which would result in regulatory mandated remedial investigation and clean-up.

As defined above, these terms are used throughout the report.

Entities relying on the report should realize that uncertainty of site environmental conditions can be further reduced via soil and groundwater sampling. While this option certainly costs additional monies and extends the assessment's time frame, it also quantitatively documents site conditions, which can facilitate future disposition or refinance activities.

Regarding any subsurface investigation, sampling undertaken or subsurface reports reviewed, our opinions are limited to only specific areas and analytes evaluated and AllWest is not accountable for analyte quantities falling below recognized standard detection limits for the laboratory method utilized. AllWest does not warrant or guarantee the subject property suitable for any particular purpose, or certify the subject site as clean or free on contamination. As with any assessment, it is possible that past or existing contamination remains undiscovered.

The professional opinions set forth in this report are based solely upon and limited to AllWest's visual observations of the site and the immediate site vicinity, and upon AllWest's interpretations of the readily available historical information, interviews with personnel knowledgeable about the site, and other readily available information. Consequently, this report is complete and accurate only to the extent that

cited reports, agency information and recollections of persons interviewed are complete and accurate. The opinions and recommendations in this report apply to site conditions and features as they existed at time of AllWest's investigation. They cannot necessarily apply to conditions and features of which AllWest is unaware and has not had the opportunity to evaluate. Future regulatory modifications, agency interpretations, and/or policy changes may also affect the compliance status of the subject property. AllWest has made no attempt to address future financial impacts to the site (e.g., reduced property values) as a result of potential subsurface contaminant migration.

SIGNIFICANT DATA GAPS: AllWest has made a good faith effort to obtain information required by 40 CFR Part 312 to formulate a professional opinion. Instances where data gaps occur are detailed within our report with an opinion as to whether the information void is significant, impacting our ability to identify conditions indicative of a release, likely release or threatened release of hazardous substances. In general, if a significant data gap is identified by AllWest, it will be discussed in the report's conclusion section with a recommendation for additional work, if warranted.

This Phase I ESA was prepared for the sole and exclusive use of WCJA, LP c/o Campus Properties, LLC, the only intended beneficiary of our work. This report is intended exclusively for the purpose outlined herein and the site location and project indicated and is intended to be used in its entirety. No excerpts may be taken to be representative of the findings of this assessment. The scope of services performed in execution of this investigation may not be appropriate to satisfy other users, and any use or reuse of this document or its findings, conclusions or recommendations presented herein is at the sole risk of the user. This report is not a specification for further work and should not be used to bid out any of the recommendations found within.

V. ENVIRONMENTAL ISSUES MATRIX

Novato Parcels, APNs 125-580-34 & -37, Novato, CA **AllWest Project 23023.20**

On-Site Issues	*Located*	*Regulatory Compliance*	*Recommended Action*	*Refer To Section*
REC/CREC/HREC	No			
55-Gallon Drums	No			
Above Ground Tanks	No			
Underground Tanks	Potential		UST survey on currently and previously developed portions of property	G.4
Evidence of Material Discharge/Release	No			
Transformers (PCBs)	No			
Hazardous Materials	No			
Hazardous Wastes	No			
Asbestos Walls, Ceilings, Floors, Fireproofing & Bulk Insulation	No			
Lead Based Paints	No			
Mold	No			
Air Quality Issues	No			
Radon	No			
Sensitive Ecological Areas	Yes		None	D.3
Wells	Yes		Appropriately abandon production well in accordance with applicable regulatory agency requirements	E.7
Regulatory Database Listings	No			
Previous Agricultural Use	Yes		None – cattle grazing	B.1, H.2
Historical Contamination	Potential		A Phase II investigation may be appropriate to evaluate potential soil quality impact from historical land use activities	B.1, H.2
Elevators	No			
Other	Potential		Potential buried building materials and other subsurface items from prior development should be anticipated	B.1

Off-Site Issues	*Located*	*Within 1/4 Mile*	*Within 1/2 Mile*	*Recommended Action*	*Refer To Section*
NPL Sites	No				
SEMS Sites	No				
RCRA TSDF	No				
EnviroStor Sites	Yes	0	2 w/in 1 mile	None	I.11
CPS-SLIC Sites	No				
LUST Sites	Yes	0	2	None	I.14

Note: ASTM-designated search radius for NPL and EnviroStor sites is 1 mile.

VI. ASSESSMENT FINDINGS

A. SITE INFORMATION

1. PURPOSE: This ESA was conducted for WCJA, LP, c/o Campus Properties, LLC, in support of a planned disposition.

2. PROPERTY ADDRESS: The subject property appears to have no assigned street address. It is located in Novato, Marin County, California.

   The subject property location is shown on the attached figures and within the EDR report in Appendix A.

3. ASSESSOR'S PARCEL NUMBER: The subject property is identified with APNs 125-580-34 and 125-580-37.

   Previously, APN 125-580-34 was a portion of former parcel APN 125-580-32 and APN 125-580-37 was a portion of former parcel APN 125-580-23.

4. ZONING: Zoning for the subject property is PD – Planned District.

5. SITE DESCRIPTION: The subject property consists of two adjoining parcels, which together comprise an irregularly-shaped 37.2-acre (1,620,432-square-foot) property. Largely undeveloped, there is an approximately 4,000-square-foot Quonset hut structure, fencing, areas of materials storage and vehicle/equipment parking and a dirt road (Pinkston Road) on the property. The subject property is situated on the west side of Redwood Boulevard and Interstate 101, along which it has no direct street frontage. Redwood Boulevard is fewer than 50 feet east of the property. There is street frontage along Pinkston Road, a dirt road which is included within the subject property.

6. CURRENT USE OF PROPERTY BY TENANT(S): The subject property currently is utilized for storage/parking and cattle grazing.

7. CURRENT USE OF SURROUNDING PROPERTIES: Surrounding land use includes undeveloped land as well as residential and commercial development. Surrounding sites include the following.

   North: Residential property (100 Pinkston Road), undeveloped land and Buck Institute (8001 Redwood Boulevard)

   South: Undeveloped land, residential properties (Wood Hollow Drive and Cobblestone Court) and office building (100 Wood Hollow Drive)

   West: Undeveloped land and Partridge Knolls residential development (Cobblestone Court)

   East: Multi-family residential development under construction (7711 Redwood Boulevard), Redwood Boulevard and Interstate 101

   Use and storage of significant quantities of hazardous materials at surrounding properties was not observed during the site visit.

8. SITE RECONNAISSANCE: AllWest Environmental Professional Belinda Blackie visited the subject property on February 16, 2023 and was unaccompanied. AllWest walked the approximate perimeter and accessible interior portions of the property on foot, and observed the interior of the Quonset hut. Muddy conditions and the presence of cattle precluded direct observation of some areas of the property. Observations made during the site visit are summarized in Sections E, F and G of this report.

   Adjoining properties were observed from the subject property and public rights-of-way.

   Site photographs are included with this report.

9. INTERVIEWS WITH PRESENT PROPERTY OWNER(S): Prior to AllWest's site visit, we forwarded an environmental questionnaire to the ESA User, Campus Properties, to collect information on past uses and ownerships of the property, to request results of the environmental lien and activity and use limitation (AUL) search conducted by the User, and to identify other potential conditions that may indicate the presence of releases, likely releases or threatened releases of hazardous substances and/or petroleum hydrocarbons at the subject property.

   The questionnaire was completed by Michael Hooper of Campus Properties on February 15, 2023 and is included in Appendix B. Mr. Hooper also provided additional information on the property via email and over the phone.

   According to Mr. Hooper, he is unaware of environmental liens or environmental activity and use limitations (AULs), including engineering or institutional controls, filed or recorded against the property. He is unaware of a reduction to property value due to environmental issues. Mr. Hooper reported no additional knowledge or experience with the subject property that would suggest the

presence or likely presence of hazardous materials releases.

Mr. Hooper stated there is one abandoned water well at the property. The pump house was removed but the casing still remains and reportedly will be removed shortly. He recalls the well as approximately 25 feet deep. Mr. Hooper also noted some wetlands delineated on the subject property (Section D.3) as well as some flooding that occurs in the lower reaches of the property by Redwood Boulevard during heavy rain, which results from blockage of drainage pipes extending beneath Interstate 101.

Mr. Hooper also recalled a horse track at the property. He was unaware of any stored chemicals, USTs, aboveground storage tanks (ASTs), spills/releases, dump areas/landfills, water treatment systems, clarifiers or other environmental concerns.

Information on current and previous property use also was requested from the farmer of the subject property, Mack Lewis, via email on February 9 and 15, 2023. A response was not received from Mr. Lewis.

10. PREVIOUS REPORTS: No previous environmental reports for the subject property were provided for AllWest's review or otherwise documented as performed.

B. HISTORICAL LAND USE: SITE AND VICINITY

1. HISTORICAL USE OF THE PROPERTY: Historical documents in the form of Sanborn maps, aerial photographs, topographic maps, city directories and municipal records were researched by AllWest, to evaluate past land use of the subject property. AllWest attempted to review historical documents as far back in time as the property contained structures or was used for agricultural, residential, commercial, industrial or governmental purposes, and used professional judgment to determine the extent of historical research.

   Aerial photographs, topographic maps and city directories were available for this study. The aerial photographs covered the years 1942, 1952, 1963, 1968, 1970, 1973, 1982, 1993, 2006, 2009, 2012, 2016 and 2020. The topographic maps were dated 1914, 1942, 1954, 1968, 1973, 1980, 2012, 2015 and 2018. City directories spanning from 1973 to 2017 also were reviewed. The historical sources were obtained from EDR of Shelton, Connecticut and are provided in Appendix A. EDR reported the subject property to be an unmapped property for the Sanborn Library, LLC collection.

   Permits and other records available from Novato and Marin County building and environmental health departments also were searched and reviewed, if available. A chain-of-title review was not conducted.

Aerial Photographs

1942: The northern portion of the subject property included several small structures, likely associated with cattle ranching. A long narrow structure possibly with a darker structure or area adjoining the north end, and a second small structure, were visible in the general location of the existing Quonset hut. A second grouping of three small structures was present near the middle of the eastern portion of the property, with another similar structure midway between the two structure groupings. The remainder of the northern portion of the subject property included seasonal streams, dirt roads, Pinkston Road, and land which appeared grazed or mowed.

The southern portion of the subject property appeared largely undeveloped, possibly with a seasonal stream present. Pinkston Road extended generally along the eastern perimeter before extending off-site. A small structure was visible a short distance south of the cluster of building described near the middle of the eastern portion of the property.

1952: There were no significant changes from the 1942 photograph, although the darker structure or area at the north end of the long narrow structure on the northern portion of the subject property no longer appeared present. Additionally, a seasonal stream, and/or possibly a dirt road/trail, was present on the southern portion of the property, extending east to Pinkston Road.

1963: The resolution of the 1963 photo provided detail on the structures/development on the northern portion of the subject property, which remained similar to that discussed on the previous photographs. The structures on the northern portion of the subject property were all accessed by Pinkston Road, which terminated at the northern portion of the property.

What appeared to be the existing Quonset hut had been added to the structures on the northern portion of the property, just west of the long narrow structure. The long narrow structure appeared to be animal housing with adjoining exterior pens. An L-shaped structure had been

added east of the long structure; the purpose was unable to be determined. An additional shack-type structure, several other items, some fencing and a few parked vehicles also were present in that area.

South of those structures was what appeared to be a barn or similar, with an adjoining large oval animal arena with possibly jumping structures within it. To the west was an additional enclosure and a dirt track, which likely were for horses (Section A.9).

The grouping of structures near the middle of the property may have included a residence as well as other barn or similar structures. A few vehicles and other items were visible around the structures.

The southern portion of the property remained undeveloped, with the exception of the single very small structure discussed for the previous photographs. Evidence of cattle or other animal pathways was visible on the southern portion of the property as well.

1968 & 1970: There were no significant changes from the 1963 photograph, although the poor resolution of the 1970 photo made details difficult to discern.

1973: There were no significant changes from the previous photographs, with a few exceptions. Additional shack-like structures were visible along the northern property line, near the Quonset hut. The seasonal stream bed appeared more defined south of the Quonset hut, and the road appeared to have a bridge crossing. The structures grouped near the middle of the property appeared possibly all residential, with at least one increased in size.

1982: There were no significant changes from the 1973 photograph.

1993 - 2020: Only the Quonset hut remained on the subject property, with the rest appearing undeveloped. Pinkston Road no longer appeared defined extending to the northern portion of the property. On different photographs during this time period, a variety of vehicles, animals and other items were visible in the vicinity of the Quonset hut, as well as along Pinkston Road, primarily on the portion near Redwood Boulevard.

Topographic Maps

1914: No development was depicted on the subject property, although Pinkston Road was depicted entering the eastern portion of the property and generally traversing the property line.

1942: One small structure, likely a residence, was depicted on the middle portion of the property, near where the grouping of three structures was described for the aerial photographs. Pinkston Road extended to the structure.

1954: The apparent residential structure remained, with two outbuildings/barns depicted in the general location of other structures described for the aerial photographs.

1968 - 1980: Structures appearing to represent the Quonset hut, long narrow structure and L-shaped structure were depicted on the far northern portion of the subject property, connected to what were depicted as two small, potentially residential structures near the middle of the property by Pinkston Road.

2015 - 2018: Maps from this time period depicted only topographic contours, municipal boundaries and roadways. One municipal boundary appeared to transect the subject property.

City Directories

As the subject property appears to have no assigned street address, no city directory listings were available.

Building Department Permits

Permits for the subject property, queried by APN, were searched through the Novato Building Department's online eTRAKiT database as well as the Marin County online Public Access Viewer on February 15, 2023. No permits were identified for the subject property.

CUPA Documents

AllWest requested documents filed by the Marin County Department of Public Works, Waste Management Division (MCWMD), which is the Certified Unified Program Agency (CUPA) for Novato, on February 9, 2023. A response had not been received at the time this study was completed. Although this is identified as a data gap, it is not considered significant as records are not anticipated due to the lack of a street address and nature of property use.

Online Databases

The California Department of Toxic Substances Control (DTSC) EnviroStor, the State Water

Resources Control Board (SWRCB) GeoTracker and the California Environmental Protection Agency (CalEPA) Registered Site Portal (RSP) databases were reviewed online on February 9, 2023.

EnviroStor and GeoTracker are databases used to track sites with documented releases, and associated investigation and cleanup efforts. The subject property was not included on either of the databases.

The RSP database contains data about environmentally regulated facilities throughout California. There also were no RSP listings for the subject property.

Summary of Historical Land Use

AllWest's land use history review for the subject property indicates Pinkston Road was present on the property as early as 1914. Two groupings of structures, as well as an additional structure, were present on the northern portion of the property by the early-1940s, including what likely were at least one residence and animal barns. Additional residential and ranch structures were added to the subject property, including a horse arena and track, through the 1970s. The existing Quonset appeared constructed on the subject property in the early-1960s. By the early-1990s, only the Quonset hut remained on the subject property, as it does at the present time.

AllWest's assessment of the site's historical land use encountered a data gap in the lack of historical sources predating development. However, as development is presumed similar from construction until the earliest sources, the gap did not diminish our ability to provide an opinion on a release or potential release of hazardous substances at the subject property, and therefore is not considered significant.

2. HISTORICAL USE OF SURROUNDING PROPERTIES: AllWest reviewed the previously referenced aerial photographs, topographic maps and city directories to assess the historical land use in the immediate site area.

Aerial Photos

1942: Adjoining and vicinity properties were undeveloped, with the exception of some small roads with a few very small structures. Railroad tracks and a larger road were present in the existing railroad line location east of Interstate 101, beyond which were wetlands.

1952: There were no significant changes from the 1942 photograph, although the road along the railroad tracks had been widened and a few additional structures were present in the more distant vicinity.

1963: Adjoining properties remained undeveloped with the exception of occasional small roads. What appeared to be a quarry was visible a short distance northwest, the existing hotel was present a short distance north and manmade ponds were present northeast of the railroad tracks. The remainder of the vicinity remained undeveloped.

1968 & 1970: There were no significant changes to the adjoining and vicinity properties, although quarrying operations appeared increased in size and intensity to the northwest.

1973: Redwood Boulevard and Interstate 101 had been constructed in the existing locations adjoining east of the subject property. The existing residence present adjoining north (100 Pinkston Road) also had been constructed. The quarry to the northwest was possibly no longer in operation. There were no other significant changes from the previous photographs.

1982: There were no significant changes to adjoining and vicinity properties, with the exception of the existing San Marin Drive business campus under construction a short distance south.

1993: Adjoining properties to the north and south remained largely undeveloped, with the residence remaining to the north and existing Wood Hollow and Meadow Crest Roads present to the south. Existing residences had been constructed adjoining west and a short distance southwest of the subject property. The property adjoining east, 7711 Redwood Boulevard, between the subject property and Redwood Boulevard, had been graded. The existing commercial/office buildings had been constructed adjoining east of Interstate 101.

2006 - 2020: Adjoining and vicinity development appeared to be that currently present, with the existing office building (100 Wood Hollow Drive) a short distance south and all the existing commercial facilities adjoining east of Interstate 101.

Topographic Maps

No significant topographic features of environmental concern were depicted in the area surrounding the subject property. Wetlands

consistently were depicted east of the railroad tracks east of the subject property. Increased development in the vicinity appeared to commence prior to 1942. Quarrying and springs were depicted in the hills east and northeast of the subject property from 1954 to 1980.

City Directories

City directories for the adjoining properties on Redwood Boulevard and Wood Hollow Drive were included in the EDR report. Available listings included the following.

South

100 Wood Hollow Drive

1973 - 2000: Address not listed

2005 & 2010: Greenpoint Mortgage Funding

2014: Indura Assistance; individual

2017: 100 Wood Hollow Dr Owners LLC; California Service Bureau

East

7711 Redwood Boulevard

1973 – 2017: Address not listed

Summary of Historical Vicinity Land Use

AllWest's land use history review of the subject property vicinity indicates the area was predominantly undeveloped, with the exception of a few small roads and structures, through the 1950s. Although the majority of the vicinity remained undeveloped, quarrying commenced a short distance northwest of the subject property by the early 1960s; the existing hotel a short distance north was present by 1963.

The existing configuration of Interstate 101 had been constructed adjoining east of the subject property by the early-1970s, at which time commercial development east of the highway commenced. The existing residence adjoining north of the subject property was present by 1973. Residential development west of the subject property was present by the early-1990s and the existing development in the vicinity, with the exception of the under construction townhome development adjoining east, was present by the early-2000s.

AllWest's assessment of the subject property's historical surrounding land use activities did not encounter data gaps that diminish our ability to provide an opinion on a release or potential release of hazardous substances at the subject property.

C. PHYSICAL CHARACTERISTICS

1. TOPOGRAPHY: Subject property topography descends moderately from the northern, western and southern edges, where the maximum elevation is approximately 180 feet above msl, towards a low point near the middle of the eastern edge of the property, where the elevation is approximately 20 feet above msl. Surrounding topography is variable, with an overall descending slope towards wetlands of Rush and Basalt Creeks to the east.

2. VEGETATION: The subject property is growing with native weeds and grasses as well as scrub brush and mature oak trees. Evidence of distressed vegetation was not observed.

3. SOILS: Soils at the subject property are classified by the U.S. Department of Agriculture Soil Conservation Service as the Los Osos and Blucher series. The Los Osos series consists of loam with very slow infiltration rates. The Blucher series consists of silt loam with slow infiltration rates. Exposed soil was present across the entire property, both with and without vegetative cover. Stained or otherwise discolored soil was not observed on the subject property.

4. GEOLOGY: Based on a review of the USGS Note 36 California Geomorphic Provinces map, the property is located in the Coast Ranges geomorphic province of California. The coastline is uplifted, terraced and wave-cut. The Coast Ranges are composed of thick Mesozoic and Cenozoic sedimentary strata. The northern and southern ranges are separated by a depression containing the San Francisco Bay.

   The northern Coast Ranges are dominated by the irregular, knobby landslide-topography of the Franciscan Complex. The eastern border is characterized by strike-ridges and valleys in Upper Mesozoic strata. In several areas, Franciscan rocks are overlain by volcanic cones and flows of the Quien Sabe, Sonoma and Clear Lake volcanic fields. The Coast Ranges are subparallel to the active San Andreas Fault. The San Andreas is more than 600 miles long, extending from Point Arena to the Gulf of California. West of the San Andreas is the Salinian Block, a granitic core extending from the southern extremity of the Coast Ranges to north

of the Farallon Islands. Geologically, the area of the subject property is underlain by Mesozoic era Eugeosynclinal Deposits.

5. HYDROLOGY: According to California's Groundwater Bulletin 118, the subject property is located in the San Francisco Bay Hydrologic Region and lies in the Novato Valley Groundwater Basin (Basin No. 2-030). The Novato Valley Basin is within a structural depression in the Coast Ranges, west of San Pablo Bay and north of San Rafael. San Antonio Creek forms the northern boundary of the basin, with the Mendocino Range forming the western and southern boundaries. The principal water-bearing formations of the Novato Valley Basin are comprised of Pleistocene to Holocene age alluvial deposits overlying non-water-bearing rocks of the Franciscan assemblage.

   Based on information for vicinity properties available on GeoTracker, groundwater depth is anticipated 10 feet bgs or greater, depending upon location, with a groundwater flow direction anticipated to follow the local topographic slope towards the east.

   Small, likely seasonal, streams flow from the upper to lower elevations at two locations on the subject property. Wetlands of Rush and Basalt Creeks are located approximately 575 feet east, beyond Interstate 101.

D. NATURAL HAZARDS

1. SEISMICITY: The San Francisco Bay Area is considered seismically active, and earthquakes are an unavoidable geologic hazard in Marin County. Based on available geologic literature, no active fault traces traverse the property. The property is not located within an Alquist-Priolo Special Study Zone for fault rupture hazard. California Department of Conservation mapping indicates the property has not been evaluated for liquefaction or seismic landslide hazards.

   The closest active faults to the site are the Rodgers Creek Fault Zone located approximately 6½ miles to the northeast and the San Andreas Fault Zone approximately 13 miles southwest.

2. RADON: Out-gassing of radon has not been identified as a problem in Marin County. The U.S. EPA has prepared a map to assist national, state and local organizations to target their resources, and to implement radon-resistant building codes. The map divides the country into three Radon Zones, Zone 1 being those areas with the average predicted indoor radon concentration in residential dwellings exceeding the EPA Action limit of 4.0 picoCuries per Liter (pCi/L) and Zone 3 being those areas with the average predicted indoor radon concentration in residential dwellings less than 2 pCi/L.

   It is important to note that the California Department of Health Services (DHS), in its California Statewide Radon Survey of 1990, has found homes with elevated levels of radon in all three zones, and both EPA and DHS recommend property-specific testing in order to determine radon levels at a specific location. However, the DHS Radon Survey does give a valuable indication of the propensity of radon gas accumulation in structures. Review of the DHS Radon Survey places the property in Zone 3, where average predicted indoor radon levels are less than 2 pCi/L.

   According to the EDR report (Section I), 29 state radon tests were conducted in the site zip code of 94945; radon did not exceed 4 pCi/L in any of the tests. Results reported for six federal radon tests conducted in the site zip code reported average radon concentrations well below 4 pCi/L.

   Based on the radon zone classification and test data, radon is not a significant environmental concern.

3. SENSITIVE ECOLOGICAL AREAS: Sensitive ecological areas include wetlands, rivers or creeks, marsh areas and land dedicated for open space. According to the U.S. Fish and Wildlife Service National Wetlands Inventory, Riverine habitat extends along the seasonal stream which traverses from the northern property line south-southeasterly past the Quonset hut to Redwood Boulevard.

   Wetland maps for the subject property, provided by the report User and included in Appendix B, documented approximately 1.64 total acres of wetlands in approximately 10 locations across the subject property.

4. FLOODING: According to Federal Emergency Management Agency (FEMA) Flood Insurance Map – Community Panel No. 06041C0164E, dated March 16, 2016, the property lies in unshaded Zone X, defined as an area of minimal flood hazard.

5. MASS WASTING: No physical evidence of mass wasting, such as landslides or ground subsidence, was observed at the property.

6. OIL AND GAS WELLS: According to the California Department of Conservation, Geologic Energy Management Division (CalGEM) map, no

oil or gas wells are located on or adjoining the subject property.

E. SITE CHARACTERISTICS

1. PARKING: Designated parking is not present at the subject property. Multiple vehicles and equipment were parked on the soil surface in the vicinity of the Quonset hut.

2. ROADWAYS: Pinkston Road, a dirt road, is located on the subject property, primarily on the eastern portion, providing property access from Redwood Boulevard. The subject property has no other direct street frontage. Redwood Boulevard is fewer than 50 feet east of the property.

3. FENCES: Fencing is located around the majority of the subject property perimeter, as well as in some interior areas.

4. OUTSIDE STORAGE: Old equipment, concrete culvert pipe, corrugated steel sheets, rolls of wire fencing, pallets, tires and similar materials were stored in several exterior locations, primarily on the northern portion of the subject property and around the Quonset hut. Storage within the open-ended Quonset hut included numerous wooden pallets and old tires as well as a few pieces of old metal and wood.

5. BASEMENTS: No basements are present at the subject property.

6. POTABLE WATER SYSTEM: There currently is no potable water system at the subject property. There is an unused water production well, as discussed in Sections A.9 and E.7. North Marin Water District is the municipal water purveyor for the subject property vicinity.

7. WELLS: One abandoned water well was reported at the subject property by the User of this report. The well was not observed during the site visit. According to Mr. Hooper of Campus Properties, the pump house has been removed from the well, but the casing remains. He believed the well to be approximately 25 feet deep. If no longer planned for use, the well should be appropriately abandoned in accordance with applicable regulatory agency requirements.

   Based on past development on the subject property, possibly including residences, additional undocumented water production wells may remain in previously developed areas.

   No evidence of monitoring, domestic water, irrigation or injection wells was observed at the subject property. Marin County Environmental Health Services reported no monitoring well records for the subject property.

8. SEWAGE SYSTEM: The property is not connected to the municipal sewer system. Currently there is no source of sewage generation or means of disposal. Novato Sanitary District is the municipal sewer service provider in the subject property vicinity.

   Based on past development on the subject property, possibly including residences, undocumented septic systems may remain present in previously developed areas.

9. WASTEWATER DISCHARGE OR TREAMTENT SYSTEMS: There are no wastewater treatment systems at the subject property. No other wastewater discharge was observed.

10. ODORS: No strong, pungent or noxious odors were encountered/noted at the subject property.

11. STANDING/POOLED WATER: A large area of standing/pooled stormwater runoff is present on the portion of the subject property extending along the Redwood Road landscaping strip east of the construction site at 7711 Redwood Road. Mr. Hooper of Campus Properties stated the flooding occurs during/following heavy rain, from blockage of the drainage culverts beneath Interstate 101. Additional areas of residual storm water puddling were also observed elsewhere on the property.

12. SUMPS: No sumps were observed or reported at the subject property.

13. POWER DISTRIBUTION SYSTEMS: There did not appear to be electrical or natural gas service at the subject property.

14. PCB-CONTAINING ITEMS: No electrical or hydraulic equipment was observed at the subject property.

15. FLOOR DRAINS: No floor drains are present at the subject property.

16. STORM DRAINS: Two concrete storm drain culverts were observed at the eastern edge of the subject property, to provide drainage beneath Redwood Boulevard and Interstate 101. A concrete drainage channel near the southeastern portion of the subject property likely was on the adjoining 7711 Redwood Boulevard construction site.

17. PITS/PONDS/LAGOONS: No ponds or other surface water bodies were observed on the

subject property, with the exception of the seasonal streams.

18. STAINS/CORROSION: Stains or corrosion were not observed at the subject property.

19. UNDOCUMENTED FILL/GRADING/MOUNDING: No areas suggestive of trash and/or other debris disposal, such as unidentified mounds or depressions, or areas that appeared graded by non-natural causes or filled with undocumented materials, were observed.

20. EASEMENTS: A draft Vesting Tentative Map for proposed subject property development, provided by the report User and included in Appendix B, documents a Pacific Gas and Electric Company (PG&E) easement on the southwestern corner of the subject property and a City of Novato Public Roadway easement along Pinkston Road on the northeastern portion of the property.

F. HAZARDOUS MATERIALS IN FACILITY AND OPERATIONAL SYSTEMS

1. BUILDING STRUCTURE: The Quonset hut structure on the northern portion of the subject property is of steel-frame construction with corrugated steel siding on a concrete perimeter foundation. The structure is open at both ends.

2. BUILDING MATERIALS: The only building material on the Quonset hut is the corrugated steel siding. The steel siding material showed varying degrees of rust. There are no interior finishes within the Quonset hut.

ASBESTOS

As corrugated steel was the only building material in the Quonset hut, no asbestos-containing materials (ACM) are expected.

LEAD-BASED PAINT

The Quonset hut structure appeared unpainted.

MOLD

The Quonset hut is not a water-tight structure and the soil surface within the hut was wet from recent rains. Evidence of mold growth was not observed.

3. MECHANICAL AND HVAC SYSTEMS: There are no mechanical or HVAC systems at the subject property.

4. BUILDING EQUIPMENT: No building equipment is present at the subject property.

5. INDUSTRIAL EQUIPMENT: No industrial equipment, other than tractors and similar aged equipment, was observed at the subject property.

G. HAZARDOUS AND NON-HAZARDOUS MATERIALS AND WASTES

1. MANUFACTURE/USE: No manufacturing is conducted at the subject property; none was documented previously. The subject property has been utilized for ranching, grazing, and possibly residential use, since development.

2. STORAGE: No hazardous materials are stored on the subject property and no regulated storage has been documented previously. Although the CUPA had not responded to a records request at the time this study was completed, the subject property was not included on the RSP database or any other databases indicative of hazardous materials permitting in the regulatory agency database report (Section I).

   No containers of unidentified substances or other hazardous materials were observed on the subject property.

3. GENERATION AND DISPOSAL: No hazardous waste generation was observed or reported on the subject property. None was documented previously. The subject property was not included on the RSP database or any other databases indicative of hazardous waste generation in the regulatory agency database report (Section I).

4. UNDERGROUND STORAGE TANKS (USTs): No evidence of existing or former USTs was observed or documented on the subject property.

   Due to the dates of construction for the original structures on the subject property, appearing to include residences and ranch buildings, as well as the age of the existing structure and use of ranching vehicles and equipment, undocumented heating oil or fuel USTs may remain present in the vicinity of the former developments. A UST survey of the previously and currently developed areas is recommended.

5. ABOVEGROUND STORAGE TANKS (ASTs): No significant ASTs were observed and none were reported at the subject property. One piece of old equipment staged near the Quonset hut had what may have been a skid-mounted small tank

with adjoining engine. The tank may have been for water, and was approximately 55 to 75 gallons in volume.

6. SOLID WASTE: Solid waste did not appear generated at the subject property. Two black plastic garbage bags were present where other old materials were stored in the vicinity of the Quonset hut. No solid waste disposal service appears provided to the subject property at the current time.

   No evidence of improper solid waste disposal was observed at the subject property.

7. MEDICAL WASTE: AllWest found no evidence of current or former generation or disposal of medical waste at the subject property.

H. POLLUTION SOURCES, CONTROLS AND TREATMENT

1. AIR: The Bay Area Air Quality Management District, through an on-line records request on February 9, 2023, reported having no emission permit records for the subject property.

2. SOIL AND GROUNDWATER: The subject property is not a recorded source of soil, soil vapor or ground water contamination; it is not included on the GeoTracker or EnviroStor databases.

   In addition to the existing Quonset hut, the subject property historically was developed with many additional structures. Many properties with historical structures are found to have residual metals and/or pesticides and herbicides present in soil around the former perimeters of the structures attributable to flaking of LBP and the domestic application of pesticides/herbicides. Based on this land use history, AllWest cannot discount the potential for these residual contaminants to remain present in near-surface soils.

   If property redevelopment with a more sensitive use is considered in the future, additional investigation may be appropriate to evaluate potential impact from historical development

3. VAPOR INTRUSION: As part of our assessment AllWest evaluated the potential for vapor intrusion into property structures following the general methodology outlined in ASTM E-2600-15, utilizing professional judgment.

   The Tier 1 screening assessment was employed to determine if a potential vapor intrusion condition (VIC) exists at the site. The subject property, adjoining properties, and hydraulically up-gradient properties were assessed to determine known or suspect contaminated sites within approximate minimum search distances.

   A Tier 1 screening assessment consists of a search distance test to identify if there are any known or suspected contaminated sites within the primary and secondary areas of concern; a chemicals of concern test to determine if chemicals of concern exist at the known or suspected contaminates sites; and a plume test to determine whether or not chemicals of concern in the contaminated plume may be within the critical distance.

   The critical distance is defined as the linear distance in any direction from the nearest edge of the plume to the site. If the distance from the site to the nearest edge of a petroleum hydrocarbon plume is less than 30 feet or less than 100 feet for non-petroleum chemicals of concern, then it is presumed that a potential VIC exists and additional screening may be necessary.

   The potential for a VIC from current and historical land use activities is considered very low due to the available documentation which suggests no significant evidence of petroleum hydrocarbon or VOC contamination that has migrated to the ground water or which has significantly impacted the soil from current or historical activities at the site.

   The potential for a VIC from surrounding land use also is considered very low, as no petroleum hydrocarbon plumes are documented within 30 feet and no VOC plumes are documented within 100 feet of the subject property.

METHANE

No known methane issues were reported for the property. There is no evidence the property is located within 1,000 feet of an active landfill, an active oil well or an abandoned/inactive oil well.

I. REGULATORY DATABASE SEARCH

To address on-site and off-site environmental concerns as provided by federal, tribal, state and local government records, AllWest contracted the services of EDR. The purpose of the records search was to assess the potential presence of hazardous substance and/or petroleum hydrocarbon contamination at the subject property as a result of activities conducted on properties within the ASTM-designated search distances. A list of the state and federal

regulatory databases searched, the date the databases were last updated by the regulatory agencies, the date the databases were searched by EDR and a summary of findings and detailed records are presented in the EDR report in Appendix A.

Significant regulatory-listed sites and high-risk historical facilities identified by EDR as being within their approximate minimum search distances from the subject property on the ASTM-required databases are listed in Table 1, and summarized in Appendix A and their respective locations identified by number in Appendix A's figures. The number of sites shown in Table 1 may not exactly reflect what is provided in the EDR report due to multiple (duplicate) listings, outdated (historical databases), and differing minimum search radii as specified in the ASTM standard. Additionally, some map locations shown on the EDR figures refer to more than one site, some sites are listed multiple times in the EDR report and some map locations shown on the EDR figures were determined by AllWest to be incorrect.

The EDR report listed three orphan sites (sites with addresses that are inadequate or incomplete as to render locating the site on a map ineffective) that could be within the approximate minimum search distances on the ASTM-required databases. By using additional sources of information, AllWest determined that they are not associated with the subject property, nor likely a significant concern to the subject property.

When reviewing the EDR report, AllWest was particularly interested in the regulatory status of Sites within the search radius that were adjoining or hydraulically up-gradient to the subject site. In general, only up-gradient hazardous materials release sites represent a potential environmental impact to the subject property. Chemical release sites located hydraulically down-gradient or cross-gradient (perpendicular) are considered unlikely to impact the site. Groundwater flow is anticipated predominantly toward the east in the subject property vicinity, making sites located west up-gradient.

The subject property was not included on any of the regulatory agency databases searched by EDR.

A summary of the off-site database listings is included in Table 1.

Table 1. Regulatory Database Search Summary

Section	*Regulatory List*	*Search Radius*	*Number of Listed Sites within Search Radius*	*Number of Listings on Subject Property*
I.1	NPL	1 mile	None	None
I.2	Delisted NPL	1 mile	None	None
I.3	CORRACTS	1 mile	None	None
I.4	SEMS	½ mile	None	None
I.5	SEMS-ARCHIVE	½ mile	None	None
I.6	RCRA – TSDF	½ mile	None	None
I.7	RCRA Generators	Subject & Adjoining	None	None
I.8	IC/EC/LUCIS	½ mile	None	None
I.9	ERNS	Subject	None	None
I.10	RESPONSE	1 mile	None	None
I.11	EnviroStor	1 mile	2	None
I.12	State Landfills (SWF/LF)	½ mile	None	None
I.13	Toxic Pits	1 mile	None	None
I.14	LUST	½ mile	2	None
I.15	CPS-SLIC	½ mile	None	None
I.16	Registered UST	Subject & Adjoining	None	None
I.17	Registered AST	Subject & Adjoining	None	None
I.18	VCP	½ mile	None	None
I.19	State Brownfields	½ mile	None	None
I.20	HAZNET	Site	None	None
I.21	EDR® Historical Auto Stations	1/8 mile	None	None
I.22	EDR® Historical Cleaners	1/8 mile	None	None
I.23	EDR® Manufactured Gas Plants	1 mile	None	None

1. **U.S. Environmental Protection Agency (EPA): National Priority List (NPL)**

   The NPL is a U.S. EPA database listing of the United States' worst uncontrolled or abandoned hazardous waste sites. NPL sites are targeted for possible long-term remedial action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980. In addition, the NPL report includes information concerning cleanup agreements between the U.S. EPA and potentially Responsible Parties (commonly called Records of Decision, or RODS), any liens filed against contaminated properties, as well as the past and current U.S. EPA budget expenditures tracked within the Superfund Consolidated Accomplishments Plan (SCAP). The search radius for NPL is one mile.

   The subject property is not listed on the NPL. There are no NPL facilities within one mile of the subject property.

2. **U.S. Environmental Protection Agency (EPA): National Priority List Deletions (Delisted NPL)**

   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. The search radius for Delisted NPL is one mile.

   The subject property is not listed on the Delisted NPL. There are no Delisted NPL facilities within one mile of the subject property.

3. **U.S. EPA: RCRA Information System Corrective Action (CORRACTS) Facilities**

   The RCRA-CORRACTS database contains information pertaining to hazardous waste treatment, storage, and disposal facilities (RCRA TSDFs) which have conducted, or are currently conducting, a corrective action(s) as regulated under the Resource Conservation and Recovery Act. The search radius for CORRACTS is one mile. The following information is included within the CORRACTS database:

   - Information pertaining to the status of facilities tracked by the RCRA Administrative Action Tracking System (RAATS);
   - Inspections and evaluations conducted by Federal and State agencies;
   - All reported facility violations, the environmental statute(s) violated, and any proposed and actual penalties; and
   - Information pertaining to corrective actions undertaken by the facility or U.S. EPA.

   The subject property is not listed on CORRACTS. There are no CORRACTS facility within 1 mile of the subject property.

4. **U.S. EPA: Superfund Enterprise Management System (SEMS)**

   The SEMS database, formerly known as CERCLIS, is a comprehensive listing of known or suspected uncontrolled or abandoned hazardous waste sites. These sites have either been investigated, or are currently under investigation, by the U.S. EPA for the release or threatened release of hazardous substances. Once a site is placed in the SEMS, it may be subjected to several levels of review and evaluation, and ultimately placed on the NPL. The search radius for SEMS is ½ mile.

   The subject property is not listed on SEMS. There are no SEMS facilities within ½ mile of the subject property.

5. **U.S. EPA: SEMS-ARCHIVE Sites**

   The SEMS-ARCHIVE database, formerly known as CERCLIS-NFRAP, contains information pertaining to sites, which have been removed from the U.S. EPA's SEMS database. Sites listed in the SEMS-ARCHIVE may be sites where, following an initial investigation, either no contamination was found, contamination was removed quickly without need for the site to be placed on the NPL, or the contamination was not serious enough to require federal Superfund action or NPL consideration. The search radius for the SEMS-ARCHIVE is ½ mile.

   The subject property is not listed on SEMS-ARCHIVE. There are no SEMS-ARCHIVE facilities within ½ mile of the subject property.

6. **U.S. EPA: RCRA - Treatment, Storage and Disposal Facilities (TSDF)**

   The RCRA-TSDF is a U.S. EPA listing of facilities that were permitted under RCRA to perform on-site treatment, storage or disposal of hazardous wastes. The search radius for RCRA-TSDF is ½ mile. The sites listed in RCRA-TSDF do not necessarily pose an environmental threat to the surrounding properties, because the TSDF permit imposes stringent monitoring and reporting requirements. The following information is also included in the RCRA-TSDF database:

   - Information pertaining to the status of facilities tracked by the RCRA-RAATS;
   - Inspections and evaluations conducted by federal and state agencies; and
   - All reported facility violations, the environmental statute(s) violated, and any proposed and actual penalties.

The subject property is not listed as a RCRA-TSDF. There are no RCRA-TSDFs within ½ mile of the subject property.

7. U.S. EPA: RCRA Generators List

The RCRA Generators list is a U.S. EPA listing of facilities that generate hazardous wastes or meet other applicable waste generating requirements under RCRA. The facilities listed on the RCRA Generators list have not necessarily released hazardous waste into the environment or pose an environmental threat to the surrounding properties. These listed sites are required to properly contain the wastes generated and remove their wastes from the site within 90 days. Furthermore, the facilities that report waste generation activities are more inclined to perform the required monitoring. The search radius for RCRA Generators list is the subject property and adjoining properties.

The subject property is not listed on the RCRA generators database. There are no RCRA waste generator listings adjoining the subject property.

8. Federal Institutional Controls/Engineering Controls Registries

The EPA Engineering Controls Site List (EC) is a listing of sites with engineering controls in place, including various forms of caps, building foundations, liners and/or treatment methods to create pathway elimination for regulated substances to enter environmental media or affect human health. The EPA Institutional Controls Site List (IC) is a listing of sites with institutional controls in place, including administrative measures, construction restrictions, property use restrictions and post-remediation care requirements intended to prevent exposure to contaminants remaining on a property. Deed restrictions generally are required as part of the institutional controls. The Land Use Control Information System (LUCIS) database contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties. The search radius for the IC, EC and LUCIS lists are ½ mile.

The subject property is not listed on the EC, IC or LUCIS databases. There are no EC, IC or LUCIS database listings within ½ mile of the subject property.

9. U.S. EPA: Emergency Response Notification System (ERNS) List

The ERNS list is a U.S. EPA maintained list of reported incidents concerning the sudden and/or accidental release of hazardous substances, including petroleum, into the environment. The search radius for ERNS is the subject property.

The subject property address is not listed on the ERNS list.

10. DTSC: Equivalent National Priority List (RESPONSE)

The RESPONSE database is a DTSC database listing of the State of California's NPL-equivalent sites. These confirmed release sites are generally high-priority and have a high potential risk. They are those where the DTSC is involved in remediation of the site. The search radius for RESPONSE is one mile.

The subject property is not listed on RESPONSE. There are no RESPONSE facilities within one mile of the subject property.

11. DTSC: EnviroStor Sites

The EnviroStor database is a DTSC listing of sites under investigation, that could be actually or potentially contaminated and that may present a possible threat to human health and the environment. The search radius for EnviroStor is one mile.

The subject property is not on the EnviroStor list.

There are two EnviroStor listings within one mile of the subject property. Both of the listed sites are greater than 0.8 mile cross-gradient of the subject property however, and therefore not of concern.

12. California Integrated Waste Management Board: Solid Waste Information System (SWF/LF) Facilities

The SWF/LF is a California Integrated Waste Management Board (CIWMB) listing of all permitted active, inactive or closed landfills. The search radius for SWF/LF is ½ mile.

The subject property is not listed on the SWF/LF list. There are no SWF/LF sites within ½ mile of the subject property.

13. DTSC: Toxic Pits Cleanup Act Sites (Toxic Pits; TPCA)

The TPCA is a DTSC listing of hazardous waste cleanup sites regulated pursuant to the California Toxic Pits Cleanup Act (Toxic Pits). It identifies sites suspected of containing hazardous substances where cleanup has not yet been completed. We note, this database has not been updated since July 1995. The search radius for the TPCA list is one mile.

The subject property is not listed on the TPCA site list. There are no TPCA sites located within one mile of the subject property.

14. SWRCB: Leaking Underground Storage Tanks (LUST)

The LUST list is a RWQCB listing of sites that have reported leaking USTs. A site may be listed on LUST by reporting the tank system(s) failed tank testing, that routine monitoring of tank system(s) showed evidence of leakage, or that verification sampling during tank removal showed subsurface contamination.

Fuel leak case research conducted at the Lawrence Livermore National Laboratory indicates that attenuation and degradation play major roles in reducing hydrocarbons in groundwater to non-detectable levels within several hundred feet of the contaminant source. Research findings indicate that in over 90 percent of the petroleum hydrocarbon cases, groundwater contaminant plumes do not extend more than 250 feet from the source. The mobility of a gasoline additive called Methyl Tertiary Butyl Ether (MTBE) is currently being researched. Preliminary findings indicate that MTBE is highly soluble in water and moves easily through soil particles and into groundwater where it may spread over a distance greater than 250 feet. MTBE will transfer to groundwater from gasoline leaking from USTs, pipelines, car emissions into the atmosphere and other components of gasoline vapor distribution. MTBE has been an additive to gasoline since approximately 1985, but banned in California since 2004.

The subject property was not listed on the LUST list.

There are two LUST listings within ½ mile of the subject property. Both LUST listings have a regulatory status of Case Closed and are located greater than ¼ mile cross-gradient. Based on location and regulatory status the sites are unlikely of concern to the subject property.

15. Regional Water Quality Control Board (RWQCB): Cleanup Program Sites (CPS)-Spills, Leaks, Investigations, and Cleanup (SLIC)

The CPS-SLIC is a California RWQCB listing of sites that have reported spills, leaks, investigative activities, and/or cleanup actions. The search radius for the CPS-SLIC list is ½ mile.

The subject property is not listed on the CPS-SLIC list. There are no CPS-SLIC listings within ½ mile of the subject property.

16. SWRCB: Registered Underground Storage Tank (UST) List and State Registered UST Lists

The RWQCB Underground Storage Tank Program maintains a list of registered USTs in the site area. The sites listed on the UST list have not necessarily released hazardous substances into the environment or pose an environmental threat to the surrounding properties. Since Federal and California UST regulations require periodic monitoring for UST leakage and the immediate reporting of evidence of UST leakage, only those sites listed on the LUST list have the potential of environmental impact. The search radius for the registered UST listings is the subject property and adjoining properties.

California, through the Regional Water Quality Control Board (RWQCB), State Water Resources Control Board (SWRCB) and CalEPA, maintain lists of registered USTs in the subject property area; many of these listings are inactive or historical. These databases include the SWEEPS UST, Historical UST and FID UST lists. The search radii for these additional registered UST databases also is the subject property and adjoining properties.

The subject property was not listed on any of the registered UST lists. There are no UST listings adjoining the subject property.

17. California EPA: Registered Aboveground Storage Tank List

The RWQCB Aboveground Storage Tank Program maintains a list of registered ASTs in the site area. The sites listed on the registered AST list have not necessarily released hazardous substances into the environment or pose an environmental threat to the surrounding properties. The search radius for the registered AST list is the subject property and adjoining properties.

The subject property is not listed on the registered AST list. There are no registered AST listings adjoining the subject property.

18. Voluntary Cleanup Program (VCP) List

The California Department of Toxic Substances Control (DTSC) maintains the VCP list, which includes low threat level properties with confirmed or unconfirmed releases, for which the project proponents have requested DTSC oversight and have agreed to cover DTSC's costs. The search radius for the VCP list is ½ mile.

The subject property is not listed on the VCP list. There are no VCP listings within ½ mile of the subject property.

19. Brownfields List

The SWRCB Brownfields database is a list of Brownfields sites which came to the SWRCB through the Memorandum of Understanding (MOU) process . The search radius for the Brownfields list is ½ mile.

The subject property is not listed on the state Brownfields list. There are no state Brownfields listings within ½ mile of the subject property.

20. DTSC: Hazardous Waste Information System (HAZNET) List

The data on the HAZNET list is extracted from the copies of hazardous waste manifests received each year by the DTSC. The volume of manifests is typically 700,000 to 1,000,000 annually, representing approximately 350,000 to 500,000 shipments. Data from the manifests is submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category and disposal method. The search radius for HAZNET is the subject property.

The subject property is not listed on the HAZNET database.

21. EDR® Historical Auto Stations

EDR maintains a proprietary list of possible historical automotive repair shops and gasoline stations derived from city directories, telephone directories and other historical sources.

The subject property is not listed as an historical auto station. There are no historical auto station listings reported within 1/8 mile of the subject property.

22. EDR® Historical Cleaners

EDR® maintains a proprietary list of possible historical dry cleaner businesses derived from city directories, telephone directories and other historical sources.

The subject property is not listed as a historical dry cleaner. There are no historical dry cleaners within 1/8 mile of the subject property.

23. EDR® Historical Manufactured Gas Plants

EDR maintains a proprietary list of coal gas plants (manufactured gas plants) derived from city directories, telephone directories and other historical sources.

The subject property is not listed as a historical manufactured gas plant. There are no historical manufactured gas plants reported within one mile of the subject property.

Summary

EDR's agency database search identified no current or historical releases or other conditions at the subject property appearing likely to have significantly impacted the underlying soil or ground water. The agency database search also found no surrounding or adjoining sites that appear likely to have significantly impacted the soil or ground water underlying the subject property.

Our review of federal, tribal, state and local government records did not encounter data gaps that diminish our ability to provide an opinion on a release or potential release of hazardous substances at the subject property.

VII. INFORMATION SOURCES

A. HISTORICAL SOURCES

Aerial Photographs

EDR® Aerial Photo Decade Package, February 9, 2023, Environmental Data Resources, Inc., Shelton, Connecticut.

Sanborn® Fire Insurance Maps

EDR® Certified Sanborn® Map Report, February 9, 2023, Environmental Data Resources, Inc., Shelton, Connecticut

Topographic Maps

EDR® Historical Topo Map Report, February 9, 2023, Environmental Data Resources, Inc., Shelton, Connecticut.

City Directories

EDR®-City Directory Abstract, February 13, 2023, Environmental Data Resources, Inc., Shelton, Connecticut.

B. AGENCY DATABASES

The EDR® Radius Map™ Report, February 10, 2023, Environmental Data Resources, Inc.

RWQCB GeoTracker database website: http://geotracker.waterboards.ca.gov

DTSC EnviroStor database website: http://www.EnviroStor.dtsc.ca.gov/public

CalEPA Regulated Site Portal database website: https://siteportal.calepa.ca.gov/

C. ENVIRONMENTAL STUDIES

Alquist-Priolo Special Studies Zones Act, Special Publication No. 42, 1997, California Division of Mines and Geology

California Statewide Radon Survey, 1990, California Department of Health Services

California's Groundwater, Bulletin 118, 2006, California Department of Water Resources
Geology of Northern California, Bulletin No. 190, 1966, California Division of Mines and Geology

Geology of California, Norris and Webb, 1990, John M. Wiley & Sons

California Geologic Energy Management Division (oil & gas well finder): https://maps.conservation.ca.gov/oilgas/

D. PLANNING, BUILDING AND ASSESSOR

Novato Building Department, 922 Machin Avenue, Novato, CA 94945. Contact: 415-899-8989. https://etrakit3.novato.org/eTRAKiT3/Search/permit.aspx

Marin County Building Department, 3501 Civic Center Drive, Ste. 308, San Rafael, CA 94903. Contact: 415-499-6550. https://www.marincounty.org/depts/cd/customer-service/records-search

Marin County Assessor's Office, 3501 Civic Center Drive, Ste. 208, San Rafael, CA 94903. Contact: 415-473-7215. https://apps.marincounty.org/TaxRollSearch

E. FIRE AND ENVIRONMENTAL HEALTH

Marin County Department of Public Works, Waste Management Division, 3501 Civic Center Drive, Ste. 304, San Rafael, CA 94903. Contact: 415-499-6528. https://www.marincounty.org/-/media/files/departments/pw/forms/cupa_file_review_request.pdf?la=en

Marin County Environmental Health Services, 3501 Civic Center Drive, Ste. 236, San Rafael, CA 94903. Contact 415-473-4381.

F. WATER QUALITY

North Marin Water District, 999 Rush Creek Place, Novato, CA 94945. Contact: 415-897-4133.

Regional Water Quality Control Board, San Francisco Bay Region (Region 2), 1515 Clay Street, Suite No. 1400, Oakland, CA 94612. Contact: 510-622-2300

G. AIR QUALITY

Bay Area Air Quality Management District, 375 Beale Street, San Francisco, CA 94105 Contact: 415-749-4900

Description of Selected General Terms and Acronyms

Term/Acronym	Description
ACM	Asbestos Containing Material. Asbestos is a naturally occurring mineral, three varieties of which (chrysotile, amosite, crocidolite) have been commonly used as fireproofing or binding agents in construction materials. Exposure to asbestos, as well as ACM, has been documented to cause lung diseases including asbestosis (scarring of the lung), lung cancer and mesothelioma (a cancer of the lung lining).Regulatory agencies have generally defined ACM as a material containing greater that one (1) percent asbestos, however some states (e.g. CA) define ACM as materials having 0.1% asbestos.
AHERA	Asbestos Hazard Emergency Response Act
AOC	Area of Concern
APN	Assessor's Parcel Number
AST	Aboveground Storage Tanks. ASTs are generally described as storage tanks less than 10% of which are below ground (i.e., buried). Tanks located in a basement, but not buried, are also considered ASTs. Whether, and the extent to which, an AST is regulated, is determined on a case-by-case basis and depends upon tank size, its contents and the jurisdiction of its location.
ASTM	American Society for Testing and Materials
AULs	Liens or Activity and Use Limitations
BAAQMD	Bay Area Air Quality Management District
bgs	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes. BTEX are VOC components found in gasoline and commonly used as analytical indicators of a petroleum hydrocarbon release.
BTU/hr	British Thermal Units per hour
Cal/EPA	California Environmental Protection Agency, also known as DTSC
CD	Critical Distance
CFR	Code of Federal Regulations
COC	Contaminant of Concern
CREC	Controlled Recognized Environmental Condition is defined in ASTM E1527-13 as “a recognized environmental condition 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) , 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).
Data Gap / Significant Data Gap	A lack of or inability to obtain information required by the practice despite good faith efforts by the environmental professional to gather such information. A data gap is significant if other information and/or professional experience raises concerns involving the data gap.
De minimis Condition	A condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.
DOGGR	California Department of Conservation, Department of Oil, Gas and Geothermal Resources
DTSC	California Department of Toxic Substances Control
EDR	Environmental Data Resources
EMI	Emissions Inventory Data
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
ESL	Environmental Screening Level
FEMA	Federal Emergency Management Agency
HAZNET	DTSC Hazardous Waste Information System
Hazardous Substance	As defined under CERCLA, this is (A) any substance designated pursuant to section 1321(b)(2)(A) of Title 33, (B) any element, compound, mixture, solution, or substance designated pursuant to section 9602 of this title; (C) any hazardous waste having characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (with some exclusions); (D) any toxic pollutant listed under section 1317(a) of Title 33; (E) any hazardous air pollutant listed under section 112 of the Clean Air Act; and (F) any imminently hazardous chemical substance or mixture with respect to which the EPA Administrator has taken action under section 2606 of Title 15. This term does not include petroleum, including crude oil or any fraction thereof

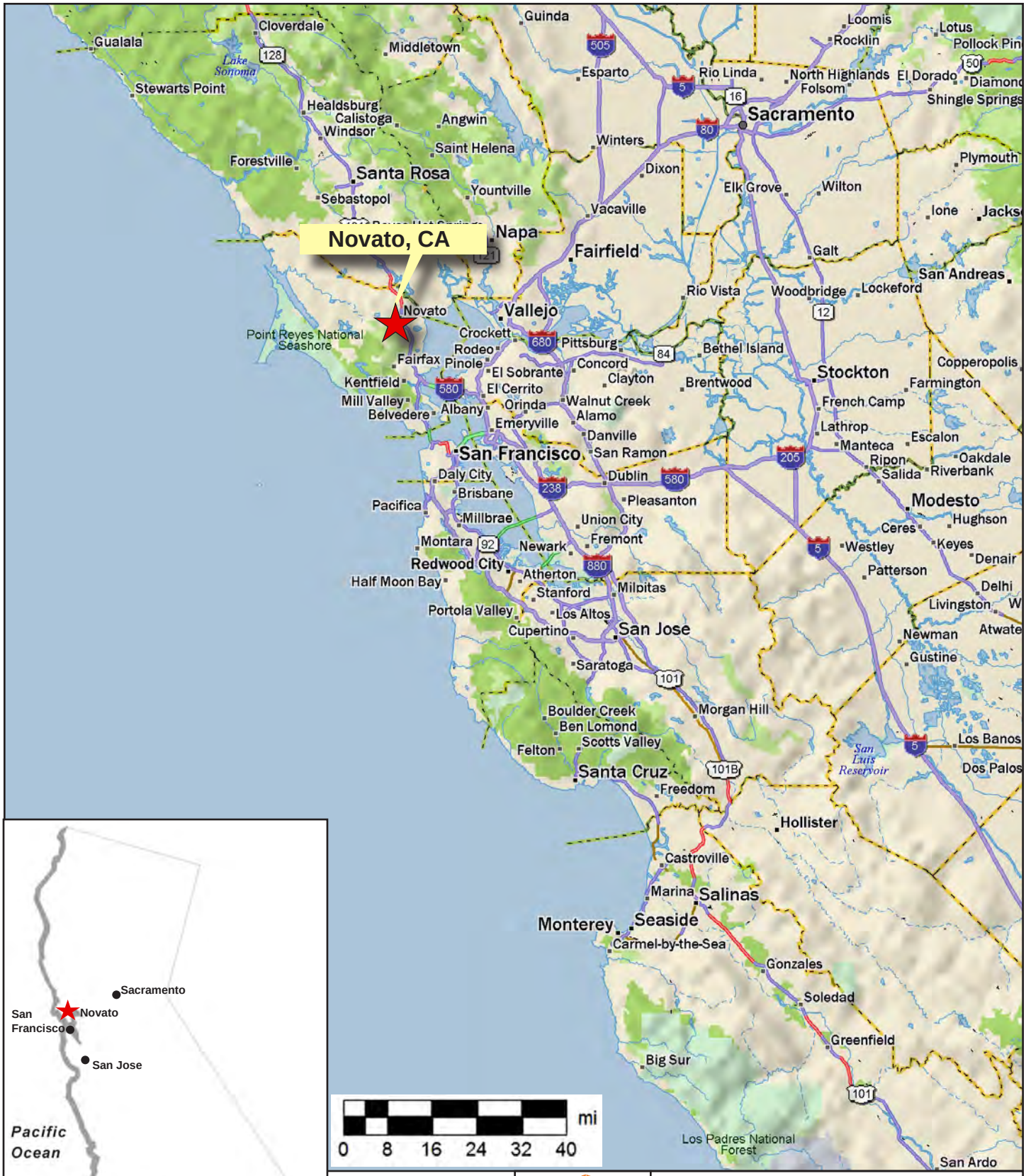
	which is not otherwise listed as a hazardous substance under subparagraphs (A) through (F) above, and the term include natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).
Hazardous Waste	This is defined as having characteristics identified or listed under section 3001 of the Solid Waste Disposal Act (with some exceptions). RCRA, as amended by the Solid Waste Disposal Act of 1980, defines this term as a "solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed."
HMBP	Hazardous Materials Business Plan
HMMP	Hazardous Materials Management Plan
HREC	Historical Recognized Environmental Condition is defined in ASTM E1527-13 as "a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted residential 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).
HVAC	Heating, Ventilation and Air Conditioning
LNAPL	Light Non-Aqueous Phase Liquid
LOP	Local Oversight Program
LQG	Large Quantity Generators
LUST	Leaking Underground Storage Tank. This is a federal term set forth under RCRA for leaking USTs. Some states also utilize this term.
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MCL	Maximum Contaminant Level. This Safe Drinking Water concept (and also used by many states as a ground water cleanup criteria) refers to the limit on drinking water contamination that determines whether a supplier can deliver water from a specific source without treatment.
MSDS	Material Safety Data Sheets. Written/printed forms prepared by chemical manufacturers, importers and employers which identify the physical and chemical traits of hazardous chemicals under OSHA's Hazard Communication Standard.
MSL	Mean Sea Level
MtBE	Methyl tertiary Butyl Ether
ND	Not Detected
NE	Not Established
NESHAP	National Emissions Standard for Hazardous Air Pollutants (Federal Clean Air Act). This part of the Clean Air Act regulates emissions of hazardous air pollutants.
NFA	No Further Action
NPDES	National Pollutant Discharge Elimination System (Clean Water Act). The federal permit system for discharges of polluted water.
NV	No Value
O&M Plan	Operations and Maintenance Plan
OSHA	Occupational Safety and Health Administration or Occupational Safety and Health Act
PACM	Presumed Asbestos-Containing Material. A material that is suspected of containing or presumed to contain asbestos but which has not been analyzed to confirm the presence or absence of asbestos.
PCBs	Polychlorinated Biphenyls. A halogenated organic compound commonly in the form of a viscous liquid or resin, a flowing yellow oil, or a waxy solid. This compound was historically used as dielectric fluid in electrical equipment (such as electrical transformers and capacitors, electrical ballasts, hydraulic and heat transfer fluids), and for numerous heat and fire sensitive applications.
pCi/L	picoCuries per Liter of air. Unit of measurement for radon and similar radioactive materials.
PE	Professional Engineer
PG&E	Pacific Gas and Electric Company
PLM	Polarized Light Microscopy (see ACM section of the report, if included in the scope of services)
ppb	parts per billion
ppm	parts per million

pVIC	Potential Vapor Intrusion Condition
Radon	A radioactive gas resulting from radioactive decay of naturally-occurring radioactive materials in rocks and soils containing uranium, granite, shale, phosphate, and pitchblende. Exposure to elevated levels of radon creates a risk of lung cancer; this risk generally increases as the level of radon and the duration of exposure increases. Radon can accumulate in building basements or similar enclosed spaces to levels that can pose a risk to human health. Indoor radon concentrations depend primarily upon the building's construction, design and the concentration of radon in the underlying soil and ground water.
REC	Recognized Environmental Conditions are defined by ASTM E1527-13 as “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. *De minimis* conditions are not recognized environmental conditions.”
RWQCB	California Regional Water Quality Control Board
SLIC	Spills, Leaks, Investigations And Cleanup
SPCC	Spill Prevention, Control and Countermeasures. SPCC plans are required under federal law (Clean Water Act and Oil Pollution Act) for any facility storing petroleum in tanks and/or containers of 55-gallons or more that when taken in aggregate exceed 1,320 gallons. SPCC plans are also required for facilities with underground petroleum storage tanks with capacities of over 42,000 gallons. Many states have similar spill prevention programs, which may have additional requirements.
SQG	Small Quantity Generator
SWRCB	State Water Resources Control Board
TPH (d)(g)(mo)	Total Petroleum Hydrocarbons (d) as diesel (g) as gasoline (mo) as motor oil
ug/kg	micrograms per kilogram
ug/L	micrograms per liter
USGS	United States Geological Survey
UST	Underground Storage Tank. Most federal and state regulations, as well as ASTM E1527-13, define this as any tank, incl. underground piping connected to the tank, that is or has been used to contain hazardous substances or petroleum products and the volume of which is 10% or more beneath the surface of the ground (i.e., buried).
VEC	Vapor Encroachment Condition
VOCs	Volatile Organic Compounds
Wetlands	Areas that are typically saturated with surface or ground water that creates an environment supportive of wetland vegetation (i.e., swamps, marshes, bogs).

FIGURES

DELORME

Topo USA® 8



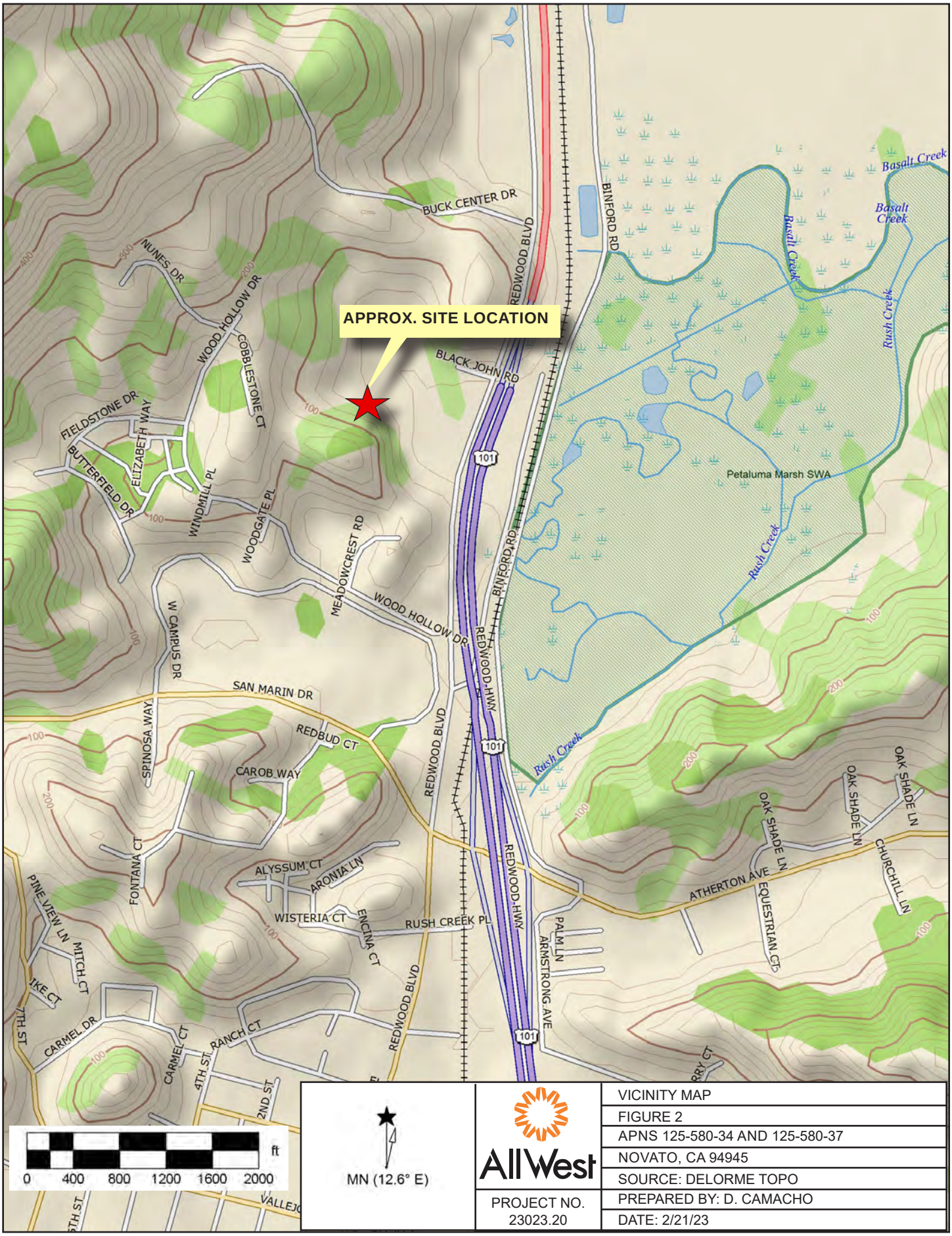
AllWest

PROJECT NO. 23023.20

REGIONAL MAP
FIGURE 1
APNS 125-580-34 AND 125-580-37
NOVATO, CA 94945
SOURCE: DELORME TOPO
PREPARED BY: D. CAMACHO
DATE: 2/21/23

DeLORME

Topo USA® 8

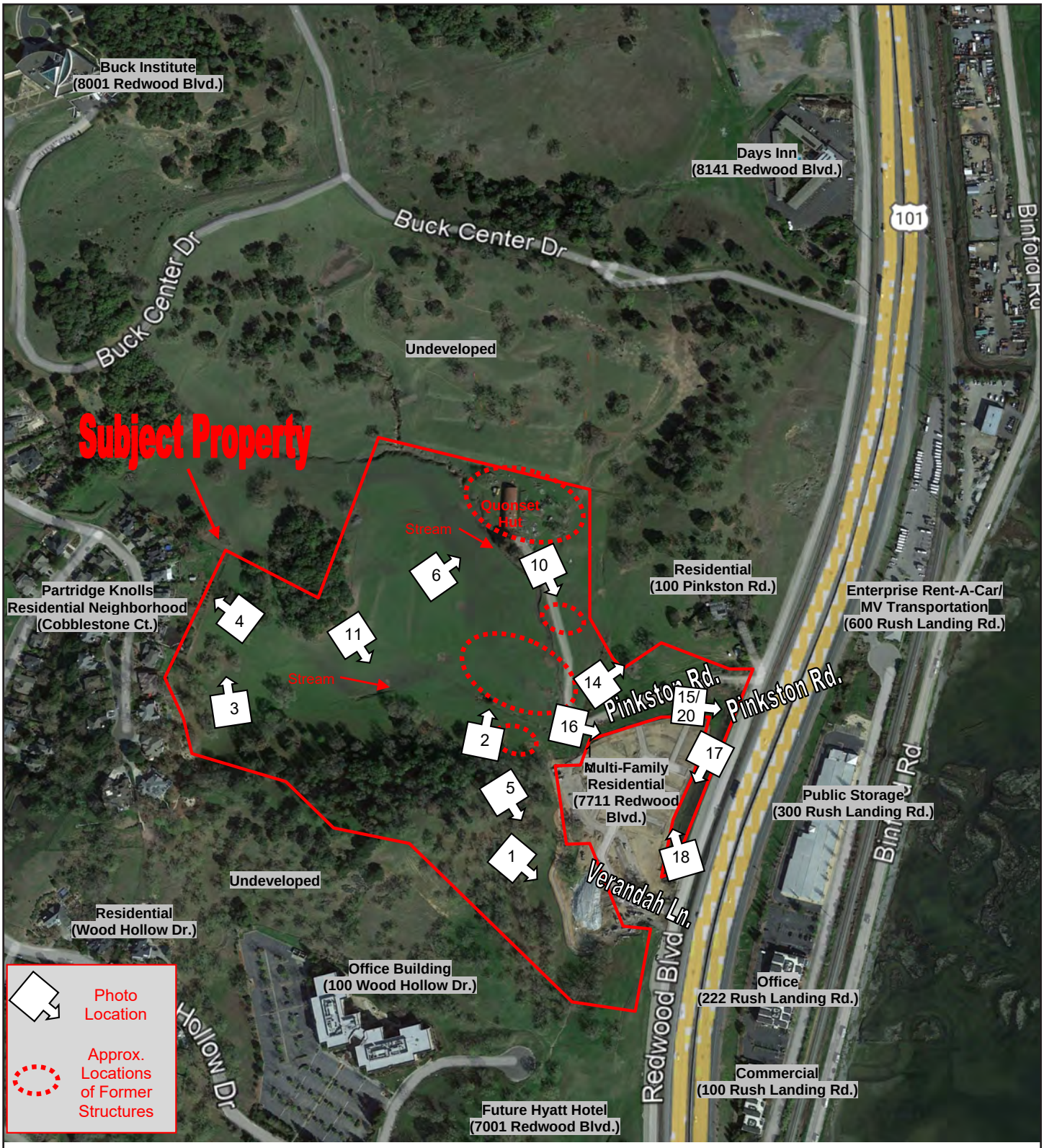


0 400 800 1200 1600 2000 ft

MN (12.6° E)

AllWest

PROJECT NO. 23023.20	VICINITY MAP
	FIGURE 2
	APNS 125-580-34 AND 125-580-37
	NOVATO, CA 94945
	SOURCE: DELORME TOPO
	PREPARED BY: D. CAMACHO
	DATE: 2/21/23



N

AllWest	AERIAL PHOTO
	FIGURE 3
	APNS 125-580-34 AND 125-580-37
	NOVATO, CA 94945
	SOURCE: GOOGLE
PROJECT NO. 23023.20	PREPARED BY: B. BLACKIE / D. CAMACHO
	DATE: 2/24/23

PHOTOGRAPHS



1. Southwestern Portion of Subject Property, View Facing Southeast



2. Center Portion of Subject Property with Parked Vehicles and Cattle in Background, View Facing North



3. Western Portion of Subject Property, View Facing North



4. Northwestern Portion of Subject Property, View Facing Northwest



5. Seasonal Stream on Southern Portion of Subject Property, View Facing Southeast



6. Quonset Hut and Northern Portion of Subject Property, View Facing Northeast



7. Quonset Hut Western and Southern Facades



8. Quonset Hut Southern and Eastern Facades with Adjacent Stored Materials



9. Quonset Hut Interior



10. Seasonal Stream on Northern Portion of Subject Property, View Facing Southeast



11. Seasonal Stream Extending onto Eastern Portion of Subject Property, View Facing South



12. Equipment and Vehicles Parked and Materials Stored East of Quonset Hut



13. Items/Materials Stored in Vicinity of Quonset Hut, Including Equipment with Possible Water AST, View Facing Southeast



14. Northeastern Portion of Subject Property, View Facing Northeast



15. Pinkston Road on Northeastern Portion of Subject Property, View Facing East



16. Northeastern Portion of Subject Property with Wetland Area and Redwood Boulevard/Interstate 101 in Background, View Facing Southeast



17. Narrow Finger of Subject Property Between Redwood Boulevard and Adjoining Construction Site, View Facing South



18. Ponded Water on Narrow Finger Portion of Subject Property, View Facing Northwest



19. Stormwater Drainage Culverts Beneath Redwood Boulevard on Eastern Edge of Subject Property



20. Gated Entrance to Subject Property with Pinkston Road Extending from Redwood Boulevard and Interstate 101 Beyond, View Facing East



21. Adjoining Residential Properties to Northwest



22. Adjoining Undeveloped Land to South



23. Adjoining Undeveloped Land and Buck Institute to North



24. Adjoining Multi-Family Residential Construction Site to East

APPENDIX A

Novato Property
7711 Redwood Blvd
Novato, CA 94945

Inquiry Number: 7249630.2s
February 10, 2023

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	9
Orphan Summary	243
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-12
Physical Setting Source Map Findings	A-14
Physical Setting Source Records Searched	PSGR-1

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 (E1527-21), 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

7711 REDWOOD BLVD
NOVATO, CA 94945

COORDINATES

Latitude (North):	38.1274310 - 38ˆ 7' 38.75''
Longitude (West):	122.5685340 - 122ˆ 34' 6.72''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	537816.9
UTM Y (Meters):	4219836.0
Elevation:	50 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	12008171 PETALUMA RIVER, CA
Version Date:	2018
South Map:	12008165 NOVATO, CA
Version Date:	2018

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140608
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
7711 REDWOOD BLVD
NOVATO, CA 94945

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	7711 REDWOOD BOULEVA	7711 REDWOOD BLVD	NPDES, CIWQS, CERS		TP
2	BIOMARIN PHARMACEUTI	100 WOOD HOLLOW DRIV	RCRA NonGen / NLR	Lower	412, 0.078, SSW
3	ILLUME AUTOPSY AND P	222 RUSH LANDING RD.	RCRA NonGen / NLR	Lower	420, 0.080, SE
A4	COTTONWOOD SOLAR LLC	8001 REDWOOD BLVD	RCRA NonGen / NLR	Lower	1033, 0.196, NE
A5	BIOMARIN PHARMACEUTI	8001 REDWOOD BLVD	RCRA NonGen / NLR	Lower	1033, 0.196, NE
A6	BUCK INSTITUTE FOR A	8001 REDWOOD BLVD	CERS HAZ WASTE, CHMIRS, FINDS, ECHO, EMI, HAZNET,...	Lower	1033, 0.196, NE
A7	CALICO LIFE SCIENCES	8001 REDWOOD BLVD	RCRA NonGen / NLR	Lower	1033, 0.196, NE
A8	ULTRAGENYX PHARMACEU	8001 REDWOOD BLVD	RCRA-SQG	Lower	1033, 0.196, NE
A9	ULTRAGENYX	8001 REDWOOD BLVD	CERS HAZ WASTE, CERS	Lower	1033, 0.196, NE
A10	BIOMARIN PHARMACEUTI	8001 REDWOOD BLVD	CERS HAZ WASTE, CERS	Lower	1033, 0.196, NE
A11	BUCK INSTITUTE FOR R	8001 REDWOOD BOULEVA	CERS HAZ WASTE, CERS TANKS, CERS	Lower	1033, 0.196, NE
A12	CYCLARITY THERAPEUTI	8001 REDWOOD BLVD	RCRA NonGen / NLR	Lower	1033, 0.196, NE
A13	BUCK INSTITUTE FOR A	8001 REDWOOD BLVD	RCRA-SQG, HAZNET, HWTS	Lower	1033, 0.196, NE
A14	FUJIFILM CELLULAR DY	8001 REDWOOD BOULEVA	RCRA NonGen / NLR	Lower	1033, 0.196, NE
A15	BUCK CENTER FOR RESE	8001 REDWOOD HWY.	UST	Lower	1033, 0.196, NE
A16	BUCK INSTITUTE FOR R	8001 REDWOOD BOULEVA	UST	Lower	1033, 0.196, NE
A17	BUCK INSTITUTE FOR R	8001 REDWOOD BOULEVA	UST	Lower	1033, 0.196, NE
18	PG & E	8161 OLD REDWOOD HWY	LUST, Cortese	Lower	1444, 0.273, NNE
B19	FIREMAN'S FUND INSUR	777 SAN MARIN DR	Cortese, HAZNET, HWTS	Lower	1838, 0.348, SSW
B20	FIREMAN'S FUND INSUR	777 SAN MARIN DR	LUST, HIST CORTESE	Lower	1838, 0.348, SSW
21	GOLDEN GATE TRANSIT	801 GOLDEN GATE PLAC	RCRA-LQG, UST, CERS HAZ WASTE, SWEEPS UST, HIST...	Lower	4217, 0.799, South
C22	NOVATO STORAGE PARK	AIRPORT AND BINFORD	ENVIROSTOR, VCP, HIST CORTESE	Lower	4232, 0.802, NNE
C23	BINFORD ROAD FILL SI	BINFORD AND AIRPORT	ENVIROSTOR	Lower	4249, 0.805, 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
7711 REDWOOD BOULEVA 7711 REDWOOD BLVD NOVATO, CA 94945	NPDES Facility Status: Active CIWQS CERS	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

Lists of Federal NPL (Superfund) sites

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Lists of Federal Delisted NPL sites

Delisted NPL ---------- National Priority List Deletions

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS ---------- Corrective Action Report

Lists of Federal RCRA TSD facilities

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Lists of Federal RCRA generators

RCRA-LQG ---------- RCRA - Large Quantity Generators

RCRA-VSQG ---------- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROLS ---------- Institutional Controls Sites List

Federal ERNS list

ERNS ---------- Emergency Response Notification System

Lists of state- and tribal (Superfund) equivalent sites

RESPONSE ---------- State Response Sites

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF ---------- Solid Waste Information System

Lists of state and tribal leaking storage tanks

INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land
CPS-SLIC ---------- Statewide SLIC Cases

Lists of state and tribal registered storage tanks

FEMA UST ---------- Underground Storage Tank Listing
AST ---------- Aboveground Petroleum Storage Tank Facilities
INDIAN UST ---------- Underground Storage Tanks on Indian Land

Lists of state and tribal voluntary cleanup sites

VCP ---------- Voluntary Cleanup Program Properties
INDIAN VCP ---------- Voluntary Cleanup Priority Listing

Lists of state and tribal brownfield 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

WMUDS/SWAT ---------- Waste Management Unit Database
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

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
US CDL	National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

SWEEPS UST	SWEEPS UST Listing
HIST UST	Hazardous Substance Storage Container Database
CA FID UST	Facility Inventory Database

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
CHMIRS	California Hazardous Material Incident Report 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 AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
FINDS	Facility Index System/Facility Registry System
DOCKET HWC	Hazardous Waste Compliance Docket Listing
ECHO	Enforcement & Compliance History Information
UXO	Unexploded Ordnance Sites
FUELS PROGRAM	EPA Fuels Program Registered Listing
PFAS NPL	Superfund Sites with PFAS Detections Information
PFAS FEDERAL SITES	Federal Sites PFAS Information
PFAS TSCA	PFAS Manufacture and Imports Information
PFAS RCRA MANIFEST	PFAS Transfers Identified In the RCRA Database Listing
PFAS ATSDR	PFAS Contamination Site Location Listing
PFAS WQP	Ambient Environmental Sampling for PFAS
PFAS NPDES	Clean Water Act Discharge Monitoring Information
PFAS ECHO	Facilities in Industries that May Be Handling PFAS Listing
PFAS ECHO FIRE TRAINING	Facilities in Industries that May Be Handling PFAS Listing
PFAS PART 139 AIRPORT	All Certified Part 139 Airports PFAS Information Listing
AQUEOUS FOAM NRC	Aqueous Foam Related Incidents Listing
PFAS	PFAS Contamination Site Location Listing
AQUEOUS FOAM	Former Fire Training Facility Assessments Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
ICE	ICE
HWP	EnviroStor Permitted Facilities Listing
HWT	Registered Hazardous Waste Transporter Database
HAZNET	Facility and Manifest Data
MINES	Mines Site Location Listing
MWMP	Medical Waste Management Program Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
UIC	UIC Listing
UIC GEO	UIC GEO (GEOTRACKER)
WASTEWATER PITS	Oil Wastewater Pits Listing
WDS	Waste Discharge System
WIP	Well Investigation Program Case List
MILITARY PRIV SITES	MILITARY PRIV SITES (GEOTRACKER)
PROJECT	PROJECT (GEOTRACKER)
WDR	Waste Discharge Requirements Listing
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)

EXECUTIVE SUMMARY

WELL STIM PROJ..... Well Stimulation Project (GEOTRACKER)
HWTS..... Hazardous Waste Tracking System
MINES MRDS..... Mineral Resources Data System

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants
EDR Hist Auto..... EDR Exclusive Historical Auto Stations
EDR Hist Cleaner..... EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF..... Recovered Government Archive Solid Waste Facilities List
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

Lists of Federal RCRA generators

RCRA-SQG: 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.

A review of the RCRA-SQG list, as provided by EDR, and dated 11/21/2022 has revealed that there are 2 RCRA-SQG sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
ULTRAGENYX PHARMACEU EPA ID:: CAR000274845	8001 REDWOOD BLVD	NE 1/8 - 1/4 (0.196 mi.)	A8	67
BUCK INSTITUTE FOR A EPA ID:: CAR000152504	***8001 REDWOOD BLVD***	***NE 1/8 - 1/4 (0.196 mi.)***	***A13***	***89***

EXECUTIVE SUMMARY

Lists of state- and tribal hazardous waste facilities

ENVIROSTOR: 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.

A review of the ENVIROSTOR list, as provided by EDR, and dated 10/24/2022 has revealed that there are 2 ENVIROSTOR sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
NOVATO STORAGE PARK	***AIRPORT AND BINFORD***	***NNE 1/2 - 1 (0.802 mi.)***	***C22***	***238***
Facility Id: 21420001				
Status: No Further Action				
BINFORD ROAD FILL SI	BINFORD AND AIRPORT	NNE 1/2 - 1 (0.805 mi.)	C23	241
Facility Id: 21490003				
Status: Refer: Other Agency				

Lists of state and tribal leaking storage tanks

LUST: 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.

A review of the LUST list, as provided by EDR, has revealed that there are 2 LUST sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
PG & E	***8161 OLD REDWOOD HWY***	***NNE 1/4 - 1/2 (0.273 mi.)***	***18***	***180***
Database: LUST REG 2, Date of Government Version: 09/30/2004				
Facility Id: 21-0306				
Facility Status: Case Closed				
date9: 4/12/1996				
FIREMAN'S FUND INSUR	***777 SAN MARIN DR***	***SSW 1/4 - 1/2 (0.348 mi.)***	***B20***	***197***
Database: LUST REG 2, Date of Government Version: 09/30/2004				
Database: LUST, Date of Government Version: 08/31/2022				
Status: Completed - Case Closed				
Facility Id: 21-0051				
Facility Status: Case Closed				
Global Id: T0604100050				
date9: 1/22/1998				

EXECUTIVE SUMMARY

Lists of state and tribal registered storage tanks

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, has revealed that there are 3 UST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
BUCK CENTER FOR RESE Database: UST, Date of Government Version: 08/31/2022 Facility Id: 600279	8001 REDWOOD HWY.	NE 1/8 - 1/4 (0.196 mi.)	A15	177
BUCK INSTITUTE FOR R Database: MARIN CO. UST, Date of Government Version: 09/26/2018 Tank Status: Change of Information Facility Id: 60-0279	8001 REDWOOD BOULEVA	NE 1/8 - 1/4 (0.196 mi.)	A16	178
BUCK INSTITUTE FOR R Database: UST, Date of Government Version: 08/31/2022 Facility Id: 21-000-600279	8001 REDWOOD BOULEVA	NE 1/8 - 1/4 (0.196 mi.)	A17	179

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Hazardous waste / Contaminated Sites

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.

A review of the CERS HAZ WASTE list, as provided by EDR, and dated 01/05/2023 has revealed that there are 4 CERS HAZ WASTE sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
BUCK INSTITUTE FOR A	***8001 REDWOOD BLVD***	***NE 1/8 - 1/4 (0.196 mi.)***	***A6***	***24***
ULTRAGENYX	***8001 REDWOOD BLVD***	***NE 1/8 - 1/4 (0.196 mi.)***	***A9***	***71***
BIOMARIN PHARMACEUTI	***8001 REDWOOD BLVD***	***NE 1/8 - 1/4 (0.196 mi.)***	***A10***	***74***
BUCK INSTITUTE FOR R	***8001 REDWOOD BOULEVA***	***NE 1/8 - 1/4 (0.196 mi.)***	***A11***	***77***

Local Lists of Registered Storage Tanks

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.

A review of the CERS TANKS list, as provided by EDR, and dated 01/06/2023 has revealed that there is 1 CERS TANKS site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
BUCK INSTITUTE FOR R	***8001 REDWOOD BOULEVA***	***NE 1/8 - 1/4 (0.196 mi.)***	***A11***	***77***

Other Ascertainable Records

RCRA NonGen / NLR: 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.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 11/21/2022 has revealed that there are 7 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
BIOMARIN PHARMACEUTI EPA ID:: CAC003052361 EPA ID:: CAC003111286	100 WOOD HOLLOW DRIV	SSW 0 - 1/8 (0.078 mi.)	2	11
ILLUME AUTOPSY AND P EPA ID:: CAC003150183	222 RUSH LANDING RD.	SE 0 - 1/8 (0.080 mi.)	3	16
COTTONWOOD SOLAR LLC EPA ID:: CAL000465255	8001 REDWOOD BLVD	NE 1/8 - 1/4 (0.196 mi.)	A4	18
BIOMARIN PHARMACEUTI EPA ID:: CAL000430504	8001 REDWOOD BLVD	NE 1/8 - 1/4 (0.196 mi.)	A5	21
CALICO LIFE SCIENCES EPA ID:: CAL000428939	8001 REDWOOD BLVD	NE 1/8 - 1/4 (0.196 mi.)	A7	64
CYCLARITY THERAPEUTI EPA ID:: CAL000474449	8001 REDWOOD BLVD	NE 1/8 - 1/4 (0.196 mi.)	A12	87
FUJIFILM CELLULAR DY EPA ID:: CAL000429849	8001 REDWOOD BOULEVA	NE 1/8 - 1/4 (0.196 mi.)	A14	175

Cortese: 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).

A review of the Cortese list, as provided by EDR, and dated 09/19/2022 has revealed that there are 2 Cortese sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
PG & E Cleanup Status: COMPLETED - CASE CLOSED	***8161 OLD REDWOOD HWY***	***NNE 1/4 - 1/2 (0.273 mi.)***	***18***	***180***
FIREMAN'S FUND INSUR Cleanup Status: COMPLETED - CASE CLOSED	***777 SAN MARIN DR***	***SSW 1/4 - 1/2 (0.348 mi.)***	***B19***	***180***

HIST CORTESE: 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.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there is 1 HIST CORTESE site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
FIREMAN'S FUND INSUR	***777 SAN MARIN DR***	***SSW 1/4 - 1/2 (0.348 mi.)***	***B20***	***197***

EXECUTIVE SUMMARY

Reg Id: 21-0051

Notify 65: 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.

A review of the Notify 65 list, as provided by EDR, and dated 09/07/2022 has revealed that there is 1 Notify 65 site within approximately 1 mile of the target property.

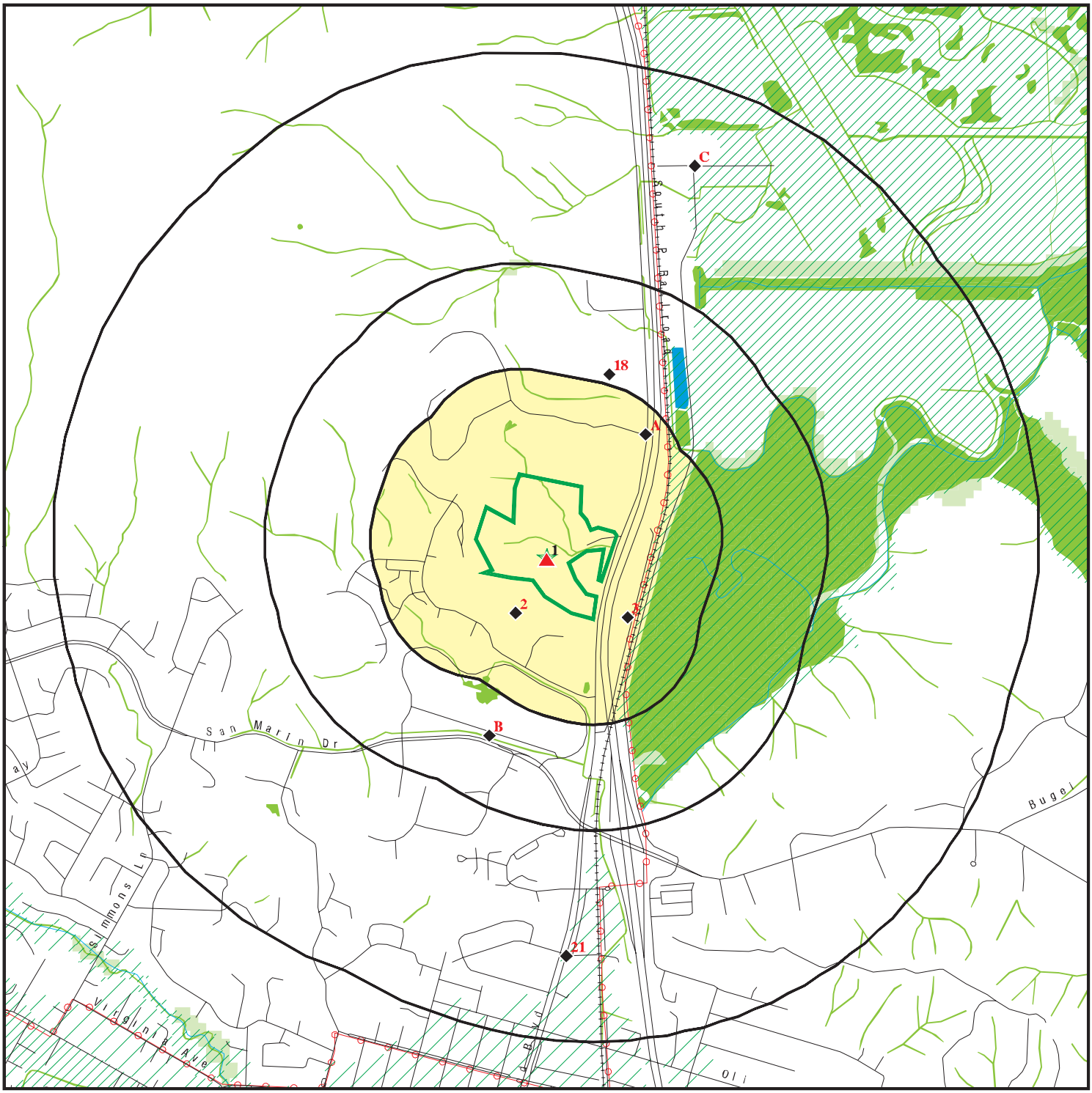
Lower Elevation	Address	Direction / Distance	Map ID	Page
GOLDEN GATE TRANSIT	***801 GOLDEN GATE PLAC***	***S 1/2 - 1 (0.799 mi.)***	***21***	***201***

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 3 records.

Site Name	Database(s)
VILLAGE AT NOVATO	CIWQS CDL
R.I. HERITAGE INN OF NOVATO, LLC	FINDS

OVERVIEW MAP - 7249630.2S



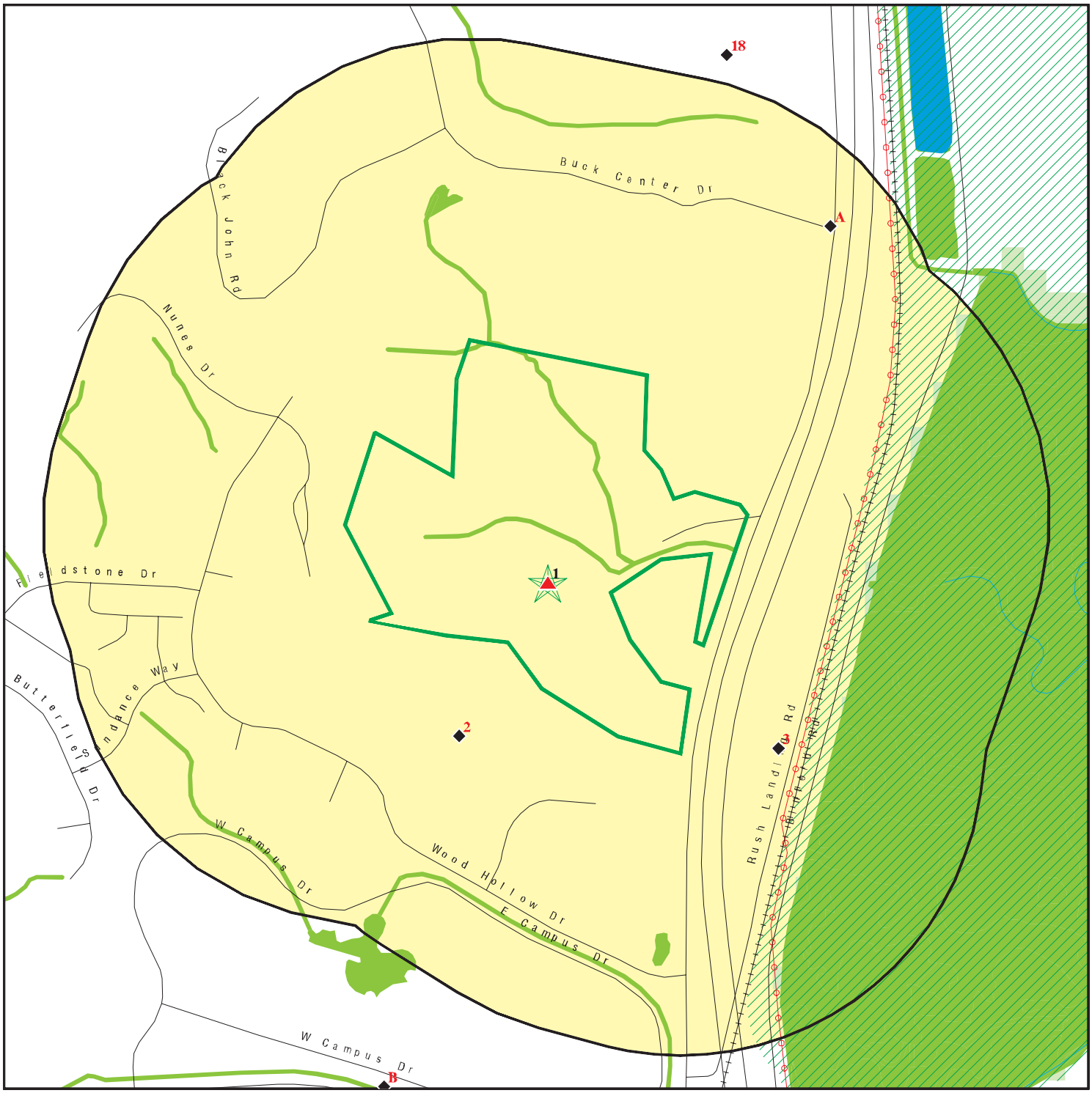
- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- 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:	Novato Property	CLIENT:	AllWest Environmental Inc.
ADDRESS:	7711 Redwood Blvd Novato CA 94945	CONTACT:	Belinda Blackie
		INQUIRY #:	7249630.2s
LAT/LONG:	38.127431 / 122.568534	DATE:	February 10, 2023 9:11 am

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DETAIL MAP - 7249630.2S



- 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
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- 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: Novato Property	CLIENT: AllWest Environmental Inc.
ADDRESS: 7711 Redwood Blvd Novato CA 94945	CONTACT: Belinda Blackie
LAT/LONG: 38.127431 / 122.568534	INQUIRY #: 7249630.2s DATE: February 10, 2023 9:16 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								
Lists of Federal NPL (Superfund) sites								
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
Lists of Federal Delisted NPL sites								
Delisted NPL	1.000		0	0	0	0	NR	0
Lists of Federal sites subject to CERCLA removals and CERCLA orders								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Lists of Federal CERCLA sites with NFRAP								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA facilities undergoing Corrective Action								
CORRACTS	1.000		0	0	0	0	NR	0
Lists of Federal RCRA TSD facilities								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA generators								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	2	NR	NR	NR	2
RCRA-VSQG	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 CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
Lists of state- and tribal (Superfund) equivalent sites								
RESPONSE	1.000		0	0	0	0	NR	0
Lists of state- and tribal hazardous waste facilities								
ENVIROSTOR	1.000		0	0	0	2	NR	2
Lists of state and tribal landfills and solid waste disposal facilities								
SWF/LF	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
Lists of state and tribal leaking storage tanks								
LUST	0.500		0	0	2	NR	NR	2
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
Lists of state and tribal registered storage tanks								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	3	NR	NR	NR	3
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
Lists of state and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
Lists of state and tribal brownfield 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	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	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								
US HIST CDL	0.001		0	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	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		0	4	NR	NR	NR	4
US CDL	0.001		0	NR	NR	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
CERS TANKS	0.250		0	1	NR	NR	NR	1
CA FID UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	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	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		2	5	NR	NR	NR	7
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	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	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	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
PFAS NPL	0.250		0	0	NR	NR	NR	0
PFAS FEDERAL SITES	0.250		0	0	NR	NR	NR	0
PFAS TSCA	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
PFAS RCRA MANIFEST	0.250		0	0	NR	NR	NR	0
PFAS ATSDR	0.250		0	0	NR	NR	NR	0
PFAS WQP	0.250		0	0	NR	NR	NR	0
PFAS NPDES	0.250		0	0	NR	NR	NR	0
PFAS ECHO	0.250		0	0	NR	NR	NR	0
PFAS ECHO FIRE TRAINING	0.250		0	0	NR	NR	NR	0
PFAS PART 139 AIRPORT	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM NRC	0.250		0	0	NR	NR	NR	0
PFAS	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM	0.001		0	NR	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	2	NR	NR	2
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	1	NR	NR	1
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001	1	0	NR	NR	NR	NR	1
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	1	NR	1
UIC	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001	1	0	NR	NR	NR	NR	1
CERS	0.001	1	0	NR	NR	NR	NR	1
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
HWTS	0.001		0	NR	NR	NR	NR	0
MINES MRDS	0.001		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	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
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	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		3	2	15	5	3	0	28

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1 **7711 REDWOOD BOULEVARD** **NPDES** **S125341397**
Target **7711 REDWOOD BLVD** **CIWQS** **N/A**
Property **NOVATO, CA 94945** **CERS**

Actual:
50 ft.

NPDES:

Name:	7711 REDWOOD BOULEVARD
Address:	7711 REDWOOD BLVD
City,State,Zip:	NOVATO, CA 94945
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:	2 21C387806
Regulatory Measure Type:	Construction
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:	08/19/2019
Operator Name:	Landsea Homes
Operator Address:	3130 Crow Canyon Place
Operator City:	San Ramon
Operator State:	California
Operator Zip:	94583

Name:	7711 REDWOOD BOULEVARD
Address:	7711 REDWOOD BLVD
City,State,Zip:	NOVATO, CA 94945
Facility Status:	Active
NPDES Number:	CAS000002
Region:	2
Agency Number:	0
Regulatory Measure ID:	511547
Place ID:	Not reported
Order Number:	2009-0009-DWQ
WDID:	2 21C387806
Regulatory Measure Type:	Enrollee
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	08/19/2019
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	3130 Crow Canyon Place
Discharge Name:	Landsea Homes
Discharge City:	San Ramon
Discharge State:	California
Discharge Zip:	94583
Status:	Not reported
Status Date:	Not reported

7711 REDWOOD BOULEVARD (Continued) **S125341397**

Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported

CIWQS:

Name:	7711 REDWOOD BOULEVARD
Address:	7711 REDWOOD BLVD
City,State,Zip:	NOVATO, CA 94945
Agency:	Landsea Homes
Agency Address:	3130 Crow Canyon Place Suite 325, San Ramon , CA 94583
Place/Project Type:	Construction - Residential
SIC/NAICS:	Not reported
Region:	2
Program:	CONSTW
Regulatory Measure Status:	Active
Regulatory Measure Type:	Storm water construction
Order Number:	2009-0009-DWQ
WDID:	2 21C387806
NPDES Number:	CAS000002
Adoption Date:	Not reported
Effective Date:	08/19/2019
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:	38.1271
Longitude:	-122.5665

CERS:

Name:	7711 REDWOOD BOULEVARD
Address:	7711 REDWOOD BLVD
City,State,Zip:	NOVATO, CA 94945
Site ID:	555482
CERS ID:	874736
CERS Description:	Construction Storm Water

Affiliation:

Affiliation Type Desc:	Owner/Operator
Entity Name:	Landsea Homes
Entity Title:	Operator
Affiliation Address:	3130 Crow Canyon PlaceSuite 325
Affiliation City:	San Ramon
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94583
Affiliation Phone:	,

2
SSW
< 1/8
0.078 mi.
412 ft.

BIOMARIN PHARMACEUTICAL INC.
100 WOOD HOLLOW DRIVE
NOVATO, CA 94945

RCRA NonGen / NLR

1026045915
CAC003052361

Relative:
Lower

Actual:
48 ft.

RCRA Listings:

Date Form Received by Agency:		20200122
Handler Name:	BIOMARIN PHARMACEUTICAL INC.	
Handler Address:		100 WOOD HOLLOW DRIVE
Handler City,State,Zip:		NOVATO, CA 94945
EPA ID:		CAC003052361
Contact Name:		ALFRE VAILLE
Contact Address:		105 DIGITAL DRIVE
Contact City,State,Zip:		NOVATO, CA 94949
Contact Telephone:		415-382-5067
Contact Fax:		Not reported
Contact Email:		AVAILLE@BMRN.COM
Contact Title:		Not reported
EPA Region:		09
Land Type:		Not reported
Federal Waste Generator Description:		Not a generator, verified
Non-Notifier:		Not reported
Biennial Report Cycle:		Not reported
Accessibility:		Not reported
Active Site Indicator:		Not reported
State District Owner:		Not reported
State District:		Not reported
Mailing Address:		105 DIGITAL DRIVE
Mailing City,State,Zip:		NOVATO, CA 94949
Owner Name:	NEWMARK KNIGHT FRANK	
Owner Type:		Other
Operator Name:	ALFRE VAILLE	
Operator Type:		Other
Short-Term Generator Activity:		No
Importer Activity:		No
Mixed Waste Generator:		No
Transporter Activity:		No
Transfer Facility Activity:		No
Recycler Activity with Storage:		No
Small Quantity On-Site Burner Exemption:		No
Smelting Melting and Refining Furnace Exemption:		No
Underground Injection Control:		No
Off-Site Waste Receipt:		No
Universal Waste Indicator:		No
Universal Waste Destination Facility:		No
Federal Universal Waste:		No
Active Site Fed-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site Converter Treatment storage and Disposal Facility:		Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site State-Reg Handler:		---
Federal Facility Indicator:		Not reported
Hazardous Secondary Material Indicator:		N
Sub-Part K Indicator:		Not reported
Commercial TSD Indicator:		No
Treatment Storage and Disposal Type:		Not reported
2018 GPRA Permit Baseline:		Not on the Baseline
2018 GPRA Renewals Baseline:		Not on the Baseline
Permit Renewals Workload Universe:		Not reported

BIOMARIN PHARMACEUTICAL INC. (Continued) **1026045915**

Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required: Not reported	
Handler Date of Last Change:	20200210
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name: NEWMARK KNIGHT FRANK	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	2010 CROW CANYON PLACE, SUITE 125
Owner/Operator City,State,Zip:	SAN RAMON, CA 94583
Owner/Operator Telephone:	925-275-9010
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name: ALFRE VAILLE	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	105 DIGITAL DRIVE
Owner/Operator City,State,Zip:	NOVATO, CA 94949
Owner/Operator Telephone:	415-382-5067
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

BIOMARIN PHARMACEUTICAL INC. (Continued) **1026045915**

Historic Generators:
Receive Date: 20200122
Handler Name: BIOMARIN PHARMACEUTICAL INC.
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 325412
NAICS Description: PHARMACEUTICAL PREPARATION MANUFACTURING

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

Date Form Received by Agency: 20210323
Handler Name: BIOMARIN PHARMACEUTICAL INC.
Handler Address: 100 WOOD HOLLOW DRIVE
Handler City,State,Zip: NOVATO, CA 94945
EPA ID: CAC003111286
Contact Name: MARINA DEL VALLE
Contact Address: 105 DIGITAL DRIVE
Contact City,State,Zip: NOVATO, CA 94949
Contact Telephone: 415-515-8496
Contact Fax: Not reported
Contact Email: MARINA.DELVALLE@BMRN.COM
Contact Title: Not reported
EPA Region: 09
Land Type: Not reported
Federal Waste Generator Description: Not a generator, verified
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Not reported
State District Owner: Not reported
State District: Not reported
Mailing Address: 105 DIGITAL DRIVE
Mailing City,State,Zip: NOVATO, CA 94949
Owner Name: NEWMARK KNIGHT FRANK
Owner Type: Other
Operator Name: MARINA DEL VALLE
Operator Type: Other
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No

BIOMARIN PHARMACEUTICAL INC. (Continued) **1026045915**

Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required: Not reported	
Handler Date of Last Change:	20210326
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:
Owner/Operator Indicator: Operator
Owner/Operator Name: MARINA DEL VALLE

BIOMARIN PHARMACEUTICAL INC. (Continued) **1026045915**

Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	105 DIGITAL DRIVE
Owner/Operator City,State,Zip:	NOVATO, CA 94949
Owner/Operator Telephone:	415-515-8496
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	NEWMARK KNIGHT FRANK
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	2010 CROW CANYON PLACE
Owner/Operator City,State,Zip:	SAN RAMON, CA 94583
Owner/Operator Telephone:	925-275-9010
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20210323
Handler Name:	BIOMARIN PHARMACEUTICAL INC.
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	No
Electronic Manifest Broker:	No

List of NAICS Codes and Descriptions:

NAICS Code:	541714
NAICS Description:	RESEARCH AND DEVELOPMENT IN BIOTECHNOLOGY (EXCEPT NANOBIOTECHNOLOGY

Facility Has Received Notices of Violations:

Violations:	No Violations Found

Evaluation Action Summary:

Evaluations:	No Evaluations Found

3
SE
< 1/8
0.080 mi.
420 ft.

ILLUME AUTOPSY AND PATHOLOGY SERVICES, LLC
222 RUSH LANDING RD.
NOVATO, CA 94945

RCRA NonGen / NLR

1027078300
CAC003150183

Relative:
Lower

Actual:
15 ft.

RCRA Listings:

Date Form Received by Agency:		20211126
Handler Name:	ILLUME AUTOPSY AND PATHOLOGY SERVICES, LLC	
Handler Address:		222 RUSH LANDING RD.
Handler City,State,Zip:		NOVATO, CA 94945
EPA ID:		CAC003150183
Contact Name:		JAVI HARTENSTINE
Contact Address:		45060 SYNERGY ST. UNIT 342
Contact City,State,Zip:		FREMONT, CA 94538
Contact Telephone:		877-232-9168
Contact Fax:		Not reported
Contact Email:		ILLUMEPATHOLOGY@GMAIL.COM
Contact Title:		Not reported
EPA Region:		09
Land Type:		Not reported
Federal Waste Generator Description:		Not a generator, verified
Non-Notifier:		Not reported
Biennial Report Cycle:		Not reported
Accessibility:		Not reported
Active Site Indicator:		Not reported
State District Owner:		Not reported
State District:		Not reported
Mailing Address:		45060 SYNERGY ST. UNIT 342
Mailing City,State,Zip:		FREMONT, CA 94538
Owner Name:	JAVI HARTENSTINE	
Owner Type:		Other
Operator Name:	JAVI HARTENSTINE	
Operator Type:		Other
Short-Term Generator Activity:		No
Importer Activity:		No
Mixed Waste Generator:		No
Transporter Activity:		No
Transfer Facility Activity:		No
Recycler Activity with Storage:		No
Small Quantity On-Site Burner Exemption:		No
Smelting Melting and Refining Furnace Exemption:		No
Underground Injection Control:		No
Off-Site Waste Receipt:		No
Universal Waste Indicator:		No
Universal Waste Destination Facility:		No
Federal Universal Waste:		No
Active Site Fed-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site Converter Treatment storage and Disposal Facility:		Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site State-Reg Handler:		---
Federal Facility Indicator:		Not reported
Hazardous Secondary Material Indicator:		N
Sub-Part K Indicator:		Not reported
Commercial TSD Indicator:		No
Treatment Storage and Disposal Type:		Not reported
2018 GPRA Permit Baseline:		Not on the Baseline
2018 GPRA Renewals Baseline:		Not on the Baseline
Permit Renewals Workload Universe:		Not reported

ILLUME AUTOPSY AND PATHOLOGY SERVICES, LLC (Continued) **1027078300**

Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required: Not reported	
Handler Date of Last Change:	20211129
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name: JAVI HARTENSTINE	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	45060 SYNERGY ST. UNIT 342
Owner/Operator City,State,Zip:	FREMONT, CA 94538
Owner/Operator Telephone:	877-232-9168
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name: JAVI HARTENSTINE	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	45060 SYNERGY ST. UNIT 342
Owner/Operator City,State,Zip:	FREMONT, CA 94538
Owner/Operator Telephone:	877-232-9168
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

ILLUME AUTOPSY AND PATHOLOGY SERVICES, LLC (Continued) **1027078300**

Historic Generators:
- Receive Date: 20211126
- Handler Name: ILLUME AUTOPSY AND PATHOLOGY SERVICES, LLC
- Federal Waste Generator Description: Not a generator, verified
- State District Owner: Not reported
- Large Quantity Handler of Universal Waste: No
- Recognized Trader Importer: No
- Recognized Trader Exporter: No
- Spent Lead Acid Battery Importer: No
- Spent Lead Acid Battery Exporter: No
- Current Record: Yes
- Non Storage Recycler Activity: No
- Electronic Manifest Broker: No

List of NAICS Codes and Descriptions:
- NAICS Code: 56299
- NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:
- Violations: No Violations Found

Evaluation Action Summary:
- Evaluations: No Evaluations Found

A4 **COTTONWOOD SOLAR LLC MARIN CARPORT** **RCRA NonGen / NLR** **1027091762**
NE **8001 REDWOOD BLVD** **CAL000465255**
1/8-1/4 **NOVATO, CA 94945**
0.196 mi.
1033 ft. **Site 1 of 14 in cluster A**

Relative: **Lower**

Actual: **33 ft.**

RCRA Listings:
- Date Form Received by Agency: 20220901
- Handler Name: COTTONWOOD SOLAR LLC MARIN CARPORT
- Handler Address: 8001 REDWOOD BLVD
- Handler City,State,Zip: NOVATO, CA 94945
- EPA ID: CAL000465255
- Contact Name: KELLY SCOTT
- Contact Address: 600 E CANAL ST
- Contact City,State,Zip: RICHMOND, VA 23219
- Contact Telephone: 804-273-3513
- Contact Fax: Not reported
- Contact Email: KELLY.SCOTT@DOMINIONENERGY.COM
- Contact Title: Not reported
- EPA Region: 09
- Land Type: Not reported
- Federal Waste Generator Description: Not a generator, verified
- Non-Notifier: Not reported
- Biennial Report Cycle: Not reported
- Accessibility: Not reported
- Active Site Indicator: Not reported
- State District Owner: Not reported
- State District: Not reported
- Mailing Address: 600 E CANAL ST
- Mailing City,State,Zip: RICHMOND, VA 23219
- Owner Name: COTTONWOOD SOLAR LLC

COTTONWOOD SOLAR LLC MARIN CARPORT (Continued) **1027091762**

Owner Type:		Other
Operator Name:	KELLY SCOTT	
Operator Type:		Other
Short-Term Generator Activity:		No
Importer Activity:		No
Mixed Waste Generator:		No
Transporter Activity:		No
Transfer Facility Activity:		No
Recycler Activity with Storage:		No
Small Quantity On-Site Burner Exemption:		No
Smelting Melting and Refining Furnace Exemption:		No
Underground Injection Control:		No
Off-Site Waste Receipt:		No
Universal Waste Indicator:		No
Universal Waste Destination Facility:		No
Federal Universal Waste:		No
Active Site Fed-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site Converter Treatment storage and Disposal Facility:		Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site State-Reg Handler:		---
Federal Facility Indicator:		Not reported
Hazardous Secondary Material Indicator:		N
Sub-Part K Indicator:		Not reported
Commercial TSD Indicator:		No
Treatment Storage and Disposal Type:		Not reported
2018 GPRA Permit Baseline:		Not on the Baseline
2018 GPRA Renewals Baseline:		Not on the Baseline
Permit Renewals Workload Universe:		Not reported
Permit Workload Universe:		Not reported
Permit Progress Universe:		Not reported
Post-Closure Workload Universe:		Not reported
Closure Workload Universe:		Not reported
202 GPRA Corrective Action Baseline:		No
Corrective Action Workload Universe:		No
Subject to Corrective Action Universe:		No
Non-TSDFs Where RCRA CA has Been Imposed Universe:		No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:		No
TSDFs Only Subject to CA under Discretionary Auth Universe:		No
Corrective Action Priority Ranking:		No NCAPS ranking
Environmental Control Indicator:		No
Institutional Control Indicator:		No
Human Exposure Controls Indicator:		N/A
Groundwater Controls Indicator:		N/A
Operating TSDF Universe:		Not reported
Full Enforcement Universe:		Not reported
Significant Non-Complier Universe:		No
Unaddressed Significant Non-Complier Universe:		No
Addressed Significant Non-Complier Universe:		No
Significant Non-Complier With a Compliance Schedule Universe:		No
Financial Assurance Required:	Not reported	
Handler Date of Last Change:		20220919
Recognized Trader-Importer:		No
Recognized Trader-Exporter:		No
Importer of Spent Lead Acid Batteries:		No
Exporter of Spent Lead Acid Batteries:		No
Recycler Activity Without Storage:		No
Manifest Broker:		No

COTTONWOOD SOLAR LLC MARIN CARPORT (Continued) **1027091762**

Sub-Part P Indicator: No

Handler - Owner Operator:
Owner/Operator Indicator: Operator
Owner/Operator Name: KELLY SCOTT
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 600 E CANAL ST
Owner/Operator City,State,Zip: RICHMOND, VA 23219
Owner/Operator Telephone: 804-273-3513
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: COTTONWOOD SOLAR LLC
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 120 TREDEGAR ST
Owner/Operator City,State,Zip: RICHMOND, VA 23219
Owner/Operator Telephone: 804-273-3513
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: COTTONWOOD SOLAR LLC
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 120 TREDEGAR ST
Owner/Operator City,State,Zip: RICHMOND, VA 23219
Owner/Operator Telephone: 804-273-3513
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: KELLY SCOTT
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 600 E CANAL ST
Owner/Operator City,State,Zip: RICHMOND, VA 23219
Owner/Operator Telephone: 804-273-3513
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 20220901
Handler Name: COTTONWOOD SOLAR LLC MARIN CARPORT
Federal Waste Generator Description: Not a generator, verified

COTTONWOOD SOLAR LLC MARIN CARPORT (Continued) **1027091762**

State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	No
Electronic Manifest Broker:	No

Receive Date:	20210903
Handler Name:	COTTONWOOD SOLAR LLC MARIN CARPORT
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	No
Electronic Manifest Broker:	No

List of NAICS Codes and Descriptions:

NAICS Code:	221122
NAICS Description:	ELECTRIC POWER DISTRIBUTION

Facility Has Received Notices of Violations:

Violations:	No Violations Found

Evaluation Action Summary:

Evaluations:	No Evaluations Found

A5 **BIOMARIN PHARMACEUTICAL INC** **RCRA NonGen / NLR** **1024861997**
NE **8001 REDWOOD BLVD** **CAL000430504**
1/8-1/4 **NOVATO, CA 94945**
0.196 mi.
1033 ft. **Site 2 of 14 in cluster A**

Relative: **Lower**

Actual: **33 ft.**

RCRA Listings:

Date Form Received by Agency:	20170906
Handler Name:	BIOMARIN PHARMACEUTICAL INC
Handler Address:	8001 REDWOOD BLVD
Handler City,State,Zip:	NOVATO, CA 94945
EPA ID:	CAL000430504
Contact Name:	CHRISTY CONFAR
Contact Address:	105 DIGITAL DR
Contact City,State,Zip:	NOVATO, CA 94949
Contact Telephone:	415-382-5244
Contact Fax:	Not reported
Contact Email:	CCONFAR@BMRN.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified

BIOMARIN PHARMACEUTICAL INC (Continued) **1024861997**

Non-Notifier:		Not reported
Biennial Report Cycle:		Not reported
Accessibility:		Not reported
Active Site Indicator:		Handler Activities
State District Owner:		Not reported
State District:		Not reported
Mailing Address:		105 DIGITAL DR
Mailing City,State,Zip:		NOVATO, CA 94949
Owner Name:	BIOMARIN PHARMACEUTICAL INC	
Owner Type:		Other
Operator Name:	CHRISTY CONFAR	
Operator Type:		Other
Short-Term Generator Activity:		No
Importer Activity:		No
Mixed Waste Generator:		No
Transporter Activity:		No
Transfer Facility Activity:		No
Recycler Activity with Storage:		No
Small Quantity On-Site Burner Exemption:		No
Smelting Melting and Refining Furnace Exemption:		No
Underground Injection Control:		No
Off-Site Waste Receipt:		No
Universal Waste Indicator:		Yes
Universal Waste Destination Facility:		Yes
Federal Universal Waste:		No
Active Site Fed-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site Converter Treatment storage and Disposal Facility:		Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site State-Reg Handler:		---
Federal Facility Indicator:		Not reported
Hazardous Secondary Material Indicator:		N
Sub-Part K Indicator:		Not reported
Commercial TSD Indicator:		No
Treatment Storage and Disposal Type:		Not reported
2018 GPRA Permit Baseline:		Not on the Baseline
2018 GPRA Renewals Baseline:		Not on the Baseline
Permit Renewals Workload Universe:		Not reported
Permit Workload Universe:		Not reported
Permit Progress Universe:		Not reported
Post-Closure Workload Universe:		Not reported
Closure Workload Universe:		Not reported
202 GPRA Corrective Action Baseline:		No
Corrective Action Workload Universe:		No
Subject to Corrective Action Universe:		No
Non-TSDFs Where RCRA CA has Been Imposed Universe:		No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:		No
TSDFs Only Subject to CA under Discretionary Auth Universe:		No
Corrective Action Priority Ranking:		No NCAPS ranking
Environmental Control Indicator:		No
Institutional Control Indicator:		No
Human Exposure Controls Indicator:		N/A
Groundwater Controls Indicator:		N/A
Operating TSDF Universe:		Not reported
Full Enforcement Universe:		Not reported
Significant Non-Complier Universe:		No
Unaddressed Significant Non-Complier Universe:		No
Addressed Significant Non-Complier Universe:		No

BIOMARIN PHARMACEUTICAL INC (Continued) **1024861997**

Significant Non-Complier With a Compliance Schedule Universe: No
Financial Assurance Required: Not reported
Handler Date of Last Change: 20180907
Recognized Trader-Importer: No
Recognized Trader-Exporter: No
Importer of Spent Lead Acid Batteries: No
Exporter of Spent Lead Acid Batteries: No
Recycler Activity Without Storage: No
Manifest Broker: No
Sub-Part P Indicator: No

Handler - Owner Operator:
Owner/Operator Indicator: Operator
Owner/Operator Name: CHRISTY CONFAR
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 105 DIGITAL DR
Owner/Operator City,State,Zip: NOVATO, CA 94949
Owner/Operator Telephone: 415-382-5244
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: BIOMARIN PHARMACEUTICAL INC
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 105 DIGITAL DR
Owner/Operator City,State,Zip: NOVATO, CA 94949
Owner/Operator Telephone: 415-506-6700
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 20170906
Handler Name: BIOMARIN PHARMACEUTICAL INC
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 56299
NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

BIOMARIN PHARMACEUTICAL INC (Continued) **1024861997**

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

A6 **BUCK INSTITUTE FOR AGE RESEARCH** **CERS HAZ WASTE** **1007458931**
NE **8001 REDWOOD BLVD** **CHMIRS** **N/A**
1/8-1/4 **NOVATO, CA 94945** **FINDS**
0.196 mi. **ECHO**
1033 ft. **Site 3 of 14 in cluster A** **EMI**
HAZNET
Relative: Lower **CIWQS**
CERS
Actual: 33 ft. **HWTS**

CERS HAZ WASTE:
Name: COTTONWOOD SOLAR, LLC
Address: 8001 REDWOOD BLVD
City,State,Zip: NOVATO, CA 94945
Site ID: 372793
CERS ID: 10674361
CERS Description: Hazardous Waste Generator

CHMIRS:
Name: Not reported
Address: 8001 REDWOOD BLVD
City,State,Zip: NOVATO, CA 94949
OES Incident Number: 08-5406
OES notification: 07/24/2008
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

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Merchant/Business
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	N/A
Other:	Not reported
Date/Time:	1521
Year:	2008
Agency:	Novato FIRE
Incident Date:	7/24/2008
Admin Agency:	Marin County Waste Management Office
Amount:	Not reported
Contained:	Yes
Site Type:	Not reported
E Date:	Not reported
Substance:	hydrochloric acid
Quantity Released:	15ml
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	65
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:	RP States: Unknown cause of release of material in the laboratory. Approximately 65 employees were evacuated and are still on site, but not yet allowed to go back in the facility.

FINDS:
Registry ID: 110017781042

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
AIR EMISSIONS CLASSIFICATION UNKNOWN
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,

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

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.
STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1007458931
Registry ID:	110017781042
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110017781042
Name:	BUCK INSTITUTE FOR AGE RESEARCH
Address:	8001 REDWOOD BLVD
City,State,Zip:	NOVATO, CA 94945

EMI:

Name:	BUCK INSTITUTE FOR AGE RESEARC
Address:	8001 REDWOOD BLVD
City,State,Zip:	NOVATO, CA 94945
Year:	2012
County Code:	21
Air Basin:	SF
Facility ID:	20644
Air District Name:	BA
SIC Code:	3721
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.019
Reactive Organic Gases Tons/Yr:	0.0158973
Carbon Monoxide Emissions Tons/Yr:	0.044
NOX - Oxides of Nitrogen Tons/Yr:	0.331
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0.0061475409836
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.006

Name:	BUCK INSTITUTE FOR AGE RESEARC
Address:	8001 REDWOOD BLVD
City,State,Zip:	NOVATO, CA 94945
Year:	2013
County Code:	21
Air Basin:	SF
Facility ID:	20644
Air District Name:	BA
SIC Code:	3721
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.019
Reactive Organic Gases Tons/Yr:	0.0158973
Carbon Monoxide Emissions Tons/Yr:	0.044
NOX - Oxides of Nitrogen Tons/Yr:	0.331
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0.006
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.006

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Name:	BUCK INSTITUTE FOR AGE RESEARCH
Address:	8001 REDWOOD BLVD
City,State,Zip:	NOVATO, CA 94945
Year:	2014
County Code:	21
Air Basin:	SF
Facility ID:	20644
Air District Name:	BA
SIC Code:	3721
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.004141834
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0.009561899
NOX - Oxides of Nitrogen Tons/Yr:	0.071449788
SOX - Oxides of Sulphur Tons/Yr:	9.396e-005
Particulate Matter Tons/Yr:	0.001295232
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.001243422

Name:	BUCK INSTITUTE FOR AGE RESEARCH
Address:	8001 REDWOOD BLVD
City,State,Zip:	NOVATO, CA 94945
Year:	2015
County Code:	21
Air Basin:	SF
Facility ID:	20644
Air District Name:	BA
SIC Code:	3721
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.004141834
Reactive Organic Gases Tons/Yr:	0.00375646
Carbon Monoxide Emissions Tons/Yr:	0.009561899
NOX - Oxides of Nitrogen Tons/Yr:	0.07144979
SOX - Oxides of Sulphur Tons/Yr:	9.396e-005
Particulate Matter Tons/Yr:	0.001295232
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.001243422

Name:	BUCK INSTITUTE FOR AGE RESEARCH
Address:	8001 REDWOOD BLVD
City,State,Zip:	NOVATO, CA 94945
Year:	2016
County Code:	21
Air Basin:	SF
Facility ID:	20644
Air District Name:	BA
SIC Code:	3721
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.004141834
Reactive Organic Gases Tons/Yr:	0.003638601169
Carbon Monoxide Emissions Tons/Yr:	0.009561899
NOX - Oxides of Nitrogen Tons/Yr:	0.071449788
SOX - Oxides of Sulphur Tons/Yr:	9.396e-005

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Particulate Matter Tons/Yr: 0.001295232
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0.001243422

Name: BUCK INSTITUTE FOR AGE RESEARCH
Address: 8001 REDWOOD BLVD
City,State,Zip: NOVATO, CA 94945
Year: 2017
County Code: 21
Air Basin: SF
Facility ID: 20644
Air District Name: BA
SIC Code: 3721
Air District Name: BAY AREA AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0.004141834
Reactive Organic Gases Tons/Yr: 0.003638601169
Carbon Monoxide Emissions Tons/Yr: 0.009561899
NOX - Oxides of Nitrogen Tons/Yr: 0.071449788
SOX - Oxides of Sulphur Tons/Yr: 9.396e-005
Particulate Matter Tons/Yr: 0.001295232
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0.001243422

Name: BUCK INSTITUTE FOR AGE RESEARCH
Address: 8001 REDWOOD BLVD
City,State,Zip: NOVATO, CA 94945
Year: 2018
County Code: 21
Air Basin: SF
Facility ID: 20644
Air District Name: BA
SIC Code: 3721
Air District Name: BAY AREA AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0.018850168
Reactive Organic Gases Tons/Yr: 0.016559872588
Carbon Monoxide Emissions Tons/Yr: 0.043517785
NOX - Oxides of Nitrogen Tons/Yr: 0.325179888
SOX - Oxides of Sulphur Tons/Yr: 0.000427628
Particulate Matter Tons/Yr: 0.005894814
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0.005659021

Name: BUCK INSTITUTE FOR AGE RESEARCH
Address: 8001 REDWOOD BLVD
City,State,Zip: NOVATO, CA 94945
Year: 2019
County Code: 21
Air Basin: SF
Facility ID: 20644
Air District Name: BA
SIC Code: 3721
Air District Name: BAY AREA AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0.020350878
Reactive Organic Gases Tons/Yr: 0.017878246323

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Carbon Monoxide Emissions Tons/Yr:	0.043891495
NOX - Oxides of Nitrogen Tons/Yr:	0.326810585
SOX - Oxides of Sulphur Tons/Yr:	0.000781844
Particulate Matter Tons/Yr:	0.005999476
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.005759496

Name:	BUCK INSTITUTE FOR AGE RESEARCH
Address:	8001 REDWOOD BLVD
City,State,Zip:	NOVATO, CA 94945
Year:	2020
County Code:	21
Air Basin:	SF
Facility ID:	20644
Air District Name:	BA
SIC Code:	3721
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.020350878
Reactive Organic Gases Tons/Yr:	0.017878246323
Carbon Monoxide Emissions Tons/Yr:	0.043891495
NOX - Oxides of Nitrogen Tons/Yr:	0.326810585
SOX - Oxides of Sulphur Tons/Yr:	0.000781844
Particulate Matter Tons/Yr:	0.005999476
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.005759496

HAZNET:

Name:	BIOMARIN PHARMACEUTICAL INC
Address:	8001 REDWOOD BLVD
Address 2:	Not reported
City,State,Zip:	NOVATO, CA 94945
Contact:	JON KAWAMOTO
Telephone:	9254706471
Mailing Name:	Not reported
Mailing Address:	105 DIGITAL DR
Year:	2021
Gepaid:	CAL000430504
TSD EPA ID:	CAD059494310
CA Waste Code:	214 - Unspecified solvent mixture
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.01
Year:	2021
Gepaid:	CAL000430504
TSD EPA ID:	NED981723513
CA Waste Code:	551 - Laboratory waste chemicals
Disposal Method:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Tons:	0.005
Year:	2021
Gepaid:	CAL000430504
TSD EPA ID:	CAD059494310
CA Waste Code:	551 - Laboratory waste chemicals
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Tons:	0.0125
Year:	2021
Gepaid:	CAL000430504
TSD EPA ID:	CAD059494310
CA Waste Code:	141 - Off-specification, aged or surplus inorganics
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.125
Year:	2020
Gepaid:	CAL000430504
TSD EPA ID:	CAD044429835
CA Waste Code:	213 - Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.004
Year:	2020
Gepaid:	CAL000430504
TSD EPA ID:	UTD981552177
CA Waste Code:	343 - Unspecified organic liquid mixture
Disposal Method:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Tons:	0.05
Year:	2020
Gepaid:	CAL000430504
TSD EPA ID:	CAD044429835
CA Waste Code:	551 - Laboratory waste chemicals
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.035
Year:	2020
Gepaid:	CAL000430504
TSD EPA ID:	NED981723513
CA Waste Code:	551 - Laboratory waste chemicals
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.01
Year:	2020
Gepaid:	CAL000430504
TSD EPA ID:	NED981723513
CA Waste Code:	551 - Laboratory waste chemicals
Disposal Method:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Tons:	0.0675
Year:	2019
Gepaid:	CAL000430504
TSD EPA ID:	NED981723513
CA Waste Code:	551 - Laboratory waste chemicals
Disposal Method:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Tons:	0.01000

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Click this hyperlink while viewing on your computer to access
7 additional CA HAZNET: record(s) in the EDR Site Report.

Additional Info:

Year:	2021
Gen EPA ID:	CAL000430504
Shipment Date:	9/18/2020
Creation Date:	11/1/2020
Receipt Date:	10/12/2020
Manifest ID:	014773609FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	CAD044429835
Trans Name:	Clean Harbors Wilmington LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	213 - Hydrocarbon solvents (benzene, hexane, Stoddard, etc.
RCRA Code:	D001,D035,F005
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.004
Waste Quantity:	8
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	9/18/2020
Creation Date:	11/1/2020
Receipt Date:	10/12/2020
Manifest ID:	014773609FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	CAD044429835
Trans Name:	Clean Harbors Wilmington LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D001
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.005
Waste Quantity:	10
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Shipment Date:	9/18/2020
Creation Date:	11/1/2020
Receipt Date:	10/12/2020
Manifest ID:	014773609FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	CAD044429835
Trans Name:	Clean Harbors Wilmington LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0075
Waste Quantity:	15
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	6/19/2020
Creation Date:	12/22/2020
Receipt Date:	6/23/2020
Manifest ID:	014773490FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	UTD981552177
Trans Name:	Clean Harbors Aragonite LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	343 - Unspecified organic liquid mixture
RCRA Code:	D001
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.05
Waste Quantity:	100
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	6/19/2020
Creation Date:	7/15/2020
Receipt Date:	6/25/2020
Manifest ID:	014773491FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MOD095038998
Trans 2 Name:	Tri State Motor Transit

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

TSDF EPA ID:	NED981723513
Trans Name:	Clean Harbors Environmental Services, Inc.
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.0075
Waste Quantity:	15
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	2/7/2020
Creation Date:	3/30/2020
Receipt Date:	3/10/2020
Manifest ID:	011857988FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	CAD044429835
Trans Name:	Clean Harbors Wilmington LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D001
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0025
Waste Quantity:	5
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	2/7/2020
Creation Date:	5/13/2020
Receipt Date:	2/23/2020
Manifest ID:	011857987FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MOD095038998
Trans 2 Name:	Tri State Motor Transit
TSDF EPA ID:	NED981723513
Trans Name:	Clean Harbors Environmental Services, Inc.
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.03

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Waste Quantity:	60
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	2/7/2020
Creation Date:	3/30/2020
Receipt Date:	3/10/2020
Manifest ID:	011857988FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	CAD044429835
Trans Name:	Clean Harbors Wilmington LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D001
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.02
Waste Quantity:	40
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	12/15/2020
Creation Date:	1/21/2021
Receipt Date:	1/1/2021
Manifest ID:	014773699FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	NED981723513
Trans Name:	Clean Harbors Environmental Services, Inc.
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.01
Waste Quantity:	20
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Shipment Date:	12/15/2020
Creation Date:	1/21/2021
Receipt Date:	1/1/2021
Manifest ID:	014773699FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	NED981723513
Trans Name:	Clean Harbors Environmental Services, Inc.
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D001
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.01
Waste Quantity:	20
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2020
Gen EPA ID:	CAL000430504
Shipment Date:	9/18/2020
Creation Date:	11/1/2020
Receipt Date:	10/12/2020
Manifest ID:	014773609FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	CAD044429835
Trans Name:	Clean Harbors Wilmington LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D001
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.005
Waste Quantity:	10
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	9/18/2020
Creation Date:	11/1/2020
Receipt Date:	10/12/2020

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Manifest ID:	014773609FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	CAD044429835
Trans Name:	Clean Harbors Wilmington LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0075
Waste Quantity:	15
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	9/18/2020
Creation Date:	11/1/2020
Receipt Date:	10/12/2020
Manifest ID:	014773609FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	CAD044429835
Trans Name:	Clean Harbors Wilmington LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	213 - Hydrocarbon solvents (benzene, hexane, Stoddard, etc.
RCRA Code:	D001,D035,F005
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.004
Waste Quantity:	8
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	6/19/2020
Creation Date:	12/22/2020
Receipt Date:	6/23/2020
Manifest ID:	014773490FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	UTD981552177
Trans Name:	Clean Harbors Aragonite LLC

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	343 - Unspecified organic liquid mixture
RCRA Code:	D001
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.05
Waste Quantity:	100
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	6/19/2020
Creation Date:	7/15/2020
Receipt Date:	6/25/2020
Manifest ID:	014773491FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MOD095038998
Trans 2 Name:	Tri State Motor Transit
TSDF EPA ID:	NED981723513
Trans Name:	Clean Harbors Environmental Services, Inc.
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.0075
Waste Quantity:	15
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	2/7/2020
Creation Date:	5/13/2020
Receipt Date:	2/23/2020
Manifest ID:	011857987FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MOD095038998
Trans 2 Name:	Tri State Motor Transit
TSDF EPA ID:	NED981723513
Trans Name:	Clean Harbors Environmental Services, Inc.
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.03
Waste Quantity:	60
Quantity Unit:	P
Additional Code 1:	Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	2/7/2020
Creation Date:	3/30/2020
Receipt Date:	3/10/2020
Manifest ID:	011857988FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	CAD044429835
Trans Name:	Clean Harbors Wilmington LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D001
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.02
Waste Quantity:	40
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	2/7/2020
Creation Date:	3/30/2020
Receipt Date:	3/10/2020
Manifest ID:	011857988FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	CAD044429835
Trans Name:	Clean Harbors Wilmington LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D001
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0025
Waste Quantity:	5
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	12/15/2020
Creation Date:	1/21/2021

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Receipt Date:	1/1/2021
Manifest ID:	014773699FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	NED981723513
Trans Name:	Clean Harbors Environmental Services, Inc.
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D001
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.01
Waste Quantity:	20
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	12/15/2020
Creation Date:	1/21/2021
Receipt Date:	1/1/2021
Manifest ID:	014773699FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	NED981723513
Trans Name:	Clean Harbors Environmental Services, Inc.
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.01
Waste Quantity:	20
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Detail Two:

Year:	2020
EM Manifest ID:	29337c1c-3398-4546-b6bd-417e97d73bfe
Shipment Date:	9/18/2020
Receipt Date:	10/12/2020
Manifest Number:	014773609FLE
Generator EPA ID:	CAL000430504
Name:	BIOMARIN PHARMACEUTICAL, INC.
Address:	8001 REDWOOD BOULEVARD
Address 2:	Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

City:	NOVATO
Zip:	94945
Telephone:	800-483-3718
Contact:	Diana Peroni
Contact Telephone:	415-455-7917
Transporter 1 EPA ID:	MAD039322250
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	MAD039322250
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	CAD044429835
TSDF Name:	Clean Harbors Wilmington LLC
TSDF Address 1:	1737 East Denni Street
TSDF Address 2:	Not reported
TSDF City:	Wilmington
TSDF Zip:	90744
TSDF Telephone:	800-483-3718

Federal:

Year:	2020
EM Manifest ID:	29337c1c-3398-4546-b6bd-417e97d73bfe
Generator EPA ID:	CAL000430504
Shipment Date:	2020-09-18
Manifest Number:	014773609FLE
Line Number:	1
Method Code:	H141
Quantity Tons:	0.00400
Quantity Waste:	8.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D001

Year:	2020
EM Manifest ID:	29337c1c-3398-4546-b6bd-417e97d73bfe
Generator EPA ID:	CAL000430504
Shipment Date:	2020-09-18
Manifest Number:	014773609FLE
Line Number:	1
Method Code:	H141
Quantity Tons:	0.00400
Quantity Waste:	8.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D035

Year:	2020
EM Manifest ID:	29337c1c-3398-4546-b6bd-417e97d73bfe
Generator EPA ID:	CAL000430504
Shipment Date:	2020-09-18
Manifest Number:	014773609FLE
Line Number:	1
Method Code:	H141
Quantity Tons:	0.00400
Quantity Waste:	8.000000
Quantity Unit:	P

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
Federal Code: F005

Year: 2020
EM Manifest ID: 29337c1c-3398-4546-b6bd-417e97d73bfe
Generator EPA ID: CAL000430504
Shipment Date: 2020-09-18
Manifest Number: 014773609FLE
Line Number: 2
Method Code: H141
Quantity Tons: 0.00500
Quantity Waste: 10.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
Federal Code: D001

State:
Year: 2020
EM Manifest ID: 29337c1c-3398-4546-b6bd-417e97d73bfe
Generator EPA ID: CAL000430504
Shipment Date: 2020-09-18
Manifest Number: 014773609FLE
Line Number: 1
Method Code: H141
Quantity Tons: 0.00400
Quantity Waste: 8.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
State Code: 213

Year: 2020
EM Manifest ID: 29337c1c-3398-4546-b6bd-417e97d73bfe
Generator EPA ID: CAL000430504
Shipment Date: 2020-09-18
Manifest Number: 014773609FLE
Line Number: 2
Method Code: H141
Quantity Tons: 0.00500
Quantity Waste: 10.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
State Code: 551

Year: 2020
EM Manifest ID: 29337c1c-3398-4546-b6bd-417e97d73bfe
Generator EPA ID: CAL000430504
Shipment Date: 2020-09-18
Manifest Number: 014773609FLE
Line Number: 3

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Method Code:	H141
Quantity Tons:	0.00750
Quantity Waste:	15.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551

Year:	2020
EM Manifest ID:	9831f2b0-bf39-4721-b8da-9205fe0eef75
Shipment Date:	6/19/2020
Receipt Date:	6/23/2020
Manifest Number:	014773490FLE
Generator EPA ID:	CAL000430504
Name:	BIOMARIN PHARMACEUTICAL, INC.
Address:	8001 REDWOOD BOULEVARD
Address 2:	Not reported
City:	NOVATO
Zip:	94945
Telephone:	800-483-3718
Contact:	Diana Peroni
Contact Telephone:	415-455-7917
Transporter 1 EPA ID:	MAD039322250
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	MAD039322250
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	UTD981552177
TSDF Name:	Clean Harbors Aragonite LLC
TSDF Address 1:	11600 North Aptus Road
TSDF Address 2:	Not reported
TSDF City:	Grantsville
TSDF Zip:	84029
TSDF Telephone:	800-483-3718

Federal:

Year:	2020
EM Manifest ID:	9831f2b0-bf39-4721-b8da-9205fe0eef75
Generator EPA ID:	CAL000430504
Shipment Date:	2020-06-19
Manifest Number:	014773490FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.05000
Quantity Waste:	100.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D001

State:

Year:	2020
EM Manifest ID:	9831f2b0-bf39-4721-b8da-9205fe0eef75
Generator EPA ID:	CAL000430504
Shipment Date:	2020-06-19

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Manifest Number: 014773490FLE
Line Number: 1
Method Code: H040
Quantity Tons: 0.05000
Quantity Waste: 100.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
State Code: 343

Year: 2020
EM Manifest ID: 7ab49be1-81ed-4441-bcd6-81db19395f0c
Shipment Date: 6/19/2020
Receipt Date: 6/25/2020
Manifest Number: 014773491FLE
Generator EPA ID: CAL000430504
Name: BIOMARIN PHARMACEUTICAL, INC.
Address: 8001 REDWOOD BOULEVARD
Address 2: Not reported
City: NOVATO
Zip: 94945
Telephone: 800-483-3718
Contact: Diana Peroni
Contact Telephone: 415-455-7917
Transporter 1 EPA ID: MAD039322250
Transporter 1 Emergency Number: Not reported
Transporter 2 EPA ID: MOD095038998
Transporter 2 Emergency Number: Not reported
TSDF EPA ID: NED981723513
TSDF Name: Clean Harbors Environmental Services, Inc.
TSDF Address 1: 2247 South Highway 71
TSDF Address 2: Not reported
TSDF City: Kimball
TSDF Zip: 69145
TSDF Telephone: 800-483-3718

State:
Year: 2020
EM Manifest ID: 7ab49be1-81ed-4441-bcd6-81db19395f0c
Generator EPA ID: CAL000430504
Shipment Date: 2020-06-19
Manifest Number: 014773491FLE
Line Number: 1
Method Code: H040
Quantity Tons: 0.00750
Quantity Waste: 15.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
State Code: 551

Year: 2020
EM Manifest ID: e248133b-8a15-42e9-89bf-bccaa392dc05
Shipment Date: 2/7/2020

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Receipt Date:	2/23/2020
Manifest Number:	011857987FLE
Generator EPA ID:	CAL000430504
Name:	BIOMARIN PHARMACEUTICAL, INC.
Address:	8001 REDWOOD BOULEVARD
Address 2:	Not reported
City:	NOVATO
Zip:	94945
Telephone:	800-483-3718
Contact:	Alfre Vaille
Contact Telephone:	415-382-5067
Transporter 1 EPA ID:	MAD039322250
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	MOD095038998
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	NED981723513
TSDF Name:	Clean Harbors Environmental Services, Inc.
TSDF Address 1:	2247 South Highway 71
TSDF Address 2:	Not reported
TSDF City:	Kimball
TSDF Zip:	69145
TSDF Telephone:	800-483-3718

State:

Year:	2020
EM Manifest ID:	e248133b-8a15-42e9-89bf-bccaa392dc05
Generator EPA ID:	CAL000430504
Shipment Date:	2020-02-07
Manifest Number:	011857987FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.03000
Quantity Waste:	60.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551

Year:	2020
EM Manifest ID:	1135728
Shipment Date:	2/7/2020
Receipt Date:	3/10/2020
Manifest Number:	011857988FLE
Generator EPA ID:	CAL000430504
Name:	BIOMARIN PHARMACEUTICAL, INC.
Address:	8001 REDWOOD BOULEVARD
Address 2:	Not reported
City:	NOVATO
Zip:	94945
Telephone:	800-483-3718
Contact:	Alfre Vaille
Contact Telephone:	415-382-5067
Transporter 1 EPA ID:	MAD039322250
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	MAD039322250
Transporter 2 Emergency Number:	Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

TSDF EPA ID: CAD044429835
TSDF Name: Clean Harbors Wilmington LLC
TSDF Address 1: 1737 East Denni Street
TSDF Address 2: Not reported
TSDF City: Wilmington
TSDF Zip: 90744
TSDF Telephone: 800-483-3718

Federal:
Year: 2020
EM Manifest ID: 1135728
Generator EPA ID: CAL000430504
Shipment Date: 2020-02-07
Manifest Number: 011857988FLE
Line Number: 1
Method Code: H141
Quantity Tons: 0.00250
Quantity Waste: 5.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
Federal Code: D001

Year: 2020
EM Manifest ID: 1135728
Generator EPA ID: CAL000430504
Shipment Date: 2020-02-07
Manifest Number: 011857988FLE
Line Number: 2
Method Code: H141
Quantity Tons: 0.02000
Quantity Waste: 40.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
Federal Code: D001

State:
Year: 2020
EM Manifest ID: 1135728
Generator EPA ID: CAL000430504
Shipment Date: 2020-02-07
Manifest Number: 011857988FLE
Line Number: 1
Method Code: H141
Quantity Tons: 0.00250
Quantity Waste: 5.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
State Code: 551

Year: 2020
EM Manifest ID: 1135728

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Generator EPA ID:	CAL000430504
Shipment Date:	2020-02-07
Manifest Number:	011857988FLE
Line Number:	2
Method Code:	H141
Quantity Tons:	0.02000
Quantity Waste:	40.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551

Detail Two:

Year:	2019
EM Manifest ID:	e7e5e18e-abc4-472b-bb87-40672e14be0c
Shipment Date:	6/21/2019
Receipt Date:	7/8/2019
Manifest Number:	013216265FLE
Generator EPA ID:	CAL000430504
Name:	BIOMARIN PHARMACEUTICAL, INC.
Address:	8001 REDWOOD BOULEVARD
Address 2:	Not reported
City:	NOVATO
Zip:	94945
Telephone:	800-483-3718
Contact:	Alfre Vaille
Contact Telephone:	415-382-5067
Transporter 1 EPA ID:	MAD039322250
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	MOD095038998
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	UTD981552177
TSDF Name:	Clean Harbors Aragonite LLC
TSDF Address 1:	PO Box 1339
TSDF Address 2:	Not reported
TSDF City:	Grantsville
TSDF Zip:	84029
TSDF Telephone:	800-483-3718

Federal:

Year:	2019
EM Manifest ID:	e7e5e18e-abc4-472b-bb87-40672e14be0c
Generator EPA ID:	CAL000430504
Shipment Date:	2019-06-21
Manifest Number:	013216265FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.00500
Quantity Waste:	10.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D002

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

State:

Year:	2019
EM Manifest ID:	e7e5e18e-abc4-472b-bb87-40672e14be0c
Generator EPA ID:	CAL000430504
Shipment Date:	2019-06-21
Manifest Number:	013216265FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.00500
Quantity Waste:	10.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551

Year:	2019
EM Manifest ID:	bfaf6e48-76b7-40ac-ae5d-56f304e52ae6
Shipment Date:	6/21/2019
Receipt Date:	7/3/2019
Manifest Number:	013216266FLE
Generator EPA ID:	CAL000430504
Name:	BIOMARIN PHARMACEUTICAL, INC.
Address:	8001 REDWOOD BOULEVARD
Address 2:	Not reported
City:	NOVATO
Zip:	94945
Telephone:	800-483-3718
Contact:	Alfre Vaille
Contact Telephone:	415-382-5067
Transporter 1 EPA ID:	MAD039322250
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	OKR000031492
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	NED981723513
TSDF Name:	Clean Harbors Environmental Services, Inc.
TSDF Address 1:	2247 South Highway 71
TSDF Address 2:	Not reported
TSDF City:	Kimball
TSDF Zip:	69145
TSDF Telephone:	800-483-3718

Federal:

Year:	2019
EM Manifest ID:	bfaf6e48-76b7-40ac-ae5d-56f304e52ae6
Generator EPA ID:	CAL000430504
Shipment Date:	2019-06-21
Manifest Number:	013216266FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.03250
Quantity Waste:	65.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Federal Code: D001

State:

Year: 2019
EM Manifest ID: bfaf6e48-76b7-40ac-ae5d-56f304e52ae6
Generator EPA ID: CAL000430504
Shipment Date: 2019-06-21
Manifest Number: 013216266FLE
Line Number: 1
Method Code: H040
Quantity Tons: 0.03250
Quantity Waste: 65.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
State Code: 551

Year: 2019
EM Manifest ID: bfaf6e48-76b7-40ac-ae5d-56f304e52ae6
Generator EPA ID: CAL000430504
Shipment Date: 2019-06-21
Manifest Number: 013216266FLE
Line Number: 2
Method Code: H040
Quantity Tons: 0.04500
Quantity Waste: 90.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
State Code: 551

Year: 2019
EM Manifest ID: 74f9a591-6390-4806-a587-1d26e1902399
Shipment Date: 2/1/2019
Receipt Date: 2/16/2019
Manifest Number: 011241735FLE
Generator EPA ID: CAL000430504
Name: BIOMARIN PHARMACEUTICAL, INC.
Address: 8001 REDWOOD BOULEVARD
Address 2: Not reported
City: NOVATO
Zip: 94945
Telephone: 800-483-3718
Contact: Alfre Vaille
Contact Telephone: 415-382-5067
Transporter 1 EPA ID: MAD039322250
Transporter 1 Emergency Number: Not reported
Transporter 2 EPA ID: MOD095038998
Transporter 2 Emergency Number: Not reported
TSDF EPA ID: NED981723513
TSDF Name: Clean Harbors Environmental Services, Inc.
TSDF Address 1: 2247 South Highway 71
TSDF Address 2: Not reported
TSDF City: Kimball

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

TSDF Zip:	69145
TSDF Telephone:	800-483-3718

Federal:

Year:	2019
EM Manifest ID:	74f9a591-6390-4806-a587-1d26e1902399
Generator EPA ID:	CAL000430504
Shipment Date:	2019-02-01
Manifest Number:	011241735FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.01000
Quantity Waste:	20.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D002

State:

Year:	2019
EM Manifest ID:	74f9a591-6390-4806-a587-1d26e1902399
Generator EPA ID:	CAL000430504
Shipment Date:	2019-02-01
Manifest Number:	011241735FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.01000
Quantity Waste:	20.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551

Year:	2019
EM Manifest ID:	524787
Shipment Date:	2/1/2019
Receipt Date:	2/8/2019
Manifest Number:	011241734FLE
Generator EPA ID:	CAL000430504
Name:	BIOMARIN PHARMACEUTICAL, INC.
Address:	8001 REDWOOD BOULEVARD
Address 2:	Not reported
City:	NOVATO
Zip:	94945
Telephone:	800-483-3718
Contact:	Alfre Vaille
Contact Telephone:	415-382-5067
Transporter 1 EPA ID:	MAD039322250
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	MOD095038998
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	UTD981552177
TSDF Name:	Clean Harbors Aragonite LLC
TSDF Address 1:	PO Box 1339

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

TSDF Address 2:	Not reported
TSDF City:	Grantsville
TSDF Zip:	84029
TSDF Telephone:	800-483-3718

Federal:

Year:	2019
EM Manifest ID:	524787
Generator EPA ID:	CAL000430504
Shipment Date:	2019-02-01
Manifest Number:	011241734FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.04000
Quantity Waste:	80.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D001

State:

Year:	2019
EM Manifest ID:	524787
Generator EPA ID:	CAL000430504
Shipment Date:	2019-02-01
Manifest Number:	011241734FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.04000
Quantity Waste:	80.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551

Year:	2019
EM Manifest ID:	ee66696f-4ebc-4d2f-93f1-3952d53247c4
Shipment Date:	10/11/2019
Receipt Date:	10/31/2019
Manifest Number:	013216422FLE
Generator EPA ID:	CAL000430504
Name:	BIOMARIN PHARMACEUTICAL, INC.
Address:	8001 REDWOOD BOULEVARD
Address 2:	Not reported
City:	NOVATO
Zip:	94945
Telephone:	800-483-3718
Contact:	Alfre Vaille
Contact Telephone:	415-382-5067
Transporter 1 EPA ID:	MAD039322250
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	MOD095038998
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	NED981723513

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

TSDF Name: Clean Harbors Environmental Services, Inc.
TSDF Address 1: 2247 South Highway 71
TSDF Address 2: Not reported
TSDF City: Kimball
TSDF Zip: 69145
TSDF Telephone: 800-483-3718

Federal:
Year: 2019
EM Manifest ID: ee66696f-4ebc-4d2f-93f1-3952d53247c4
Generator EPA ID: CAL000430504
Shipment Date: 2019-10-11
Manifest Number: 013216422FLE
Line Number: 1
Method Code: H040
Quantity Tons: 0.03000
Quantity Waste: 60.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
Federal Code: U122

State:
Year: 2019
EM Manifest ID: ee66696f-4ebc-4d2f-93f1-3952d53247c4
Generator EPA ID: CAL000430504
Shipment Date: 2019-10-11
Manifest Number: 013216422FLE
Line Number: 1
Method Code: H040
Quantity Tons: 0.03000
Quantity Waste: 60.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
State Code: 331

Year: 2019
EM Manifest ID: ee66696f-4ebc-4d2f-93f1-3952d53247c4
Generator EPA ID: CAL000430504
Shipment Date: 2019-10-11
Manifest Number: 013216422FLE
Line Number: 2
Method Code: H040
Quantity Tons: 0.01500
Quantity Waste: 30.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
State Code: 551

Year: 2019
EM Manifest ID: ee66696f-4ebc-4d2f-93f1-3952d53247c4
Generator EPA ID: CAL000430504

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Shipment Date:	2019-10-11
Manifest Number:	013216422FLE
Line Number:	3
Method Code:	H040
Quantity Tons:	0.01250
Quantity Waste:	25.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551

Year:	2019
EM Manifest ID:	ee66696f-4ebc-4d2f-93f1-3952d53247c4
Generator EPA ID:	CAL000430504
Shipment Date:	2019-10-11
Manifest Number:	013216422FLE
Line Number:	4
Method Code:	H040
Quantity Tons:	0.01000
Quantity Waste:	20.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551

Year:	2019
EM Manifest ID:	692573
Shipment Date:	10/11/2019
Receipt Date:	11/6/2019
Manifest Number:	013216423FLE
Generator EPA ID:	CAL000430504
Name:	BIOMARIN PHARMACEUTICAL, INC.
Address:	8001 REDWOOD BOULEVARD
Address 2:	Not reported
City:	NOVATO
Zip:	94945
Telephone:	800-483-3718
Contact:	Alfre Vaille
Contact Telephone:	415-382-5067
Transporter 1 EPA ID:	MAD039322250
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	MAD039322250
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	CAD044429835
TSDF Name:	Clean Harbors Wilmington LLC
TSDF Address 1:	1737 East Denni Street
TSDF Address 2:	Not reported
TSDF City:	Wilmington
TSDF Zip:	90744
TSDF Telephone:	800-483-3718

Federal:

Year:	2019
EM Manifest ID:	692573
Generator EPA ID:	CAL000430504

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Shipment Date:	2019-10-11
Manifest Number:	013216423FLE
Line Number:	1
Method Code:	H141
Quantity Tons:	0.00500
Quantity Waste:	10.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D001

Year:	2019
EM Manifest ID:	692573
Generator EPA ID:	CAL000430504
Shipment Date:	2019-10-11
Manifest Number:	013216423FLE
Line Number:	1
Method Code:	H141
Quantity Tons:	0.00500
Quantity Waste:	10.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D035

Year:	2019
EM Manifest ID:	692573
Generator EPA ID:	CAL000430504
Shipment Date:	2019-10-11
Manifest Number:	013216423FLE
Line Number:	1
Method Code:	H141
Quantity Tons:	0.00500
Quantity Waste:	10.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	U159

State:

Year:	2019
EM Manifest ID:	692573
Generator EPA ID:	CAL000430504
Shipment Date:	2019-10-11
Manifest Number:	013216423FLE
Line Number:	1
Method Code:	H141
Quantity Tons:	0.00500
Quantity Waste:	10.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	212

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Detail Two:

Year:	2018
EM Manifest ID:	011583837FLE20171206_D_1
Shipment Date:	12/6/2017
Receipt Date:	1/10/2018
Manifest Number:	011583837FLE
Generator EPA ID:	CAL000430504
Name:	BIOMARIN PHARMACEUTICAL INC
Address:	Not reported
Address 2:	Not reported
City:	Not reported
Zip:	Not reported
Telephone:	Not reported
Contact:	Not reported
Contact Telephone:	Not reported
Transporter 1 EPA ID:	MAD039322250
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	MOD095038998
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	ARD069748192
TSDF Name:	CLEAN HARBORS EL DORADO LLC
TSDF Address 1:	Not reported
TSDF Address 2:	Not reported
TSDF City:	Not reported
TSDF Zip:	Not reported
TSDF Telephone:	Not reported

Federal:

Year:	2018
EM Manifest ID:	011583837FLE20171206_D_1
Generator EPA ID:	CAL000430504
Shipment Date:	2017-12-06
Manifest Number:	011583837FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.00350
Quantity Waste:	7.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D001

Year:	2018
EM Manifest ID:	011583837FLE20171206_D_1
Generator EPA ID:	CAL000430504
Shipment Date:	2017-12-06
Manifest Number:	011583837FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.00350
Quantity Waste:	7.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D002

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Year:	2018
EM Manifest ID:	011583837FLE20171206_D_1
Generator EPA ID:	CAL000430504
Shipment Date:	2017-12-06
Manifest Number:	011583837FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.00350
Quantity Waste:	7.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D003

State:

Year:	2018
EM Manifest ID:	011583837FLE20171206_D_1
Generator EPA ID:	CAL000430504
Shipment Date:	2017-12-06
Manifest Number:	011583837FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.00350
Quantity Waste:	7.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551

Year:	2018
EM Manifest ID:	184238
Shipment Date:	10/19/2018
Receipt Date:	11/9/2018
Manifest Number:	011241678FLE
Generator EPA ID:	CAL000430504
Name:	BIOMARIN PHARMACEUTICAL, INC.
Address:	8001 REDWOOD BOULEVARD
Address 2:	Not reported
City:	NOVATO
Zip:	94945
Telephone:	800-483-3718
Contact:	Alfre Vaille
Contact Telephone:	415-382-5067
Transporter 1 EPA ID:	MAD039322250
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	CAR000187922
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	NED981723513
TSDF Name:	Clean Harbors Environmental Services, Inc.
TSDF Address 1:	2247 South Highway 71
TSDF Address 2:	Not reported
TSDF City:	Kimball
TSDF Zip:	69145
TSDF Telephone:	800-483-3718

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

State:

Year:	2018
EM Manifest ID:	184238
Generator EPA ID:	CAL000430504
Shipment Date:	2018-10-19
Manifest Number:	011241678FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.02000
Quantity Waste:	40.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551

Year:	2018
EM Manifest ID:	184000
Shipment Date:	10/19/2018
Receipt Date:	10/31/2018
Manifest Number:	011241677FLE
Generator EPA ID:	CAL000430504
Name:	BIOMARIN PHARMACEUTICAL, INC.
Address:	8001 REDWOOD BOULEVARD
Address 2:	Not reported
City:	NOVATO
Zip:	94945
Telephone:	800-483-3718
Contact:	Alfre Vaille
Contact Telephone:	415-382-5067
Transporter 1 EPA ID:	MAD039322250
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	MOD095038998
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	UTD981552177
TSDF Name:	Clean Harbors Aragonite LLC
TSDF Address 1:	PO Box 1339
TSDF Address 2:	Not reported
TSDF City:	Grantsville
TSDF Zip:	84029
TSDF Telephone:	800-483-3718

Federal:

Year:	2018
EM Manifest ID:	184000
Generator EPA ID:	CAL000430504
Shipment Date:	2018-10-19
Manifest Number:	011241677FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.03000
Quantity Waste:	60.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Federal Code: D001

State:
Year: 2018
EM Manifest ID: 184000
Generator EPA ID: CAL000430504
Shipment Date: 2018-10-19
Manifest Number: 011241677FLE
Line Number: 1
Method Code: H040
Quantity Tons: 0.03000
Quantity Waste: 60.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
State Code: 551

Additional Info:
Year: 2017
Gen EPA ID: CAL000430504

Shipment Date: 20171206
Creation Date: Not reported
Receipt Date: Not reported
Manifest ID: 011583838FLE
Trans EPA ID: MAD039322250
Trans Name: CLEAN HARBORS ENVIRONMENTAL SERVICES INC
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAD059494310
Trans Name: CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code: D002
Meth Code: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons: 0.0415
Waste Quantity: 83
Quantity Unit: P
Additional Code 1: D001
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 20171206
Creation Date: 11/5/2018 18:33:28
Receipt Date: 20180110
Manifest ID: 011583837FLE
Trans EPA ID: MAD039322250
Trans Name: CLEAN HARBORS ENVIRONMENTAL SERVICES INC
Trans 2 EPA ID: MOD095038998
Trans 2 Name: BED ROCK INC DBA TSMT CO

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

TSDF EPA ID:	ARD069748192
Trans Name:	CLEAN HARBORS EL DORADO LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D003
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.0035
Waste Quantity:	7
Quantity Unit:	P
Additional Code 1:	D002
Additional Code 2:	D001
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20171206
Creation Date:	8/7/2018 18:30:18
Receipt Date:	20171215
Manifest ID:	011583838FLE
Trans EPA ID:	MAD039322250
Trans Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D002
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.006
Waste Quantity:	12
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20171206
Creation Date:	8/7/2018 18:30:18
Receipt Date:	20171215
Manifest ID:	011583838FLE
Trans EPA ID:	MAD039322250
Trans Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	F003
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Quantity Tons:	0.0575
Waste Quantity:	115
Quantity Unit:	P
Additional Code 1:	D001
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20171206
Creation Date:	8/7/2018 18:30:18
Receipt Date:	20171215
Manifest ID:	011583838FLE
Trans EPA ID:	MAD039322250
Trans Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	135 - Unspecified aqueous solution
RCRA Code:	D002
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.057
Waste Quantity:	114
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20171206
Creation Date:	8/7/2018 18:30:18
Receipt Date:	20171215
Manifest ID:	011583838FLE
Trans EPA ID:	MAD039322250
Trans Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D001
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0395
Waste Quantity:	79
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Additional Code 5: Not reported

CIWQS:

Name:	BUCK INSTITUTE
Address:	8001 REDWOOD BLVD
City,State,Zip:	NOVATO, CA 94945
Agency:	Buck Institute
Agency Address:	8001 Redwood Blvd, Novato, CA 94945
Place/Project Type:	Construction - Commercial
SIC/NAICS:	Not reported
Region:	2
Program:	CONSTW
Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water construction
Order Number:	2009-0009-DWQ
WDID:	2 21C357253
NPDES Number:	CAS000002
Adoption Date:	Not reported
Effective Date:	01/27/2010
Termination Date:	09/10/2012
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:	Not reported
Longitude:	Not reported

Name:	BUCK INSTITUTE
Address:	8001 REDWOOD BLVD
City,State,Zip:	NOVATO, CA 94945
Agency:	Buck Institute
Agency Address:	8001 Redwood Blvd, Novato, CA 94945
Place/Project Type:	Construction - Other: Parking Lot and Fill Area
SIC/NAICS:	Not reported
Region:	2
Program:	CONSTW
Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water construction
Order Number:	2009-0009-DWQ
WDID:	2 21C364465
NPDES Number:	CAS000002
Adoption Date:	Not reported
Effective Date:	08/28/2012
Termination Date:	08/26/2013
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:	38.13168
Longitude:	-122.56422

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

CERS:
Name: COTTONWOOD SOLAR, LLC
Address: 8001 REDWOOD BLVD
City,State,Zip: NOVATO, CA 94945
Site ID: 372793
CERS ID: 10674361
CERS Description: Chemical Storage Facilities

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-15-2022
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Site consists of solar panel arrays, electrical transfer equipment, and energy storage as lead acid batteries. Connex next to site contains hardware for the site. Access to batteries in basement must be coordinated with building owners EH&S staff (Buck Institute). Site transferred ownership in early 2022, however the previous maintenance firm is still responsible for maintenance.
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-15-2022
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Site consists of solar panel arrays, electrical transfer equipment, and energy storage as lead acid batteries. Site transferred ownership in early 2022, however the previous maintenance firm is still responsible for maintenance. Connex next to site contains hardware for the site. Access to batteries in basement must be coordinated with building owners EH&S staff (Buck Institute). No hazardous waste has been generated by the site since ownership transfer.
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-30-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for a routine hazardous materials and Hazardous Materials Business Plan (HMBP) inspection. Consent to enter and conduct inspection activities was provided by Jennifer Dessort. Verified the business owner information and site map. The following materials were observed in amounts that meet or exceed the minimum volumes required for disclosure as outlined in the Health and Safety Code: - lead acid batteries - FR- 3 (vegetable oil) The emergency response plan and employee training records were available for review. * Facility may generate hazardous waste in the future (e-waste, oil).
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-30-2016

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HMRRP
Eval Source: CERS,

Coordinates:
Site ID: 372793
Facility Name: Cottonwood Solar, LLC
Env Int Type Code: HMBP
Program ID: 10674361
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.,
Latitude: 38.133270
Longitude: -122.574580

Affiliation:
Affiliation Type Desc: Operator
Entity Name: Novasource Energy Services
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (877) 375-7662,

Affiliation Type Desc: Document Preparer
Entity Name: Jennifer Dessort
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 767 Third Avenue, 17th Floor
Affiliation City: New York
Affiliation State: NY
Affiliation Country: Not reported
Affiliation Zip: 10017
Affiliation Phone: ,

Affiliation Type Desc: Identification Signer
Entity Name: Ian Fudalski
Entity Title: Manager - Environmental Compliance
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Affiliation Phone: ,

Affiliation Type Desc: Environmental Contact
Entity Name: Ian Fudalski
Entity Title: Not reported
Affiliation Address: 600 Seventeenth Street, Suite 2400 S
Affiliation City: Denver
Affiliation State: CO
Affiliation Country: Not reported
Affiliation Zip: 80202
Affiliation Phone: ,

Affiliation Type Desc: Legal Owner
Entity Name: Cottonwood - Marin Carport
Entity Title: Not reported
Affiliation Address: 767 Third Avenue, 17th Floor
Affiliation City: New York
Affiliation State: NY
Affiliation Country: United States
Affiliation Zip: 10017
Affiliation Phone: (980) 294-0204,

Affiliation Type Desc: CUPA District
Entity Name: Marin County CUPA
Entity Title: Not reported
Affiliation Address: 1600 Los GamosSuite 210
Affiliation City: San Rafael
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94903
Affiliation Phone: (415) 473-6647,

Affiliation Type Desc: Parent Corporation
Entity Name: SOLAR CARPORTS, BUCK INSTITUTE FOR RESEARCH ON AGING
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

HWTS:
Name: BIOMARIN PHARMACEUTICAL INC
Address: 8001 REDWOOD BLVD
Address 2: Not reported
City,State,Zip: NOVATO, CA 94945
EPA ID: CAL000430504
Inactive Date: Not reported
Create Date: 09/06/2017
Last Act Date: Not reported
Mailing Name: Not reported
Mailing Address: 105 DIGITAL DR
Mailing Address 2: Not reported
Mailing City,State,Zip: NOVATO, CA 949490000
Owner Name: BIOMARIN PHARMACEUTICAL INC

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007458931**

Owner Address:	105 DIGITAL DR
Owner Address 2:	Not reported
Owner City,State,Zip:	NOVATO, CA 949490000
Contact Name:	JON KAWAMOTO
Contact Address:	105 DIGITAL DR.
Contact Address 2:	Not reported
City,State,Zip:	NOVATO, CA 94949
Facility Status:	Active
Facility Type:	PERMANENT
Category:	STATE
Latitude:	38.133648
Longitude:	-122.5732725

NAICS:

EPA ID:	CAL000430504
Create Date:	2017-09-06 11:39:22.707
NAICS Code:	541711
NAICS Description:	Research and Dev in Biotechnology
Issued EPA ID Date:	2017-09-06 11:39:22.68700
Inactive Date:	Not reported
Facility Name:	BIOMARIN PHARMACEUTICAL INC
Facility Address:	8001 REDWOOD BLVD
Facility Address 2:	Not reported
Facility City:	NOVATO
Facility County:	Not reported
Facility State:	CA
Facility Zip:	94945

A7 **CALICO LIFE SCIENCES LLC** **RCRA NonGen / NLR** **1024860496**
NE **8001 REDWOOD BLVD** **CAL000428939**
1/8-1/4 **NOVATO, CA 94945**
0.196 mi.
1033 ft. **Site 4 of 14 in cluster A**

Relative: **Lower**

Actual: **33 ft.**

RCRA Listings:

Date Form Received by Agency:	20220415
Handler Name:	CALICO LIFE SCIENCES LLC
Handler Address:	8001 REDWOOD BLVD
Handler City,State,Zip:	NOVATO, CA 94945
EPA ID:	CAL000428939
Contact Name:	ASHLEEN RAI
Contact Address:	VETERANS BLVD
Contact City,State,Zip:	SOUTH SAN FRANCISCO, CA 94080
Contact Telephone:	916-849-0922
Contact Fax:	Not reported
Contact Email:	ARAI@CALICOLABS.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	VETERANS BLVD

CALICO LIFE SCIENCES LLC (Continued) **1024860496**

Mailing City,State,Zip:		SOUTH SAN FRANCISCO, CA 94080
Owner Name:	CALICO LIFE SCIENCES LLC	
Owner Type:		Other
Operator Name:	CALICO LIFE SCIENCES LLC	
Operator Type:		Other
Short-Term Generator Activity:		No
Importer Activity:		No
Mixed Waste Generator:		No
Transporter Activity:		No
Transfer Facility Activity:		No
Recycler Activity with Storage:		No
Small Quantity On-Site Burner Exemption:		No
Smelting Melting and Refining Furnace Exemption:		No
Underground Injection Control:		No
Off-Site Waste Receipt:		No
Universal Waste Indicator:		No
Universal Waste Destination Facility:		No
Federal Universal Waste:		No
Active Site Fed-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site Converter Treatment storage and Disposal Facility:		Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site State-Reg Handler:		---
Federal Facility Indicator:		Not reported
Hazardous Secondary Material Indicator:		N
Sub-Part K Indicator:		Not reported
Commercial TSD Indicator:		No
Treatment Storage and Disposal Type:		Not reported
2018 GPRA Permit Baseline:		Not on the Baseline
2018 GPRA Renewals Baseline:		Not on the Baseline
Permit Renewals Workload Universe:		Not reported
Permit Workload Universe:		Not reported
Permit Progress Universe:		Not reported
Post-Closure Workload Universe:		Not reported
Closure Workload Universe:		Not reported
202 GPRA Corrective Action Baseline:		No
Corrective Action Workload Universe:		No
Subject to Corrective Action Universe:		No
Non-TSDFs Where RCRA CA has Been Imposed Universe:		No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:		No
TSDFs Only Subject to CA under Discretionary Auth Universe:		No
Corrective Action Priority Ranking:		No NCAPS ranking
Environmental Control Indicator:		No
Institutional Control Indicator:		No
Human Exposure Controls Indicator:		N/A
Groundwater Controls Indicator:		N/A
Operating TSDF Universe:		Not reported
Full Enforcement Universe:		Not reported
Significant Non-Complier Universe:		No
Unaddressed Significant Non-Complier Universe:		No
Addressed Significant Non-Complier Universe:		No
Significant Non-Complier With a Compliance Schedule Universe:		No
Financial Assurance Required:	Not reported	
Handler Date of Last Change:		20220419
Recognized Trader-Importer:		No
Recognized Trader-Exporter:		No
Importer of Spent Lead Acid Batteries:		No
Exporter of Spent Lead Acid Batteries:		No

CALICO LIFE SCIENCES LLC (Continued) **1024860496**

Recycler Activity Without Storage: No
Manifest Broker: No
Sub-Part P Indicator: No

Handler - Owner Operator:
Owner/Operator Indicator: Owner
Owner/Operator Name: CALICO LIFE SCIENCES
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 1170 VETERANS BLVD
Owner/Operator City,State,Zip: SOUTH SAN FRANCISCO, CA 94080
Owner/Operator Telephone: 616-581-7138
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: CALICO LIFE SCIENCES LLC
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 1170 VETERANS BLVD
Owner/Operator City,State,Zip: SOUTH SAN FRANCISCO, CA 94080
Owner/Operator Telephone: 408-204-0032
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: MARA BRYAN
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 1170 VETERANS BLVD
Owner/Operator City,State,Zip: SOUTH SAN FRANCISCO, CA 94080
Owner/Operator Telephone: 650-267-7817
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: CALICO LIFE SCIENCES LLC
Legal Status: Other
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 1170 VETERANS BLVD
Owner/Operator City,State,Zip: SOUTH SAN FRANCISCO, CA 94080
Owner/Operator Telephone: 408-204-0032
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 20220415

CALICO LIFE SCIENCES LLC (Continued) **1024860496**

Handler Name: CALICO LIFE SCIENCES LLC
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

Receive Date: 20170706
Handler Name: CALICO LIFE SCIENCES
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 336411
NAICS Description: AIRCRAFT MANUFACTURING

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

A8 **ULTRAGENYX PHARMACEUTICAL INCORPORATED** **RCRA-SQG** **1023966806**
NE **8001 REDWOOD BLVD** **CAR000274845**
1/8-1/4 **NOVATO, CA 94945**
0.196 mi.
1033 ft. **Site 5 of 14 in cluster A**

Relative: **Lower**
Actual: **33 ft.**

RCRA Listings:
Date Form Received by Agency: 20200901
Handler Name: ULTRAGENYX PHARMACEUTICAL INCORPORATED
Handler Address: 8001 REDWOOD BLVD
Handler City,State,Zip: NOVATO, CA 94945
EPA ID: CAR000274845
Contact Name: MELANI MENENDEZ
Contact Address: LEVERONI CT.
Contact City,State,Zip: NOVATO, CA 94949
Contact Telephone: 415-763-2830
Contact Fax: Not reported
Contact Email: MMENENDEZ@ULTRAGENYX.COM
Contact Title: EHS MANAGER
EPA Region: 09

ULTRAGENYX PHARMACEUTICAL INCORPORATED (Continued) **1023966806**

Land Type:	Private
Federal Waste Generator Description:	Small Quantity Generator
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	LEVERONI CT
Mailing City,State,Zip:	NOVATO, CA 94949
Owner Name:	THE BUCK INSTITUTE FOR RESEARCH AND AGING
Owner Type:	Private
Operator Name:	ULTRAGENYX PHARMACEUTICAL INC.
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No

ULTRAGENYX PHARMACEUTICAL INCORPORATED (Continued) **1023966806**

Unaddressed Significant Non-Complier Universe: No
Addressed Significant Non-Complier Universe: No
Significant Non-Complier With a Compliance Schedule Universe: No
Financial Assurance Required: Not reported
Handler Date of Last Change: 20200904
Recognized Trader-Importer: No
Recognized Trader-Exporter: No
Importer of Spent Lead Acid Batteries: No
Exporter of Spent Lead Acid Batteries: No
Recycler Activity Without Storage: No
Manifest Broker: No
Sub-Part P Indicator: No

Hazardous Waste Summary:

Waste Code: D001
Waste Description: IGNITABLE WASTE

Waste Code: D002
Waste Description: CORROSIVE WASTE

Waste Code: D003
Waste Description: REACTIVE WASTE

Waste Code: D010
Waste Description: SELENIUM

Waste Code: D011
Waste Description: SILVER

Waste Code: D022
Waste Description: CHLOROFORM

Waste Code: F003
Waste Description: 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.

Waste Code: U044
Waste Description: CHLOROFORM (OR) METHANE, TRICHLORO-

Waste Code: U170
Waste Description: P-NITROPHENOL (I,T) (OR) PHENOL, 4-NITRO-

Handler - Owner Operator:
Owner/Operator Indicator: Operator
Owner/Operator Name: THE BUCK INSTITUTE FOR RESEARCH AND AGING
Legal Status: Private
Date Became Current: 19961101

ULTRAGENYX PHARMACEUTICAL INCORPORATED (Continued) **1023966806**

Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: THE BUCK INSTITUTE FOR RESEARCH AND AGING
Legal Status: Private
Date Became Current: 19961101
Date Ended Current: Not reported
Owner/Operator Address: 8001 REDWOOD BLVD
Owner/Operator City,State,Zip: NOVATO, CA 94945
Owner/Operator Telephone: 415-209-2000
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: 415-899-1810
Owner/Operator Email: EHS@BUCKINSTITUTE.ORG

Owner/Operator Indicator: Owner
Owner/Operator Name: THE BUCK INSTITUTE FOR RESEARCH AND AGING
Legal Status: Private
Date Became Current: 19961101
Date Ended Current: Not reported
Owner/Operator Address: 8001 REDWOOD BLVD
Owner/Operator City,State,Zip: NOVATO, CA 94945
Owner/Operator Telephone: 415-899-1810
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: 415-899-1810
Owner/Operator Email: INFO@BUCKINSTITUTE.ORG

Owner/Operator Indicator: Operator
Owner/Operator Name: ULTRAGENYX PHARMACEUTICAL INC.
Legal Status: Private
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 60 LEVERONI CT
Owner/Operator City,State,Zip: NOVATO, CA 94949
Owner/Operator Telephone: 415-763-2830
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: MMENENDEZ@ULTRAGENYX.COM

Historic Generators:
Receive Date: 20170809
Handler Name: ULTRAGENYX PHARMACEUTICALS INCORPORATED
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

ULTRAGENYX PHARMACEUTICAL INCORPORATED (Continued) **1023966806**

Receive Date: 20200901
Handler Name: ULTRAGENYX PHARMACEUTICAL INCORPORATED
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

List of NAICS Codes and Descriptions:
NAICS Code: 54171
NAICS Description: RESEARCH AND DEVELOPMENT IN THE PHYSICAL, ENGINEERING, AND LIFE SCIENCES

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

A9 **ULTRAGENYX** **CERS HAZ WASTE** **S121782114**
NE **8001 REDWOOD BLVD** **CERS** **N/A**
1/8-1/4 **NOVATO, CA 94945**
0.196 mi.
1033 ft. **Site 6 of 14 in cluster A**

Relative: **Lower**
Actual: **33 ft.**

CERS HAZ WASTE:
Name: ULTRAGENYX
Address: 8001 REDWOOD BLVD
City,State,Zip: NOVATO, CA 94945
Site ID: 425311
CERS ID: 10741876
CERS Description: Hazardous Waste Generator

CERS:
Name: ULTRAGENYX
Address: 8001 REDWOOD BLVD
City,State,Zip: NOVATO, CA 94945
Site ID: 425311
CERS ID: 10741876
CERS Description: Chemical Storage Facilities

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-23-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HW
Eval Source: CERS,

ULTRAGENYX (Continued) **S121782114**

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-01-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for a routine hazardous waste inspection. Consent to enter and conduct inspection activities was provided by Jean Lord and James Hardeman. Facility is a small quantity generator. Facility uses Ingenium to haul hazardous waste. Generator s ID number CAR000274845 is active. Walked the facility, including the dumpster area. Hazardous waste containers were observed closed, properly labeled, and no signs of unauthorized releases. Employees were reported to be trained and emergency contact phone numbers are posted. Business ownership was verified and signed copies of manifests available for review.
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-01-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for a routine hazardous materials and Hazardous Materials Business Plan (HMBP) inspection. Consent to enter and conduct inspection activities was provided by Jean Lord and James Hardeman. Verified the business owner information and site map. The following materials were observed in amounts that meet or exceed the minimum volumes required for disclosure as outlined in the Health and Safety Code: -dry ice, 570 pounds The emergency response plan and employee training records were available for review.
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-23-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HMRRP
Eval Source: CERS,

Coordinates:
Site ID: 425311
Facility Name: Ultragenyx
Env Int Type Code: HMBP
Program ID: 10741876
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.,
Latitude: 38.122850
Longitude: -122.566490

Affiliation:
Affiliation Type Desc: Legal Owner
Entity Name: Ultragenyx Pharmaceutical Inc
Entity Title: Not reported

ULTRAGENYX (Continued) **S121782114**

Affiliation Address:	60 Leveroni Court
Affiliation City:	Novato
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94949
Affiliation Phone:	(415) 483-8800,
Affiliation Type Desc:	CUPA District
Entity Name:	Marin County CUPA
Entity Title:	Not reported
Affiliation Address:	1600 Los GamosSuite 210
Affiliation City:	San Rafael
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94903
Affiliation Phone:	(415) 473-6647,
Affiliation Type Desc:	Document Preparer
Entity Name:	Melani Menendez
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,
Affiliation Type Desc:	Environmental Contact
Entity Name:	Jean Lord
Entity Title:	Not reported
Affiliation Address:	60 Leveroni Court
Affiliation City:	Novato
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94949
Affiliation Phone:	,
Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	60 Leveroni Court
Affiliation City:	Novato
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94949
Affiliation Phone:	,
Affiliation Type Desc:	Identification Signer
Entity Name:	Melani Menendez
Entity Title:	EHS Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

ULTRAGENYX (Continued) **S121782114**

Affiliation Type Desc:	Operator
Entity Name:	Ultragenyx Pharmaceutical Inc
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(415) 475-6505,

Affiliation Type Desc:	Parent Corporation
Entity Name:	Ultragenyx
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

A10 **BIOMARIN PHARMACEUTICAL INC., THE BUCK INSTITUTE F** **CERS HAZ WASTE** **S121781915**
NE **8001 REDWOOD BLVD** **CERS** **N/A**
1/8-1/4 **NOVATO, CA 94945**
0.196 mi.
1033 ft. **Site 7 of 14 in cluster A**

Relative:
Lower

Actual:
33 ft.

CERS HAZ WASTE:

Name:	BIOMARIN PHARMACEUTICAL INC., THE BUCK INSTITUTE FOR RESEARCH ON AGING
Address:	8001 REDWOOD BLVD
City,State,Zip:	NOVATO, CA 94945
Site ID:	424650
CERS ID:	10740766
CERS Description:	Hazardous Waste Generator

CERS:

Name:	BIOMARIN PHARMACEUTICAL INC., THE BUCK INSTITUTE FOR RESEARCH ON AGING
Address:	8001 REDWOOD BLVD
City,State,Zip:	NOVATO, CA 94945
Site ID:	424650
CERS ID:	10740766
CERS Description:	Chemical Storage Facilities

Evaluation:

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	06-23-2017
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program:	HW
Eval Source:	CERS,

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	06-23-2017
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported

BIOMARIN PHARMACEUTICAL INC., THE BUCK INSTITUTE FOR RESEARC (Continued) **S121781915**

Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-01-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for a routine hazardous materials and Hazardous Materials Business Plan (HMBP) inspection. Consent to enter and conduct inspection activities was provided by Marina Del Valle. Verified the business owner information and site map. The following materials were observed in amounts that meet or exceed the minimum volumes required for disclosure as outlined in the Health and Safety Code: - Nitrogen, 460 gal - Oxygen, 1000 cf The emergency response plan and employee training records were available for review.
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-01-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for a routine hazardous waste inspection. Consent to enter and conduct inspection activities was provided by Marina Del Valle. Facility is a small quantity generator. Facility uses Clean Harbors to haul hazardous waste. Generator s ID number CAL000430504 is active. Walked the facility, including the dumpster area. Hazardous waste containers were observed closed, properly labeled, and no signs of unauthorized releases. Employees were reported to be trained and emergency contact phone numbers are posted. Business ownership was verified and signed copies of manifests available for review.
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HW
Eval Source: CERS,

Coordinates:
Site ID: 424650
Facility Name: BioMarin Pharmaceutical Inc., The Buck Institute for Research on Aging
Env Int Type Code: HMBP
Program ID: 10740766
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.,
Latitude: 38.122850
Longitude: -122.566490

Affiliation:
Affiliation Type Desc: Environmental Contact
Entity Name: Marina Del Valle
Entity Title: Not reported
Affiliation Address: 105 Digital Drive
Affiliation City: Novato
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94949

BIOMARIN PHARMACEUTICAL INC., THE BUCK INSTITUTE FOR RESEARC (Continued) **S121781915**

Affiliation Phone:	,
Affiliation Type Desc:	Operator
Entity Name:	BioMarin Pharmaceutical Inc.
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(415) 506-6700,
Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	105 Digital Drive
Affiliation City:	Novato
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94949
Affiliation Phone:	,
Affiliation Type Desc:	Property Owner
Entity Name:	The Buck Institute for Research on Aging
Entity Title:	Not reported
Affiliation Address:	8001 Redwood Blvd
Affiliation City:	Novato
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94945
Affiliation Phone:	(415) 209-2000,
Affiliation Type Desc:	CUPA District
Entity Name:	Marin County CUPA
Entity Title:	Not reported
Affiliation Address:	1600 Los GamosSuite 210
Affiliation City:	San Rafael
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94903
Affiliation Phone:	(415) 473-6647,
Affiliation Type Desc:	Legal Owner
Entity Name:	BioMarin Pharmaceutical
Entity Title:	Not reported
Affiliation Address:	105 Digital Drive
Affiliation City:	Novato
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94949
Affiliation Phone:	(415) 506-6700,
Affiliation Type Desc:	Parent Corporation
Entity Name:	BioMarin Pharmaceutical, Inc.
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported

BIOMARIN PHARMACEUTICAL INC., THE BUCK INSTITUTE FOR RESEARC (Continued) **S121781915**

Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

A11 **BUCK INSTITUTE FOR RESEARCH ON AGING** **CERS HAZ WASTE** **S121736913**
NE **8001 REDWOOD BOULEVARD** **CERS TANKS** **N/A**
1/8-1/4 **NOVATO, CA 94945** **CERS**
0.196 mi.
1033 ft. **Site 8 of 14 in cluster A**

Relative:
Lower

Actual:
33 ft.

CERS HAZ WASTE:
Name: BUCK INSTITUTE FOR RESEARCH ON AGING
Address: 8001 REDWOOD BOULEVARD
City,State,Zip: NOVATO, CA 94945
Site ID: 100390
CERS ID: 10032616
CERS Description: Hazardous Waste Generator

CERS TANKS:
Name: BUCK INSTITUTE FOR RESEARCH ON AGING
Address: 8001 REDWOOD BOULEVARD
City,State,Zip: NOVATO, CA 94945
Site ID: 100390
CERS ID: 10032616
CERS Description: Underground Storage Tank

CERS:
Name: BUCK INSTITUTE FOR RESEARCH ON AGING
Address: 8001 REDWOOD BOULEVARD
City,State,Zip: NOVATO, CA 94945
Site ID: 100390
CERS ID: 10032616
CERS Description: Chemical Storage Facilities

Violations:
Site ID: 100390
Site Name: Buck Institute For Research On Aging
Violation Date: 09-01-2021
Citation: 23 CCR 16 2716(e) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2716(e)
Violation Description: For designated operator (DO) monthly inspections conducted before October 1, 2018, failure to comply with one or more of the following requirements: Be performed by an ICC certified DO. Inspect monthly alarm history report, check that alarms are documented and responded to appropriately, and attach a copy. Inspect for the presence of liquid/debris in spill containers. Inspect for the presence of liquid/debris in under dispenser containment (UDC) and ensure that the monitoring equipment is positioned correctly. Inspect for liquid or debris in containment sumps where an alarm occurred with no service visit. Check that all testing and maintenance has been completed and documented. Verify that all facility employees have been trained in accordance with 23 CCR 2715(c). For designated operator (DO) 30 day inspections conducted on and after October 1, 2018, failure to conduct the designated UST operator visual inspection at least once every 30 days.

BUCK INSTITUTE FOR RESEARCH ON AGING (Continued) **S121736913**

Violation Notes: Returned to compliance on 09/28/2021. DO monthly inspection reports were not signed for acknowledgment. This was corrected on site.
Violation Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program: UST
Violation Source: CERS,

Site ID: 100390
Site Name: Buck Institute For Research On Aging
Violation Date: 12-23-2020
Citation: HSC 6.7 25290.2(c) - California Health and Safety Code, Chapter 6.7, Section(s) 25290.2(c)
Violation Description: Failure to maintain secondary containment (e.g., failure of secondary containment testing).
Violation Notes: Returned to compliance on 01/04/2021. The pipe run failed the pressure test during the SB989. Investigate and retest within 30 days.
Violation Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program: UST
Violation Source: CERS,

Site ID: 100390
Site Name: Buck Institute For Research On Aging
Violation Date: 08-03-2016
Citation: HSC 6.75 25299.30-25299.34 - California Health and Safety Code, Chapter 6.75, Section(s) 25299.30-25299.34
Violation Description: Failure to submit and maintain complete and current Certification of Financial Responsibility or other mechanism of financial assurance.
Violation Notes: Returned to compliance on 08/03/2016. Facility does not have current financial responsibility form onsite. Within 30 days, please submit current financial responsibility form to Marin County CUPA or via CERS.
Violation Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program: UST
Violation Source: CERS,

Site ID: 100390
Site Name: Buck Institute For Research On Aging
Violation Date: 08-05-2020
Citation: HSC 6.75 25299.30-25299.34 - California Health and Safety Code, Chapter 6.75, Section(s) 25299.30-25299.34
Violation Description: Failure to submit and maintain complete and current Certification of Financial Responsibility or other mechanism of financial assurance.
Violation Notes: Returned to compliance on 08/06/2020. Financial responsibility certification submitted in CERS expired on 7/30/2020. Update and submit in CERS current financial responsibility certification within 30 days.
Violation Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program: UST
Violation Source: CERS,

Site ID: 100390
Site Name: Buck Institute For Research On Aging
Violation Date: 08-03-2016
Citation: 23 CCR 16 2715(a) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(a)
Violation Description: Failure to notify the CUPA of the designated operator (DO) identification and/or change of the DO within 30 days.
Violation Notes: Returned to compliance on 08/03/2016. In addition to financial

BUCK INSTITUTE FOR RESEARCH ON AGING (Continued) **S121736913**

	responsibility form, please submit updated "Owner Statements of Designated Underground Storage Tank (UST) Operator" form to Marin County CUPA or via CERS within 30 days.
Violation Division:	Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program:	UST
Violation Source:	CERS,
Site ID:	100390
Site Name:	Buck Institute For Research On Aging
Violation Date:	09-01-2021
Citation:	23 CCR 16 2715(f) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(f)
Violation Description:	Failure to have a properly qualified service technician test leak detection equipment as required every 12 months (vapor, pressure, hydrostatic (VPH) system, sensors, line-leak detectors (LLD), automatic tank gauge (ATG), etc.).
Violation Notes:	Returned to compliance on 09/01/2021. Leak detection equipment was not tested every 12 months. This was corrected today. No further action required. *Note, testing date does not reset due to late testing and is due in August 2022.
Violation Division:	Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program:	UST
Violation Source:	CERS,
Site ID:	100390
Site Name:	Buck Institute For Research On Aging
Violation Date:	08-03-2016
Citation:	23 CCR 16 2715(f) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(f)
Violation Description:	Failure to have at least one employee present during operating hours that has been trained in the proper operation and maintenance of the UST system by a designated operator (DO).
Violation Notes:	Returned to compliance on 09/07/2016. At time of inspection, all employees have been yearly trained, except for Nicole Nannery (EHS). Nicole must be trained within 30 days of hire date. Please provide updated roster within 30 days indicating Nicole has been trained to Marin County CUPA.
Violation Division:	Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program:	UST
Violation Source:	CERS,
Site ID:	100390
Site Name:	Buck Institute For Research On Aging
Violation Date:	09-24-2021
Citation:	HSC 6.7 25292.1(a) - California Health and Safety Code, Chapter 6.7, Section(s) 25292.1(a)
Violation Description:	Failure to operate the UST system to prevent unauthorized releases including leaks, spills, and/or overfills.
Violation Notes:	Returned to compliance on 10/29/2021. The overfill prevention method no longer has a ball float and the flapper is not testable. (10/26/2021) Correct by date extended 30 days - retest scheduled for 10/29/2021. Ball floats are no longer allowed to be installed and the flapper must be testable. Install a testable flapper within 60 days.
Violation Division:	Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program:	UST
Violation Source:	CERS,

BUCK INSTITUTE FOR RESEARCH ON AGING (Continued) **S121736913**

Site ID:	100390
Site Name:	Buck Institute For Research On Aging
Violation Date:	08-05-2020
Citation:	23 CCR 16 2712(b)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(b)(2)
Violation Description:	Failure to maintain monitoring records for release detection and/or maintain records of appropriate follow-up actions.
Violation Notes:	Returned to compliance on 08/05/2020. Multiple monthly DO inspection reports were not reviewed and signed by owner/operator but procedures were reviewed and signed off during the inspection. Ensure monthly DO reports are reviewed, any issues are addressed and noted, and are signed off.
Violation Division:	Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program:	UST
Violation Source:	CERS,

Site ID:	100390
Site Name:	Buck Institute For Research On Aging
Violation Date:	08-18-2021
Citation:	22 CCR 12 66262.34(e) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(e)
Violation Description:	Failure to meet the following conditions of satellite accumulation regulations: Accumulate up to 55 gallons of hazardous waste or one quart of acute hazardous waste at or near the initial point of accumulation which was under the control of the operator. Total time hazardous waste can be accumulated onsite in any generator accumulation area is one year, i.e., the combined accmulation time at a satellite accumulation point and at a 90/180/270 accumulation area (depending on size of generator and distance transported), whichever comes first. The generator complies with section 66265.171, 66265.172, and 66265.173(a). The container must be clearly marked with the initial date that hazardous waste is first placed in the container and labelled with the words Hazardous Waste including specified information Container must be labelled with the date the satellite accumulation limit is reached and moved within three days after reaching the 55 gallon (or one quart) limit to a 90 day accumulation area 55 gallons (or one quart of acute hazardous waste) of waste per process may be accumulated
Violation Notes:	Returned to compliance on 09/01/2021. Various laboratory wastes dated 2018 and 2019 exceeded the one year limit for satellite accumulation. Removed wastes mentioned above and provide proof to this Agency within 30 days.
Violation Division:	Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program:	HW
Violation Source:	CERS,

Site ID:	100390
Site Name:	Buck Institute For Research On Aging
Violation Date:	08-05-2019
Citation:	23 CCR 16 2665(b) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665(b)
Violation Description:	"Failure to submit a copy of the overfill prevention equipment inspection results on the Overfill Prevention Equipment Inspection Report Form to the UPA within 30 days after the inspection. "
Violation Notes:	Returned to compliance on 08/05/2019. The overfill inspection was overdue, but corrected by the tester completing inspection during Annual Monitoring Certification Corrected Onsite the Overfill

BUCK INSTITUTE FOR RESEARCH ON AGING (Continued) **S121736913**

Inspection-No Violation
Violation Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program: UST
Violation Source: CERS,

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-02-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspection emailed to Nicole Nannery
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-03-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-18-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: On site for a routine hazardous materials and Hazardous Materials Business Plan (HMBP) inspection. Consent to enter and conduct inspection activities was provided by Nicole Nannery. Verified the business owner information and site map. The following materials were observed in amounts that meet or exceed the minimum volumes required for disclosure as outlined in the Health and Safety Code: - various gases (N, He, CO2, O, NOx) - diesel - propane The emergency response plan and employee training records were available for review.
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 09-24-2021
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 10-29-2021
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: On site for OPE install and retest. Technicians: Zach Stroupe of Stroupe Petroleum Maintenance, ICC verified. Ben Meyer of Stroupe Petroleum Maintenance, OPW and Franklin Fueling Phase 1 certificates verified. EBW auto-limiter drop tube installed, tested, and passed OPE

BUCK INSTITUTE FOR RESEARCH ON AGING (Continued) **S121736913**

test. Violation corrected this date. Submit test report to this Agency within 30 days. *Note, OPE testing is due every 36 months from original test date in 2021.

Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-05-2019
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Overfill Equipment Inspection conducted and passed
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-07-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-09-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-18-2021
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: On site for a routine hazardous waste inspection. Consent to enter and conduct inspection activities was provided by Nicole Nannery. Facility is a small quantity generator. Facility uses Clean Harbors to haul hazardous waste. Generator s ID number CAR000152504 is active. Walked the facility, including the dumpster area. Hazardous waste containers were observed closed, properly labeled, and no signs of unauthorized releases. Employees were reported to be trained and emergency contact phone numbers are posted. Business ownership was verified and signed copies of manifests available for review.
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-01-2021
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: On site for monitoring system certification, spill bucket test, and routine UST inspection. The site has the following double-walled tank:

BUCK INSTITUTE FOR RESEARCH ON AGING (Continued) **S121736913**

- Diesel, 6000 gal Product piping for all tanks is double-walled and suction. UST system is monitored via Incon TS-1000 panel. The site has the following sensors: Annular: - TSP Fill sump - ULS Testing was conducted by Franklin Stroupe of Stroupe Petroleum Maintenanc. Technician s certifications (ICC and Incon) were verified. Please submit test results to this Agency within 30 days. The following were tested and passed: - Spill buckets (hydrostatic test) - All liquid detection sensors Tanks utilize flapper and ATG for overfill protection and were inspected/tested on 8/5/2019. It must be tested every 36 months. Secondary containment test was conducted on 1/4/21 and must be tested every 36 months. Certificate of Financial Responsibility (CFR) and Chief Financial Officer (CFO... [TRUNCATED: Refer to full Inspection Report]

Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-08-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-08-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-23-2022
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Ben Meyer of Stroupe Petroleum lead tester on site, all required certifications current at the time of inspection.
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 12-23-2020
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-08-2014
Violations Found: No

BUCK INSTITUTE FOR RESEARCH ON AGING (Continued) **S121736913**

Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-23-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-23-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-05-2020
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: (1) Tester Tracey Thornbrugh and Ben Meyer with Stroupe (2) SB989 testing completed 1/4/2018 (3) Overfill protection inspection completed 8/5/2019 (4) Mike Madias and Nicole Nannery were representatives of the Buck Institute and assisted with the inspection.
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 08-08-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Affiliation:
Affiliation Type Desc: CUPA District
Entity Name: Marin County CUPA
Entity Title: Not reported
Affiliation Address: 1600 Los GamosSuite 210
Affiliation City: San Rafael
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94903
Affiliation Phone: (415) 473-6647,

BUCK INSTITUTE FOR RESEARCH ON AGING (Continued) **S121736913**

Affiliation Type Desc:	Environmental Contact
Entity Name:	Nicole Nannery
Entity Title:	Not reported
Affiliation Address:	8001 Redwood Boulevard
Affiliation City:	Novato
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94945
Affiliation Phone:	,

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	8001 Redwood Boulevard
Affiliation City:	Novato
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94945
Affiliation Phone:	,

Affiliation Type Desc:	Parent Corporation
Entity Name:	Buck Institute for Age Research
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

Affiliation Type Desc:	UST Tank Operator
Entity Name:	Buck Institute for Research on Aging
Entity Title:	Not reported
Affiliation Address:	8001 Redwood Blvd
Affiliation City:	Novato
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94945
Affiliation Phone:	(415) 209-2000,

Affiliation Type Desc:	Identification Signer
Entity Name:	Nicole Nannery
Entity Title:	EH&S Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

Affiliation Type Desc:	Operator
Entity Name:	Michael Madias
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported

BUCK INSTITUTE FOR RESEARCH ON AGING (Continued) **S121736913**

Affiliation Zip: Not reported
Affiliation Phone: (415) 209-2073,

Affiliation Type Desc: UST Property Owner Name
Entity Name: Buck Institute for Research on Aging
Entity Title: Not reported
Affiliation Address: 8001 Redwood Blvd
Affiliation City: Novato
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94945
Affiliation Phone: (415) 209-2000,

Affiliation Type Desc: Legal Owner
Entity Name: Buck Institute for Research on Aging
Entity Title: Not reported
Affiliation Address: 8001 Redwood Boulevard
Affiliation City: Novato
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94945
Affiliation Phone: (415) 209-2000,

Affiliation Type Desc: Property Owner
Entity Name: Buck Institute for Research on Aging
Entity Title: Not reported
Affiliation Address: 8001 Redwood Boulevard
Affiliation City: Novato
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94945
Affiliation Phone: (415) 209-2000,

Affiliation Type Desc: UST Permit Applicant
Entity Name: Nicole Nannery
Entity Title: EH&S Manager
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (415) 209-2281,

Affiliation Type Desc: UST Tank Owner
Entity Name: Buck Institute for Research on Aging
Entity Title: Not reported
Affiliation Address: 8001 Redwood Blvd
Affiliation City: Novato
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94945
Affiliation Phone: (415) 209-2000,

Affiliation Type Desc: Document Preparer
Entity Name: Nicole Nannery
Entity Title: Not reported
Affiliation Address: Not reported

BUCK INSTITUTE FOR RESEARCH ON AGING (Continued) **S121736913**

Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

A12 **CYCLARITY THERAPEUTICS** **RCRA NonGen / NLR** **1027469992**
NE **8001 REDWOOD BLVD** **CAL000474449**
1/8-1/4 **NOVATO, CA 94545**
0.196 mi.
1033 ft. **Site 9 of 14 in cluster A**

Relative: **Lower**
Actual: **33 ft.**

RCRA Listings:

Date Form Received by Agency:		20221104
Handler Name:	CYCLARITY THERAPEUTICS	
Handler Address:		8001 REDWOOD BLVD
Handler City,State,Zip:		NOVATO, CA 94545
EPA ID:		CAL000474449
Contact Name:		DARREN DINH
Contact Address:		1 H ST UNIT 104
Contact City,State,Zip:		SAN RAFAEL, CA 94901
Contact Telephone:		707-265-3864
Contact Fax:		Not reported
Contact Email:		DARREN.DINH@CYCLARITYTX.COM
Contact Title:		Not reported
EPA Region:		09
Land Type:		Not reported
Federal Waste Generator Description:		Not a generator, verified
Non-Notifier:		Not reported
Biennial Report Cycle:		Not reported
Accessibility:		Not reported
Active Site Indicator:		Not reported
State District Owner:		Not reported
State District:		Not reported
Mailing Address:		8001 REDWOOD BLVD
Mailing City,State,Zip:		NOVATO, CA 94545
Owner Name:	CYCLARITY THERAPEUTICS INC	
Owner Type:		Other
Operator Name:	DARREN DINH	
Operator Type:		Other
Short-Term Generator Activity:		No
Importer Activity:		No
Mixed Waste Generator:		No
Transporter Activity:		No
Transfer Facility Activity:		No
Recycler Activity with Storage:		No
Small Quantity On-Site Burner Exemption:		No
Smelting Melting and Refining Furnace Exemption:		No
Underground Injection Control:		No
Off-Site Waste Receipt:		No
Universal Waste Indicator:		No
Universal Waste Destination Facility:		No
Federal Universal Waste:		No
Active Site Fed-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site Converter Treatment storage and Disposal Facility:		Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site State-Reg Handler:		---

CYCLARITY THERAPEUTICS (Continued) **1027469992**

Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required: Not reported	
Handler Date of Last Change:	20221105
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name: CYCLARITY THERAPEUTICS INC	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	8001 REDWOOD BLVD
Owner/Operator City,State,Zip:	NOVATO, CA 94545
Owner/Operator Telephone:	707-265-3864
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name: DARREN DINH	
Legal Status:	Other
Date Became Current:	Not reported

CYCLARITY THERAPEUTICS (Continued) **1027469992**

Date Ended Current: Not reported
Owner/Operator Address: 1 H ST UNIT 104
Owner/Operator City,State,Zip: SAN RAFAEL, CA 94901
Owner/Operator Telephone: 707-265-3864
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 20221104
Handler Name: CYCLARITY THERAPEUTICS
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

List of NAICS Codes and Descriptions:
NAICS Code: 541715
NAICS Description: RESEARCH AND DEVELOPMENT IN THE PHYSICAL, ENGINEERING, AND LIFE SCIENCES (EXCEPT NANOTECHNOLOGY AND BIOTECHNOLOGY

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

A13 **BUCK INSTITUTE FOR AGE RESEARCH** **RCRA-SQG** **1007370093**
NE **8001 REDWOOD BLVD** **HAZNET** **CAR000152504**
1/8-1/4 **NOVATO, CA 94945** **HWTS**
0.196 mi.
1033 ft. **Site 10 of 14 in cluster A**

Relative: **Lower**
Actual: **33 ft.**

RCRA Listings:
Date Form Received by Agency: 20220215
Handler Name: BUCK INSTITUTE FOR AGE RESEARCH
Handler Address: 8001 REDWOOD BLVD
Handler City,State,Zip: NOVATO, CA 94945
EPA ID: CAR000152504
Contact Name: NICOLE V NANNERY
Contact Address: 8001 REDWOOD BLVD
Contact City,State,Zip: NOVATO, CA 94945
Contact Telephone: 415-209-2281
Contact Fax: Not reported
Contact Email: NNANNERY@BUCKINSTITUTE.ORG
Contact Title: EHS
EPA Region: 09
Land Type: Private
Federal Waste Generator Description: Small Quantity Generator

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Non-Notifier:	Not reported
Biennial Report Cycle:	2021
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	8001 REDWOOD BLVD
Mailing City,State,Zip:	NOVATO, CA 94945
Owner Name:	BUCK INSTITUTE FOR AGE RESEARCH
Owner Type:	Private
Operator Name:	BUCK INSTITUTE FOR AGE RESEARCH
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Significant Non-Complier With a Compliance Schedule Universe: No
Financial Assurance Required: Not reported
Handler Date of Last Change: 20220627
Recognized Trader-Importer: No
Recognized Trader-Exporter: No
Importer of Spent Lead Acid Batteries: No
Exporter of Spent Lead Acid Batteries: No
Recycler Activity Without Storage: No
Manifest Broker: No
Sub-Part P Indicator: No

Hazardous Waste Summary:

Waste Code: D001
Waste Description: IGNITABLE WASTE

Waste Code: D002
Waste Description: CORROSIVE WASTE

Waste Code: D003
Waste Description: REACTIVE WASTE

Waste Code: D006
Waste Description: CADMIUM

Waste Code: D008
Waste Description: LEAD

Waste Code: D009
Waste Description: MERCURY

Waste Code: D011
Waste Description: SILVER

Waste Code: D022
Waste Description: CHLOROFORM

Waste Code: F003
Waste Description: 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.

Waste Code: F005
Waste Description: 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.

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Waste Code: P030
Waste Description: CYANIDES (SOLUBLE CYANIDE SALTS), NOT OTHERWISE SPECIFIED

Waste Code: P087
Waste Description: OSMIUM OXIDE OSO4, (T-4)- (OR) OSMIUM TETROXIDE

Waste Code: P098
Waste Description: POTASSIUM CYANIDE (OR) POTASSIUM CYANIDE K(CN)

Waste Code: U188
Waste Description: PHENOL

Handler - Owner Operator:
Owner/Operator Indicator: Owner
Owner/Operator Name: BUCK INSTITUTE FOR AGE RESEARCH
Legal Status: Private
Date Became Current: 19990501
Date Ended Current: Not reported
Owner/Operator Address: 8001 REDWOOD BLVD
Owner/Operator City,State,Zip: NOVATO, CA 94945
Owner/Operator Telephone: 415-209-2281
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: EHS@BUCKINSTITUTE.ORG

Owner/Operator Indicator: Operator
Owner/Operator Name: BUCK INSTITUTE FOR AGE RESEARCH
Legal Status: Private
Date Became Current: 19990809
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: BUCK INSTITUTE FOR AGE RESEARCH
Legal Status: Private
Date Became Current: 19990501
Date Ended Current: Not reported
Owner/Operator Address: 8001 REDWOOD BLVD
Owner/Operator City,State,Zip: NOVATO, CA 94945
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: BUCK INSTITUTE FOR AGE RESEARCH
Legal Status: Private
Date Became Current: 19990809
Date Ended Current: Not reported
Owner/Operator Address: 8001 REDWOOD BLVD
Owner/Operator City,State,Zip: NOVATO, CA 94945
Owner/Operator Telephone: 415-209-2281

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: EHS@BUCKINSTITUTE.ORG

Historic Generators:
Receive Date: 20220215
Handler Name: BUCK INSTITUTE FOR AGE RESEARCH
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

Receive Date: 20040406
Handler Name: BUCK INSTITUTE FOR AGE RESEARCH
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 54172
NAICS Description: RESEARCH AND DEVELOPMENT IN THE SOCIAL SCIENCES AND HUMANITIES

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

HAZNET:
Name: BUCK INSTITUTE FOR RESEARCH ON AGING
Address: 8001 REDWOOD BLVD
Address 2: Not reported
City,State,Zip: NOVATO, CA 949451400
Contact: NICOLE NANNERY
Telephone: 4152092281
Mailing Name: Not reported
Mailing Address: 8001 REDWOOD BLVD

Year: 2021
Gepaid: CAR000152504
TSD EPA ID: ILD098642424

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

CA Waste Code: 331 - Off-specification, aged or surplus organics
Disposal Method: H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Tons: 0.0025

Year: 2021
Gepaid: CAR000152504
TSD EPA ID: CAD008302903
CA Waste Code: 181 - Other inorganic solid waste
Disposal Method: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.01

Year: 2021
Gepaid: CAR000152504
TSD EPA ID: CAT080014079
CA Waste Code: 791 - Liquids with pH <= 2
Disposal Method: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.12

Year: 2021
Gepaid: CAR000152504
TSD EPA ID: UTD981552177
CA Waste Code: 331 - Off-specification, aged or surplus organics
Disposal Method: H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Tons: 0.055

Year: 2021
Gepaid: CAR000152504
TSD EPA ID: NED981723513
CA Waste Code: 352 - Other organic solids
Disposal Method: H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Tons: 0.3765

Year: 2021
Gepaid: CAR000152504
TSD EPA ID: CAT080014079
CA Waste Code: 352 - Other organic solids
Disposal Method: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.149

Year: 2021
Gepaid: CAR000152504
TSD EPA ID: UTD981552177
CA Waste Code: 551 - Laboratory waste chemicals
Disposal Method: H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Tons: 0.056

Year: 2021
Gepaid: CAR000152504
TSD EPA ID: CAD008302903
CA Waste Code: 214 - Unspecified solvent mixture
Disposal Method: H061 - Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.12

Year: 2021

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Gepaid: CAR000152504
TSD EPA ID: CAT080014079
CA Waste Code: 343 - Unspecified organic liquid mixture
Disposal Method: H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.1

Year: 2021
Gepaid: CAR000152504
TSD EPA ID: UTD981552177
CA Waste Code: 121 - Alkaline solution (pH >= 12.5) with metals
Disposal Method: H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Tons: 0.018

Click this hyperlink while viewing on your computer to access
124 additional CA HAZNET: record(s) in the EDR Site Report.

Additional Info:
Year: 2021
Gen EPA ID: CAR000152504

Shipment Date: 2/4/2020
Creation Date: 5/12/2020
Receipt Date: 2/17/2020
Manifest ID: 014484769FLE
Trans EPA ID: MAD039322250
Trans Name: Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID: MOD095038998
Trans 2 Name: Tri State Motor Transit
TSDF EPA ID: UTD981552177
Trans Name: Clean Harbors Aragonite LLC
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 791 - Liquids with pH < 2 792 Liquids with pH < 2 with metals
RCRA Code: D002
Meth Code: H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons: 0.16681
Waste Quantity: 40
Quantity Unit: G
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 2/4/2020
Creation Date: 3/10/2020
Receipt Date: 2/19/2020
Manifest ID: 014484770FLE
Trans EPA ID: MAD039322250
Trans Name: Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID: OKR000031492
Trans 2 Name: Basin Transportation
TSDF EPA ID: NED981723513
Trans Name: Clean Harbors Environmental Services, Inc.
TSDF Alt EPA ID: Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	D022
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.075
Waste Quantity:	150
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	2/4/2020
Creation Date:	3/10/2020
Receipt Date:	2/19/2020
Manifest ID:	014484770FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	OKR000031492
Trans 2 Name:	Basin Transportation
TSDF EPA ID:	NED981723513
Trans Name:	Clean Harbors Environmental Services, Inc.
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	Not reported
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.03
Waste Quantity:	60
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	2/4/2020
Creation Date:	2/26/2020
Receipt Date:	2/6/2020
Manifest ID:	014484771FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	CAD059494310
Trans Name:	Clean Harbors San Jose LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.07506
Waste Quantity:	18
Quantity Unit:	G
Additional Code 1:	Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	2/4/2020
Creation Date:	2/26/2020
Receipt Date:	2/6/2020
Manifest ID:	014484771FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	CAD059494310
Trans Name:	Clean Harbors San Jose LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D001,F003
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0417
Waste Quantity:	10
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	2/4/2020
Creation Date:	3/12/2020
Receipt Date:	2/21/2020
Manifest ID:	014484772FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	CAD044429835
Trans Name:	Clean Harbors Wilmington LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.038
Waste Quantity:	10
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	10/27/2020
Creation Date:	11/26/2020

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Receipt Date:	11/6/2020
Manifest ID:	015483941FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	UTD981552177
Trans Name:	Clean Harbors Aragonite LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	791 - Liquids with pH < 2 792 Liquids with pH < 2 with metals
RCRA Code:	D002
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.0875
Waste Quantity:	175
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	10/27/2020
Creation Date:	11/26/2020
Receipt Date:	11/6/2020
Manifest ID:	015483942FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	NED981723513
Trans Name:	Clean Harbors Environmental Services, Inc.
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	D022
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.225
Waste Quantity:	450
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	10/27/2020
Creation Date:	11/26/2020
Receipt Date:	11/6/2020
Manifest ID:	015483942FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	NED981723513
Trans Name:	Clean Harbors Environmental Services, Inc.
TSDF Alt EPA ID:	Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.05
Waste Quantity:	100
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	10/27/2020
Creation Date:	11/26/2020
Receipt Date:	11/6/2020
Manifest ID:	015483942FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	NED981723513
Trans Name:	Clean Harbors Environmental Services, Inc.
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D001,F003
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.075
Waste Quantity:	150
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2020
Gen EPA ID:	CAR000152504

Shipment Date:	2/4/2020
Creation Date:	5/12/2020
Receipt Date:	2/17/2020
Manifest ID:	014484769FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MOD095038998
Trans 2 Name:	Tri State Motor Transit
TSDF EPA ID:	UTD981552177
Trans Name:	Clean Harbors Aragonite LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	791 - Liquids with pH < 2 792 Liquids with pH < 2 with metals
RCRA Code:	D002
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.16681

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Waste Quantity:	40
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	2/4/2020
Creation Date:	3/10/2020
Receipt Date:	2/19/2020
Manifest ID:	014484770FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	OKR000031492
Trans 2 Name:	Basin Transportation
TSDF EPA ID:	NED981723513
Trans Name:	Clean Harbors Environmental Services, Inc.
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	D022
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.075
Waste Quantity:	150
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	2/4/2020
Creation Date:	3/10/2020
Receipt Date:	2/19/2020
Manifest ID:	014484770FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	OKR000031492
Trans 2 Name:	Basin Transportation
TSDF EPA ID:	NED981723513
Trans Name:	Clean Harbors Environmental Services, Inc.
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	Not reported
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.03
Waste Quantity:	60
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	2/4/2020

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Creation Date:	2/26/2020
Receipt Date:	2/6/2020
Manifest ID:	014484771FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	CAD059494310
Trans Name:	Clean Harbors San Jose LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.07506
Waste Quantity:	18
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	2/4/2020
Creation Date:	2/26/2020
Receipt Date:	2/6/2020
Manifest ID:	014484771FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	CAD059494310
Trans Name:	Clean Harbors San Jose LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D001,F003
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0417
Waste Quantity:	10
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	2/4/2020
Creation Date:	3/12/2020
Receipt Date:	2/21/2020
Manifest ID:	014484772FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

TSDF EPA ID:	CAD044429835
Trans Name:	Clean Harbors Wilmington LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.038
Waste Quantity:	10
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	10/27/2020
Creation Date:	11/26/2020
Receipt Date:	11/6/2020
Manifest ID:	015483941FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	UTD981552177
Trans Name:	Clean Harbors Aragonite LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	791 - Liquids with pH < 2 792 Liquids with pH < 2 with metals
RCRA Code:	D002
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.0875
Waste Quantity:	175
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	10/27/2020
Creation Date:	11/26/2020
Receipt Date:	11/6/2020
Manifest ID:	015483942FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	NED981723513
Trans Name:	Clean Harbors Environmental Services, Inc.
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	D022
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.225

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Waste Quantity:	450
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	10/27/2020
Creation Date:	11/26/2020
Receipt Date:	11/6/2020
Manifest ID:	015483942FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	NED981723513
Trans Name:	Clean Harbors Environmental Services, Inc.
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.05
Waste Quantity:	100
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	10/27/2020
Creation Date:	11/26/2020
Receipt Date:	11/6/2020
Manifest ID:	015483942FLE
Trans EPA ID:	MAD039322250
Trans Name:	Clean Harbors Environmental Services, Inc.
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	Clean Harbors Environmental Services, Inc.
TSDF EPA ID:	NED981723513
Trans Name:	Clean Harbors Environmental Services, Inc.
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D001,F003
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.075
Waste Quantity:	150
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Detail Two:

Year:	2020
EM Manifest ID:	1087803
Shipment Date:	2/4/2020
Receipt Date:	2/19/2020
Manifest Number:	014484770FLE
Generator EPA ID:	CAR000152504
Name:	BUCK INSTITUTE FOR RESEARCH ON AGING
Address:	8001 REDWOOD BOULEVARD
Address 2:	Not reported
City:	NOVATO
Zip:	94945
Telephone:	800-483-3718
Contact:	Nicole Nannery
Contact Telephone:	415-209-2010
Transporter 1 EPA ID:	MAD039322250
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	OKR000031492
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	NED981723513
TSDF Name:	Clean Harbors Environmental Services, Inc.
TSDF Address 1:	2247 South Highway 71
TSDF Address 2:	Not reported
TSDF City:	Kimball
TSDF Zip:	69145
TSDF Telephone:	800-483-3718

Federal:

Year:	2020
EM Manifest ID:	1087803
Generator EPA ID:	CAR000152504
Shipment Date:	2020-02-04
Manifest Number:	014484770FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.07500
Quantity Waste:	150.000000
Quantity Unit:	P
Number of Containers:	2
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D022

State:

Year:	2020
EM Manifest ID:	1087803
Generator EPA ID:	CAR000152504
Shipment Date:	2020-02-04
Manifest Number:	014484770FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.07500
Quantity Waste:	150.000000
Quantity Unit:	P
Number of Containers:	2
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

State Code: 352

Year: 2020
EM Manifest ID: 1087803
Generator EPA ID: CAR000152504
Shipment Date: 2020-02-04
Manifest Number: 014484770FLE
Line Number: 2
Method Code: H040
Quantity Tons: 0.03000
Quantity Waste: 60.000000
Quantity Unit: P
Number of Containers: 2
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
State Code: 352

Year: 2020
EM Manifest ID: 1095388
Shipment Date: 2/4/2020
Receipt Date: 2/21/2020
Manifest Number: 014484772FLE
Generator EPA ID: CAR000152504
Name: BUCK INSTITUTE FOR RESEARCH ON AGING
Address: 8001 REDWOOD BOULEVARD
Address 2: Not reported
City: NOVATO
Zip: 94945
Telephone: 800-483-3718
Contact: Nicole Nannery
Contact Telephone: 415-209-2010
Transporter 1 EPA ID: MAD039322250
Transporter 1 Emergency Number: Not reported
Transporter 2 EPA ID: MAD039322250
Transporter 2 Emergency Number: Not reported
TSDF EPA ID: CAD044429835
TSDF Name: Clean Harbors Wilmington LLC
TSDF Address 1: 1737 East Denni Street
TSDF Address 2: Not reported
TSDF City: Wilmington
TSDF Zip: 90744
TSDF Telephone: 800-483-3718

State:
Year: 2020
EM Manifest ID: 1095388
Generator EPA ID: CAR000152504
Shipment Date: 2020-02-04
Manifest Number: 014484772FLE
Line Number: 1
Method Code: H141
Quantity Tons: 0.03800
Quantity Waste: 10.000000
Quantity Unit: G
Number of Containers: 2
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Gallons

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

State Code: 221

Year: 2020
EM Manifest ID: 1035142
Shipment Date: 2/4/2020
Receipt Date: 2/6/2020
Manifest Number: 014484771FLE
Generator EPA ID: CAR000152504
Name: BUCK INSTITUTE FOR RESEARCH ON AGING
Address: 8001 REDWOOD BOULEVARD
Address 2: Not reported
City: NOVATO
Zip: 94945
Telephone: 800-483-3718
Contact: Nicole Nannery
Contact Telephone: 415-209-2010
Transporter 1 EPA ID: MAD039322250
Transporter 1 Emergency Number: Not reported
Transporter 2 EPA ID: MAD039322250
Transporter 2 Emergency Number: Not reported
TSDF EPA ID: CAD059494310
TSDF Name: Clean Harbors San Jose LLC
TSDF Address 1: 1021 Berryessa Road
TSDF Address 2: Not reported
TSDF City: San Jose
TSDF Zip: 95133
TSDF Telephone: 800-483-3718

Federal:
Year: 2020
EM Manifest ID: 1035142
Generator EPA ID: CAR000152504
Shipment Date: 2020-02-04
Manifest Number: 014484771FLE
Line Number: 1
Method Code: H141
Quantity Tons: 0.04170
Quantity Waste: 10.000000
Quantity Unit: G
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Gallons
Federal Code: D001

Year: 2020
EM Manifest ID: 1035142
Generator EPA ID: CAR000152504
Shipment Date: 2020-02-04
Manifest Number: 014484771FLE
Line Number: 1
Method Code: H141
Quantity Tons: 0.04170
Quantity Waste: 10.000000
Quantity Unit: G
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Gallons

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Federal Code: F003

State:

Year: 2020
EM Manifest ID: 1035142
Generator EPA ID: CAR000152504
Shipment Date: 2020-02-04
Manifest Number: 014484771FLE
Line Number: 1
Method Code: H141
Quantity Tons: 0.04170
Quantity Waste: 10.000000
Quantity Unit: G
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Gallons
State Code: 551

Year: 2020
EM Manifest ID: 1035142
Generator EPA ID: CAR000152504
Shipment Date: 2020-02-04
Manifest Number: 014484771FLE
Line Number: 2
Method Code: H141
Quantity Tons: 0.07506
Quantity Waste: 18.000000
Quantity Unit: G
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Gallons
State Code: 551

Year: 2020
EM Manifest ID: f7a3f9d7-94e5-47b7-bb7a-9d174fd1ec45
Shipment Date: 2/4/2020
Receipt Date: 2/17/2020
Manifest Number: 014484769FLE
Generator EPA ID: CAR000152504
Name: BUCK INSTITUTE FOR RESEARCH ON AGING
Address: 8001 REDWOOD BOULEVARD
Address 2: Not reported
City: NOVATO
Zip: 94945
Telephone: 800-483-3718
Contact: Nicole Nannery
Contact Telephone: 415-209-2010
Transporter 1 EPA ID: MAD039322250
Transporter 1 Emergency Number: Not reported
Transporter 2 EPA ID: MOD095038998
Transporter 2 Emergency Number: Not reported
TSDF EPA ID: UTD981552177
TSDF Name: Clean Harbors Aragonite LLC
TSDF Address 1: 11600 North Aptus Road
TSDF Address 2: Not reported
TSDF City: Grantsville

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

TSDF Zip:	84029
TSDF Telephone:	800-483-3718

Federal:

Year:	2020
EM Manifest ID:	f7a3f9d7-94e5-47b7-bb7a-9d174fd1ec45
Generator EPA ID:	CAR000152504
Shipment Date:	2020-02-04
Manifest Number:	014484769FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.16680
Quantity Waste:	40.000000
Quantity Unit:	G
Number of Containers:	2
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Gallons
Federal Code:	D002

State:

Year:	2020
EM Manifest ID:	f7a3f9d7-94e5-47b7-bb7a-9d174fd1ec45
Generator EPA ID:	CAR000152504
Shipment Date:	2020-02-04
Manifest Number:	014484769FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.16680
Quantity Waste:	40.000000
Quantity Unit:	G
Number of Containers:	2
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Gallons
State Code:	791

Year:	2020
EM Manifest ID:	0ef2869c-28ac-4bfb-81d7-5011413aa76d
Shipment Date:	10/27/2020
Receipt Date:	11/6/2020
Manifest Number:	015483941FLE
Generator EPA ID:	CAR000152504
Name:	BUCK INSTITUTE FOR RESEARCH ON AGING
Address:	8001 REDWOOD BOULEVARD
Address 2:	Not reported
City:	NOVATO
Zip:	94945
Telephone:	800-483-3718
Contact:	Nicole Nannery
Contact Telephone:	415-209-2010
Transporter 1 EPA ID:	MAD039322250
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	MAD039322250
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	UTD981552177
TSDF Name:	Clean Harbors Aragonite LLC
TSDF Address 1:	11600 North Aptus Road

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

TSDF Address 2: Not reported
TSDF City: Grantsville
TSDF Zip: 84029
TSDF Telephone: 800-483-3718

Federal:
Year: 2020
EM Manifest ID: 0ef2869c-28ac-4bfb-81d7-5011413aa76d
Generator EPA ID: CAR000152504
Shipment Date: 2020-10-27
Manifest Number: 015483941FLE
Line Number: 1
Method Code: H040
Quantity Tons: 0.08750
Quantity Waste: 175.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
Federal Code: D002

State:
Year: 2020
EM Manifest ID: 0ef2869c-28ac-4bfb-81d7-5011413aa76d
Generator EPA ID: CAR000152504
Shipment Date: 2020-10-27
Manifest Number: 015483941FLE
Line Number: 1
Method Code: H040
Quantity Tons: 0.08750
Quantity Waste: 175.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
State Code: 791

Year: 2020
EM Manifest ID: 53af7067-b191-41a4-9292-ec9bfd49b096
Shipment Date: 10/27/2020
Receipt Date: 11/6/2020
Manifest Number: 015483942FLE
Generator EPA ID: CAR000152504
Name: BUCK INSTITUTE FOR RESEARCH ON AGING
Address: 8001 REDWOOD BOULEVARD
Address 2: Not reported
City: NOVATO
Zip: 94945
Telephone: 800-483-3718
Contact: Nicole Nannery
Contact Telephone: 415-209-2010
Transporter 1 EPA ID: MAD039322250
Transporter 1 Emergency Number: Not reported
Transporter 2 EPA ID: MAD039322250
Transporter 2 Emergency Number: Not reported
TSDF EPA ID: NED981723513

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

TSDF Name: Clean Harbors Environmental Services, Inc.
TSDF Address 1: 2247 South Highway 71
TSDF Address 2: Not reported
TSDF City: Kimball
TSDF Zip: 69145
TSDF Telephone: 800-483-3718

Federal:
Year: 2020
EM Manifest ID: 53af7067-b191-41a4-9292-ec9bfd49b096
Generator EPA ID: CAR000152504
Shipment Date: 2020-10-27
Manifest Number: 015483942FLE
Line Number: 1
Method Code: H040
Quantity Tons: 0.07500
Quantity Waste: 150.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
Federal Code: D001

Year: 2020
EM Manifest ID: 53af7067-b191-41a4-9292-ec9bfd49b096
Generator EPA ID: CAR000152504
Shipment Date: 2020-10-27
Manifest Number: 015483942FLE
Line Number: 1
Method Code: H040
Quantity Tons: 0.07500
Quantity Waste: 150.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
Federal Code: F003

Year: 2020
EM Manifest ID: 53af7067-b191-41a4-9292-ec9bfd49b096
Generator EPA ID: CAR000152504
Shipment Date: 2020-10-27
Manifest Number: 015483942FLE
Line Number: 3
Method Code: H040
Quantity Tons: 0.22500
Quantity Waste: 450.000000
Quantity Unit: P
Number of Containers: 2
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
Federal Code: D022

State:
Year: 2020
EM Manifest ID: 53af7067-b191-41a4-9292-ec9bfd49b096
Generator EPA ID: CAR000152504

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Shipment Date:	2020-10-27
Manifest Number:	015483942FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.07500
Quantity Waste:	150.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551

Year:	2020
EM Manifest ID:	53af7067-b191-41a4-9292-ec9bfd49b096
Generator EPA ID:	CAR000152504
Shipment Date:	2020-10-27
Manifest Number:	015483942FLE
Line Number:	2
Method Code:	H040
Quantity Tons:	0.05000
Quantity Waste:	100.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551

Year:	2020
EM Manifest ID:	53af7067-b191-41a4-9292-ec9bfd49b096
Generator EPA ID:	CAR000152504
Shipment Date:	2020-10-27
Manifest Number:	015483942FLE
Line Number:	3
Method Code:	H040
Quantity Tons:	0.22500
Quantity Waste:	450.000000
Quantity Unit:	P
Number of Containers:	2
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	352

Year:	2020
EM Manifest ID:	bcf8b715-a443-4fb2-a7ec-d57d5ee2c39f
Shipment Date:	10/27/2020
Receipt Date:	10/29/2020
Manifest Number:	015483943FLE
Generator EPA ID:	CAR000152504
Name:	BUCK INSTITUTE FOR RESEARCH ON AGING
Address:	8001 REDWOOD BOULEVARD
Address 2:	Not reported
City:	NOVATO
Zip:	94945
Telephone:	800-483-3718
Contact:	Nicole Nannery
Contact Telephone:	415-209-2010

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Transporter 1 EPA ID: MAD039322250
Transporter 1 Emergency Number: Not reported
Transporter 2 EPA ID: MAD039322250
Transporter 2 Emergency Number: Not reported
TSDF EPA ID: CAD059494310
TSDF Name: Clean Harbors San Jose LLC
TSDF Address 1: 1021 Berryessa Road
TSDF Address 2: Not reported
TSDF City: San Jose
TSDF Zip: 95133
TSDF Telephone: 800-483-3718

State:
Year: 2020
EM Manifest ID: bcf8b715-a443-4fb2-a7ec-d57d5ee2c39f
Generator EPA ID: CAR000152504
Shipment Date: 2020-10-27
Manifest Number: 015483943FLE
Line Number: 1
Method Code: H141
Quantity Tons: 0.02000
Quantity Waste: 40.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
State Code: 221

Detail Two:
Year: 2019
EM Manifest ID: 476957
Shipment Date: 7/8/2019
Receipt Date: 7/20/2019
Manifest Number: 013211865FLE
Generator EPA ID: CAR000152504
Name: BUCK INSTITUTE FOR RESEARCH ON AGING
Address: 8001 REDWOOD BOULEVARD
Address 2: Not reported
City: NOVATO
Zip: 94945
Telephone: 800-483-3718
Contact: Nicole Nannery
Contact Telephone: 415-209-2010
Transporter 1 EPA ID: MAD039322250
Transporter 1 Emergency Number: Not reported
Transporter 2 EPA ID: MOD095038998
Transporter 2 Emergency Number: Not reported
TSDF EPA ID: NED981723513
TSDF Name: Clean Harbors Environmental Services, Inc.
TSDF Address 1: 2247 South Highway 71
TSDF Address 2: Not reported
TSDF City: Kimball
TSDF Zip: 69145
TSDF Telephone: 800-483-3718

Federal:
Year: 2019

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.11000
Quantity Waste:	220.000000
Quantity Unit:	P
Number of Containers:	2
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D001

Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.11000
Quantity Waste:	220.000000
Quantity Unit:	P
Number of Containers:	2
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	F003

Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	2
Method Code:	H040
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D001

Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	2
Method Code:	H040
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Federal Code:	D002
Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	3
Method Code:	H040
Quantity Tons:	0.00350
Quantity Waste:	7.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D001
Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	3
Method Code:	H040
Quantity Tons:	0.00350
Quantity Waste:	7.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	U220
Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	4
Method Code:	H040
Quantity Tons:	0.00450
Quantity Waste:	9.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D001
Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	4
Method Code:	H040
Quantity Tons:	0.00450
Quantity Waste:	9.000000
Quantity Unit:	P

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
Federal Code: U221

Year: 2019
EM Manifest ID: 476957
Generator EPA ID: CAR000152504
Shipment Date: 2019-07-08
Manifest Number: 013211865FLE
Line Number: 5
Method Code: H141
Quantity Tons: 0.00050
Quantity Waste: 1.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
Federal Code: D001

Year: 2019
EM Manifest ID: 476957
Generator EPA ID: CAR000152504
Shipment Date: 2019-07-08
Manifest Number: 013211865FLE
Line Number: 5
Method Code: H141
Quantity Tons: 0.00050
Quantity Waste: 1.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
Federal Code: D003

Year: 2019
EM Manifest ID: 476957
Generator EPA ID: CAR000152504
Shipment Date: 2019-07-08
Manifest Number: 013211865FLE
Line Number: 6
Method Code: H141
Quantity Tons: 0.00150
Quantity Waste: 3.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: Fiberboard or plastic drums, barrels, kegs
Quantity Type: Pounds
Federal Code: D001

Year: 2019
EM Manifest ID: 476957
Generator EPA ID: CAR000152504
Shipment Date: 2019-07-08
Manifest Number: 013211865FLE
Line Number: 6
Method Code: H141

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Quantity Tons:	0.00150
Quantity Waste:	3.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D003
Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	8
Method Code:	H040
Quantity Tons:	0.00100
Quantity Waste:	2.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D002
Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	9
Method Code:	H040
Quantity Tons:	0.00050
Quantity Waste:	1.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	P105
Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	11
Method Code:	H040
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D001
Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Manifest Number:	013211865FLE
Line Number:	11
Method Code:	H040
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D002

Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	11
Method Code:	H040
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	U179

Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	12
Method Code:	H040
Quantity Tons:	0.10350
Quantity Waste:	207.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D002

Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	13
Method Code:	H040
Quantity Tons:	0.11600
Quantity Waste:	232.000000
Quantity Unit:	P
Number of Containers:	2
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
Federal Code:	D022

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

State:

Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.11000
Quantity Waste:	220.000000
Quantity Unit:	P
Number of Containers:	2
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551

Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	2
Method Code:	H040
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551

Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	3
Method Code:	H040
Quantity Tons:	0.00350
Quantity Waste:	7.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551

Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	4
Method Code:	H040
Quantity Tons:	0.00450
Quantity Waste:	9.000000
Quantity Unit:	P
Number of Containers:	1

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551
Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	5
Method Code:	H141
Quantity Tons:	0.00050
Quantity Waste:	1.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551
Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	6
Method Code:	H141
Quantity Tons:	0.00150
Quantity Waste:	3.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551
Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	7
Method Code:	H040
Quantity Tons:	0.01750
Quantity Waste:	35.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551
Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	8
Method Code:	H040
Quantity Tons:	0.00100

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Quantity Waste:	2.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551
Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	9
Method Code:	H040
Quantity Tons:	0.00050
Quantity Waste:	1.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551
Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	10
Method Code:	H040
Quantity Tons:	0.07800
Quantity Waste:	156.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	551
Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	12
Method Code:	H040
Quantity Tons:	0.10350
Quantity Waste:	207.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	791
Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Line Number:	13
Method Code:	H040
Quantity Tons:	0.11600
Quantity Waste:	232.000000
Quantity Unit:	P
Number of Containers:	2
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	352

Year:	2019
EM Manifest ID:	476957
Generator EPA ID:	CAR000152504
Shipment Date:	2019-07-08
Manifest Number:	013211865FLE
Line Number:	14
Method Code:	H040
Quantity Tons:	0.12300
Quantity Waste:	246.000000
Quantity Unit:	P
Number of Containers:	3
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Pounds
State Code:	352

Detail Two:

Year:	2018
EM Manifest ID:	122008
Shipment Date:	9/11/2018
Receipt Date:	9/17/2018
Manifest Number:	012655757FLE
Generator EPA ID:	CAR000152504
Name:	BUCK INSTITUTE FOR RESEARCH ON AGING
Address:	8001 REDWOOD BOULEVARD
Address 2:	Not reported
City:	NOVATO
Zip:	94945
Telephone:	800-483-3718
Contact:	Nicole Nannery
Contact Telephone:	415-209-2010
Transporter 1 EPA ID:	MAD039322250
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	MAD039322250
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	CAD059494310
TSDF Name:	Clean Harbors San Jose LLC
TSDF Address 1:	1021 Berryessa Road
TSDF Address 2:	Not reported
TSDF City:	San Jose
TSDF Zip:	95133
TSDF Telephone:	800-483-3718

Federal:

Year:	2018
EM Manifest ID:	122008
Generator EPA ID:	CAR000152504

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Shipment Date:	2018-09-11
Manifest Number:	012655757FLE
Line Number:	1
Method Code:	H141
Quantity Tons:	0.05838
Quantity Waste:	14.000000
Quantity Unit:	G
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Gallons
Federal Code:	D001

Year:	2018
EM Manifest ID:	122008
Generator EPA ID:	CAR000152504
Shipment Date:	2018-09-11
Manifest Number:	012655757FLE
Line Number:	1
Method Code:	H141
Quantity Tons:	0.05838
Quantity Waste:	14.000000
Quantity Unit:	G
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Gallons
Federal Code:	F003

State:

Year:	2018
EM Manifest ID:	122008
Generator EPA ID:	CAR000152504
Shipment Date:	2018-09-11
Manifest Number:	012655757FLE
Line Number:	1
Method Code:	H141
Quantity Tons:	0.05838
Quantity Waste:	14.000000
Quantity Unit:	G
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Gallons
State Code:	551

Year:	2018
EM Manifest ID:	122008
Generator EPA ID:	CAR000152504
Shipment Date:	2018-09-11
Manifest Number:	012655757FLE
Line Number:	2
Method Code:	H141
Quantity Tons:	0.12510
Quantity Waste:	30.000000
Quantity Unit:	G
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Gallons
State Code:	551

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Year:	2018
EM Manifest ID:	145880
Shipment Date:	9/11/2018
Receipt Date:	9/24/2018
Manifest Number:	012655754FLE
Generator EPA ID:	CAR000152504
Name:	BUCK INSTITUTE FOR RESEARCH ON AGING
Address:	8001 REDWOOD BOULEVARD
Address 2:	Not reported
City:	NOVATO
Zip:	94945
Telephone:	800-483-3718
Contact:	Nicole Nannery
Contact Telephone:	415-209-2010
Transporter 1 EPA ID:	MAD039322250
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	MOD095038998
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	UTD981552177
TSDF Name:	Clean Harbors Aragonite LLC
TSDF Address 1:	PO Box 1339
TSDF Address 2:	Not reported
TSDF City:	Grantsville
TSDF Zip:	84029
TSDF Telephone:	800-483-3718

Federal:

Year:	2018
EM Manifest ID:	145880
Generator EPA ID:	CAR000152504
Shipment Date:	2018-09-11
Manifest Number:	012655754FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.12510
Quantity Waste:	30.000000
Quantity Unit:	G
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Gallons
Federal Code:	D002

State:

Year:	2018
EM Manifest ID:	145880
Generator EPA ID:	CAR000152504
Shipment Date:	2018-09-11
Manifest Number:	012655754FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.12510
Quantity Waste:	30.000000
Quantity Unit:	G
Number of Containers:	1
Type of Container:	Fiberboard or plastic drums, barrels, kegs
Quantity Type:	Gallons
State Code:	791

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Shipment Date:	7/14/2017
Receipt Date:	7/21/2017
Manifest Number:	000158773DAT
Generator EPA ID:	CAR000152504
Name:	BUCKINSTITUTE
Address:	Not reported
Address 2:	Not reported
City:	Not reported
Zip:	Not reported
Telephone:	Not reported
Contact:	Not reported
Contact Telephone:	Not reported
Transporter 1 EPA ID:	MNS000110924
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	NED986382133
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	NVD980895338
TSDF Name:	21ST CENTURY ENVIRONMENTAL MANAGEMENT OF NEVADA
TSDF Address 1:	Not reported
TSDF Address 2:	Not reported
TSDF City:	Not reported
TSDF Zip:	Not reported
TSDF Telephone:	Not reported

Federal:

Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	1
Method Code:	H141
Quantity Tons:	0.09100
Quantity Waste:	182.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D004

Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	1
Method Code:	H141
Quantity Tons:	0.09100
Quantity Waste:	182.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D006

Year: 2018

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	1
Method Code:	H141
Quantity Tons:	0.09100
Quantity Waste:	182.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D007

Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	1
Method Code:	H141
Quantity Tons:	0.09100
Quantity Waste:	182.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D008

Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	1
Method Code:	H141
Quantity Tons:	0.09100
Quantity Waste:	182.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D010

Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	4
Method Code:	H141
Quantity Tons:	0.00350
Quantity Waste:	7.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Federal Code:	U133
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	6
Method Code:	H121
Quantity Tons:	0.00500
Quantity Waste:	10.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D002
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	7
Method Code:	H121
Quantity Tons:	0.00500
Quantity Waste:	10.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D002
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	8
Method Code:	H141
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D001
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	8
Method Code:	H141
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Number of Containers: 1
Type of Container: NULL
Quantity Type: NULL
Federal Code: D002

Year: 2018
EM Manifest ID: 000158773DAT20170714_D_1
Generator EPA ID: CAR000152504
Shipment Date: 2017-07-14
Manifest Number: 000158773DAT
Line Number: 9
Method Code: H141
Quantity Tons: 0.00600
Quantity Waste: 12.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: NULL
Quantity Type: NULL
Federal Code: D001

Year: 2018
EM Manifest ID: 000158773DAT20170714_D_1
Generator EPA ID: CAR000152504
Shipment Date: 2017-07-14
Manifest Number: 000158773DAT
Line Number: 9
Method Code: H141
Quantity Tons: 0.00600
Quantity Waste: 12.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: NULL
Quantity Type: NULL
Federal Code: D002

Year: 2018
EM Manifest ID: 000158773DAT20170714_D_1
Generator EPA ID: CAR000152504
Shipment Date: 2017-07-14
Manifest Number: 000158773DAT
Line Number: 11
Method Code: H121
Quantity Tons: 0.00250
Quantity Waste: 5.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: NULL
Quantity Type: NULL
Federal Code: D010

Year: 2018
EM Manifest ID: 000158773DAT20170714_D_1
Generator EPA ID: CAR000152504
Shipment Date: 2017-07-14
Manifest Number: 000158773DAT
Line Number: 13
Method Code: H141

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D002
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	14
Method Code:	H141
Quantity Tons:	0.00300
Quantity Waste:	6.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D001
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	14
Method Code:	H141
Quantity Tons:	0.00300
Quantity Waste:	6.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D003
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	16
Method Code:	H141
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D001
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Manifest Number:	000158773DAT
Line Number:	16
Method Code:	H141
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D002
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	17
Method Code:	H141
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D001
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	17
Method Code:	H141
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D002
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	18
Method Code:	H141
Quantity Tons:	0.00700
Quantity Waste:	14.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D001
Year:	2018

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	19
Method Code:	H141
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D001

Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	19
Method Code:	H141
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D003

Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	21
Method Code:	H141
Quantity Tons:	0.00050
Quantity Waste:	1.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	P105

Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	22
Method Code:	H141
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Federal Code: D001

Year: 2018
EM Manifest ID: 000158773DAT20170714_D_1
Generator EPA ID: CAR000152504
Shipment Date: 2017-07-14
Manifest Number: 000158773DAT
Line Number: 22
Method Code: H141
Quantity Tons: 0.00250
Quantity Waste: 5.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: NULL
Quantity Type: NULL
Federal Code: D003

Year: 2018
EM Manifest ID: 000158773DAT20170714_D_1
Generator EPA ID: CAR000152504
Shipment Date: 2017-07-14
Manifest Number: 000158773DAT
Line Number: 24
Method Code: H141
Quantity Tons: 0.00600
Quantity Waste: 12.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: NULL
Quantity Type: NULL
Federal Code: D001

Year: 2018
EM Manifest ID: 000158773DAT20170714_D_1
Generator EPA ID: CAR000152504
Shipment Date: 2017-07-14
Manifest Number: 000158773DAT
Line Number: 27
Method Code: H141
Quantity Tons: 0.00200
Quantity Waste: 4.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: NULL
Quantity Type: NULL
Federal Code: D001

State:
Year: 2018
EM Manifest ID: 000158773DAT20170714_D_1
Generator EPA ID: CAR000152504
Shipment Date: 2017-07-14
Manifest Number: 000158773DAT
Line Number: 1
Method Code: H141
Quantity Tons: 0.09100
Quantity Waste: 182.000000

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	2
Method Code:	H121
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	3
Method Code:	H121
Quantity Tons:	0.00500
Quantity Waste:	10.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	4
Method Code:	H141
Quantity Tons:	0.00350
Quantity Waste:	7.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	5

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Method Code:	H141
Quantity Tons:	0.00300
Quantity Waste:	6.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	6
Method Code:	H121
Quantity Tons:	0.00500
Quantity Waste:	10.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	7
Method Code:	H121
Quantity Tons:	0.00500
Quantity Waste:	10.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	8
Method Code:	H141
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	9
Method Code:	H141
Quantity Tons:	0.00600
Quantity Waste:	12.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551

Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	10
Method Code:	H141
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551

Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	11
Method Code:	H121
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551

Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	12
Method Code:	H141
Quantity Tons:	0.00200
Quantity Waste:	4.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	13
Method Code:	H141
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551

Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	14
Method Code:	H141
Quantity Tons:	0.00300
Quantity Waste:	6.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551

Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	15
Method Code:	H141
Quantity Tons:	0.00600
Quantity Waste:	12.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551

Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	16
Method Code:	H141
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	17
Method Code:	H141
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	18
Method Code:	H141
Quantity Tons:	0.00700
Quantity Waste:	14.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	19
Method Code:	H141
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	20
Method Code:	H141
Quantity Tons:	0.00250
Quantity Waste:	5.000000

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	21
Method Code:	H141
Quantity Tons:	0.00050
Quantity Waste:	1.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	22
Method Code:	H141
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	23
Method Code:	H141
Quantity Tons:	0.00250
Quantity Waste:	5.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	24

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Method Code:	H141
Quantity Tons:	0.00600
Quantity Waste:	12.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	25
Method Code:	H141
Quantity Tons:	0.00400
Quantity Waste:	8.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	26
Method Code:	H141
Quantity Tons:	0.00200
Quantity Waste:	4.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000158773DAT20170714_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-14
Manifest Number:	000158773DAT
Line Number:	27
Method Code:	H141
Quantity Tons:	0.00200
Quantity Waste:	4.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000178554DAT20170713_D_1

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Shipment Date:	7/13/2017
Receipt Date:	7/31/2017
Manifest Number:	000178554DAT
Generator EPA ID:	CAR000152504
Name:	BUCK INSTITUTE FOR RESEARCH ON AGING
Address:	Not reported
Address 2:	Not reported
City:	Not reported
Zip:	Not reported
Telephone:	Not reported
Contact:	Not reported
Contact Telephone:	Not reported
Transporter 1 EPA ID:	MNS000110924
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	MAD039322250
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	CAD059494310
TSDF Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Address 1:	Not reported
TSDF Address 2:	Not reported
TSDF City:	Not reported
TSDF Zip:	Not reported
TSDF Telephone:	Not reported

Federal:

Year:	2018
EM Manifest ID:	000178554DAT20170713_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-13
Manifest Number:	000178554DAT
Line Number:	1
Method Code:	H141
Quantity Tons:	0.16680
Quantity Waste:	40.000000
Quantity Unit:	G
Number of Containers:	3
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D001

Year:	2018
EM Manifest ID:	000178554DAT20170713_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-13
Manifest Number:	000178554DAT
Line Number:	1
Method Code:	H141
Quantity Tons:	0.16680
Quantity Waste:	40.000000
Quantity Unit:	G
Number of Containers:	3
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	F003

Year:	2018
EM Manifest ID:	000178554DAT20170713_D_1
Generator EPA ID:	CAR000152504

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Shipment Date:	2017-07-13
Manifest Number:	000178554DAT
Line Number:	2
Method Code:	H141
Quantity Tons:	0.09750
Quantity Waste:	195.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D022

State:

Year:	2018
EM Manifest ID:	000178554DAT20170713_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-13
Manifest Number:	000178554DAT
Line Number:	1
Method Code:	H141
Quantity Tons:	0.16680
Quantity Waste:	40.000000
Quantity Unit:	G
Number of Containers:	3
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551

Year:	2018
EM Manifest ID:	000178554DAT20170713_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-13
Manifest Number:	000178554DAT
Line Number:	2
Method Code:	H141
Quantity Tons:	0.09750
Quantity Waste:	195.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	352

Year:	2018
EM Manifest ID:	000178554DAT20170713_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-13
Manifest Number:	000178554DAT
Line Number:	3
Method Code:	H141
Quantity Tons:	0.02900
Quantity Waste:	58.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	352

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Year:	2018
EM Manifest ID:	000178555DAT20170713_D_1
Shipment Date:	7/13/2017
Receipt Date:	8/18/2017
Manifest Number:	000178555DAT
Generator EPA ID:	CAR000152504
Name:	BUCK INSTITUTE FOR RESEARCH ON AGING
Address:	Not reported
Address 2:	Not reported
City:	Not reported
Zip:	Not reported
Telephone:	Not reported
Contact:	Not reported
Contact Telephone:	Not reported
Transporter 1 EPA ID:	MNS000110924
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	MAD039322250
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	CAD044429835
TSDF Name:	CLEAN HARBORS WILMINGTON LLC
TSDF Address 1:	Not reported
TSDF Address 2:	Not reported
TSDF City:	Not reported
TSDF Zip:	Not reported
TSDF Telephone:	Not reported

State:

Year:	2018
EM Manifest ID:	000178555DAT20170713_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-07-13
Manifest Number:	000178555DAT
Line Number:	1
Method Code:	H141
Quantity Tons:	0.01520
Quantity Waste:	4.000000
Quantity Unit:	G
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	221

Year:	2018
EM Manifest ID:	011617820FLE20180619_D_1
Shipment Date:	6/19/2018
Receipt Date:	6/27/2018
Manifest Number:	011617820FLE
Generator EPA ID:	CAR000152504
Name:	BUCK INSTITUTE FOR RESEARCH ON AGING
Address:	Not reported
Address 2:	Not reported
City:	Not reported
Zip:	Not reported
Telephone:	Not reported
Contact:	Not reported
Contact Telephone:	Not reported
Transporter 1 EPA ID:	MAD039322250

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Transporter 1 Emergency Number: Not reported
Transporter 2 EPA ID: OKR000071492
Transporter 2 Emergency Number: Not reported
TSDF EPA ID: NED981723513
TSDF Name: CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF Address 1: Not reported
TSDF Address 2: Not reported
TSDF City: Not reported
TSDF Zip: Not reported
TSDF Telephone: Not reported

Federal:
Year: 2018
EM Manifest ID: 011617820FLE20180619_D_1
Generator EPA ID: CAR000152504
Shipment Date: 2018-06-19
Manifest Number: 011617820FLE
Line Number: 1
Method Code: H040
Quantity Tons: 0.20000
Quantity Waste: 400.000000
Quantity Unit: P
Number of Containers: 2
Type of Container: NULL
Quantity Type: NULL
Federal Code: D022

State:
Year: 2018
EM Manifest ID: 011617820FLE20180619_D_1
Generator EPA ID: CAR000152504
Shipment Date: 2018-06-19
Manifest Number: 011617820FLE
Line Number: 1
Method Code: H040
Quantity Tons: 0.20000
Quantity Waste: 400.000000
Quantity Unit: P
Number of Containers: 2
Type of Container: NULL
Quantity Type: NULL
State Code: 352

Year: 2018
EM Manifest ID: 011617820FLE20180619_D_1
Generator EPA ID: CAR000152504
Shipment Date: 2018-06-19
Manifest Number: 011617820FLE
Line Number: 2
Method Code: H040
Quantity Tons: 0.03000
Quantity Waste: 60.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: NULL
Quantity Type: NULL
State Code: 352

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Year:	2018
EM Manifest ID:	011617819FLE20180619_D_1
Shipment Date:	6/19/2018
Receipt Date:	6/26/2018
Manifest Number:	011617819FLE
Generator EPA ID:	CAR000152504
Name:	BUCK INSTITUTE FOR RESEARCH ON AGING
Address:	Not reported
Address 2:	Not reported
City:	Not reported
Zip:	Not reported
Telephone:	Not reported
Contact:	Not reported
Contact Telephone:	Not reported
Transporter 1 EPA ID:	MAD039322250
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	MOD095038998
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	UTD981552177
TSDF Name:	CLEAN HARBORS ARAGONITE LLC
TSDF Address 1:	Not reported
TSDF Address 2:	Not reported
TSDF City:	Not reported
TSDF Zip:	Not reported
TSDF Telephone:	Not reported

Federal:

Year:	2018
EM Manifest ID:	011617819FLE20180619_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2018-06-19
Manifest Number:	011617819FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.12510
Quantity Waste:	30.000000
Quantity Unit:	G
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D002

State:

Year:	2018
EM Manifest ID:	011617819FLE20180619_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2018-06-19
Manifest Number:	011617819FLE
Line Number:	1
Method Code:	H040
Quantity Tons:	0.12510
Quantity Waste:	30.000000
Quantity Unit:	G
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	791

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Year:	2018
EM Manifest ID:	000172362DAT20170407_D_1
Shipment Date:	4/7/2017
Receipt Date:	4/21/2017
Manifest Number:	000172362DAT
Generator EPA ID:	CAR000152504
Name:	BUCK INSTITUTE FOR RESEARCH ON AGING
Address:	Not reported
Address 2:	Not reported
City:	Not reported
Zip:	Not reported
Telephone:	Not reported
Contact:	Not reported
Contact Telephone:	Not reported
Transporter 1 EPA ID:	MNS000110924
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	MAD039322250
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	CAD059494310
TSDF Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Address 1:	Not reported
TSDF Address 2:	Not reported
TSDF City:	Not reported
TSDF Zip:	Not reported
TSDF Telephone:	Not reported

Federal:

Year:	2018
EM Manifest ID:	000172362DAT20170407_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-04-07
Manifest Number:	000172362DAT
Line Number:	1
Method Code:	H141
Quantity Tons:	0.25020
Quantity Waste:	60.000000
Quantity Unit:	G
Number of Containers:	2
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	D001

Year:	2018
EM Manifest ID:	000172362DAT20170407_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-04-07
Manifest Number:	000172362DAT
Line Number:	1
Method Code:	H141
Quantity Tons:	0.25020
Quantity Waste:	60.000000
Quantity Unit:	G
Number of Containers:	2
Type of Container:	NULL
Quantity Type:	NULL
Federal Code:	F003

Year: 2018

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

EM Manifest ID: 000172362DAT20170407_D_1
Generator EPA ID: CAR000152504
Shipment Date: 2017-04-07
Manifest Number: 000172362DAT
Line Number: 2
Method Code: H141
Quantity Tons: 0.10000
Quantity Waste: 200.000000
Quantity Unit: P
Number of Containers: 2
Type of Container: NULL
Quantity Type: NULL
Federal Code: D022

State:
Year: 2018
EM Manifest ID: 000172362DAT20170407_D_1
Generator EPA ID: CAR000152504
Shipment Date: 2017-04-07
Manifest Number: 000172362DAT
Line Number: 1
Method Code: H141
Quantity Tons: 0.25020
Quantity Waste: 60.000000
Quantity Unit: G
Number of Containers: 2
Type of Container: NULL
Quantity Type: NULL
State Code: 551

Year: 2018
EM Manifest ID: 000172362DAT20170407_D_1
Generator EPA ID: CAR000152504
Shipment Date: 2017-04-07
Manifest Number: 000172362DAT
Line Number: 2
Method Code: H141
Quantity Tons: 0.10000
Quantity Waste: 200.000000
Quantity Unit: P
Number of Containers: 2
Type of Container: NULL
Quantity Type: NULL
State Code: 352

Year: 2018
EM Manifest ID: 000172362DAT20170407_D_1
Generator EPA ID: CAR000152504
Shipment Date: 2017-04-07
Manifest Number: 000172362DAT
Line Number: 3
Method Code: H141
Quantity Tons: 0.02500
Quantity Waste: 50.000000
Quantity Unit: P
Number of Containers: 1
Type of Container: NULL

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Quantity Type:	NULL
State Code:	352
Year:	2018
EM Manifest ID:	000172362DAT20170407_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2017-04-07
Manifest Number:	000172362DAT
Line Number:	4
Method Code:	H141
Quantity Tons:	0.22935
Quantity Waste:	55.000000
Quantity Unit:	G
Number of Containers:	3
Type of Container:	NULL
Quantity Type:	NULL
State Code:	551
Year:	2018
EM Manifest ID:	000141060DAT20180122_D_1
Shipment Date:	1/22/2018
Receipt Date:	2/5/2018
Manifest Number:	000141060DAT
Generator EPA ID:	CAR000152504
Name:	BUCK INSTITUT FOR RESEARCH ON AGING
Address:	Not reported
Address 2:	Not reported
City:	Not reported
Zip:	Not reported
Telephone:	Not reported
Contact:	Not reported
Contact Telephone:	Not reported
Transporter 1 EPA ID:	MNS000110924
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	NED986382133
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	CAD059494310
TSDF Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Address 1:	Not reported
TSDF Address 2:	Not reported
TSDF City:	Not reported
TSDF Zip:	Not reported
TSDF Telephone:	Not reported

State:

Year:	2018
EM Manifest ID:	000141060DAT20180122_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2018-01-22
Manifest Number:	000141060DAT
Line Number:	1
Method Code:	H141
Quantity Tons:	0.04000
Quantity Waste:	80.000000
Quantity Unit:	P
Number of Containers:	1
Type of Container:	NULL

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Quantity Type:	NULL
State Code:	352
Year:	2018
EM Manifest ID:	000191331DAT20180122_D_1
Shipment Date:	1/22/2018
Receipt Date:	4/23/2018
Manifest Number:	000191331DAT
Generator EPA ID:	CAR000152504
Name:	BUCK INSTITUTE FOR RESEARCH ON AGING
Address:	Not reported
Address 2:	Not reported
City:	Not reported
Zip:	Not reported
Telephone:	Not reported
Contact:	Not reported
Contact Telephone:	Not reported
Transporter 1 EPA ID:	MNS000110924
Transporter 1 Emergency Number:	Not reported
Transporter 2 EPA ID:	NED986382133
Transporter 2 Emergency Number:	Not reported
TSDF EPA ID:	CAD044429835
TSDF Name:	CLEAN HARBORS WILMINGTON LLC
TSDF Address 1:	Not reported
TSDF Address 2:	Not reported
TSDF City:	Not reported
TSDF Zip:	Not reported
TSDF Telephone:	Not reported

State:

Year:	2018
EM Manifest ID:	000191331DAT20180122_D_1
Generator EPA ID:	CAR000152504
Shipment Date:	2018-01-22
Manifest Number:	000191331DAT
Line Number:	1
Method Code:	H141
Quantity Tons:	0.00760
Quantity Waste:	2.000000
Quantity Unit:	G
Number of Containers:	1
Type of Container:	NULL
Quantity Type:	NULL
State Code:	221

Additional Info:

Year:	2017
Gen EPA ID:	CAR000152504
Shipment Date:	20170821
Creation Date:	7/6/2018 18:30:51
Receipt Date:	20170913
Manifest ID:	000670816WAS
Trans EPA ID:	IND058484114
Trans Name:	HERITAGE TRANSPORT LLC- TS HAYWARD

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	OHD980613541
Trans Name:	HERITAGE THERMAL SERVICES INC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	311 - Pharmaceutical waste
RCRA Code:	Not reported
Meth Code:	H040 - Incineration--Thermal Destruction Other Than Use As A Fuel
Quantity Tons:	0.0025
Waste Quantity:	5
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20170714
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000158773DAT
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	NED986382133
Trans 2 Name:	SMITH SYSTEMS TRANSPORTATION
TSDF EPA ID:	NVD980895338
Trans Name:	21ST CENTURY ENVIRONMENTAL MANAGEMENT OF NEVADA
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.003
Waste Quantity:	6
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20170714
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000158773DAT
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	NED986382133
Trans 2 Name:	SMITH SYSTEMS TRANSPORTATION
TSDF EPA ID:	NVD980895338
Trans Name:	21ST CENTURY ENVIRONMENTAL MANAGEMENT OF NEVADA
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D002

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Meth Code:	H121 - Neutralization Only
Quantity Tons:	0.005
Waste Quantity:	10
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20170714
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000158773DAT
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	NED986382133
Trans 2 Name:	SMITH SYSTEMS TRANSPORTATION
TSDF EPA ID:	NVD980895338
Trans Name:	21ST CENTURY ENVIRONMENTAL MANAGEMENT OF NEVADA
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D002
Meth Code:	H121 - Neutralization Only
Quantity Tons:	0.005
Waste Quantity:	10
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20170714
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000158773DAT
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	NED986382133
Trans 2 Name:	SMITH SYSTEMS TRANSPORTATION
TSDF EPA ID:	NVD980895338
Trans Name:	21ST CENTURY ENVIRONMENTAL MANAGEMENT OF NEVADA
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D002
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0025
Waste Quantity:	5
Quantity Unit:	P
Additional Code 1:	D001
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Additional Code 5:	Not reported
Shipment Date:	20170714
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000158773DAT
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	NED986382133
Trans 2 Name:	SMITH SYSTEMS TRANSPORTATION
TSDF EPA ID:	NVD980895338
Trans Name:	21ST CENTURY ENVIRONMENTAL MANAGEMENT OF NEVADA
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D002
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.006
Waste Quantity:	12
Quantity Unit:	P
Additional Code 1:	D001
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20170714
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000158773DAT
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	NED986382133
Trans 2 Name:	SMITH SYSTEMS TRANSPORTATION
TSDF EPA ID:	NVD980895338
Trans Name:	21ST CENTURY ENVIRONMENTAL MANAGEMENT OF NEVADA
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0025
Waste Quantity:	5
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20170714
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000158773DAT
Trans EPA ID:	MNS000110924

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	NED986382133
Trans 2 Name:	SMITH SYSTEMS TRANSPORTATION
TSDF EPA ID:	NVD980895338
Trans Name:	21ST CENTURY ENVIRONMENTAL MANAGEMENT OF NEVADA
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D010
Meth Code:	H121 - Neutralization Only
Quantity Tons:	0.0025
Waste Quantity:	5
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20170714
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000158773DAT
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	NED986382133
Trans 2 Name:	SMITH SYSTEMS TRANSPORTATION
TSDF EPA ID:	NVD980895338
Trans Name:	21ST CENTURY ENVIRONMENTAL MANAGEMENT OF NEVADA
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.002
Waste Quantity:	4
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20170714
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000158773DAT
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	NED986382133
Trans 2 Name:	SMITH SYSTEMS TRANSPORTATION
TSDF EPA ID:	NVD980895338
Trans Name:	21ST CENTURY ENVIRONMENTAL MANAGEMENT OF NEVADA
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

RCRA Code:	D002
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0025
Waste Quantity:	5
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2016
Gen EPA ID:	CAR000152504
Shipment Date:	20151215
Creation Date:	3/2/2016 22:15:29
Receipt Date:	20151217
Manifest ID:	011481690JJK
Trans EPA ID:	CAD982049306
Trans Name:	NERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000100189
Trans Name:	NERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.02085
Waste Quantity:	5
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20151113
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000129910DAT
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D002
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0015

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Waste Quantity:	3
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20151113
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000129910DAT
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.09
Waste Quantity:	180
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20151113
Creation Date:	3/22/2016 22:15:44
Receipt Date:	20151202
Manifest ID:	000129910DAT
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	F003
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.1251
Waste Quantity:	30
Quantity Unit:	G
Additional Code 1:	D001
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Shipment Date:	20151113
Creation Date:	3/22/2016 22:15:44
Receipt Date:	20151202
Manifest ID:	000129910DAT
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.1251
Waste Quantity:	30
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20151113
Creation Date:	3/22/2016 22:15:44
Receipt Date:	20151202
Manifest ID:	000129910DAT
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	D022
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.05
Waste Quantity:	100
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20151109
Creation Date:	1/21/2016 22:16:05
Receipt Date:	20151112
Manifest ID:	011481700JJK
Trans EPA ID:	CAD982049306
Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000100189
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.02085
Waste Quantity:	5
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20151020
Creation Date:	12/22/2015 22:15:31
Receipt Date:	20151022
Manifest ID:	011481691JJK
Trans EPA ID:	CAD982049306
Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000100189
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.06255
Waste Quantity:	15
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20150909
Creation Date:	11/6/2015 22:15:31
Receipt Date:	20150909
Manifest ID:	011481689JJK
Trans EPA ID:	CAD982049306
Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000100189
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.02085

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Waste Quantity:	5
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20150826
Creation Date:	11/4/2015 22:15:42
Receipt Date:	20150918
Manifest ID:	006965095FLE
Trans EPA ID:	MAD039322250
Trans Name:	CLEAN HARBORS ENV SVC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD044429835
Trans Name:	CLEAN HARBORS WILMINGTON LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	223 - Unspecified oil-containing waste
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.00417
Waste Quantity:	1
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2015
Gen EPA ID:	CAR000152504
Shipment Date:	20151215
Creation Date:	3/2/2016 22:15:29
Receipt Date:	20151217
Manifest ID:	011481690JJK
Trans EPA ID:	CAD982049306
Trans Name:	NERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000100189
Trans Name:	NERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.02085
Waste Quantity:	5
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20151113
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000129910DAT
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.09
Waste Quantity:	180
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20151113
Creation Date:	3/22/2016 22:15:44
Receipt Date:	20151202
Manifest ID:	000129910DAT
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	D022
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.05
Waste Quantity:	100
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20151113
Creation Date:	3/22/2016 22:15:44
Receipt Date:	20151202

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Manifest ID:	000129910DAT
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	F003
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.1251
Waste Quantity:	30
Quantity Unit:	G
Additional Code 1:	D001
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20151113
Creation Date:	3/22/2016 22:15:44
Receipt Date:	20151202
Manifest ID:	000129910DAT
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.1251
Waste Quantity:	30
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20151113
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	000129910DAT
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D002
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0015
Waste Quantity:	3
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20151109
Creation Date:	1/21/2016 22:16:05
Receipt Date:	20151112
Manifest ID:	011481700JJK
Trans EPA ID:	CAD982049306
Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000100189
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.02085
Waste Quantity:	5
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20151020
Creation Date:	12/22/2015 22:15:31
Receipt Date:	20151022
Manifest ID:	011481691JJK
Trans EPA ID:	CAD982049306
Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000100189
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.06255
Waste Quantity:	15
Quantity Unit:	G

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20150909
Creation Date:	11/6/2015 22:15:31
Receipt Date:	20150909
Manifest ID:	011481689JJK
Trans EPA ID:	CAD982049306
Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000100189
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.02085
Waste Quantity:	5
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20150826
Creation Date:	11/4/2015 22:15:42
Receipt Date:	20150918
Manifest ID:	006965095FLE
Trans EPA ID:	MAD039322250
Trans Name:	CLEAN HARBORS ENV SVC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD044429835
Trans Name:	CLEAN HARBORS WILMINGTON LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	223 - Unspecified oil-containing waste
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.00417
Waste Quantity:	1
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2014

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Gen EPA ID:	CAR000152504
Shipment Date:	20141219
Creation Date:	3/3/2015 22:15:07
Receipt Date:	20141219
Manifest ID:	011481621JJK
Trans EPA ID:	CAD982049306
Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000100189
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.06255
Waste Quantity:	15
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20141120
Creation Date:	3/19/2015 22:14:50
Receipt Date:	20141203
Manifest ID:	007905933FLE
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	F003
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.1251
Waste Quantity:	30
Quantity Unit:	G
Additional Code 1:	D001
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20141120
Creation Date:	3/19/2015 22:14:50
Receipt Date:	20141203
Manifest ID:	007905933FLE
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.04
Waste Quantity:	80
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20141120
Creation Date:	3/19/2015 22:14:50
Receipt Date:	20141203
Manifest ID:	007905933FLE
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	D022
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0875
Waste Quantity:	175
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20141120
Creation Date:	3/19/2015 22:14:50
Receipt Date:	20141203
Manifest ID:	007905933FLE
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

RCRA Code:	D002
Meth Code:	H135 - Discharge To Sewer/Potw Or Npdes(With Prior Storage--With Or Without Treatment)
Quantity Tons:	0.0025
Waste Quantity:	5
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20141120
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	007905933FLE
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0335
Waste Quantity:	67
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20141114
Creation Date:	1/26/2015 22:15:24
Receipt Date:	20141114
Manifest ID:	011481541JJK
Trans EPA ID:	CAD982049306
Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000100189
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.0834
Waste Quantity:	20
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20141016
Creation Date:	12/31/2014 22:14:53
Receipt Date:	20141016
Manifest ID:	011481540JJK
Trans EPA ID:	CAD982049306
Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000100189
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.02085
Waste Quantity:	5
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20140917
Creation Date:	11/14/2014 22:15:04
Receipt Date:	20140917
Manifest ID:	011481539JJK
Trans EPA ID:	CAD982049306
Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000100189
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.06255
Waste Quantity:	15
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20140821
Creation Date:	11/7/2014 22:15:04
Receipt Date:	20140822
Manifest ID:	011481542JJK
Trans EPA ID:	CAD982049306

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000100189
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.02085
Waste Quantity:	5
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2013
Gen EPA ID:	CAR000152504
Shipment Date:	20131121
Creation Date:	1/12/2014 22:15:07
Receipt Date:	20131121
Manifest ID:	011481775JJK
Trans EPA ID:	CAD982049306
Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000100189
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.0417
Waste Quantity:	10
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20131107
Creation Date:	1/29/2014 22:15:06
Receipt Date:	20131125
Manifest ID:	006721316FLE
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	791 - Liquids with pH < 2 792 Liquids with pH < 2 with metals
RCRA Code:	D002
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.00834
Waste Quantity:	2
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20131107
Creation Date:	1/29/2014 22:15:06
Receipt Date:	20131125
Manifest ID:	006721316FLE
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	122 - Alkaline solution without metals (pH > 12.5
RCRA Code:	D002
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.02085
Waste Quantity:	5
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20131107
Creation Date:	1/29/2014 22:15:06
Receipt Date:	20131125
Manifest ID:	006721316FLE
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	D022
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.08

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Waste Quantity:	160
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20131107
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	006721316FLE
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0365
Waste Quantity:	73
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20131107
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	006721316FLE
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	D022
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0305
Waste Quantity:	61
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Shipment Date:	20131107
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	006721316FLE
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.1251
Waste Quantity:	30
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20131016
Creation Date:	11/30/2013 22:15:05
Receipt Date:	20131016
Manifest ID:	011481774JJK
Trans EPA ID:	CAD982049306
Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000100189
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.0417
Waste Quantity:	10
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20130913
Creation Date:	11/4/2013 22:15:04
Receipt Date:	20130913
Manifest ID:	011481969JJK
Trans EPA ID:	CAD982049306
Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

TSDF EPA ID:	CAL000100189
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.0417
Waste Quantity:	10
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20130814
Creation Date:	10/18/2013 22:15:07
Receipt Date:	20130814
Manifest ID:	011481773JJK
Trans EPA ID:	CAD982049306
Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000100189
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.0417
Waste Quantity:	10
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2012
Gen EPA ID:	CAR000152504

Shipment Date:	20121219
Creation Date:	2/15/2013 22:15:11
Receipt Date:	20121220
Manifest ID:	009617402JJK
Trans EPA ID:	CAD982049306
Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000051065
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.0417
Waste Quantity:	10
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20121205
Creation Date:	2/15/2013 22:15:11
Receipt Date:	20121211
Manifest ID:	009617403JJK
Trans EPA ID:	CAD982049306
Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000051065
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.06255
Waste Quantity:	15
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20121121
Creation Date:	1/21/2013 22:15:09
Receipt Date:	20121128
Manifest ID:	009617407JJK
Trans EPA ID:	CAD982049306
Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000051065
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.0417
Waste Quantity:	10
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Additional Code 5:	Not reported
Shipment Date:	20121107
Creation Date:	1/21/2013 22:15:09
Receipt Date:	20121114
Manifest ID:	009617405JJK
Trans EPA ID:	CAD982049306
Trans Name:	MERRY X-RAY
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAL000051065
Trans Name:	MERRY X-RAY
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	541 - Photochemicals / photo processing waste
RCRA Code:	D011
Meth Code:	H010 - Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Quantity Tons:	0.03753
Waste Quantity:	9
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20121029
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	005167761FLE
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	352 - Other organic solids
RCRA Code:	D022
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.075
Waste Quantity:	150
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20121029
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	005167761FLE
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.18765
Waste Quantity:	45
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20121029
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	005167761FLE
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	Not reported
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.025
Waste Quantity:	50
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20121029
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	005167761FLE
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

RCRA Code:	P105
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0025
Waste Quantity:	5
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20121029
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	005167761FLE
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	P075
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0245
Waste Quantity:	49
Quantity Unit:	P
Additional Code 1:	U219
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20121029
Creation Date:	Not reported
Receipt Date:	Not reported
Manifest ID:	005167761FLE
Trans EPA ID:	MNS000110924
Trans Name:	STERICYCLE SPECIALTY WASTE SOLUTIONS INC
Trans 2 EPA ID:	MAD039322250
Trans 2 Name:	CLEAN HARBORS ENVIRONMENTAL SERVICES INC
TSDF EPA ID:	CAD059494310
Trans Name:	CLEAN HARBORS SAN JOSE LLC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code:	D002
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0065
Waste Quantity:	13
Quantity Unit:	P
Additional Code 1:	Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

HWTS:
Name: BUCK INSTITUTE FOR RESEARCH ON AGING
Address: 8001 REDWOOD BLVD
Address 2: Not reported
City,State,Zip: NOVATO, CA 94945
EPA ID: CAR000152504
Inactive Date: Not reported
Create Date: 07/14/2004
Last Act Date: Not reported
Mailing Name: Not reported
Mailing Address: 8001 REDWOOD BLVD
Mailing Address 2: Not reported
Mailing City,State,Zip: NOVATO, CA 949451400
Owner Name: BUCK INST FOR RSRCH ON AGING
Owner Address: 8001 REDWOOD BLVD
Owner Address 2: Not reported
Owner City,State,Zip: NOVATO, CA 949450000
Contact Name: NICOLE NANNERY
Contact Address: 8001 REDWOOD BLVD
Contact Address 2: Not reported
City,State,Zip: NOVATO, CA 94945
Facility Status: Active
Facility Type: PERMANENT
Category: FEDERAL
Latitude: 38.131666
Longitude: -122.564171

NAICS:
EPA ID: CAR000152504
Create Date: 2004-07-14 16:33:02.580
NAICS Code: 54171
NAICS Description: Research and Development in the Physical, Engineering, and Life Sciences
Issued EPA ID Date: 2004-07-14 16:33:02.54700
Inactive Date: Not reported
Facility Name: BUCK INSTITUTE FOR RESEARCH ON AGING
Facility Address: 8001 REDWOOD BLVD
Facility Address 2: Not reported
Facility City: NOVATO
Facility County: Not reported
Facility State: CA
Facility Zip: 949451400

EPA ID: CAR000152504
Create Date: 2011-10-26 15:19:37.000
NAICS Code: 54172
NAICS Description: Research and Development in the Social Sciences and Humanities
Issued EPA ID Date: 2004-07-14 16:33:02.54700
Inactive Date: Not reported
Facility Name: BUCK INSTITUTE FOR RESEARCH ON AGING
Facility Address: 8001 REDWOOD BLVD
Facility Address 2: Not reported

BUCK INSTITUTE FOR AGE RESEARCH (Continued) **1007370093**

Facility City:	NOVATO
Facility County:	Not reported
Facility State:	CA
Facility Zip:	949451400

A14 **FUJIFILM CELLULAR DYNAMICS INTERNATIONAL** **RCRA NonGen / NLR** **1024861375**
NE **8001 REDWOOD BOULEVARD** **CAL000429849**
1/8-1/4 **NOVATO, CA 94945**
0.196 mi.
1033 ft. **Site 11 of 14 in cluster A**

Relative: **Lower**
Actual: **33 ft.**

RCRA Listings:

Date Form Received by Agency:		20170807
Handler Name:	FUJIFILM CELLULAR DYNAMICS INTERNATIONAL	
Handler Address:		8001 REDWOOD BOULEVARD
Handler City,State,Zip:		NOVATO, CA 94945
EPA ID:		CAL000429849
Contact Name:		LAURA ENCARNACION
Contact Address:		8001 REDWOOD BOULEVARD
Contact City,State,Zip:		NOVATO, CA 94945
Contact Telephone:		415-985-5118
Contact Fax:		Not reported
Contact Email:		LENCARNACION@CELLULARDYNAMICS.COM
Contact Title:		Not reported
EPA Region:		09
Land Type:		Not reported
Federal Waste Generator Description:		Not a generator, verified
Non-Notifier:		Not reported
Biennial Report Cycle:		Not reported
Accessibility:		Not reported
Active Site Indicator:		Handler Activities
State District Owner:		Not reported
State District:		Not reported
Mailing Address:		8001 REDWOOD BOULEVARD
Mailing City,State,Zip:		NOVATO, CA 94945
Owner Name:	FUJIFILM CELLULAR DYNAMICS INTERNAT	
Owner Type:		Other
Operator Name:	LAURA ENCARNACION	
Operator Type:		Other
Short-Term Generator Activity:		No
Importer Activity:		No
Mixed Waste Generator:		No
Transporter Activity:		No
Transfer Facility Activity:		No
Recycler Activity with Storage:		No
Small Quantity On-Site Burner Exemption:		No
Smelting Melting and Refining Furnace Exemption:		No
Underground Injection Control:		No
Off-Site Waste Receipt:		No
Universal Waste Indicator:		Yes
Universal Waste Destination Facility:		Yes
Federal Universal Waste:		No
Active Site Fed-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site Converter Treatment storage and Disposal Facility:		Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site State-Reg Handler:		---
Federal Facility Indicator:		Not reported

FUJIFILM CELLULAR DYNAMICS INTERNATIONAL (Continued) **1024861375**

Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required: Not reported	
Handler Date of Last Change:	20180907
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name: FUJIFILM CELLULAR DYNAMICS INTERNAT	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	525 SCIENCE DRIVE
Owner/Operator City,State,Zip:	MADISON, WI 53711
Owner/Operator Telephone:	768-310-5100
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name: LAURA ENCARNACION	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported

FUJIFILM CELLULAR DYNAMICS INTERNATIONAL (Continued) **1024861375**

Owner/Operator Address:	8001 REDWOOD BOULEVARD
Owner/Operator City,State,Zip:	NOVATO, CA 94945
Owner/Operator Telephone:	415-985-5118
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20170807
Handler Name:	FUJIFILM CELLULAR DYNAMICS INTERNATIONAL
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	54172
NAICS Description:	RESEARCH AND DEVELOPMENT IN THE SOCIAL SCIENCES AND HUMANITIES

Facility Has Received Notices of Violations:

Violations:	No Violations Found

Evaluation Action Summary:

Evaluations:	No Evaluations Found

A15 **BUCK CENTER FOR RESEARCH IN AGING** **UST** **U004349577**
NE **8001 REDWOOD HWY.** **N/A**
1/8-1/4 **NOVATO, CA 94945**
0.196 mi.
1033 ft. **Site 12 of 14 in cluster A**

Relative:
Lower

Actual:
33 ft.

UST:

Name:	BUCK CENTER FOR RESEARCH IN AGING
Address:	8001 REDWOOD HWY.
City,State,Zip:	NOVATO, CA 94945
Facility ID:	600279
Permitting Agency:	MARIN COUNTY
CERSID:	Not reported
Latitude:	38.13396
Longitude:	-122.56421
Owner type:	Not reported
Facility type:	Not reported
Num of inuse ust:	Not reported
Num of closed ust:	Not reported
Num of oos ust:	Not reported
Epa region:	Not reported
Tribal lands:	Not reported
Tank owner name:	Not reported
Tank owner mailing address:	Not reported

BUCK CENTER FOR RESEARCH IN AGING (Continued) **U004349577**

Tank owner mailing city:	Not reported
Tank owner mailing zip:	Not reported
Tank owner mailing state:	Not reported
Tank operator name:	Not reported
Tank operator mailing address:	Not reported
Tank operator mailing city:	Not reported
Tank operator mailing zip:	Not reported
Tank operator mailing state:	Not reported
Tankidnumber:	Not reported
Tank status:	Not reported
Tank configuration:	Not reported
Tank closure date:	Not reported
Tank installation date:	Not reported
Tank num of compartments:	Not reported
Tank contents:	Not reported
Tank capacity gallons:	Not reported
Tank type:	Not reported
Tank pc construction:	Not reported
Tank pwpiping construction:	Not reported
Tank piping type:	Not reported
Tank piping construction:	Not reported
Tank sacrificial anode:	Not reported
Tank cp impressed current:	Not reported
Tank cp shutoff:	Not reported
Tank alarms:	Not reported
Tank ball float:	Not reported
Tank spill bucket:	Not reported

A16 **BUCK INSTITUTE FOR RESEARCH ON AGING** **UST** **U003761883**
NE **8001 REDWOOD BOULEVARD** **N/A**
1/8-1/4 **NOVATO, CA**
0.196 mi.
1033 ft. **Site 13 of 14 in cluster A**

Relative: **Lower**

Actual: **33 ft.**

MARIN CO. UST:

Name:	BUCK INSTITUTE FOR RESEARCH ON AGING
Address:	8001 REDWOOD BOULEVARD
City:	NOVATO
Zip:	Not reported
Facility Id:	60-0279
Tank Number:	000001
Tank Status:	Change of Information
Tank Contents:	Diesel
Tank Use:	Motor vehicle fueling
Certficate Number:	15854
Last Inspected:	02/10/2009
Program:	Not reported
Location:	Not reported
Pulled Date:	Not reported
Reason:	Not reported
Tank Number:	000001
Tank Status:	Change of Information
Tank Contents:	Diesel
Tank Use:	Motor vehicle fueling
Certficate Number:	15854

BUCK INSTITUTE FOR RESEARCH ON AGING (Continued) **U003761883**

Last Inspected: 02/10/2009
Program: Not reported
Location: Not reported
Pulled Date: Not reported
Reason: Not reported

A17 **BUCK INSTITUTE FOR RESEARCH ON AGING** **UST** **U004345010**
NE **8001 REDWOOD BOULEVARD** **N/A**
1/8-1/4 **NOVATO, CA 94945**
0.196 mi.
1033 ft. **Site 14 of 14 in cluster A**

Relative: UST:
Lower

Actual:
33 ft.

Name:	BUCK INSTITUTE FOR RESEARCH ON AGING
Address:	8001 REDWOOD BOULEVARD
City,State,Zip:	NOVATO, CA 94945
Facility ID:	21-000-600279
Permitting Agency:	Marin County Dept of Public Works, Waste Management Division
CERSID:	10032616
Latitude:	38.1229570
Longitude:	-122.5666040
Owner type:	Non-Government
Facility type:	Other
Num of inuse ust:	Not reported
Num of closed ust:	0
Num of oos ust:	0
Epa region:	9
Tribal lands:	No
Tank owner name:	Buck Institute for Research on Aging
Tank owner mailing address:	8001 Redwood Blvd
Tank owner mailing city:	Novato
Tank owner mailing zip:	94945
Tank owner mailing state:	CA
Tank operator name:	Buck Institute for Research on Aging
Tank operator mailing address:	8001 Redwood Blvd
Tank operator mailing city:	Novato
Tank operator mailing zip:	94945
Tank operator mailing state:	CA
Tankidnumber:	1
Tank status:	Confirmed/Updated Information
Tank configuration:	Stand Alone Tank
Tank closure date:	Not reported
Tank installation date:	1/1/1998 12:00:00 AM
Tank num of compartments:	1
Tank contents:	Diesel
Tank capacity gallons:	6000
Tank type:	Double Wall
Tank pc construction:	Fiberglass
Tank pwpiping construction:	Other
Tank piping type:	23 CCR S2636(a)(3) Suction
Tank piping construction:	Double Walled
Tank sacrificial anode:	No
Tank cp impressed current:	No
Tank cp shutoff:	Yes
Tank alarms:	Yes
Tank ball float:	No
Tank spill bucket:	Yes

18 **PG & E** **LUST** **S106610926**
NNE **8161 OLD REDWOOD HWY** **Cortese** **N/A**
1/4-1/2 **NOVATO, CA 94947**
0.273 mi.
1444 ft.

Relative:
Lower

Actual:
20 ft.

LUST REG 2:

Region:	2
Facility Id:	21-0306
Facility Status:	Case Closed
Case Number:	21-0306
How Discovered:	Tank Closure
Leak Cause:	UNK
Leak Source:	UNK
Date Leak Confirmed:	3/1/1996
Oversight Program:	LUST
Prelim. Site Assesment Wokplan Submitted:	Not reported
Preliminary Site Assesment Began:	Not reported
Pollution Characterization Began:	Not reported
Pollution Remediation Plan Submitted:	Not reported
Date Remediation Action Underway:	Not reported
Date Post Remedial Action Monitoring Began:	Not reported

CORTESE:

Name:	PG & E
Address:	8161 OLD REDWOOD HWY
City,State,Zip:	NOVATO, CA 94947
Region:	CORTESE
Envirostor Id:	Not reported
Global ID:	T0604100288
Site/Facility Type:	LUST CLEANUP SITE
Cleanup Status:	COMPLETED - CASE CLOSED
Status Date:	Not reported
Site Code:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Owner:	Not reported
Enf Type:	Not reported
Swat R:	Not reported
Flag:	active
Order No:	Not reported
Waste Discharge System No:	Not reported
Effective Date:	Not reported
Region 2:	Not reported
WID Id:	Not reported
Solid Waste Id No:	Not reported
Waste Management Uit Name:	Not reported
File Name:	Active Open

B19 **FIREMAN'S FUND INSURANCE CO** **Cortese** **S113030461**
SSW **777 SAN MARIN DR** **HAZNET** **N/A**
1/4-1/2 **NOVATO, CA 94998** **HWTS**
0.348 mi.
1838 ft. **Site 1 of 2 in cluster B**

Relative:
Lower

Actual:
36 ft.

CORTESE:

Name:	FIREMAN'S FUND INSURANCE
Address:	777 SAN MARIN DR
City,State,Zip:	NOVATO, CA 94947

FIREMAN'S FUND INSURANCE CO (Continued) **S113030461**

Region:	CORTESE
Envirostor Id:	Not reported
Global ID:	T0604100050
Site/Facility Type:	LUST CLEANUP SITE
Cleanup Status:	COMPLETED - CASE CLOSED
Status Date:	Not reported
Site Code:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Owner:	Not reported
Enf Type:	Not reported
Swat R:	Not reported
Flag:	active
Order No:	Not reported
Waste Discharge System No:	Not reported
Effective Date:	Not reported
Region 2:	Not reported
WID Id:	Not reported
Solid Waste Id No:	Not reported
Waste Management Uit Name:	Not reported
File Name:	Active Open

HAZNET:

Name:	FIREMAN'S FUND INSURANCE CO
Address:	777 SAN MARIN DR
Address 2:	Not reported
City,State,Zip:	NOVATO, CA 949980001
Contact:	ANTHONY KOSMAS MANAGER
Telephone:	4158995554
Mailing Name:	Not reported
Mailing Address:	777 SAN MARIN DR
Year:	2013
Gepaid:	CAL000024435
TSD EPA ID:	CAD980887418
CA Waste Code:	213 - Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.0417
Year:	2013
Gepaid:	CAL000024435
TSD EPA ID:	CAD980887418
CA Waste Code:	741 - Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.01251
Year:	2010
Gepaid:	CAL000024435
TSD EPA ID:	CAD980887418
CA Waste Code:	241 - Tank bottom waste
Disposal Method:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.02085
Year:	2008

FIREMAN'S FUND INSURANCE CO (Continued) **S113030461**

Gepaid:	CAL000024435
TSD EPA ID:	TXD077603371
CA Waste Code:	252 - Other still bottom waste
Disposal Method:	H061 - Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.05836
Year:	2007
Gepaid:	CAL000024435
TSD EPA ID:	TXD077603371
CA Waste Code:	252 - Other still bottom waste
Disposal Method:	H061 - Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.062
Year:	2003
Gepaid:	CAL000024435
TSD EPA ID:	NVD980895338
CA Waste Code:	291 - Latex waste
Disposal Method:	D80 - Disposal, Land Fill
Tons:	0.0834
Year:	2003
Gepaid:	CAL000024435
TSD EPA ID:	CAT000613943
CA Waste Code:	741 - Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method:	H01 - Transfer Station
Tons:	0.03753
Year:	2003
Gepaid:	CAL000024435
TSD EPA ID:	NVD980895338
CA Waste Code:	214 - Unspecified solvent mixture
Disposal Method:	T03 - Treatment, Incineration
Tons:	0.0375
Year:	2003
Gepaid:	CAL000024435
TSD EPA ID:	NVD980895338
CA Waste Code:	214 - Unspecified solvent mixture
Disposal Method:	R01 - Recycler
Tons:	0.18
Year:	2002
Gepaid:	CAL000024435
TSD EPA ID:	CAT000613943
CA Waste Code:	741 - Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method:	H01 - Transfer Station
Tons:	0.03336

Click this hyperlink while viewing on your computer to access
23 additional CA HAZNET: record(s) in the EDR Site Report.

Additional Info:

Year:	2013
Gen EPA ID:	CAL000024435
Shipment Date:	20130501

FIREMAN'S FUND INSURANCE CO (Continued) **S113030461**

Creation Date:	7/6/2013 22:15:05
Receipt Date:	20130507
Manifest ID:	007038724JJK
Trans EPA ID:	CAD982413262
Trans Name:	EVERGREEN ENVIRONMENTAL SERVICES
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD980887418
Trans Name:	EVERGREEN OIL, INC.
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	213 - Hydrocarbon solvents (benzene, hexane, Stoddard, etc.
RCRA Code:	D018
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.0417
Waste Quantity:	10
Quantity Unit:	G
Additional Code 1:	D001
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20130501
Creation Date:	7/6/2013 22:15:05
Receipt Date:	20130507
Manifest ID:	007038724JJK
Trans EPA ID:	CAD982413262
Trans Name:	EVERGREEN ENVIRONMENTAL SERVICES
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD980887418
Trans Name:	EVERGREEN OIL, INC.
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	741 - Liquids with halogenated organic compounds > 1000 mg/l
RCRA Code:	F002
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.01251
Waste Quantity:	3
Quantity Unit:	G
Additional Code 1:	F001
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2010
Gen EPA ID:	CAL000024435

Shipment Date:	20100628
Creation Date:	8/30/2010 18:30:46
Receipt Date:	20100630
Manifest ID:	006661645JJK

FIREMAN'S FUND INSURANCE CO (Continued) **S113030461**

Trans EPA ID:	CAD982413262
Trans Name:	EVERGREEN ENVIRONMENTAL SERVICES
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD980887418
Trans Name:	EVERGREEN OIL INC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	241 - Tank bottom waste 251 Still bottoms with halogenated organics
RCRA Code:	F002
Meth Code:	H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Quantity Tons:	0.02085
Waste Quantity:	5
Quantity Unit:	G
Additional Code 1:	F001
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2008
Gen EPA ID:	CAL000024435
Shipment Date:	20080715
Creation Date:	12/8/2008 18:30:08
Receipt Date:	20080801
Manifest ID:	001204010SKS
Trans EPA ID:	TXR000050930
Trans Name:	SAFETY-KLEEN SYSTEMS INC
Trans 2 EPA ID:	OKD981588791
Trans 2 Name:	TRIAD TRANSPORT
TSDF EPA ID:	TXD077603371
Trans Name:	SAFETY-KLEEN SYSTEMS INC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	252 - Oher still bottom waste 261 Polychlorinated biphenyls and material containing PCBs
RCRA Code:	D008
Meth Code:	H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons:	0.03336
Waste Quantity:	8
Quantity Unit:	G
Additional Code 1:	D007
Additional Code 2:	D006
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20080408
Creation Date:	8/25/2008 18:30:24
Receipt Date:	20080421
Manifest ID:	001042011SKS
Trans EPA ID:	TXR000050930
Trans Name:	SAFETY-KLEEN SYSTEMS INC
Trans 2 EPA ID:	OKD981588791

FIREMAN'S FUND INSURANCE CO (Continued) **S113030461**

Trans 2 Name:	TRIAD
TSDF EPA ID:	TXD077603371
Trans Name:	SAFETY-KLEEN SYSTEMS INC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	252 - Oher still bottom waste 261 Polychlorinated biphenyls and material containing PCBs
RCRA Code:	D008
Meth Code:	H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons:	0.025
Waste Quantity:	50
Quantity Unit:	P
Additional Code 1:	D007
Additional Code 2:	D006
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2007
Gen EPA ID:	CAL000024435
Shipment Date:	20070710
Creation Date:	2/29/2008 18:30:12
Receipt Date:	20070727
Manifest ID:	000516316SKS
Trans EPA ID:	TXR000050930
Trans Name:	SAFETY-KLEEN SYSTEMS INC
Trans 2 EPA ID:	OKD981588791
Trans 2 Name:	TRIAD
TSDF EPA ID:	TXD077603371
Trans Name:	SAFETY-KLEEN SYSTEMS INC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	252 - Oher still bottom waste 261 Polychlorinated biphenyls and material containing PCBs
RCRA Code:	D008
Meth Code:	H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons:	0.03
Waste Quantity:	60
Quantity Unit:	P
Additional Code 1:	D007
Additional Code 2:	D006
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20070319
Creation Date:	12/10/2007 18:30:29
Receipt Date:	20070405
Manifest ID:	000245541SKS
Trans EPA ID:	TXR000050930
Trans Name:	SAFETY-KLEEN SYSTEMS INC
Trans 2 EPA ID:	OKD981588791
Trans 2 Name:	TRIAD
TSDF EPA ID:	TXD077603371
Trans Name:	SAFETY-KLEEN SYSTEMS INC

FIREMAN'S FUND INSURANCE CO (Continued) **S113030461**

TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	252 - Oher still bottom waste 261 Polychlorinated biphenyls and material containing PCBs
RCRA Code:	D008
Meth Code:	H061 - Fuel Blending Prior To Energy Recovery At Another Site
Quantity Tons:	0.032
Waste Quantity:	64
Quantity Unit:	P
Additional Code 1:	D007
Additional Code 2:	D006
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2003
Gen EPA ID:	CAL000024435
Shipment Date:	20030820
Creation Date:	8/2/2004 9:38:01
Receipt Date:	20030922
Manifest ID:	22471212
Trans EPA ID:	CAD982413262
Trans Name:	Not reported
Trans 2 EPA ID:	CAD063547996
Trans 2 Name:	Not reported
TSDF EPA ID:	NVD980895338
Trans Name:	Not reported
TSDF Alt EPA ID:	NVD980895338
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001
Meth Code:	T03 - Treatment, Incineration
Quantity Tons:	0.0375
Waste Quantity:	75
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20030820
Creation Date:	8/2/2004 9:38:01
Receipt Date:	20030922
Manifest ID:	22471212
Trans EPA ID:	CAD982413262
Trans Name:	Not reported
Trans 2 EPA ID:	CAD063547996
Trans 2 Name:	Not reported
TSDF EPA ID:	NVD980895338
Trans Name:	Not reported
TSDF Alt EPA ID:	NVD980895338
TSDF Alt Name:	Not reported
Waste Code Description:	214 - Unspecified solvent mixture
RCRA Code:	D001

FIREMAN'S FUND INSURANCE CO (Continued) **S113030461**

Meth Code:	R01 - Recycler
Quantity Tons:	0.18
Waste Quantity:	50
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20030820
Creation Date:	8/2/2004 9:38:01
Receipt Date:	20030922
Manifest ID:	22471212
Trans EPA ID:	CAD982413262
Trans Name:	Not reported
Trans 2 EPA ID:	CAD063547996
Trans 2 Name:	Not reported
TSDF EPA ID:	NVD980895338
Trans Name:	Not reported
TSDF Alt EPA ID:	NVD980895338
TSDF Alt Name:	Not reported
Waste Code Description:	291 - Latex waste
RCRA Code:	Not reported
Meth Code:	D80 - Disposal, Land Fill
Quantity Tons:	0.0834
Waste Quantity:	20
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20030407
Creation Date:	7/13/2003 18:31:11
Receipt Date:	20030407
Manifest ID:	22435647
Trans EPA ID:	TXR000050930
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000613943
Trans Name:	Not reported
TSDF Alt EPA ID:	CAT000613943
TSDF Alt Name:	Not reported
Waste Code Description:	741 - Liquids with halogenated organic compounds > 1000 mg/l
RCRA Code:	D001
Meth Code:	H01 - Transfer Station
Quantity Tons:	0.03753
Waste Quantity:	9
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

FIREMAN'S FUND INSURANCE CO (Continued) **S113030461**

Additional Info:

Year:	2002
Gen EPA ID:	CAL000024435
Shipment Date:	20021126
Creation Date:	3/27/2003 18:31:27
Receipt Date:	20021126
Manifest ID:	22141567
Trans EPA ID:	SCR000075150
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000613943
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	741 - Liquids with halogenated organic compounds > 1000 mg/l
RCRA Code:	D001
Meth Code:	H01 - Transfer Station
Quantity Tons:	0.03336
Waste Quantity:	8
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2001
Gen EPA ID:	CAL000024435
Shipment Date:	20011226
Creation Date:	2/26/2002 0:00:00
Receipt Date:	20011226
Manifest ID:	21325446
Trans EPA ID:	SCR000075150
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000613943
Trans Name:	Not reported
TSDF Alt EPA ID:	CAT000613943
TSDF Alt Name:	Not reported
Waste Code Description:	741 - Liquids with halogenated organic compounds > 1000 mg/l
RCRA Code:	D001
Meth Code:	H01 - Transfer Station
Quantity Tons:	0.0333
Waste Quantity:	8
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

FIREMAN'S FUND INSURANCE CO (Continued) **S113030461**

Shipment Date:	20011120
Creation Date:	2/19/2002 0:00:00
Receipt Date:	20011120
Manifest ID:	21004852
Trans EPA ID:	SCR000075150
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000613943
Trans Name:	Not reported
TSDF Alt EPA ID:	CAT000613943
TSDF Alt Name:	Not reported
Waste Code Description:	741 - Liquids with halogenated organic compounds > 1000 mg/l
RCRA Code:	D001
Meth Code:	H01 - Transfer Station
Quantity Tons:	0.0375
Waste Quantity:	9
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20011113
Creation Date:	2/19/2002 0:00:00
Receipt Date:	20011113
Manifest ID:	21310738
Trans EPA ID:	SCR000075150
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000613943
Trans Name:	Not reported
TSDF Alt EPA ID:	CAT000613943
TSDF Alt Name:	Not reported
Waste Code Description:	741 - Liquids with halogenated organic compounds > 1000 mg/l
RCRA Code:	D001
Meth Code:	H01 - Transfer Station
Quantity Tons:	0.0333
Waste Quantity:	8
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20011001
Creation Date:	1/16/2002 0:00:00
Receipt Date:	20011001
Manifest ID:	21228957
Trans EPA ID:	SCR000075150
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000613943

FIREMAN'S FUND INSURANCE CO (Continued) **S113030461**

Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	741 - Liquids with halogenated organic compounds > 1000 mg/l
RCRA Code:	D001
Meth Code:	H01 - Transfer Station
Quantity Tons:	0.0333
Waste Quantity:	8
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20010820
Creation Date:	11/1/2001 0:00:00
Receipt Date:	20010820
Manifest ID:	21110985
Trans EPA ID:	SCR000075150
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000613943
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	741 - Liquids with halogenated organic compounds > 1000 mg/l
RCRA Code:	D001
Meth Code:	H01 - Transfer Station
Quantity Tons:	0.0375
Waste Quantity:	9
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20010712
Creation Date:	10/1/2001 0:00:00
Receipt Date:	20010712
Manifest ID:	21138467
Trans EPA ID:	SCR000075150
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000613943
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	741 - Liquids with halogenated organic compounds > 1000 mg/l
RCRA Code:	D001
Meth Code:	H01 - Transfer Station
Quantity Tons:	0.0291
Waste Quantity:	7
Quantity Unit:	G

FIREMAN'S FUND INSURANCE CO (Continued) **S113030461**

Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20010612
Creation Date:	8/24/2001 0:00:00
Receipt Date:	20010612
Manifest ID:	20648204
Trans EPA ID:	SCR000075150
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000613943
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	741 - Liquids with halogenated organic compounds > 1000 mg/l
RCRA Code:	D001
Meth Code:	H01 - Transfer Station
Quantity Tons:	0.0375
Waste Quantity:	9
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20010416
Creation Date:	7/10/2001 0:00:00
Receipt Date:	20010416
Manifest ID:	20630367
Trans EPA ID:	SCR000075150
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000613943
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	741 - Liquids with halogenated organic compounds > 1000 mg/l
RCRA Code:	D001
Meth Code:	H01 - Transfer Station
Quantity Tons:	0.0375
Waste Quantity:	9
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	20010312
Creation Date:	6/12/2001 0:00:00
Receipt Date:	20010312

FIREMAN'S FUND INSURANCE CO (Continued) **S113030461**

Manifest ID:	20372036
Trans EPA ID:	SCR000075150
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000613943
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	741 - Liquids with halogenated organic compounds > 1000 mg/l
RCRA Code:	D001
Meth Code:	H01 - Transfer Station
Quantity Tons:	0.0375
Waste Quantity:	9
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20010122
Creation Date:	4/10/2001 0:00:00
Receipt Date:	20010122
Manifest ID:	20390693
Trans EPA ID:	SCR000075150
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000613943
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	741 - Liquids with halogenated organic compounds > 1000 mg/l
RCRA Code:	D001
Meth Code:	H01 - Transfer Station
Quantity Tons:	0.0667
Waste Quantity:	16
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2000
Gen EPA ID:	CAL000024435

Shipment Date:	20001208
Creation Date:	3/6/2001 0:00:00
Receipt Date:	20001208
Manifest ID:	20559462
Trans EPA ID:	SCR000075150
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported

FIREMAN'S FUND INSURANCE CO (Continued) **S113030461**

TSDF EPA ID:	CAT000613943
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	741 - Liquids with halogenated organic compounds > 1000 mg/l
RCRA Code:	D001
Meth Code:	H01 - Transfer Station
Quantity Tons:	0.0333
Waste Quantity:	8
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Shipment Date:	20001030
Creation Date:	1/9/2001 0:00:00
Receipt Date:	20001030
Manifest ID:	20576019
Trans EPA ID:	SCR000075150
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT000613943
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	741 - Liquids with halogenated organic compounds > 1000 mg/l
RCRA Code:	D001
Meth Code:	H01 - Transfer Station
Quantity Tons:	0.0375
Waste Quantity:	9
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	1999
Gen EPA ID:	CAL000024435

Shipment Date:	19991022
Creation Date:	1/19/2000 0:00:00
Receipt Date:	19991104
Manifest ID:	99457659
Trans EPA ID:	CAR000016857
Trans Name:	Not reported
Trans 2 EPA ID:	CAD982524480
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD028409019
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil

FIREMAN'S FUND INSURANCE CO (Continued) **S113030461**

RCRA Code:	Not reported
Meth Code:	T01 - Treatment, Tank
Quantity Tons:	0.095
Waste Quantity:	25
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19990528
Creation Date:	7/30/1999 0:00:00
Receipt Date:	19990609
Manifest ID:	98523771
Trans EPA ID:	CAD982413262
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD059494310
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	741 - Liquids with halogenated organic compounds > 1000 mg/l
RCRA Code:	F002
Meth Code:	D99 - Disposal, Other
Quantity Tons:	0.2293
Waste Quantity:	55
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	1997
Gen EPA ID:	CAL000024435
Shipment Date:	19971007
Creation Date:	7/23/1998 0:00:00
Receipt Date:	19971007
Manifest ID:	96612067
Trans EPA ID:	CAD982413262
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD982446866
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD982446866
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	H01 - Transfer Station
Quantity Tons:	0.76
Waste Quantity:	200
Quantity Unit:	G

FIREMAN'S FUND INSURANCE CO (Continued) **S113030461**

Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19970725
Creation Date:	12/4/1997 0:00:00
Receipt Date:	19970725
Manifest ID:	96415847
Trans EPA ID:	CAD009466392
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD980887418
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	R01 - Recycler
Quantity Tons:	11.4
Waste Quantity:	3000
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19970723
Creation Date:	12/4/1997 0:00:00
Receipt Date:	19970723
Manifest ID:	96415877
Trans EPA ID:	CAD009466392
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD980887418
Trans Name:	Not reported
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	R01 - Recycler
Quantity Tons:	3.8
Waste Quantity:	1000
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported
Shipment Date:	19970722
Creation Date:	7/23/1998 0:00:00
Receipt Date:	19970722

FIREMAN'S FUND INSURANCE CO (Continued) **S113030461**

Manifest ID:	96415709
Trans EPA ID:	CAD009466392
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD009466392
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD009466392
TSDF Alt Name:	Not reported
Waste Code Description:	512 - Other empty containers 30 gallons or more
RCRA Code:	Not reported
Meth Code:	D99 - Disposal, Other
Quantity Tons:	2.5
Waste Quantity:	5000
Quantity Unit:	P
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

HWTS:

Name:	FIREMAN'S FUND INSURANCE CO
Address:	777 SAN MARIN DR
Address 2:	Not reported
City,State,Zip:	NOVATO, CA 94998
EPA ID:	CAL000024435
Inactive Date:	02/17/2010
Create Date:	11/14/1989
Last Act Date:	Not reported
Mailing Name:	Not reported
Mailing Address:	777 SAN MARIN DR
Mailing Address 2:	Not reported
Mailing City,State,Zip:	NOVATO, CA 949980001
Owner Name:	SPIEKER PROPERTIES
Owner Address:	11455 EL CAMINO REAL STE 200
Owner Address 2:	Not reported
Owner City,State,Zip:	SAN DIEGO, CA 921302047
Contact Name:	ANTHONY KOSMAS MANAGER
Contact Address:	777 SAN MARIN DR
Contact Address 2:	Not reported
City,State,Zip:	NOVATO, CA 949980000
Facility Status:	Inactive
Facility Type:	PERMANENT
Category:	STATE
Latitude:	38.120784
Longitude:	-122.569601

B20 **FIREMAN'S FUND INSURANCE** **LUST** **1001267336**
SSW **777 SAN MARIN DR** **HIST CORTESE** **N/A**
1/4-1/2 **NOVATO, CA 94947**
0.348 mi.
1838 ft. **Site 2 of 2 in cluster B**

Relative:
Lower

Actual:
36 ft.

LUST:

Name:	FIREMAN'S FUND INSURANCE
Address:	777 SAN MARIN DR
City,State,Zip:	NOVATO, CA 94947
Lead Agency:	SAN FRANCISCO BAY RWQCB (REGION 2)
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0604100050
Global Id:	T0604100050
Latitude:	38.12421
Longitude:	-122.57052
Status:	Completed - Case Closed
Status Date:	01/22/1998
Case Worker:	JMJ
RB Case Number:	21-0051
Local Agency:	MARIN COUNTY
File Location:	Not reported
Local Case Number:	21-0051
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Diesel
Site History:	Not reported

LUST:

Global Id:	T0604100050
Contact Type:	Regional Board Caseworker
Contact Name:	JOHN JANG
Organization Name:	SAN FRANCISCO BAY RWQCB (REGION 2)
Address:	1515 CLAY STREET, SUITE 1400
City:	OAKLAND
Email:	jjang@waterboards.ca.gov
Phone Number:	Not reported

Global Id:	T0604100050
Contact Type:	Local Agency Caseworker
Contact Name:	UNK
Organization Name:	MARIN COUNTY
Address:	Not reported
City:	r2 UNKNOWN
Email:	Not reported
Phone Number:	Not reported

LUST:

Global Id:	T0604100050
Action Type:	ENFORCEMENT
Date:	06/13/2005
Action:	* Verbal Communication

Global Id:	T0604100050
Action Type:	Other
Date:	07/22/1997
Action:	Leak Discovery

Global Id:	T0604100050
Action Type:	RESPONSE

FIREMAN'S FUND INSURANCE (Continued) **1001267336**

Date: 08/15/1997
Action: Tank Removal Report / UST Sampling Report

Global Id: T0604100050
Action Type: RESPONSE
Date: 06/27/1996
Action: Monitoring Report - Quarterly

Global Id: T0604100050
Action Type: RESPONSE
Date: 08/28/1997
Action: Other Report / Document

Global Id: T0604100050
Action Type: RESPONSE
Date: 04/10/1991
Action: Monitoring Report - Quarterly

Global Id: T0604100050
Action Type: RESPONSE
Date: 06/27/1996
Action: Soil and Water Investigation Report

Global Id: T0604100050
Action Type: RESPONSE
Date: 06/27/1996
Action: Monitoring Report - Quarterly

Global Id: T0604100050
Action Type: RESPONSE
Date: 06/27/1996
Action: Phase I Assessment Report

Global Id: T0604100050
Action Type: RESPONSE
Date: 06/07/1990
Action: Site Assessment Report

Global Id: T0604100050
Action Type: RESPONSE
Date: 07/17/1996
Action: Soil and Water Investigation Report

Global Id: T0604100050
Action Type: RESPONSE
Date: 11/13/1997
Action: Soil and Water Investigation Workplan

Global Id: T0604100050
Action Type: RESPONSE
Date: 08/06/1997
Action: Tank Removal Report / UST Sampling Report

Global Id: T0604100050
Action Type: RESPONSE
Date: 06/15/1990
Action: Soil and Water Investigation Report

FIREMAN'S FUND INSURANCE (Continued) **1001267336**

Global Id: T0604100050
Action Type: RESPONSE
Date: 08/26/1996
Action: Tank Removal Report / UST Sampling Report

Global Id: T0604100050
Action Type: RESPONSE
Date: 12/04/1995
Action: Monitoring Report - Quarterly

Global Id: T0604100050
Action Type: RESPONSE
Date: 05/10/1995
Action: Soil and Water Investigation Report

Global Id: T0604100050
Action Type: RESPONSE
Date: 02/07/1996
Action: Monitoring Report - Quarterly

Global Id: T0604100050
Action Type: RESPONSE
Date: 10/09/1990
Action: Monitoring Report - Quarterly

Global Id: T0604100050
Action Type: RESPONSE
Date: 06/01/1995
Action: Soil and Water Investigation Report

Global Id: T0604100050
Action Type: RESPONSE
Date: 05/26/1995
Action: Soil and Water Investigation Report

Global Id: T0604100050
Action Type: RESPONSE
Date: 10/23/1990
Action: Other Report / Document

Global Id: T0604100050
Action Type: RESPONSE
Date: 12/29/1997
Action: Soil and Water Investigation Report

Global Id: T0604100050
Action Type: ENFORCEMENT
Date: 09/06/1996
Action: Closure/No Further Action Letter

Global Id: T0604100050
Action Type: Other
Date: 08/12/1997
Action: Leak Reported

Global Id: T0604100050
Action Type: RESPONSE

FIREMAN'S FUND INSURANCE (Continued) **1001267336**

Date: 01/10/1991
Action: Monitoring Report - Quarterly

Global Id: T0604100050
Action Type: ENFORCEMENT
Date: 11/24/1997
Action: 13267 Requirement

Global Id: T0604100050
Action Type: ENFORCEMENT
Date: 10/21/1997
Action: Staff Letter

Global Id: T0604100050
Action Type: ENFORCEMENT
Date: 01/22/1998
Action: Closure/No Further Action Letter

Global Id: T0604100050
Action Type: ENFORCEMENT
Date: 09/06/1996
Action: Closure/No Further Action Letter

Global Id: T0604100050
Action Type: Other
Date: 07/22/1997
Action: Leak Stopped

LUST:
Global Id: T0604100050
Status: Open - Case Begin Date
Status Date: 04/03/1990

Global Id: T0604100050
Status: Open - Site Assessment
Status Date: 04/03/1990

Global Id: T0604100050
Status: Open - Site Assessment
Status Date: 10/20/1997

Global Id: T0604100050
Status: Open - Site Assessment
Status Date: 11/24/1997

Global Id: T0604100050
Status: Completed - Case Closed
Status Date: 01/22/1998

LUST REG 2:
Region: 2
Facility Id: 21-0051
Facility Status: Case Closed
Case Number: 21-0051
How Discovered: Tank Closure

FIREMAN'S FUND INSURANCE (Continued) **1001267336**

Leak Cause: Overfill
Leak Source: Tank
Date Leak Confirmed: 10/20/1997
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: 11/24/1997
Preliminary Site Assesment Began: 4/3/1990
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

HIST CORTESE:
edr_fname: FIREMAN'S FUND INSURANCE
edr_fadd1: 777 SAN MARIN
City,State,Zip: NOVATO, CA
Region: CORTESE
Facility County Code: 21
Reg By: LTNKA
Reg Id: 21-0051

21
South
1/2-1
0.799 mi.
4217 ft.

Relative:
Lower

Actual:
33 ft.

GOLDEN GATE TRANSIT **RCRA-LQG** **1000187000**
801 GOLDEN GATE PLACE **UST** **CAD980736508**
NOVATO, CA 94947 **CERS HAZ WASTE**
SWEEPS UST
HIST UST
CA FID UST
CERS TANKS
HAZNET
NPDES
Notify 65
CIWQS
CERS
HWTS

RCRA Listings:
Date Form Received by Agency: 20220222
Handler Name: GOLDEN GATE TRANSIT
Handler Address: 801 GOLDEN GATE PLACE
Handler City,State,Zip: NOVATO, CA 94947
EPA ID: CAD980736508
Contact Name: ALBERT LAM
Contact Address: 801 GOLDEN GATE PLACE
Contact City,State,Zip: NOVATO, CA 94947
Contact Telephone: 415-257-4519
Contact Fax: Not reported
Contact Email: Not reported
Contact Title: Not reported
EPA Region: 09
Land Type: Other
Federal Waste Generator Description: Large Quantity Generator
Non-Notifier: Not reported
Biennial Report Cycle: 2021
Accessibility: Not reported
Active Site Indicator: Handler Activities
State District Owner: CA
State District: 2
Mailing Address: PO BOX 3474

GOLDEN GATE TRANSIT (Continued) **1000187000**

Mailing City,State,Zip:		SAN RAFAEL, CA 94912
Owner Name:	GOLDEN GATE BRIDGE DISTRICT	
Owner Type:		Private
Operator Name:	ALBERT LAM	
Operator Type:		Federal
Short-Term Generator Activity:		No
Importer Activity:		No
Mixed Waste Generator:		No
Transporter Activity:		No
Transfer Facility Activity:		No
Recycler Activity with Storage:		No
Small Quantity On-Site Burner Exemption:		No
Smelting Melting and Refining Furnace Exemption:		No
Underground Injection Control:		No
Off-Site Waste Receipt:		No
Universal Waste Indicator:		No
Universal Waste Destination Facility:		No
Federal Universal Waste:		No
Active Site Fed-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site Converter Treatment storage and Disposal Facility:		Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site State-Reg Handler:		---
Federal Facility Indicator:		The site is federally-operated
Hazardous Secondary Material Indicator:		N
Sub-Part K Indicator:		Not reported
Commercial TSD Indicator:		No
Treatment Storage and Disposal Type:		Not reported
2018 GPRA Permit Baseline:		Not on the Baseline
2018 GPRA Renewals Baseline:		Not on the Baseline
Permit Renewals Workload Universe:		Not reported
Permit Workload Universe:		Not reported
Permit Progress Universe:		Not reported
Post-Closure Workload Universe:		Not reported
Closure Workload Universe:		Not reported
202 GPRA Corrective Action Baseline:		No
Corrective Action Workload Universe:		No
Subject to Corrective Action Universe:		No
Non-TSDFs Where RCRA CA has Been Imposed Universe:		No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:		No
TSDFs Only Subject to CA under Discretionary Auth Universe:		No
Corrective Action Priority Ranking:		No NCAPS ranking
Environmental Control Indicator:		No
Institutional Control Indicator:		No
Human Exposure Controls Indicator:		N/A
Groundwater Controls Indicator:		N/A
Operating TSDF Universe:		Not reported
Full Enforcement Universe:		Not reported
Significant Non-Complier Universe:		No
Unaddressed Significant Non-Complier Universe:		No
Addressed Significant Non-Complier Universe:		No
Significant Non-Complier With a Compliance Schedule Universe:		No
Financial Assurance Required:	Not reported	
Handler Date of Last Change:		20220629
Recognized Trader-Importer:		No
Recognized Trader-Exporter:		No
Importer of Spent Lead Acid Batteries:		No
Exporter of Spent Lead Acid Batteries:		No

GOLDEN GATE TRANSIT (Continued) **1000187000**

Recycler Activity Without Storage: No
Manifest Broker: No
Sub-Part P Indicator: No

Handler - Owner Operator:
Owner/Operator Indicator: Owner
Owner/Operator Name: GOLDEN GATE BRIDGE DISTRICT
Legal Status: Private
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: NOT REQUIRED
Owner/Operator City,State,Zip: NOT REQUIRED, ME 99999
Owner/Operator Telephone: 415-555-1212
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: GOLDEN GATE BRIDGE DISTRICT
Legal Status: Private
Date Became Current: 19280101
Date Ended Current: Not reported
Owner/Operator Address: 801 GOLDEN GATE PLACE
Owner/Operator City,State,Zip: NOVATO, CA 94945
Owner/Operator Telephone: 415-257-4519
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: ALAM@GOLDENGATE.ORG

Owner/Operator Indicator: Operator
Owner/Operator Name: ALBERT LAM
Legal Status: Federal
Date Became Current: 19870410
Date Ended Current: Not reported
Owner/Operator Address: 801 GOLDEN GATE PLACE
Owner/Operator City,State,Zip: NOVATO, CA 94947
Owner/Operator Telephone: 415-257-4519
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: ALAM@GOLDENGATE.ORG

Historic Generators:
Receive Date: 20220222
Handler Name: GOLDEN GATE TRANSIT
Federal Waste Generator Description: Large Quantity Generator
State District Owner: CA
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

GOLDEN GATE TRANSIT (Continued) **1000187000**

Receive Date: 19820803
Handler Name: GOLDEN GATE TRANSIT
Federal Waste Generator Description: Large Quantity Generator
State District Owner: CA
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 485999
NAICS Description: ALL OTHER TRANSIT AND GROUND PASSENGER TRANSPORTATION

Facility Has Received Notices of Violation:
Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

GOLDEN GATE TRANSIT (Continued) **1000187000**

Evaluation Action Summary:

Evaluation Date:	19850220
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	R9
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

MARIN CO. UST:

Name:	GOLDEN GATE TRANSIT
Address:	801 GOLDEN GATE PLACE
City:	NOVATO
Zip:	Not reported
Facility Id:	60-0118

Tank Number:	000001
Tank Status:	Change of Information
Tank Contents:	Diesel
Tank Use:	Motor vehicle fueling
Certficate Number:	15791
Last Inspected:	05/22/2008
Program:	Not reported
Location:	Not reported
Pulled Date:	Not reported
Reason:	Not reported

Tank Number:	000001
Tank Status:	Change of Information
Tank Contents:	Diesel
Tank Use:	Motor vehicle fueling
Certficate Number:	15791
Last Inspected:	05/22/2008
Program:	Not reported
Location:	Not reported
Pulled Date:	Not reported
Reason:	Not reported

Tank Number:	000002
Tank Status:	Change of Information
Tank Contents:	Diesel
Tank Use:	Motor vehicle fueling
Certficate Number:	15791
Last Inspected:	05/22/2008
Program:	Not reported
Location:	Not reported
Pulled Date:	Not reported
Reason:	Not reported

GOLDEN GATE TRANSIT (Continued) **1000187000**

Tank Number: 000002
Tank Status: Change of Information
Tank Contents: Diesel
Tank Use: Motor vehicle fueling
Certficate Number: 15791
Last Inspected: 05/22/2008
Program: Not reported
Location: Not reported
Pulled Date: Not reported
Reason: Not reported

UST:
Name: GOLDEN GATE TRANSIT
Address: 801 GOLDEN GATE PLACE
City,State,Zip: NOVATO, CA 94947
Facility ID: 21-000-600118
Permitting Agency: Marin County Dept of Public Works, Waste Management Division
CERSID: 10032229
Latitude: 38.1138300
Longitude: -122.5676890
Owner type: Local Agency/District
Facility type: Motor Vehicle Fueling
Num of inuse ust: Not reported
Num of closed ust: 0
Num of oos ust: 0
Epa region: 9
Tribal lands: No
Tank owner name: Golden Gate Bridge Highway and Transportation District
Tank owner mailing address: 1011 Andersen Drive
Tank owner mailing city: San Rafael
Tank owner mailing zip: 94901
Tank owner mailing state: CA
Tank operator name: Golden Gate Bridge Highway and Transportation District
Tank operator mailing address: 1011 Andersen Drive
Tank operator mailing city: San Rafael
Tank operator mailing zip: 94901
Tank operator mailing state: CA
Tankidnumber: 1
Tank status: Confirmed/Updated Information
Tank configuration: Stand Alone Tank
Tank closure date: Not reported
Tank installation date: 4/20/1998 12:00:00 AM
Tank num of compartments: 1
Tank contents: Diesel
Tank capacity gallons: 15000
Tank type: Double Wall
Tank pc construction: Steel
Tank pwpiping construction: Flexible
Tank piping type: Pressure
Tank piping construction: Double Walled
Tank sacrificial anode: No
Tank cp impressed current: No
Tank cp shutoff: Yes
Tank alarms: Yes
Tank ball float: No
Tank spill bucket: Yes

GOLDEN GATE TRANSIT (Continued) **1000187000**

Name:	GOLDEN GATE TRANSIT
Address:	801 GOLDEN GATE PLACE
City,State,Zip:	NOVATO, CA 94947
Facility ID:	21-000-600118
Permitting Agency:	Marin County Dept of Public Works, Waste Management Division
CERSID:	10032229
Latitude:	38.1138300
Longitude:	-122.5676890
Owner type:	Local Agency/District
Facility type:	Motor Vehicle Fueling
Num of inuse ust:	Not reported
Num of closed ust:	0
Num of oos ust:	0
Epa region:	9
Tribal lands:	No
Tank owner name:	Golden Gate Bridge Highway and Transportation District
Tank owner mailing address:	1011 Andersen Drive
Tank owner mailing city:	San Rafael
Tank owner mailing zip:	94901
Tank owner mailing state:	CA
Tank operator name:	Golden Gate Bridge Highway and Transportation District
Tank operator mailing address:	1011 Andersen Drive
Tank operator mailing city:	San Rafael
Tank operator mailing zip:	94901
Tank operator mailing state:	CA
Tankidnumber:	2
Tank status:	Confirmed/Updated Information
Tank configuration:	Stand Alone Tank
Tank closure date:	Not reported
Tank installation date:	4/20/1998 12:00:00 AM
Tank num of compartments:	1
Tank contents:	Diesel
Tank capacity gallons:	15000
Tank type:	Double Wall
Tank pc construction:	Steel
Tank pwpiping construction:	Flexible
Tank piping type:	Pressure
Tank piping construction:	Double Walled
Tank sacrificial anode:	No
Tank cp impressed current:	No
Tank cp shutoff:	Yes
Tank alarms:	Yes
Tank ball float:	No
Tank spill bucket:	Yes

CERS HAZ WASTE:

Name:	GOLDEN GATE TRANSIT
Address:	801 GOLDEN GATE PLACE
City,State,Zip:	NOVATO, CA 94947
Site ID:	119922
CERS ID:	10032229
CERS Description:	Hazardous Waste Generator

SWEEPS UST:

Name:	GOLDEN GATE TRANSIT
Address:	801 GOLDEN GATE PL

GOLDEN GATE TRANSIT (Continued) **1000187000**

City: NOVATO
Status: Active
Comp Number: 30032
Number: 9
Board Of Equalization: 44-013866
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 12-31-88
Owner Tank Id: DFT-1-D3
SWRCB Tank Id: 21-000-030032-000001
Tank Status: A
Capacity: 12000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: 6

Name: GOLDEN GATE TRANSIT
Address: 801 GOLDEN GATE PL
City: NOVATO
Status: Active
Comp Number: 30032
Number: 9
Board Of Equalization: 44-013866
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 12-31-88
Owner Tank Id: DFT-2-D3
SWRCB Tank Id: 21-000-030032-000002
Tank Status: A
Capacity: 12000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

Name: GOLDEN GATE TRANSIT
Address: 801 GOLDEN GATE PL
City: NOVATO
Status: Active
Comp Number: 30032
Number: 9
Board Of Equalization: 44-013866
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 12-31-88
Owner Tank Id: DFT-3-D3
SWRCB Tank Id: 21-000-030032-000003
Tank Status: A
Capacity: 10000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

GOLDEN GATE TRANSIT (Continued) **1000187000**

Name: GOLDEN GATE TRANSIT
Address: 801 GOLDEN GATE PL
City: NOVATO
Status: Active
Comp Number: 30032
Number: 9
Board Of Equalization: 44-013866
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 12-31-88
Owner Tank Id: DFT-4-D3
SWRCB Tank Id: 21-000-030032-000004
Tank Status: A
Capacity: 10000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

Name: GOLDEN GATE TRANSIT
Address: 801 GOLDEN GATE PL
City: NOVATO
Status: Active
Comp Number: 30032
Number: 9
Board Of Equalization: 44-013866
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 12-31-88
Owner Tank Id: DFT-1-D2
SWRCB Tank Id: 21-000-030032-000005
Tank Status: A
Capacity: 12000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

Name: GOLDEN GATE TRANSIT
Address: 801 GOLDEN GATE PL
City: NOVATO
Status: Active
Comp Number: 30032
Number: 9
Board Of Equalization: 44-013866
Referral Date: 07-01-85
Action Date: Not reported
Created Date: 12-31-88
Owner Tank Id: DFT-2-D2
SWRCB Tank Id: 21-000-030032-000006
Tank Status: A
Capacity: 12000
Active Date: 07-01-85
Tank Use: M.V. FUEL
STG: P

GOLDEN GATE TRANSIT (Continued) **1000187000**

Content: DIESEL
Number Of Tanks: Not reported

HIST UST:
Name: GOLDEN GATE TRANSIT
Address: 801 GOLDEN GATE PLACE
City,State,Zip: NOVATO, CA 94947
File Number: 00029241
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00029241.pdf
Region: STATE
Facility ID: 00000030032
Facility Type: Other
Other Type: BUS MAINTENANCE FACI
Contact Name: ANGELO LEONE
Telephone: 4154573110
Owner Name: GOLDEN GATE BRIDGE, HIGHWAY AN
Owner Address: GOLDEN GAT BRIDGE - TOLL PLAZA
Owner City,St,Zip: SAN FRANCISCO, CA 94129
Total Tanks: 0006

Tank Num: 001
Container Num: DFT-1-D3
Year Installed: 1972
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: .25
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: DFT-2-D3
Year Installed: 1972
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: .25
Leak Detection: Stock Inventor

Tank Num: 003
Container Num: DFT-3-D3
Year Installed: Not reported
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Tank Num: 004
Container Num: DFT-4-D3
Year Installed: Not reported
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Tank Num: 005

GOLDEN GATE TRANSIT (Continued) **1000187000**

Container Num: DFT-1-D2
Year Installed: 1975
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: .25
Leak Detection: Stock Inventor

Tank Num: 006
Container Num: DFT-2-D2
Year Installed: 1975
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: .25
Leak Detection: Stock Inventor

Click here for Geo Tracker PDF:

CA FID UST:
Facility ID: 21000065
Regulated By: UTNKA
Regulated ID: 00030032
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 4154573110
Mail To: Not reported
Mailing Address: P O BOX
Mailing Address 2: Not reported
Mailing City,St,Zip: NOVATO 94947
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

CERS TANKS:
Name: GOLDEN GATE TRANSIT
Address: 801 GOLDEN GATE PLACE
City,State,Zip: NOVATO, CA 94947
Site ID: 119922
CERS ID: 10032229
CERS Description: Underground Storage Tank

HAZNET:
Name: GOLDEN GATE TRANSIT
Address: 801 GOLDEN GATE PLACE
Address 2: Not reported
City,State,Zip: NOVATO, CA 949470000
Contact: David Denning
Telephone: 4152574519
Mailing Name: Not reported
Mailing Address: 1011 ANDERSEN DR

GOLDEN GATE TRANSIT (Continued) **1000187000**

Year: 2012
Gepaid: CAD980736508
TSD EPA ID: CAD980887418
CA Waste Code: 223 - Unspecified oil-containing waste
Disposal Method: H135 - Discharge To Sewer/Potw Or Npdes(With Prior Storage--With Or Without Treatment)
Tons: 2.085

Year: 2011
Gepaid: CAD980736508
TSD EPA ID: CAD980887418
CA Waste Code: 223 - Unspecified oil-containing waste
Disposal Method: H135 - Discharge To Sewer/Potw Or Npdes(With Prior Storage--With Or Without Treatment)
Tons: 1.68468

Year: 2002
Gepaid: CAD980736508
TSD EPA ID: CAD980887418
CA Waste Code: 221 - Waste oil and mixed oil
Disposal Method: R01 - Recycler
Tons: 2.356

Year: 1989
Gepaid: CAD980736508
TSD EPA ID: CAD004771168
CA Waste Code: 241 - Tank bottom waste
Disposal Method: R01 - Recycler
Tons: 8.34

Year: 1988
Gepaid: CAD980736508
TSD EPA ID: 3800178
CA Waste Code: 222 - Oil/water separation sludge
Disposal Method: 01 -
Tons: 16.68

Year: 1988
Gepaid: CAD980736508
TSD EPA ID: 3800178
CA Waste Code: 223 - Unspecified oil-containing waste
Disposal Method: 03 -
Tons: 1.251

Year: 1988
Gepaid: CAD980736508
TSD EPA ID: 3800178
CA Waste Code: 223 - Unspecified oil-containing waste
Disposal Method: 01 -
Tons: 11.259

Additional Info:
Year: 2012
Gen EPA ID: CAD980736508

Shipment Date: 20120705

GOLDEN GATE TRANSIT (Continued) **1000187000**

Creation Date:	10/3/2012 22:15:14
Receipt Date:	20120705
Manifest ID:	009438203JJK
Trans EPA ID:	CAD982413262
Trans Name:	EVERGREEN ENVIRONMENTAL SERVICES
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD980887418
Trans Name:	EVERGREEN OIL INC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	223 - Unspecified oil-containing waste
RCRA Code:	Not reported
Meth Code:	H135 - Discharge To Sewer/Potw Or Npdes(With Prior Storage--With Or Without Treatment)
Quantity Tons:	2.085
Waste Quantity:	500
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2011
Gen EPA ID:	CAD980736508

Shipment Date:	20111010
Creation Date:	12/9/2011 18:30:58
Receipt Date:	20111013
Manifest ID:	003774368JJK
Trans EPA ID:	CAD982413262
Trans Name:	EVERGREEN ENVIRONMENTAL SERVICES
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD980887418
Trans Name:	EVERGREEN OIL INC
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	223 - Unspecified oil-containing waste
RCRA Code:	Not reported
Meth Code:	H135 - Discharge To Sewer/Potw Or Npdes(With Prior Storage--With Or Without Treatment)
Quantity Tons:	1.68468
Waste Quantity:	404
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

Additional Info:

Year:	2002
Gen EPA ID:	CAD980736508

GOLDEN GATE TRANSIT (Continued) **1000187000**

Shipment Date:	20020109
Creation Date:	2/20/2002 0:00:00
Receipt Date:	20020109
Manifest ID:	21088699
Trans EPA ID:	CAD982413262
Trans Name:	Not reported
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAD980887418
Trans Name:	Not reported
TSDF Alt EPA ID:	CAD980887418
TSDF Alt Name:	Not reported
Waste Code Description:	221 - Waste oil and mixed oil
RCRA Code:	Not reported
Meth Code:	R01 - Recycler
Quantity Tons:	2.356
Waste Quantity:	620
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

NPDES:

Name:	GOLDEN GATE TRANSIT
Address:	801 GOLDEN GATE PLACE
City,State,Zip:	NOVATO, CA 94901
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:	2 21I027528
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:	01/08/2018
Operator Name:	Golden Gate Bridge District
Operator Address:	1011 Anderson Dr
Operator City:	San Rafael
Operator State:	California
Operator Zip:	94901

NPDES as of 03/2018:

NPDES Number:	CAS000001

GOLDEN GATE TRANSIT (Continued) **1000187000**

Status:	Active
Agency Number:	0
Region:	2
Regulatory Measure ID:	493226
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	2 21I027528
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	01/08/2018
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Golden Gate Bridge District
Discharge Address:	1011 Anderson Dr
Discharge City:	San Rafael
Discharge State:	California
Discharge Zip:	94901
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

GOLDEN GATE TRANSIT (Continued) **1000187000**

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

Name:	GOLDEN GATE TRANSIT
Address:	801 GOLDEN GATE PLACE
City,State,Zip:	NOVATO, CA 94901
Facility Status:	Active
NPDES Number:	CAS000001
Region:	2
Agency Number:	0
Regulatory Measure ID:	493226
Place ID:	Not reported
Order Number:	97-03-DWQ
WDID:	2 21I027528
Regulatory Measure Type:	Enrollee
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	01/08/2018
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	1011 Anderson Dr
Discharge Name:	Golden Gate Bridge District
Discharge City:	San Rafael
Discharge State:	California
Discharge Zip:	94901
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:	2
Regulatory Measure ID:	493226
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported

GOLDEN GATE TRANSIT (Continued) **1000187000**

WDID:	2 21I027528
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	01/08/2018
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Golden Gate Bridge District
Discharge Address:	1011 Anderson Dr
Discharge City:	San Rafael
Discharge State:	California
Discharge Zip:	94901
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

GOLDEN GATE TRANSIT (Continued) **1000187000**

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

NOTIFY 65:

Name:	GOLDEN GATE TRANSIT
Address:	801 GOLDEN GATE PLACE
City,State,Zip:	NOVATO, CA 93001
Date Reported:	Not reported
Staff Initials:	Not reported
Board File Number:	Not reported
Facility Type:	Not reported
Discharge Date:	Not reported
Issue Date:	Not reported
Incident Description:	Not reported
Global ID:	Not reported
Status:	Not reported

CIWQS:

Name:	GOLDEN GATE TRANSIT
Address:	801 GOLDEN GATE PLACE
City,State,Zip:	NOVATO, CA 94901
Agency:	Golden Gate Bridge District
Agency Address:	1011 Anderson Dr, San Rafael, CA 94901
Place/Project Type:	Industrial - Terminal and Service Facilities for Motor Vehicle Passenger Transportation
SIC/NAICS:	4173
Region:	2
Program:	INDSTW
Regulatory Measure Status:	Active
Regulatory Measure Type:	Storm water industrial
Order Number:	2014-0057-DWQ
WDID:	2 21I027528
NPDES Number:	CAS000001
Adoption Date:	Not reported
Effective Date:	01/08/2018
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:	38.11357
Longitude:	-122.56552

GOLDEN GATE TRANSIT (Continued) **1000187000**

CERS:
Name: GOLDEN GATE TRANSIT
Address: 801 GOLDEN GATE PLACE
City,State,Zip: NOVATO, CA 94947
Site ID: 119922
CERS ID: 860530
CERS Description: Industrial Facility Storm Water

Violations:
Site ID: 119922
Site Name: Golden Gate Transit
Violation Date: 05-28-2020
Citation: 23 CCR 16 2665(b) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665(b)
Violation Description: "Failure to submit a copy of the overfill prevention equipment inspection results on the Overfill Prevention Equipment Inspection Report Form to the UPA within 30 days after the inspection. "
Violation Notes: Returned to compliance on 01/06/2021. Overfill prevention testing not performed. Perform overfill prevention testing.
Violation Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program: UST
Violation Source: CERS,

Site ID: 119922
Site Name: Golden Gate Transit
Violation Date: 05-21-2021
Citation: 23 CCR 16 2641(h) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2641(h)
Violation Description: Failure to have an approved UST Monitoring Plan.
Violation Notes: Returned to compliance on 06/02/2021. Monitoring plan in CERS is different from what was observed on site. Specifically, flapper fill tube shutoff valves were observed in drop tubes (CERS shows both ball valves and fill tube shutoff valves as "YES" in tank information. Periodic system testing in monitoring plan section shows "No" for the periodic system testing of spill buckets: this testing is performed at each AMC. Update CERS to show "NO" for ball valves in the tank information section, and Spill Bucket Testing as "YES" in the tank monitoring plan.
Violation Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program: UST
Violation Source: CERS,

Site ID: 119922
Site Name: Golden Gate Transit
Violation Date: 05-21-2021
Citation: 23 CCR 16 2715(c)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(c)(2)
Violation Description: Failure to have at least one facility employee present during operating hours that has been trained in the proper operation and maintenance of the UST system by a designated operator (DO).
Violation Notes: Returned to compliance on 06/22/2021. Current training documents no observed on site. Ensure that training is performed for at least one employee on site on an annual basis. Provide documentation to Marin CUPA that annual UST training has been performed for at least one employee.
Violation Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program: UST

GOLDEN GATE TRANSIT (Continued) **1000187000**

Violation Source: CERS,

Site ID: 119922
Site Name: Golden Gate Transit
Violation Date: 05-21-2021
Citation: 23 CCR 16 2636(f)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2636(f)(2)
Violation Description: Failure of the functional line leak detector (LLD) monitoring pressurized piping to meet one or more of the following requirements: Monitored at least hourly with the capability of detecting a release of 3.0 gallons per hour leak at 10 pounds per square inch and restrict or shut off the flow of product through the piping when a leak is detected.
Violation Notes: Returned to compliance on 10/04/2021. Tank 1 LLD did not meet the requirements. Specifically, the mechanical LLD did not detect the simulated leak, and the LLD installed could not be calibrated on-site. Perform necessary actions to ensure the MLLD can detect a 3.0 GPH leak at 10 PSI and schedule re-inspection.
Violation Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program: UST
Violation Source: CERS,

Site ID: 119922
Site Name: Golden Gate Transit
Violation Date: 05-21-2021
Citation: 23 CCR 16 2716(f) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2716(f)
Violation Description: Failure to maintain on-site, or off-site at a readily available location if approved by the UPA, copies of Designated Operator inspection records as follows: Designated operator monthly inspection records for inspections performed before October 1, 2018 must be kept for 12 months from the month of inspection. For inspections performed on or after October 1, 2018, copies of the "Designated Underground Storage Tank Operator Visual Inspection Report" must be kept for 36 months from the month of inspection.
Violation Notes: Returned to compliance on 06/22/2021. DO inspections were not performed in April and November of 2020. Ensure DO performs monthly inspections and the required documents are available on site. No further action required.
Violation Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program: UST
Violation Source: CERS,

Site ID: 119922
Site Name: Golden Gate Transit
Violation Date: 05-21-2021
Citation: 23 CCR 16 2716(e) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2716(e)
Violation Description: For designated operator (DO) monthly inspections conducted before October 1, 2018, failure to comply with one or more of the following requirements: Be performed by an ICC certified DO. Inspect monthly alarm history report, check that alarms are documented and responded to appropriately, and attach a copy. Inspect for the presence of liquid/debris in spill containers. Inspect for the presence of liquid/debris in under dispenser containment (UDC) and ensure that the monitoring equipment is positioned correctly. Inspect for liquid or debris in containment sumps where an alarm occurred with no service

GOLDEN GATE TRANSIT (Continued) **1000187000**

visit. Check that all testing and maintenance has been completed and documented. Verify that all facility employees have been trained in accordance with 23 CCR 2715(c). For designated operator (DO) 30 day inspections conducted on and after October 1, 2018, failure to conduct the designated UST operator visual inspection at least once every 30 days.

Violation Notes: Returned to compliance on 06/22/2021. During the monitoring perform, multiple DO inspections did not occur within in 30 calendar days of each inspection. Ensure that monthly DO inspections occur within 30 calendar days of each inspection. No further action required.
Violation Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program: UST
Violation Source: CERS,

Site ID: 119922
Site Name: Golden Gate Transit
Violation Date: 05-21-2021
Citation: HSC 6.75 25299.30-25299.34 - California Health and Safety Code, Chapter 6.75, Section(s) 25299.30-25299.34
Violation Description: Failure to submit and maintain complete and current Certification of Financial Responsibility or other mechanism of financial assurance.
Violation Notes: Returned to compliance on 06/02/2021. Certification of Finicial Responsibly observed on-site and dated 10/05/2020 which partially meets the requirements, however this document was not observed in CERS. Ensure this document is uploaded into CERS on an annual basis from the date it is issued.
Violation Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program: UST
Violation Source: CERS,

Site ID: 119922
Site Name: Golden Gate Transit
Violation Date: 05-08-2017
Citation: 23 CCR 6.7 25284, 25286 - California Code of Regulations, Title 23, Chapter 6.7, Section(s) 25284, 25286
Violation Description: Failure to submit a complete and accurate application for a permit to operate a UST, or for renewal of the permit.
Violation Notes: Returned to compliance on 06/07/2017. At time of inspection, CERS information "Tank Information" and "Monitoring Plan" did not include all accurate information on the piping system type, UDCs, MLDDs, etc. Please correct information in CERS to reflect site’s tank components. Complete within 30 days, and provide proof of correction to Marin County CUPA.
Violation Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program: UST
Violation Source: CERS,

Site ID: 119922
Site Name: Golden Gate Transit
Violation Date: 05-08-2017
Citation: 23 CCR 16 2715(c) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(c)
Violation Description: Failure to comply with one or more of the following designated operator (DO) monthly inspection requirements: Be performed by an ICC certified DO. Inspect monthly alarm history report, check that alarms are documented and responded to appropriately, and attach a copy. Inspect for the presence of liquid/debris in spill containers. Inspect

GOLDEN GATE TRANSIT (Continued) **1000187000**

	for the presence of liquid/debris in under dispenser containment (UDC) and ensure that the monitoring equipment is positioned correctly. Inspect for liquid or debris in containment sumps where an alarm occurred with no service visit. Check that all testing and maintenance has been completed and documented. Verify that all facility employees have been properly trained.
Violation Notes:	Returned to compliance on 05/08/2017. At time of inspection, facility had about 0.5 gallons of water in the turbine sump of Tank #1. The water came from the secondary containment test that was done prior to the AMC. EPIC Compliance removed water, and issue has been corrected onsite.
Violation Division:	Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program:	UST
Violation Source:	CERS,
Site ID:	119922
Site Name:	Golden Gate Transit
Violation Date:	05-28-2020
Citation:	23 CCR 16 2712(b)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(b)(2)
Violation Description:	Failure to maintain monitoring records for release detection and/or maintain records of appropriate follow-up actions.
Violation Notes:	Returned to compliance on 12/10/2020. Monthly DO inspection reports not reviewed and signed by owner/operator Review and sign monthly DO inspection reports
Violation Division:	Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program:	UST
Violation Source:	CERS,
Site ID:	119922
Site Name:	Golden Gate Transit
Violation Date:	05-16-2022
Citation:	23 CCR 16 2636(f)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2636(f)(2)
Violation Description:	Failure of the functional line leak detector (LLD) monitoring pressurized piping to meet one or more of the following requirements: Monitored at least hourly with the capability of detecting a release of 3.0 gallons per hour leak at 10 pounds per square inch and restrict or shut off the flow of product through the piping when a leak is detected.
Violation Notes:	Returned to compliance on 06/16/2022. Line leak detector for tank #2 failed to detect a release of 3.0 gallons per hour at 10 p.s.i.g. Within 30 days, repair or replace line leak detector for tank #2 so that it is capable of monitoring at least hourly, detecting a release of 3.0 gallons per hour at 10 p.s.i.g., and restricting or shutting off the flow of product through the piping when a leak is detected.
Violation Division:	Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program:	UST
Violation Source:	CERS,
Site ID:	119922
Site Name:	Golden Gate Transit
Violation Date:	05-28-2020
Citation:	23 CCR 16 2712(b)(1)(F) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(b)(1)(F)
Violation Description:	"Failure to conduct secondary containment testing, or one or more of the following requirements: Perform the test of the secondary

GOLDEN GATE TRANSIT (Continued) **1000187000**

containment system upon installation, within six months of installation and every 36 months thereafter. Perform the test of a secondary containment component within 30 days of a repair or discontinuing vacuum, pressure or hydrostatic monitoring. Use a procedure that demonstrates the system works as well as at installation. Use applicable manufacturer guidelines, industry codes, engineering standard, or professional engineer approval. Performed by a certified service technician. Maintain records of secondary containment testing for 36 months."

Violation Notes: Returned to compliance on 01/06/2021. Secondary containment testing was due by 05/08/2020 Perform secondary containment testing within 60 days!
Violation Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program: UST
Violation Source: CERS,

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-05-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: CalARP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-08-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-16-2022
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-24-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-28-2020
Violations Found: Yes
Eval Type: Routine done by local agency

GOLDEN GATE TRANSIT (Continued) **1000187000**

Eval Notes: Chris Rundell, Haz Materials Specialist verified onsite testing along with virtual inspection review by ICC qualified inspector GMobley. Covid 19 restrictions!
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-05-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-06-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-06-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-21-2021
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: TEC Accutech on site to perform testing. Last test dates: OPE 5.24.2019, AMC 5.24.2020, SB989 7.13.2020. OPE testing was performed and flappers in both drops tubes were observed to be operational. Testers took measurements, will provide OPE report with calculations at a later date. Sensors observed on site match monitoring plan in CERS: 420s in annuals, 208s in STP sumps, VR TS-350 monitoring panel, Vaporless LD-200 MLLDs. Site is currently not in use by GGT, expected to reopen in 2022, and monitoring is still being performed. Please contact Marin CUPA with any questions and to schedule re-inspection of the LLD repair: CUPA@marincounty.org Chris Rundell (415-419-7730 / crundell@marincounty.org) performed this inspection on behalf of Tracey Nguyen (tlnguyen@marincounty.org)
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-06-2014
Violations Found: No

GOLDEN GATE TRANSIT (Continued) **1000187000**

Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-16-2022
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-24-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-08-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Coordinates:
Site ID: 119922
Facility Name: Golden Gate Transit
Env Int Type Code: SMSWIND
Program ID: 860530
Coord Name: Not reported
Ref Point Type Desc: Unknown,
Latitude: 38.113570
Longitude: -122.565520

Affiliation:
Affiliation Type Desc: Environmental Contact
Entity Name: Albert Lam
Entity Title: Not reported
Affiliation Address: 1011 Andersen Drive
Affiliation City: San Rafael
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94901
Affiliation Phone: ,

Affiliation Type Desc: Operator
Entity Name: Golden Gate Transit

GOLDEN GATE TRANSIT (Continued) **1000187000**

Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (415) 257-4519,

Affiliation Type Desc: UST Property Owner Name
Entity Name: Golden Gate Bridge Highway and Transportation District
Entity Title: Not reported
Affiliation Address: 1011 Andersen Drive
Affiliation City: San Rafael
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94901
Affiliation Phone: (415) 455-2000,

Affiliation Type Desc: CUPA District
Entity Name: Marin County CUPA
Entity Title: Not reported
Affiliation Address: 1600 Los GamosSuite 210
Affiliation City: San Rafael
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94903
Affiliation Phone: (415) 473-6647,

Affiliation Type Desc: UST Permit Applicant
Entity Name: Karen Shelar
Entity Title: EH&S Specialist
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (415) 257-4519,

Affiliation Type Desc: UST Tank Owner
Entity Name: Golden Gate Bridge Highway and Transportation District
Entity Title: Not reported
Affiliation Address: 1011 Andersen Drive
Affiliation City: San Rafael
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94901
Affiliation Phone: (415) 455-2000,

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 1011 Andersen Drive
Affiliation City: San Rafael
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94901
Affiliation Phone: ,

GOLDEN GATE TRANSIT (Continued) **1000187000**

Affiliation Type Desc:	Legal Owner
Entity Name:	Golden Gate Bridge, Highway and Transportation Dis
Entity Title:	Not reported
Affiliation Address:	1011 Andersen Drive
Affiliation City:	San Rafael
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94901
Affiliation Phone:	(415) 257-4519,

Affiliation Type Desc:	Owner/Operator
Entity Name:	Golden Gate Bridge District
Entity Title:	Operator
Affiliation Address:	1011 Anderson Dr
Affiliation City:	San Rafael
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94901
Affiliation Phone:	,

Affiliation Type Desc:	Parent Corporation
Entity Name:	Golden Gate Bridge Highway and Transportation District
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

Affiliation Type Desc:	Property Owner
Entity Name:	Golden Gate Bridge, Highway and Transportation Dis
Entity Title:	Not reported
Affiliation Address:	1011 Andersen Drive
Affiliation City:	San Rafael
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94901
Affiliation Phone:	(415) 257-4519,

Affiliation Type Desc:	UST Tank Operator
Entity Name:	Golden Gate Bridge Highway and Transportation District
Entity Title:	Not reported
Affiliation Address:	1011 Andersen Drive
Affiliation City:	San Rafael
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94901
Affiliation Phone:	(415) 455-2000,

Affiliation Type Desc:	Document Preparer
Entity Name:	Albert Lam
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported

GOLDEN GATE TRANSIT (Continued) **1000187000**

Affiliation Zip: Not reported
Affiliation Phone: ,

Affiliation Type Desc: Identification Signer
Entity Name: Albert Lam
Entity Title: Environmental Health & Safety Specialist
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

Name: GOLDEN GATE TRANSIT
Address: 801 GOLDEN GATE PLACE
City,State,Zip: NOVATO, CA 94947
Site ID: 119922
CERS ID: 10032229
CERS Description: Chemical Storage Facilities

Violations:

Site ID: 119922
Site Name: Golden Gate Transit
Violation Date: 05-28-2020
Citation: 23 CCR 16 2665(b) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665(b)
Violation Description: "Failure to submit a copy of the overfill prevention equipment inspection results on the Overfill Prevention Equipment Inspection Report Form to the UPA within 30 days after the inspection. "
Violation Notes: Returned to compliance on 01/06/2021. Overfill prevention testing not performed. Perform overfill prevention testing.
Violation Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program: UST
Violation Source: CERS,

Site ID: 119922
Site Name: Golden Gate Transit
Violation Date: 05-21-2021
Citation: 23 CCR 16 2641(h) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2641(h)
Violation Description: Failure to have an approved UST Monitoring Plan.
Violation Notes: Returned to compliance on 06/02/2021. Monitoring plan in CERS is different from what was observed on site. Specifically, flapper fill tube shutoff valves were observed in drop tubes (CERS shows both ball valves and fill tube shutoff valves as "YES" in tank information. Periodic system testing in monitoring plan section shows "No" for the periodic system testing of spill buckets: this testing is performed at each AMC. Update CERS to show "NO" for ball valves in the tank information section, and Spill Bucket Testing as "YES" in the tank monitoring plan.
Violation Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program: UST
Violation Source: CERS,

Site ID: 119922
Site Name: Golden Gate Transit
Violation Date: 05-21-2021

GOLDEN GATE TRANSIT (Continued) **1000187000**

Citation:	23 CCR 16 2715(c)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(c)(2)
Violation Description:	Failure to have at least one facility employee present during operating hours that has been trained in the proper operation and maintenance of the UST system by a designated operator (DO).
Violation Notes:	Returned to compliance on 06/22/2021. Current training documents no observed on site. Ensure that training is performed for at least one employee on site on an annual basis. Provide documentation to Marin CUPA that annual UST training has been performed for at least one employee.
Violation Division:	Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program:	UST
Violation Source:	CERS,
Site ID:	119922
Site Name:	Golden Gate Transit
Violation Date:	05-21-2021
Citation:	23 CCR 16 2636(f)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2636(f)(2)
Violation Description:	Failure of the functional line leak detector (LLD) monitoring pressurized piping to meet one or more of the following requirements: Monitored at least hourly with the capability of detecting a release of 3.0 gallons per hour leak at 10 pounds per square inch and restrict or shut off the flow of product through the piping when a leak is detected.
Violation Notes:	Returned to compliance on 10/04/2021. Tank 1 LLD did not meet the requirements. Specifically, the mechanical LLD did not detect the simulated leak, and the LLD installed could not be calibrated on-site. Perform necessary actions to ensure the MLLD can detect a 3.0 GPH leak at 10 PSI and schedule re-inspection.
Violation Division:	Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program:	UST
Violation Source:	CERS,
Site ID:	119922
Site Name:	Golden Gate Transit
Violation Date:	05-21-2021
Citation:	23 CCR 16 2716(f) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2716(f)
Violation Description:	Failure to maintain on-site, or off-site at a readily available location if approved by the UPA, copies of Designated Operator inspection records as follows: Designated operator monthly inspection records for inspections performed before October 1, 2018 must be kept for 12 months from the month of inspection. For inspections performed on or after October 1, 2018, copies of the "Designated Underground Storage Tank Operator Visual Inspection Report" must be kept for 36 months from the month of inspection.
Violation Notes:	Returned to compliance on 06/22/2021. DO inspections were not performed in April and November of 2020. Ensure DO performs monthly inspections and the required documents are available on site. No further action required.
Violation Division:	Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program:	UST
Violation Source:	CERS,
Site ID:	119922
Site Name:	Golden Gate Transit

GOLDEN GATE TRANSIT (Continued) **1000187000**

Violation Date:	05-21-2021
Citation:	23 CCR 16 2716(e) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2716(e)
Violation Description:	For designated operator (DO) monthly inspections conducted before October 1, 2018, failure to comply with one or more of the following requirements: Be performed by an ICC certified DO. Inspect monthly alarm history report, check that alarms are documented and responded to appropriately, and attach a copy. Inspect for the presence of liquid/debris in spill containers. Inspect for the presence of liquid/debris in under dispenser containment (UDC) and ensure that the monitoring equipment is positioned correctly. Inspect for liquid or debris in containment sumps where an alarm occurred with no service visit. Check that all testing and maintenance has been completed and documented. Verify that all facility employees have been trained in accordance with 23 CCR 2715(c). For designated operator (DO) 30 day inspections conducted on and after October 1, 2018, failure to conduct the designated UST operator visual inspection at least once every 30 days.
Violation Notes:	Returned to compliance on 06/22/2021. During the monitoring perform, multiple DO inspections did not occur within in 30 calendar days of each inspection. Ensure that monthly DO inspections occur within 30 calendar days of each inspection. No further action required.
Violation Division:	Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program:	UST
Violation Source:	CERS,
Site ID:	119922
Site Name:	Golden Gate Transit
Violation Date:	05-21-2021
Citation:	HSC 6.75 25299.30-25299.34 - California Health and Safety Code, Chapter 6.75, Section(s) 25299.30-25299.34
Violation Description:	Failure to submit and maintain complete and current Certification of Financial Responsibility or other mechanism of financial assurance.
Violation Notes:	Returned to compliance on 06/02/2021. Certification of Finicial Responsibly observed on-site and dated 10/05/2020 which partially meets the requirements, however this document was not observed in CERS. Ensure this document is uploaded into CERS on an annual basis from the date it is issued.
Violation Division:	Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program:	UST
Violation Source:	CERS,
Site ID:	119922
Site Name:	Golden Gate Transit
Violation Date:	05-08-2017
Citation:	23 CCR 6.7 25284, 25286 - California Code of Regulations, Title 23, Chapter 6.7, Section(s) 25284, 25286
Violation Description:	Failure to submit a complete and accurate application for a permit to operate a UST, or for renewal of the permit.
Violation Notes:	Returned to compliance on 06/07/2017. At time of inspection, CERS information "Tank Information" and "Monitoring Plan" did not include all accurate information on the piping system type, UDCs, MLDDs, etc. Please correct information in CERS to reflect site's tank components. Complete within 30 days, and provide proof of correction to Marin County CUPA.
Violation Division:	Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program:	UST

GOLDEN GATE TRANSIT (Continued) **1000187000**

Violation Source:	CERS,
Site ID:	119922
Site Name:	Golden Gate Transit
Violation Date:	05-08-2017
Citation:	23 CCR 16 2715(c) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(c)
Violation Description:	Failure to comply with one or more of the following designated operator (DO) monthly inspection requirements: Be performed by an ICC certified DO. Inspect monthly alarm history report, check that alarms are documented and responded to appropriately, and attach a copy. Inspect for the presence of liquid/debris in spill containers. Inspect for the presence of liquid/debris in under dispenser containment (UDC) and ensure that the monitoring equipment is positioned correctly. Inspect for liquid or debris in containment sumps where an alarm occurred with no service visit. Check that all testing and maintenance has been completed and documented. Verify that all facility employees have been properly trained.
Violation Notes:	Returned to compliance on 05/08/2017. At time of inspection, facility had about 0.5 gallons of water in the turbine sump of Tank #1. The water came from the secondary containment test that was done prior to the AMC. EPIC Compliance removed water, and issue has been corrected onsite.
Violation Division:	Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program:	UST
Violation Source:	CERS,
Site ID:	119922
Site Name:	Golden Gate Transit
Violation Date:	05-28-2020
Citation:	23 CCR 16 2712(b)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(b)(2)
Violation Description:	Failure to maintain monitoring records for release detection and/or maintain records of appropriate follow-up actions.
Violation Notes:	Returned to compliance on 12/10/2020. Monthly DO inspection reports not reviewed and signed by owner/operator Review and sign monthly DO inspection reports
Violation Division:	Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program:	UST
Violation Source:	CERS,
Site ID:	119922
Site Name:	Golden Gate Transit
Violation Date:	05-16-2022
Citation:	23 CCR 16 2636(f)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2636(f)(2)
Violation Description:	Failure of the functional line leak detector (LLD) monitoring pressurized piping to meet one or more of the following requirements: Monitored at least hourly with the capability of detecting a release of 3.0 gallons per hour leak at 10 pounds per square inch and restrict or shut off the flow of product through the piping when a leak is detected.
Violation Notes:	Returned to compliance on 06/16/2022. Line leak detector for tank #2 failed to detect a release of 3.0 gallons per hour at 10 p.s.i.g. Within 30 days, repair or replace line leak detector for tank #2 so that it is capable of monitoring at least hourly, detecting a release of 3.0 gallons per hour at 10 p.s.i.g., and restricting or shutting

GOLDEN GATE TRANSIT (Continued) **1000187000**

off the flow of product through the piping when a leak is detected.
Violation Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program: UST
Violation Source: CERS,

Site ID: 119922
Site Name: Golden Gate Transit
Violation Date: 05-28-2020
Citation: 23 CCR 16 2712(b)(1)(F) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(b)(1)(F)
Violation Description: "Failure to conduct secondary containment testing, or one or more of the following requirements: Perform the test of the secondary containment system upon installation, within six months of installation and every 36 months thereafter. Perform the test of a secondary containment component within 30 days of a repair or discontinuing vacuum, pressure or hydrostatic monitoring. Use a procedure that demonstrates the system works as well as at installation. Use applicable manufacturer guidelines, industry codes, engineering standard, or professional engineer approval. Performed by a certified service technician. Maintain records of secondary containment testing for 36 months."
Violation Notes: Returned to compliance on 01/06/2021. Secondary containment testing was due by 05/08/2020 Perform secondary containment testing within 60 days!
Violation Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Violation Program: UST
Violation Source: CERS,

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-05-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: CalARP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-08-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-16-2022
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection

GOLDEN GATE TRANSIT (Continued) **1000187000**

Eval Date: 05-24-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-28-2020
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Chris Rundell, Haz Materials Specialist verified onsite testing along with virtual inspection review by ICC qualified inspector GMobley. Covid 19 restrictions!
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-05-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-06-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-06-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-21-2021
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: TEC Accutech on site to perform testing. Last test dates: OPE 5.24.2019, AMC 5.24.2020, SB989 7.13.2020. OPE testing was performed and flappers in both drops tubes were observed to be operational. Testers took measurements, will provide OPE report with calculations at a later date. Sensors observed on site match monitoring plan in CERS: 420s in annuals, 208s in STP sumps, VR TS-350 monitoring panel, Vaporless LD-200 MLLDs. Site is currently not in use by GGT, expected

GOLDEN GATE TRANSIT (Continued) **1000187000**

to reopen in 2022, and monitoring is still being performed. Please contact Marin CUPA with any questions and to schedule re-inspection of the LLD repair: CUPA@marincounty.org Chris Rundell (415-419-7730 / crundell@marincounty.org) performed this inspection on behalf of Tracey Nguyen (tlnguyen@marincounty.org)

Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-06-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-16-2022
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-24-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-08-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Marin County Dept of Public Works, Waste Mgmt, CUP
Eval Program: UST
Eval Source: CERS,

Coordinates:
Site ID: 119922
Facility Name: Golden Gate Transit
Env Int Type Code: SMSWIND
Program ID: 860530
Coord Name: Not reported
Ref Point Type Desc: Unknown,
Latitude: 38.113570
Longitude: -122.565520

Affiliation:

GOLDEN GATE TRANSIT (Continued) **1000187000**

Affiliation Type Desc:	Environmental Contact
Entity Name:	Albert Lam
Entity Title:	Not reported
Affiliation Address:	1011 Andersen Drive
Affiliation City:	San Rafael
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94901
Affiliation Phone:	,

Affiliation Type Desc:	Operator
Entity Name:	Golden Gate Transit
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(415) 257-4519,

Affiliation Type Desc:	UST Property Owner Name
Entity Name:	Golden Gate Bridge Highway and Transportation District
Entity Title:	Not reported
Affiliation Address:	1011 Andersen Drive
Affiliation City:	San Rafael
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94901
Affiliation Phone:	(415) 455-2000,

Affiliation Type Desc:	CUPA District
Entity Name:	Marin County CUPA
Entity Title:	Not reported
Affiliation Address:	1600 Los GamosSuite 210
Affiliation City:	San Rafael
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94903
Affiliation Phone:	(415) 473-6647,

Affiliation Type Desc:	UST Permit Applicant
Entity Name:	Karen Shelar
Entity Title:	EH&S Specialist
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(415) 257-4519,

Affiliation Type Desc:	UST Tank Owner
Entity Name:	Golden Gate Bridge Highway and Transportation District
Entity Title:	Not reported
Affiliation Address:	1011 Andersen Drive
Affiliation City:	San Rafael
Affiliation State:	CA
Affiliation Country:	United States

GOLDEN GATE TRANSIT (Continued) **1000187000**

Affiliation Zip: 94901
Affiliation Phone: (415) 455-2000,

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 1011 Andersen Drive
Affiliation City: San Rafael
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94901
Affiliation Phone: ,

Affiliation Type Desc: Legal Owner
Entity Name: Golden Gate Bridge, Highway and Transportation Dis
Entity Title: Not reported
Affiliation Address: 1011 Andersen Drive
Affiliation City: San Rafael
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94901
Affiliation Phone: (415) 257-4519,

Affiliation Type Desc: Owner/Operator
Entity Name: Golden Gate Bridge District
Entity Title: Operator
Affiliation Address: 1011 Anderson Dr
Affiliation City: San Rafael
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94901
Affiliation Phone: ,

Affiliation Type Desc: Parent Corporation
Entity Name: Golden Gate Bridge Highway and Transportation District
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

Affiliation Type Desc: Property Owner
Entity Name: Golden Gate Bridge, Highway and Transportation Dis
Entity Title: Not reported
Affiliation Address: 1011 Andersen Drive
Affiliation City: San Rafael
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94901
Affiliation Phone: (415) 257-4519,

Affiliation Type Desc: UST Tank Operator
Entity Name: Golden Gate Bridge Highway and Transportation District
Entity Title: Not reported
Affiliation Address: 1011 Andersen Drive

GOLDEN GATE TRANSIT (Continued) **1000187000**

Affiliation City:	San Rafael
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94901
Affiliation Phone:	(415) 455-2000,
Affiliation Type Desc:	Document Preparer
Entity Name:	Albert Lam
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,
Affiliation Type Desc:	Identification Signer
Entity Name:	Albert Lam
Entity Title:	Environmental Health & Safety Specialist
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

HWTS:

Name:	GOLDEN GATE TRANSIT
Address:	801 GOLDEN GATE PLACE
Address 2:	Not reported
City,State,Zip:	NOVATO, CA 94947
EPA ID:	CAD980736508
Inactive Date:	Not reported
Create Date:	04/10/1987
Last Act Date:	Not reported
Mailing Name:	Not reported
Mailing Address:	1011 ANDERSEN DR
Mailing Address 2:	Not reported
Mailing City,State,Zip:	SAN RAFAEL, CA 949015318
Owner Name:	GOLDEN GATE BRIDGE HWY AND TSP DIST
Owner Address:	1011 ANDERSEN DR
Owner Address 2:	Not reported
Owner City,State,Zip:	SAN RAFAEL, CA 949015318
Contact Name:	ALBERT LAM
Contact Address:	1011 ANDERSEN DRIVE
Contact Address 2:	Not reported
City,State,Zip:	SAN RAFAEL, CA 949015318
Facility Status:	Active
Facility Type:	PERMANENT
Category:	FEDERAL
Latitude:	38.113864
Longitude:	-122.566514

NAICS:

EPA ID:	CAD980736508
Create Date:	2011-10-04 11:44:31.690

GOLDEN GATE TRANSIT (Continued) **1000187000**

NAICS Code:	485999
NAICS Description:	All Other Transit and Ground Passenger Transportation
Issued EPA ID Date:	1987-04-10 00:00:00
Inactive Date:	Not reported
Facility Name:	GOLDEN GATE TRANSIT
Facility Address:	801 GOLDEN GATE PLACE
Facility Address 2:	Not reported
Facility City:	NOVATO
Facility County:	Not reported
Facility State:	CA
Facility Zip:	949470000

C22 **NOVATO STORAGE PARK** **ENVIROSTOR** **S100181583**
NNE **AIRPORT AND BINFORD ROADS** **VCP** **N/A**
1/2-1 **NOVATO, CA 94945** **HIST CORTESE**
0.802 mi.
4232 ft. **Site 1 of 2 in cluster C**

Relative: **Lower**

Actual: **5 ft.**

ENVIROSTOR:

Name:	NOVATO STORAGE PARK
Address:	AIRPORT AND BINFORD ROADS
City,State,Zip:	NOVATO, CA 94945
Facility ID:	21420001
Status:	No Further Action
Status Date:	05/16/1996
Site Code:	Not reported
Site Type:	Voluntary Cleanup
Site Type Detailed:	Voluntary Agreement
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Not reported
Supervisor:	Karen Toth
Division Branch:	Cleanup Berkeley
Assembly:	10
Senate:	02
Special Program:	Voluntary Agreement - Standard Voluntary Agreement
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	38.1406
Longitude:	-122.5618
APN:	NONE SPECIFIED
Past Use:	NONE
Potential COC:	NONE SPECIFIED No Contaminants found
Confirmed COC:	No Contaminants found
Potential Description:	NMA
Alias Name:	110033612277
Alias Type:	EPA (FRS #)
Alias Name:	SLT2O124130
Alias Type:	GeoTracker Global ID
Alias Name:	21420001
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE

NOVATO STORAGE PARK (Continued) **S100181583**

Completed Sub Area Name: Not reported
Completed Document Type: *Voluntary Cleanup Agreement Completion
Completed Date: 05/16/1996
Comments: Completed VCA. No further action required at the site based on the submission of a 1987 report showing the result of a detailed investigation of the drums, their contents, and the soil beneath them. Soil and drum were disposed at a Class III landfill.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 01/25/1987
Comments: Site Discovery. Facility identified by workplan received by DTSC.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 02/06/1990
Comments: Completed Site Screening. Approximately fourteen 55-gallon drums were found in fill. A soil investigation is needed to characterize both the vertical and lateral extent of the soil contamination and see if there is potentail leachate into bay mud underlying the fill. Recommended PEA.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

VCP:
Name: NOVATO STORAGE PARK
Address: AIRPORT AND BINFORD ROADS
City,State,Zip: NOVATO, CA 94945
Facility ID: 21420001
Site Type: Voluntary Cleanup
Site Type Detail: Voluntary Agreement
Site Mgmt. Req.: NONE SPECIFIED
Acres: Not reported
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: DTSC - Site Cleanup Program
Project Manager: Not reported
Supervisor: Karen Toth
Division Branch: Cleanup Berkeley
Site Code: Not reported
Assembly: 10
Senate: 02
Special Programs Code: Voluntary Agreement - Standard Voluntary Agreement
Status: No Further Action
Status Date: 05/16/1996
Restricted Use: NO

NOVATO STORAGE PARK (Continued) **S100181583**

Funding:	Not reported
Lat/Long:	38.1406 / -122.5618
APN:	NONE SPECIFIED
Past Use:	NONE
Potential COC:	NONE SPECIFIED,31000
Confirmed COC:	31000
Potential Description:	NMA
Alias Name:	110033612277
Alias Type:	EPA (FRS #)
Alias Name:	SLT2O124130
Alias Type:	GeoTracker Global ID
Alias Name:	21420001
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	*Voluntary Cleanup Agreement Completion
Completed Date:	05/16/1996
Comments:	Completed VCA. No further action required at the site based on the submission of a 1987 report showing the result of a detailed investigation of the drums, their contents, and the soil beneath them. Soil and drum were disposed at a Class III landfill.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Discovery
Completed Date:	01/25/1987
Comments:	Site Discovery. Facility identified by workplan received by DTSC.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	02/06/1990
Comments:	Completed Site Screening. Approximately fourteen 55-gallon drums were found in fill. A soil investigation is needed to characterize both the vertical and lateral extent of the soil contamination and see if there is potentail leachate into bay mud underlying the fill. Recommended PEA.

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

HIST CORTESE:

edr_fname:	NOVATO STORAGE PARK
edr_fadd1:	AIRPORT AND BINFORD ROADS
City,State,Zip:	NOVATO, CA 94945
Region:	CORTESE
Facility County Code:	21
Reg By:	CALSI

NOVATO STORAGE PARK (Continued) **S100181583**

Reg Id: 21420001

C23 **BINFORD ROAD FILL SITE** **ENVIROSTOR** **S100184022**
NNE **BINFORD AND AIRPORT ROADS, NORTH & WEST** **N/A**
1/2-1 **NOVATO, CA 94947**
0.805 mi.
4249 ft. **Site 2 of 2 in cluster C**

Relative:
Lower

Actual:
4 ft.

ENVIROSTOR:

Name:	BINFORD ROAD FILL SITE
Address:	BINFORD AND AIRPORT ROADS, NORTH & WEST
City,State,Zip:	NOVATO, CA 94947
Facility ID:	21490003
Status:	Refer: Other Agency
Status Date:	07/27/1994
Site Code:	Not reported
Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Cleanup Berkeley
Assembly:	Not reported
Senate:	Not reported
Special Program:	* Rural County Survey Program
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	38.14092
Longitude:	-122.5621
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	* HYDROCARBON SOLVENTS * OXYGENATED SOLVENTS * CONTAMINATED SOIL * ALKALINE SOLUTION WITHOUT METALS * UNSPECIFIED AQUEOUS SOLUTION * OTHER PESTICIDE CONTAINERS, 30 GALLONS OR MORE * UNSPECIFIED ORGANIC LIQUID MIXTURE
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	NOVATO STORAGE PARK DEVELOPMENT
Alias Type:	Alternate Name
Alias Name:	RANCHO DEL PANTANO DEVELOPMENT
Alias Type:	Alternate Name
Alias Name:	21490003
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	01/02/1990
Comments:	SITE SCREENING DONE FIFTEEN 55-GALLON METAL BARRELS WERE DUMPED ILLEGALLY. PRELIMINARY INVEST- IGATION INDICATED LOW LEVELS OF PETROL- EUM HYDROCARBONS IN SITE SOILS. RECOM- MENDATION IS PEA (LOW PRIORITY).

BINFORD ROAD FILL SITE (Continued) **S100184022**

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Assessment Report
Completed Date:	12/30/1987
Comments:	PRELIM ASSESS DONE RECOMMENDATION IS FOR A MEDIUM PRIORITY SI BASED UPON THE EARTH METRICS INC DATA INDICATING POTENTIAL SOIL CONTAMINATION IN THE AREA OF THE DRUM PIT. RESIDUAL OIL CONTAMINATION NEEDS TO BE ASSESSED IN THE AREA NEAR THE ABANDONED SOLVENT SPILL AS WELL AS SOIL FROM THE CEMENT WASTEWATER IMPOUNDMENTS. THIS RECOMMENDATION IS DEFERRED TO A PENDING STATUS IN ORDER TO ALLOW THE RP TO ASSESS THE POTENTIAL EXTENT OF CONTAMINATION. THE FINAL REPORT FILED ON BEHALF OF THE RP WILL REQUIRE REVIEW TO DETERMINE COMPLETENESS.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	04/17/1987
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Discovery
Completed Date:	04/17/1987
Comments:	FACILITY IDENTIFIED NOVATO FIRE PROTECTION DISTRICT FACILITY DRIVE-BY OPERATION IS AN ACTIVE FILL SITE THAT APPEARS TO BE AN UNPERMITTED CLASS III DUMPSITE. SITE HAS CEMENT WASTEWATER IMPOUNDMENTS, A PIT OF 55-GAL ABANDONED STEEL DRUMS, MISC. DEBRIS. 2 DRUMS OF WASTE SOLVENT ABANDONED AT SW CORNER OF SITE RESULTING IN SOIL CONTAMINATION. DRUMS AND SOME SOIL REMOVED BY IT CORP. BUT A PROMINENT SOLVENT ODOR REMAINS. MARIN CO. ENV HLTH: INCIDENT FILE SITE SCREENING DONE RATIONALE FOR PA: BASED ON THE OBSERVED PRESENCE OF ABANDONED DRUMS ONSITE, FURTHER EVALUATION OF THIS SITE IS REQUIRED.

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

Count: 3 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
NOVATO	S121688966	VILLAGE AT NOVATO	NW OF REDWOOD BLVD & OLIVE AVE	94945	CIWQS
NOVATO	1027058801	R.I. HERITAGE INN OF NOVATO, LLC	7546 REDWOOD BLVD.	94945	FINDS
NOVATO	S107535151		5901 REDWOOD HIGHWAY		CDL

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

Lists of Federal NPL (Superfund) sites

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: 10/27/2022
Date Data Arrived at EDR: 11/01/2022
Date Made Active in Reports: 11/15/2022
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 02/03/2023
Next Scheduled EDR Contact: 04/10/2023
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 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

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: 10/27/2022
Date Data Arrived at EDR: 11/01/2022
Date Made Active in Reports: 11/15/2022
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 02/02/2023
Next Scheduled EDR Contact: 04/10/2023
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

Lists of Federal Delisted NPL sites

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: 10/27/2022
Date Data Arrived at EDR: 11/01/2022
Date Made Active in Reports: 11/15/2022
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 02/02/2023
Next Scheduled EDR Contact: 04/10/2023
Data Release Frequency: Quarterly

Lists of Federal sites subject to CERCLA removals and CERCLA orders

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: 08/25/2022
Date Data Arrived at EDR: 09/06/2022
Date Made Active in Reports: 12/05/2022
Number of Days to Update: 90

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 12/21/2022
Next Scheduled EDR Contact: 04/10/2023
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: 10/27/2022
Date Data Arrived at EDR: 11/01/2022
Date Made Active in Reports: 11/15/2022
Number of Days to Update: 14

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/02/2023
Next Scheduled EDR Contact: 04/24/2023
Data Release Frequency: Quarterly

Lists of Federal CERCLA sites with NFRAP

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: 10/27/2022
Date Data Arrived at EDR: 11/01/2022
Date Made Active in Reports: 11/15/2022
Number of Days to Update: 14

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/02/2023
Next Scheduled EDR Contact: 04/24/2023
Data Release Frequency: Quarterly

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 11/21/2022
Date Data Arrived at EDR: 11/21/2022
Date Made Active in Reports: 12/05/2022
Number of Days to Update: 14

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 12/21/2022
Next Scheduled EDR Contact: 04/03/2023
Data Release Frequency: Quarterly

Lists of Federal RCRA TSD facilities

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: 11/21/2022
Date Data Arrived at EDR: 11/21/2022
Date Made Active in Reports: 12/05/2022
Number of Days to Update: 14

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/21/2022
Next Scheduled EDR Contact: 04/03/2023
Data Release Frequency: Quarterly

Lists of Federal RCRA generators

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: 11/21/2022
Date Data Arrived at EDR: 11/21/2022
Date Made Active in Reports: 12/05/2022
Number of Days to Update: 14

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/21/2022
Next Scheduled EDR Contact: 04/03/2023
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: 11/21/2022
Date Data Arrived at EDR: 11/21/2022
Date Made Active in Reports: 12/05/2022
Number of Days to Update: 14

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/21/2022
Next Scheduled EDR Contact: 04/03/2023
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly 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). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 11/21/2022
Date Data Arrived at EDR: 11/21/2022
Date Made Active in Reports: 12/05/2022
Number of Days to Update: 14

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/21/2022
Next Scheduled EDR Contact: 04/03/2023
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: 11/02/2022
Date Data Arrived at EDR: 11/08/2022
Date Made Active in Reports: 01/10/2023
Number of Days to Update: 63

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/03/2023
Next Scheduled EDR Contact: 05/22/2023
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: 10/27/2022
Date Data Arrived at EDR: 11/16/2022
Date Made Active in Reports: 02/09/2023
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/16/2022
Next Scheduled EDR Contact: 03/06/2023
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

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: 10/27/2022
Date Data Arrived at EDR: 11/16/2022
Date Made Active in Reports: 02/09/2023
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/16/2022
Next Scheduled EDR Contact: 03/06/2023
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: 12/12/2022
Date Data Arrived at EDR: 12/14/2022
Date Made Active in Reports: 12/19/2022
Number of Days to Update: 5

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 12/14/2022
Next Scheduled EDR Contact: 04/03/2023
Data Release Frequency: Quarterly

Lists of state- and tribal (Superfund) equivalent sites

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: 10/24/2022
Date Data Arrived at EDR: 10/24/2022
Date Made Active in Reports: 01/12/2023
Number of Days to Update: 80

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/24/2023
Next Scheduled EDR Contact: 05/08/2023
Data Release Frequency: Quarterly

Lists of state- and tribal hazardous waste facilities

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: 10/24/2022
Date Data Arrived at EDR: 10/24/2022
Date Made Active in Reports: 01/12/2023
Number of Days to Update: 80

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/24/2023
Next Scheduled EDR Contact: 05/08/2023
Data Release Frequency: Quarterly

Lists of state and tribal landfills and solid waste disposal facilities

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: 11/03/2022
Date Data Arrived at EDR: 11/03/2022
Date Made Active in Reports: 01/25/2023
Number of Days to Update: 83

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/07/2023
Next Scheduled EDR Contact: 05/22/2023
Data Release Frequency: Quarterly

Lists of state and tribal leaking storage tanks

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 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: No Update Planned

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 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

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: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/17/2022
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
Data Release Frequency: Quarterly

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: 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 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 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

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 06/02/2022
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/31/2022
Number of Days to Update: 79

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
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: 04/11/2022
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/16/2022
Number of Days to Update: 64

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/20/2022
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/16/2022
Number of Days to Update: 64

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
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: 04/08/2022
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/16/2022
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
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: 04/20/2022
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/16/2022
Number of Days to Update: 64

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
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: 04/14/2022
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/16/2022
Number of Days to Update: 64

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
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: 04/28/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
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: 04/28/2022
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/16/2022
Number of Days to Update: 64

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
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: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/17/2022
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
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: No Update Planned

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: No Update Planned

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: No Update Planned

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: No Update Planned

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: No Update Planned

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: No Update Planned

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: No Update Planned

Lists of state and tribal registered storage tanks

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 10/14/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 02/01/2022
Number of Days to Update: 88
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 12/28/2022
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/28/2022
Number of Days to Update: 89
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
Data Release Frequency: Semi-Annually

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: 08/24/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/21/2022
Number of Days to Update: 82

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)

Military ust sites

Date of Government Version: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/17/2022
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
Data Release Frequency: Varies

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: 12/06/2022
Next Scheduled EDR Contact: 03/27/2023
Data Release Frequency: Varies

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: 04/20/2022
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/16/2022
Number of Days to Update: 64

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
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: 06/02/2022
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/31/2022
Number of Days to Update: 79

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
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: 04/28/2022
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/16/2022
Number of Days to Update: 64

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
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: 04/14/2022
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/16/2022
Number of Days to Update: 64

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
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: 04/20/2022
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/16/2022
Number of Days to Update: 64

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
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: 04/08/2022
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/16/2022
Number of Days to Update: 64

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
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: 04/11/2022
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/16/2022
Number of Days to Update: 64

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
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: 04/07/2022
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/16/2022
Number of Days to Update: 64

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

Lists of state and tribal voluntary cleanup sites

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: 10/24/2022
Date Data Arrived at EDR: 10/24/2022
Date Made Active in Reports: 01/12/2023
Number of Days to Update: 80

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/24/2023
Next Scheduled EDR Contact: 05/08/2023
Data Release Frequency: Quarterly

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: 12/13/2022
Next Scheduled EDR Contact: 04/03/2023
Data Release Frequency: Varies

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: 07/08/2021
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

Lists of state and tribal brownfield 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: 09/19/2022
Date Data Arrived at EDR: 09/19/2022
Date Made Active in Reports: 12/07/2022
Number of Days to Update: 79

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 12/14/2022
Next Scheduled EDR Contact: 04/03/2023
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: 02/23/2022
Date Data Arrived at EDR: 03/10/2022
Date Made Active in Reports: 03/10/2022
Number of Days to Update: 0

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 12/07/2022
Next Scheduled EDR Contact: 03/27/2023
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: 01/20/2023
Next Scheduled EDR Contact: 05/08/2023
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/18/2022
Number of Days to Update: 79

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 08/12/2022
Date Data Arrived at EDR: 08/16/2022
Date Made Active in Reports: 08/26/2022
Number of Days to Update: 10

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/03/2023
Next Scheduled EDR Contact: 05/22/2023
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: 01/20/2023
Next Scheduled EDR Contact: 05/08/2023
Data Release Frequency: Varies

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: 01/13/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: No Update Planned

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

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: 01/27/2023
Next Scheduled EDR Contact: 05/08/2023
Data Release Frequency: Varies

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: 07/29/2022
Date Data Arrived at EDR: 08/18/2022
Date Made Active in Reports: 10/24/2022
Number of Days to Update: 67

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/02/2023
Next Scheduled EDR Contact: 03/06/2023
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: 10/24/2022
Date Data Arrived at EDR: 10/24/2022
Date Made Active in Reports: 01/12/2023
Number of Days to Update: 80

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/24/2023
Next Scheduled EDR Contact: 05/08/2023
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: 12/31/2020
Date Data Arrived at EDR: 11/30/2022
Date Made Active in Reports: 02/09/2023
Number of Days to Update: 71

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 02/09/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Varies

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

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: 01/05/2023
Date Data Arrived at EDR: 01/06/2023
Date Made Active in Reports: 01/11/2023
Number of Days to Update: 5

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 01/06/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Quarterly

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: 07/29/2022
Date Data Arrived at EDR: 08/18/2022
Date Made Active in Reports: 10/24/2022
Number of Days to Update: 67

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/02/2023
Next Scheduled EDR Contact: 03/06/2023
Data Release Frequency: Quarterly

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

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: 11/03/2022
Date Data Arrived at EDR: 11/07/2022
Date Made Active in Reports: 01/24/2023
Number of Days to Update: 78

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Varies

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

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: 01/06/2023
Date Data Arrived at EDR: 01/06/2023
Date Made Active in Reports: 01/11/2023
Number of Days to Update: 5
Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 10/17/2022
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Quarterly

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: 08/23/2022
Date Data Arrived at EDR: 08/24/2022
Date Made Active in Reports: 11/14/2022
Number of Days to Update: 82
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 03/13/2023
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: 10/27/2022
Date Data Arrived at EDR: 11/01/2022
Date Made Active in Reports: 11/15/2022
Number of Days to Update: 14
Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 02/02/2023
Next Scheduled EDR Contact: 04/10/2023
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: 08/25/2022
Date Data Arrived at EDR: 08/25/2022
Date Made Active in Reports: 11/14/2022
Number of Days to Update: 81
Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 11/29/2022
Next Scheduled EDR Contact: 03/13/2023
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: 09/19/2022
Date Data Arrived at EDR: 09/19/2022
Date Made Active in Reports: 09/30/2022
Number of Days to Update: 11
Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 12/14/2022
Next Scheduled EDR Contact: 04/03/2023
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: 08/02/2022
Date Data Arrived at EDR: 10/17/2022
Date Made Active in Reports: 01/04/2023
Number of Days to Update: 79

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 01/20/2023
Next Scheduled EDR Contact: 05/01/2023
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: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/17/2022
Number of Days to Update: 78

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
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: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/17/2022
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
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: 11/21/2022
Date Data Arrived at EDR: 11/21/2022
Date Made Active in Reports: 12/05/2022
Number of Days to Update: 14

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/21/2022
Next Scheduled EDR Contact: 04/03/2023
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: 11/01/2022
Date Data Arrived at EDR: 11/10/2022
Date Made Active in Reports: 02/09/2023
Number of Days to Update: 91

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 11/10/2022
Next Scheduled EDR Contact: 02/27/2023
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: 06/07/2021
Date Data Arrived at EDR: 07/13/2021
Date Made Active in Reports: 03/09/2022
Number of Days to Update: 239

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 01/13/2023
Next Scheduled EDR Contact: 04/24/2023
Data Release Frequency: Varies

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: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/03/2023
Next Scheduled EDR Contact: 04/17/2023
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: 02/02/2023
Next Scheduled EDR Contact: 05/22/2023
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: 09/19/2022
Date Data Arrived at EDR: 09/20/2022
Date Made Active in Reports: 12/22/2022
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 12/14/2022
Next Scheduled EDR Contact: 04/03/2023
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: 01/30/2023
Next Scheduled EDR Contact: 05/15/2023
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: 02/03/2023
Next Scheduled EDR Contact: 05/15/2023
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: 06/17/2020
Date Made Active in Reports: 09/10/2020
Number of Days to Update: 85

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/12/2022
Next Scheduled EDR Contact: 03/27/2023
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: 12/31/2021
Date Data Arrived at EDR: 11/01/2022
Date Made Active in Reports: 02/09/2023
Number of Days to Update: 100

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 11/01/2022
Next Scheduled EDR Contact: 02/27/2023
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: 10/17/2022
Date Data Arrived at EDR: 10/18/2022
Date Made Active in Reports: 01/10/2023
Number of Days to Update: 84

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/18/2023
Next Scheduled EDR Contact: 05/01/2023
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: 10/27/2022
Date Data Arrived at EDR: 11/01/2022
Date Made Active in Reports: 11/15/2022
Number of Days to Update: 14

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 02/02/2023
Next Scheduled EDR Contact: 03/13/2023
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: 04/27/2022
Date Data Arrived at EDR: 05/04/2022
Date Made Active in Reports: 05/10/2022
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
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: 10/27/2022
Date Data Arrived at EDR: 11/01/2022
Date Made Active in Reports: 11/15/2022
Number of Days to Update: 14

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 02/02/2023
Next Scheduled EDR Contact: 05/15/2023
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: 01/20/2022
Date Data Arrived at EDR: 01/20/2022
Date Made Active in Reports: 03/25/2022
Number of Days to Update: 64

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/04/2023
Next Scheduled EDR Contact: 04/17/2023
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: 12/28/2022
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: No Update Planned

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: No Update Planned

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: 10/26/2022
Date Data Arrived at EDR: 11/22/2022
Date Made Active in Reports: 12/05/2022
Number of Days to Update: 13
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 11/30/2021
Date Made Active in Reports: 02/22/2022
Number of Days to Update: 84
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 11/29/2022
Next Scheduled EDR Contact: 03/13/2023
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: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 11/23/2022
Next Scheduled EDR Contact: 03/13/2023
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: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 02/03/2023
Next Scheduled EDR Contact: 05/15/2023
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: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 12/20/2022
Next Scheduled EDR Contact: 04/10/2023
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: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 01/24/2023
Next Scheduled EDR Contact: 05/08/2023
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: 09/30/2022
Date Data Arrived at EDR: 10/21/2022
Date Made Active in Reports: 01/10/2023
Number of Days to Update: 81

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/03/2023
Next Scheduled EDR Contact: 04/17/2023
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: 12/31/2019
Date Data Arrived at EDR: 03/02/2022
Date Made Active in Reports: 03/25/2022
Number of Days to Update: 23

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 12/21/2022
Next Scheduled EDR Contact: 04/03/2023
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: 01/06/2023
Next Scheduled EDR Contact: 04/17/2023
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: 07/26/2021
Date Data Arrived at EDR: 07/27/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 87

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 01/30/2023
Next Scheduled EDR Contact: 05/15/2023
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: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 11/09/2022
Next Scheduled EDR Contact: 02/27/2023
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 10/27/2022
Date Data Arrived at EDR: 11/01/2022
Date Made Active in Reports: 11/15/2022
Number of Days to Update: 14

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 02/02/2023
Next Scheduled EDR Contact: 04/10/2023
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

MINES VIOLATIONS: MSHA Violation Assessment Data
Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 11/29/2022
Date Data Arrived at EDR: 11/30/2022
Date Made Active in Reports: 12/22/2022
Number of Days to Update: 22

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 01/03/2023
Next Scheduled EDR Contact: 03/13/2023
Data Release Frequency: Quarterly

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: 08/03/2022
Date Data Arrived at EDR: 08/17/2022
Date Made Active in Reports: 08/31/2022
Number of Days to Update: 14

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 11/17/2022
Next Scheduled EDR Contact: 03/06/2023
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: 05/06/2020
Date Data Arrived at EDR: 05/27/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 78

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 11/21/2022
Next Scheduled EDR Contact: 03/06/2023
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: 11/21/2022
Next Scheduled EDR Contact: 03/06/2023
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: 09/13/2022
Date Data Arrived at EDR: 09/14/2022
Date Made Active in Reports: 12/05/2022
Number of Days to Update: 82

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 12/13/2022
Next Scheduled EDR Contact: 03/20/2023
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: 08/03/2022
Date Data Arrived at EDR: 08/25/2022
Date Made Active in Reports: 10/24/2022
Number of Days to Update: 60

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 11/29/2022
Next Scheduled EDR Contact: 03/13/2023
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 11/09/2021
Date Data Arrived at EDR: 10/20/2022
Date Made Active in Reports: 01/10/2023
Number of Days to Update: 82

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 01/09/2023
Next Scheduled EDR Contact: 04/24/2023
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: 05/06/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 11/15/2022
Next Scheduled EDR Contact: 03/06/2023
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/25/2022
Date Data Arrived at EDR: 09/30/2022
Date Made Active in Reports: 12/22/2022
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 01/04/2023
Next Scheduled EDR Contact: 04/17/2023
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: 11/10/2022
Date Data Arrived at EDR: 11/10/2022
Date Made Active in Reports: 02/09/2023
Number of Days to Update: 91

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 11/10/2022
Next Scheduled EDR Contact: 02/27/2023
Data Release Frequency: Quarterly

PFAS NPL: Superfund Sites with PFAS Detections Information

EPA's Office of Land and Emergency Management and EPA Regional Offices maintain data describing what is known about site investigations, contamination, and remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) where PFAS is present in the environment.

Date of Government Version: 02/23/2022
Date Data Arrived at EDR: 07/08/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 123

Source: Environmental Protection Agency
Telephone: 703-603-8895
Last EDR Contact: 01/10/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PFAS FEDERAL SITES: Federal Sites PFAS Information

Several federal entities, such as the federal Superfund program, Department of Defense, National Aeronautics and Space Administration, Department of Transportation, and Department of Energy provided information for sites with known or suspected detections at federal facilities.

Date of Government Version: 02/23/2022
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 222

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PFAS TSCA: PFAS Manufacture and Imports Information

EPA issued the Chemical Data Reporting (CDR) Rule under the Toxic Substances Control Act (TSCA) and requires chemical manufacturers and facilities that manufacture or import chemical substances to report data to EPA. EPA publishes non-confidential business information (non-CBI) and includes descriptive information about each site, corporate parent, production volume, other manufacturing information, and processing and use information.

Date of Government Version: 01/03/2022
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 222

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PFAS RCRA MANIFEST: PFAS Transfers Identified In the RCRA Database Listing

To work around the lack of PFAS waste codes in the RCRA database, EPA developed the PFAS Transfers dataset by mining e-Manifest records containing at least one of these common PFAS keywords: PFAS, PFOA, PFOS, PERFL, AFFF, GENX, GEN-X (plus the VT waste codes). These keywords were searched for in the following text fields: Manifest handling instructions (MANIFEST_HANDLING_INSTR), Non-hazardous waste description (NON_HAZ_WASTE_DESCRIPTION), DOT printed information (DOT_PRINTED_INFORMATION), Waste line handling instructions (WASTE_LINE_HANDLING_INSTR), Waste residue comments (WASTE_RESIDUE_COMMENTS).

Date of Government Version: 01/03/2022
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 222

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PFAS ATSDR: PFAS Contamination Site Location Listing

PFAS contamination site locations from the Department of Health & Human Services, Center for Disease Control & Prevention. ATSDR is involved at a number of PFAS-related sites, either directly or through assisting state and federal partners. As of now, most sites are related to drinking water contamination connected with PFAS production facilities or fire training areas where aqueous film-forming firefighting foam (AFFF) was regularly used.

Date of Government Version: 06/24/2020
Date Data Arrived at EDR: 03/17/2021
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 601

Source: Department of Health & Human Services
Telephone: 202-741-5770
Last EDR Contact: 01/23/2023
Next Scheduled EDR Contact: 05/08/2023
Data Release Frequency: Varies

PFAS WQP: Ambient Environmental Sampling for PFAS

The Water Quality Portal (WQP) is a part of a modernized repository storing ambient sampling data for all environmental media and tissue samples. A wide range of federal, state, tribal and local governments, academic and non-governmental organizations and individuals submit project details and sampling results to this public repository. The information is commonly used for research and assessments of environmental quality.

Date of Government Version: 01/03/2022
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 222

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PFAS NPDES: Clean Water Act Discharge Monitoring Information

Any discharger of pollutants to waters of the United States from a point source must have a National Pollutant Discharge Elimination System (NPDES) permit. The process for obtaining limits involves the regulated entity (permittee) disclosing releases in a NPDES permit application and the permitting authority (typically the state but sometimes EPA) deciding whether to require monitoring or monitoring with limits.

Date of Government Version: 01/03/2022
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 222

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PFAS ECHO: Facilities in Industries that May Be Handling PFAS Listing

Regulators and the public have expressed interest in knowing which regulated entities may be using PFAS. EPA has developed a dataset from various sources that show which industries may be handling PFAS. Approximately 120,000 facilities subject to federal environmental programs have operated or currently operate in industry sectors with processes that may involve handling and/or release of PFAS.

Date of Government Version: 01/03/2022
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 222

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PFAS ECHO FIRE TRAINING: Facilities in Industries that May Be Handling PFAS Listing

A list of fire training sites was added to the Industry Sectors dataset using a keyword search on the permitted facilitys name to identify sites where fire-fighting foam may have been used in training exercises. Additionally, you may view an example spreadsheet of the subset of fire training facility data, as well as the keywords used in selecting or deselecting a facility for the subset. as well as the keywords used in selecting or deselecting a facility for the subset. These keywords were tested to maximize accuracy in selecting facilities that may use fire-fighting foam in training exercises, however, due to the lack of a required reporting field in the data systems for designating fire training sites, this methodology may not identify all fire training sites or may potentially misidentify them.

Date of Government Version: 08/22/2018
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 222

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PFAS PART 139 AIRPORT: All Certified Part 139 Airports PFAS Information Listing

Since July 1, 2006, all certified part 139 airports are required to have fire-fighting foam onsite that meet military specifications (MIL-F-24385) (14 CFR 139.317). To date, these military specification fire-fighting foams are fluorinated and have been historically used for training and extinguishing. The 2018 FAA Reauthorization Act has a provision stating that no later than October 2021, FAA shall not require the use of fluorinated AFFF. This provision does not prohibit the use of fluorinated AFFF at Part 139 civilian airports; it only prohibits FAA from mandating its use. The Federal Aviation Administration?s document AC 150/5210-6D - Aircraft Fire Extinguishing Agents provides guidance on Aircraft Fire Extinguishing Agents, which includes Aqueous Film Forming Foam (AFFF).

Date of Government Version: 08/22/2018
Date Data Arrived at EDR: 10/26/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

AQUEOUS FOAM NRC: Aqueous Foam Related Incidents Listing

The National Response Center (NRC) serves as an emergency call center that fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. The spreadsheets posted to the NRC website contain initial incident data that has not been validated or investigated by a federal/state response agency. Response center calls from 1990 to the most recent complete calendar year where there was indication of Aqueous Film Forming Foam (AFFF) usage are included in this dataset. NRC calls may reference AFFF usage in the ?Material Involved? or ?Incident Description? fields.

Date of Government Version: 02/23/2022
Date Data Arrived at EDR: 03/31/2022
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 222

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 10/31/2022
Number of Days to Update: 61

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
Data Release Frequency: Varies

AQUEOUS FOAM: Former Fire Training Facility Assessments Listing

Airports shown on this list are those believed to use Aqueous Film Forming Foam (AFFF), and certified by the Federal Aviation Administration (FAA) under Title 14, Code of Federal Regulations (CFR), Part 139 (14 CFR Part 139). This list was created by SWRCB using information available from the FAA. Location points shown are from the latitude and longitude listed on the FAA airport master record.

Date of Government Version: 09/06/2022
Date Data Arrived at EDR: 09/06/2022
Date Made Active in Reports: 10/26/2022
Number of Days to Update: 50

Source: State Water Resources Control Board
Telephone: 916-341-5455
Last EDR Contact: 10/09/2022
Next Scheduled EDR Contact: 03/20/2023
Data Release Frequency: Varies

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: 09/19/2022
Date Data Arrived at EDR: 09/19/2022
Date Made Active in Reports: 12/07/2022
Number of Days to Update: 79

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 12/14/2022
Next Scheduled EDR Contact: 04/03/2023
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing

list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 12/07/2021
Date Data Arrived at EDR: 05/09/2022
Date Made Active in Reports: 05/17/2022
Number of Days to Update: 8

Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 11/10/2022
Next Scheduled EDR Contact: 02/20/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 11/14/2022
Date Data Arrived at EDR: 11/14/2022
Date Made Active in Reports: 02/01/2023
Number of Days to Update: 79

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 11/14/2022
Next Scheduled EDR Contact: 03/13/2023
Data Release Frequency: Varies

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: 08/18/2022
Date Data Arrived at EDR: 08/29/2022
Date Made Active in Reports: 11/14/2022
Number of Days to Update: 77

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 11/15/2022
Next Scheduled EDR Contact: 03/06/2023
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: 08/27/2021
Date Data Arrived at EDR: 09/01/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 79

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 01/24/2023
Next Scheduled EDR Contact: 03/13/2023
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 06/13/2022
Date Made Active in Reports: 08/30/2022
Number of Days to Update: 78

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 12/15/2022
Next Scheduled EDR Contact: 03/27/2023
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: 10/17/2022
Date Data Arrived at EDR: 10/19/2022
Date Made Active in Reports: 01/10/2023
Number of Days to Update: 83

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 01/18/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 10/12/2022
Date Data Arrived at EDR: 10/12/2022
Date Made Active in Reports: 12/29/2022
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/13/2023
Next Scheduled EDR Contact: 05/01/2023
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: 08/09/2022
Date Data Arrived at EDR: 08/10/2022
Date Made Active in Reports: 08/30/2022
Number of Days to Update: 20

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/03/2023
Next Scheduled EDR Contact: 05/22/2023
Data Release Frequency: Varies

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 11/10/2022
Date Data Arrived at EDR: 11/10/2022
Date Made Active in Reports: 02/01/2023
Number of Days to Update: 83

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 11/10/2022
Next Scheduled EDR Contact: 02/27/2023
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: 11/10/2022
Date Data Arrived at EDR: 11/10/2022
Date Made Active in Reports: 02/01/2023
Number of Days to Update: 83

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/10/2022
Next Scheduled EDR Contact: 02/27/2023
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: 10/03/2022
Date Data Arrived at EDR: 10/03/2022
Date Made Active in Reports: 12/15/2022
Number of Days to Update: 73

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 01/04/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Quarterly

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: 12/31/2021
Date Data Arrived at EDR: 07/05/2022
Date Made Active in Reports: 09/19/2022
Number of Days to Update: 76

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 01/06/2023
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Annually

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/18/2022
Number of Days to Update: 79
Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
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: 08/08/2022
Date Data Arrived at EDR: 08/25/2022
Date Made Active in Reports: 11/14/2022
Number of Days to Update: 81
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 11/29/2022
Next Scheduled EDR Contact: 03/13/2023
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 11/03/2022
Date Data Arrived at EDR: 11/03/2022
Date Made Active in Reports: 01/25/2023
Number of Days to Update: 83
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/07/2023
Next Scheduled EDR Contact: 05/22/2023
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: 08/25/2022
Date Data Arrived at EDR: 08/25/2022
Date Made Active in Reports: 11/14/2022
Number of Days to Update: 81
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 11/29/2022
Next Scheduled EDR Contact: 03/13/2023
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/18/2022
Number of Days to Update: 79
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
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: 09/07/2022
Date Data Arrived at EDR: 09/08/2022
Date Made Active in Reports: 11/29/2022
Number of Days to Update: 82
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 12/06/2022
Next Scheduled EDR Contact: 03/27/2023
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: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/18/2022
Number of Days to Update: 79
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/17/2022
Number of Days to Update: 78
Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
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: 02/11/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 90
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 01/06/2023
Next Scheduled EDR Contact: 04/17/2023
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: 11/08/2022
Next Scheduled EDR Contact: 02/27/2023
Data Release Frequency: No Update Planned

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: 12/13/2022
Next Scheduled EDR Contact: 04/03/2023
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/17/2022
Number of Days to Update: 78
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/17/2022
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
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: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/18/2022
Number of Days to Update: 79

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
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: 08/16/2022
Date Data Arrived at EDR: 08/17/2022
Date Made Active in Reports: 08/18/2022
Number of Days to Update: 1

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 11/29/2022
Next Scheduled EDR Contact: 03/13/2023
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: 01/05/2023
Date Data Arrived at EDR: 01/06/2023
Date Made Active in Reports: 01/10/2023
Number of Days to Update: 4

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 01/06/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/17/2022
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/17/2022
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/17/2022
Number of Days to Update: 78
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/17/2022
Number of Days to Update: 78
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
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: 08/31/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/17/2022
Number of Days to Update: 78
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
Data Release Frequency: Varies

MINES MRDS: Mineral Resources Data System
Mineral Resources Data System

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 10/21/2019
Date Made Active in Reports: 10/24/2019
Number of Days to Update: 3
Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 11/22/2022
Next Scheduled EDR Contact: 03/06/2023
Data Release Frequency: Varies

PCS INACTIVE: Listing of Inactive PCS Permits
An inactive permit is a facility that has shut down or is no longer discharging.

Date of Government Version: 11/05/2014
Date Data Arrived at EDR: 01/06/2015
Date Made Active in Reports: 05/06/2015
Number of Days to Update: 120
Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 12/28/2022
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Semi-Annually

PCS: Permit Compliance System
PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55
Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 12/28/2022
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Semi-Annually

PCS ENF: Enforcement data
No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 12/28/2022
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Varies

HWTS: Hazardous Waste Tracking System

DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

Date of Government Version: 04/05/2022
Date Data Arrived at EDR: 04/05/2022
Date Made Active in Reports: 04/26/2022
Number of Days to Update: 21

Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 01/03/2023
Next Scheduled EDR Contact: 04/17/2023
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: 12/28/2022
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 09/28/2022
Date Data Arrived at EDR: 09/29/2022
Date Made Active in Reports: 12/14/2022
Number of Days to Update: 76

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 12/28/2022
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 07/22/2022
Date Data Arrived at EDR: 07/27/2022
Date Made Active in Reports: 08/01/2022
Number of Days to Update: 5

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/15/2023
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: 12/28/2022
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 12/13/2022
Date Data Arrived at EDR: 12/15/2022
Date Made Active in Reports: 12/21/2022
Number of Days to Update: 6

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 12/13/2022
Next Scheduled EDR Contact: 04/03/2023
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/06/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 78

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/15/2023
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: 10/20/2022
Date Data Arrived at EDR: 10/21/2022
Date Made Active in Reports: 01/10/2023
Number of Days to Update: 81

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 01/20/2023
Next Scheduled EDR Contact: 05/08/2023
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 05/04/2022
Date Data Arrived at EDR: 05/06/2022
Date Made Active in Reports: 07/28/2022
Number of Days to Update: 83

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 02/03/2023
Next Scheduled EDR Contact: 05/08/2023
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/08/2022
Date Data Arrived at EDR: 08/09/2022
Date Made Active in Reports: 09/01/2022
Number of Days to Update: 23

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 01/20/2023
Next Scheduled EDR Contact: 05/08/2023
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: 06/28/2021
Date Data Arrived at EDR: 12/21/2021
Date Made Active in Reports: 03/03/2022
Number of Days to Update: 72

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 12/29/2022
Next Scheduled EDR Contact: 04/10/2023
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: 01/13/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/12/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 88

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/09/2023
Next Scheduled EDR Contact: 05/29/2023
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 10/11/2022
Date Data Arrived at EDR: 10/12/2022
Date Made Active in Reports: 12/29/2022
Number of Days to Update: 78

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/13/2023
Next Scheduled EDR Contact: 05/01/2023
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: 02/09/2023
Next Scheduled EDR Contact: 05/29/2023
Data Release Frequency: Varies

KERN COUNTY:

CUPA KERN: CUPA Facility List
A listing of sites included in the Kern County Hazardous Material Business Plan.

Date of Government Version: 10/03/2022
Date Data Arrived at EDR: 10/05/2022
Date Made Active in Reports: 12/16/2022
Number of Days to Update: 72

Source: Kern County Public Health
Telephone: 661-321-3000
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Varies

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 10/03/2022
Date Data Arrived at EDR: 10/05/2022
Date Made Active in Reports: 12/16/2022
Number of Days to Update: 72

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/15/2023
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: 12/03/2020
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/14/2021
Number of Days to Update: 78

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 02/09/2023
Next Scheduled EDR Contact: 05/29/2023
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 11/04/2022
Date Data Arrived at EDR: 11/07/2022
Date Made Active in Reports: 01/25/2023
Number of Days to Update: 79

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 01/09/2023
Next Scheduled EDR Contact: 04/24/2023
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 07/31/2020
Date Data Arrived at EDR: 08/21/2020
Date Made Active in Reports: 11/09/2020
Number of Days to Update: 80

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 01/13/2023
Next Scheduled EDR Contact: 05/01/2023
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: 12/06/2022
Next Scheduled EDR Contact: 03/27/2023
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 10/03/2022
Date Data Arrived at EDR: 10/04/2022
Date Made Active in Reports: 12/15/2022
Number of Days to Update: 72

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 12/28/2022
Next Scheduled EDR Contact: 04/17/2023
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 10/07/2022
Date Data Arrived at EDR: 10/07/2022
Date Made Active in Reports: 12/21/2022
Number of Days to Update: 75

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/10/2023
Next Scheduled EDR Contact: 04/24/2023
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: 01/01/2022
Date Data Arrived at EDR: 01/21/2022
Date Made Active in Reports: 04/11/2022
Number of Days to Update: 80

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/24/2023
Data Release Frequency: Varies

LOS ANGELES AST: Active & Inactive AST Inventory
A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 12/13/2022
Next Scheduled EDR Contact: 04/03/2023
Data Release Frequency: Varies

LOS ANGELES CO LF METHANE: Methane Producing Landfills
This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 01/10/2022
Date Data Arrived at EDR: 01/12/2022
Date Made Active in Reports: 04/04/2022
Number of Days to Update: 82

Source: Los Angeles County Department of Public Works
Telephone: 626-458-6973
Last EDR Contact: 01/05/2023
Next Scheduled EDR Contact: 04/24/2023
Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory
A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 08/30/2022
Date Data Arrived at EDR: 09/20/2022
Date Made Active in Reports: 12/07/2022
Number of Days to Update: 78

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 12/14/2022
Next Scheduled EDR Contact: 04/03/2023
Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory
A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 08/30/2022
Date Data Arrived at EDR: 09/20/2022
Date Made Active in Reports: 12/08/2022
Number of Days to Update: 79

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 12/14/2022
Next Scheduled EDR Contact: 04/03/2023
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: 05/26/2021
Date Data Arrived at EDR: 07/09/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 82

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 01/20/2023
Next Scheduled EDR Contact: 05/01/2023
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: 01/05/2023
Next Scheduled EDR Contact: 04/24/2023
Data Release Frequency: No Update Planned

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: 04/22/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 65

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 01/20/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 10/18/2022
Date Data Arrived at EDR: 10/19/2022
Date Made Active in Reports: 01/10/2023
Number of Days to Update: 83

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/13/2023
Next Scheduled EDR Contact: 05/01/2023
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: 08/10/2020
Date Data Arrived at EDR: 08/12/2020
Date Made Active in Reports: 10/23/2020
Number of Days to Update: 72

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/09/2023
Next Scheduled EDR Contact: 05/29/2023
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: 12/19/2022
Next Scheduled EDR Contact: 04/10/2023
Data Release Frequency: Semi-Annually

MENDOCINO COUNTY:

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/22/2021
Date Data Arrived at EDR: 11/18/2021
Date Made Active in Reports: 11/22/2021
Number of Days to Update: 4

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 11/15/2022
Next Scheduled EDR Contact: 03/06/2023
Data Release Frequency: Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 02/15/2022
Date Data Arrived at EDR: 02/17/2022
Date Made Active in Reports: 05/11/2022
Number of Days to Update: 83

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 01/31/2023
Next Scheduled EDR Contact: 05/29/2023
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 02/22/2021
Date Data Arrived at EDR: 03/02/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 78

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 11/15/2022
Next Scheduled EDR Contact: 03/06/2023
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 10/04/2021
Date Data Arrived at EDR: 10/06/2021
Date Made Active in Reports: 12/29/2021
Number of Days to Update: 84

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 02/03/2023
Next Scheduled EDR Contact: 04/10/2023
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: 11/15/2022
Next Scheduled EDR Contact: 03/06/2023
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: 09/05/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 52

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 11/15/2022
Next Scheduled EDR Contact: 03/06/2023
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 10/27/2022
Date Data Arrived at EDR: 10/27/2022
Date Made Active in Reports: 01/18/2023
Number of Days to Update: 83

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 01/20/2023
Next Scheduled EDR Contact: 05/08/2023
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 05/24/2022
Date Data Arrived at EDR: 08/09/2022
Date Made Active in Reports: 10/28/2022
Number of Days to Update: 80

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 01/31/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 04/08/2022
Date Data Arrived at EDR: 05/18/2022
Date Made Active in Reports: 08/03/2022
Number of Days to Update: 77

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 01/31/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 05/24/2022
Date Data Arrived at EDR: 08/01/2022
Date Made Active in Reports: 10/20/2022
Number of Days to Update: 80

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 01/31/2023
Next Scheduled EDR Contact: 05/15/2023
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: 08/26/2022
Date Data Arrived at EDR: 08/29/2022
Date Made Active in Reports: 11/15/2022
Number of Days to Update: 78

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 11/22/2022
Next Scheduled EDR Contact: 03/13/2023
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 01/13/2023
Next Scheduled EDR Contact: 05/01/2023
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: 09/22/2022
Date Data Arrived at EDR: 09/26/2022
Date Made Active in Reports: 12/09/2022
Number of Days to Update: 74

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/06/2022
Next Scheduled EDR Contact: 03/27/2023
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 09/22/2022
Date Data Arrived at EDR: 09/26/2022
Date Made Active in Reports: 12/09/2022
Number of Days to Update: 74

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/06/2022
Next Scheduled EDR Contact: 03/27/2023
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: 06/18/2021
Date Data Arrived at EDR: 09/28/2021
Date Made Active in Reports: 12/14/2021
Number of Days to Update: 77

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 12/21/2022
Next Scheduled EDR Contact: 04/10/2023
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: 05/04/2022
Date Data Arrived at EDR: 06/30/2022
Date Made Active in Reports: 07/05/2022
Number of Days to Update: 5

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 12/09/2022
Next Scheduled EDR Contact: 04/10/2023
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 10/27/2022
Date Data Arrived at EDR: 10/28/2022
Date Made Active in Reports: 01/18/2023
Number of Days to Update: 82

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/15/2023
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: 11/18/2022
Date Data Arrived at EDR: 11/21/2022
Date Made Active in Reports: 02/09/2023
Number of Days to Update: 80

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 01/30/2023
Next Scheduled EDR Contact: 05/15/2023
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: 08/25/2022
Date Data Arrived at EDR: 08/25/2022
Date Made Active in Reports: 11/15/2022
Number of Days to Update: 82

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 11/29/2022
Next Scheduled EDR Contact: 03/13/2023
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/27/2021
Date Data Arrived at EDR: 03/04/2022
Date Made Active in Reports: 05/31/2022
Number of Days to Update: 88

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 01/13/2023
Next Scheduled EDR Contact: 05/01/2023
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: 07/22/2021
Date Data Arrived at EDR: 10/19/2021
Date Made Active in Reports: 01/13/2022
Number of Days to Update: 86

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 01/13/2023
Next Scheduled EDR Contact: 05/01/2023
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: 11/22/2022
Next Scheduled EDR Contact: 03/13/2023
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 11/03/2022
Date Data Arrived at EDR: 11/07/2022
Date Made Active in Reports: 01/25/2023
Number of Days to Update: 79

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Varies

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: 01/27/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: No Update Planned

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/03/2022
Date Data Arrived at EDR: 11/07/2022
Date Made Active in Reports: 01/24/2023
Number of Days to Update: 78

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Quarterly

SAN FRANCISO COUNTY:

SAN FRANCISCO MAHER: Maher Ordinance Property Listing
a listing of properties that fall within a Maher Ordinance, for all of San Francisco

Date of Government Version: 10/11/2022
Date Data Arrived at EDR: 10/14/2022
Date Made Active in Reports: 01/04/2023
Number of Days to Update: 82

Source: San Francisco Planning
Telephone: 628-652-7483
Last EDR Contact: 01/13/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

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: 12/06/2022
Next Scheduled EDR Contact: 03/27/2023
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 11/08/2022
Date Data Arrived at EDR: 11/09/2022
Date Made Active in Reports: 02/01/2023
Number of Days to Update: 84

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/09/2023
Next Scheduled EDR Contact: 05/29/2023
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: 02/20/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 12/09/2022
Next Scheduled EDR Contact: 03/20/2023
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: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 61
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 11/30/2022
Next Scheduled EDR Contact: 03/20/2023
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: 02/09/2023
Next Scheduled EDR Contact: 05/29/2023
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 10/28/2022
Date Data Arrived at EDR: 11/01/2022
Date Made Active in Reports: 01/20/2023
Number of Days to Update: 80
Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/09/2023
Next Scheduled EDR Contact: 05/29/2023
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: 11/15/2022
Next Scheduled EDR Contact: 03/06/2023
Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/03/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 01/26/2021
Number of Days to Update: 82

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/15/2023
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: 02/09/2023
Next Scheduled EDR Contact: 05/29/2023
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: 02/09/2023
Next Scheduled EDR Contact: 05/29/2023
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: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 11/22/2022
Next Scheduled EDR Contact: 03/13/2023
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 09/15/2021
Date Data Arrived at EDR: 09/16/2021
Date Made Active in Reports: 12/09/2021
Number of Days to Update: 84

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 11/22/2022
Next Scheduled EDR Contact: 03/13/2023
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 07/02/2021
Date Data Arrived at EDR: 07/06/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 8

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 12/13/2022
Next Scheduled EDR Contact: 04/03/2023
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: 06/30/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 09/24/2021
Number of Days to Update: 86

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 12/13/2022
Next Scheduled EDR Contact: 04/03/2023
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 02/08/2022
Date Data Arrived at EDR: 02/10/2022
Date Made Active in Reports: 05/04/2022
Number of Days to Update: 83

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 01/09/2023
Next Scheduled EDR Contact: 04/24/2023
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 08/03/2022
Date Data Arrived at EDR: 08/25/2022
Date Made Active in Reports: 11/14/2022
Number of Days to Update: 81

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 11/23/2022
Next Scheduled EDR Contact: 03/13/2023
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 07/27/2022
Date Data Arrived at EDR: 07/27/2022
Date Made Active in Reports: 10/11/2022
Number of Days to Update: 76

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/15/2023
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 10/11/2022
Date Data Arrived at EDR: 10/12/2022
Date Made Active in Reports: 12/29/2022
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 01/13/2023
Next Scheduled EDR Contact: 05/01/2023
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 10/07/2022
Date Data Arrived at EDR: 10/07/2022
Date Made Active in Reports: 12/21/2022
Number of Days to Update: 75

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/15/2023
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: 01/13/2023
Next Scheduled EDR Contact: 05/01/2023
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: 09/26/2022
Date Data Arrived at EDR: 10/19/2022
Date Made Active in Reports: 01/10/2023
Number of Days to Update: 83

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
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: 12/19/2022
Next Scheduled EDR Contact: 04/10/2023
Data Release Frequency: No Update Planned

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: 02/02/2023
Next Scheduled EDR Contact: 05/22/2023
Data Release Frequency: No Update Planned

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: 09/26/2022
Date Data Arrived at EDR: 10/20/2022
Date Made Active in Reports: 01/10/2023
Number of Days to Update: 82

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/17/2023
Next Scheduled EDR Contact: 05/01/2023
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: 08/29/2022
Date Data Arrived at EDR: 08/31/2022
Date Made Active in Reports: 11/21/2022
Number of Days to Update: 82
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/02/2022
Next Scheduled EDR Contact: 03/20/2023
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: 09/21/2022
Date Data Arrived at EDR: 09/30/2022
Date Made Active in Reports: 12/14/2022
Number of Days to Update: 75
Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 12/19/2022
Next Scheduled EDR Contact: 04/10/2023
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 10/25/2022
Date Data Arrived at EDR: 10/26/2022
Date Made Active in Reports: 10/31/2022
Number of Days to Update: 5
Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 01/20/2023
Next Scheduled EDR Contact: 05/08/2023
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: 11/16/2022
Date Data Arrived at EDR: 11/16/2022
Date Made Active in Reports: 02/06/2023
Number of Days to Update: 82
Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/16/2022
Next Scheduled EDR Contact: 02/20/2023
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36
Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 12/28/2022
Next Scheduled EDR Contact: 04/17/2023
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: 10/29/2021
Date Made Active in Reports: 01/19/2022
Number of Days to Update: 82

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 01/27/2023
Next Scheduled EDR Contact: 05/08/2023
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/06/2023
Next Scheduled EDR Contact: 04/24/2023
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 11/30/2021
Date Made Active in Reports: 02/18/2022
Number of Days to Update: 80

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 12/20/2022
Next Scheduled EDR Contact: 02/27/2023
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 12/01/2022
Next Scheduled EDR Contact: 03/20/2023
Data Release Frequency: Annually

Oil/Gas Pipelines

Source: Endeavor Business Media

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 Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data

Source: Endeavor Business Media

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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, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

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

NOVATO PROPERTY
7711 REDWOOD BLVD
NOVATO, CA 94945

TARGET PROPERTY COORDINATES

Latitude (North):	38.127431 - 38ˆ 7’ 38.75’’
Longitude (West):	122.568534 - 122ˆ 34’ 6.72’’
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	537816.9
UTM Y (Meters):	4219836.0
Elevation:	50 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	12008171 PETALUMA RIVER, CA
Version Date:	2018
South Map:	12008165 NOVATO, CA
Version Date:	2018

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).

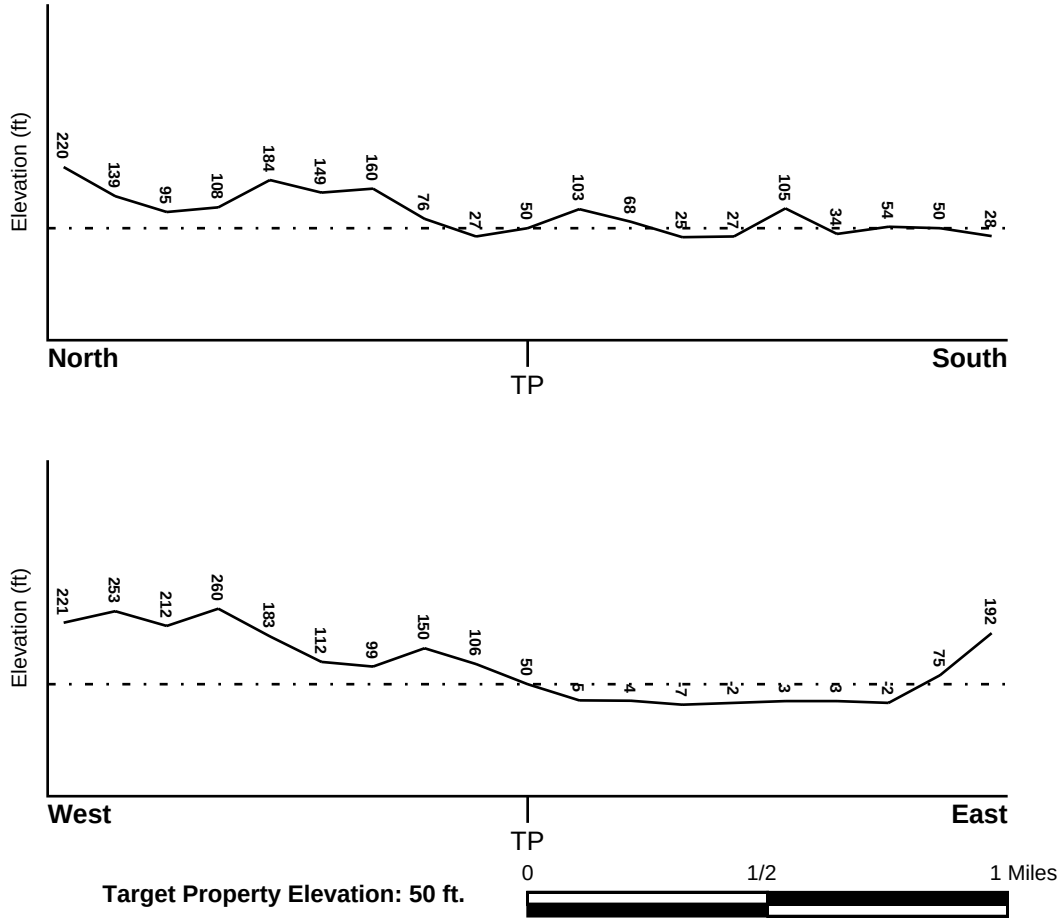
TOPOGRAPHIC INFORMATION

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 ESE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



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
06041C0175D	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06041C0281D	FEMA FIRM Flood data
06041C0277D	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
PETALUMA RIVER	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
1	1/2 - 1 Mile South	E, SE, Varie
3	1/2 - 1 Mile NNE	E
8	1/2 - 1 Mile South	NE
1G	1/2 - 1 Mile NNE	E
2G	1/2 - 1 Mile South	E, SE, Varie
3G	1/2 - 1 Mile South	NE

For additional site information, refer to Physical Setting Source Map Findings.

* ©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

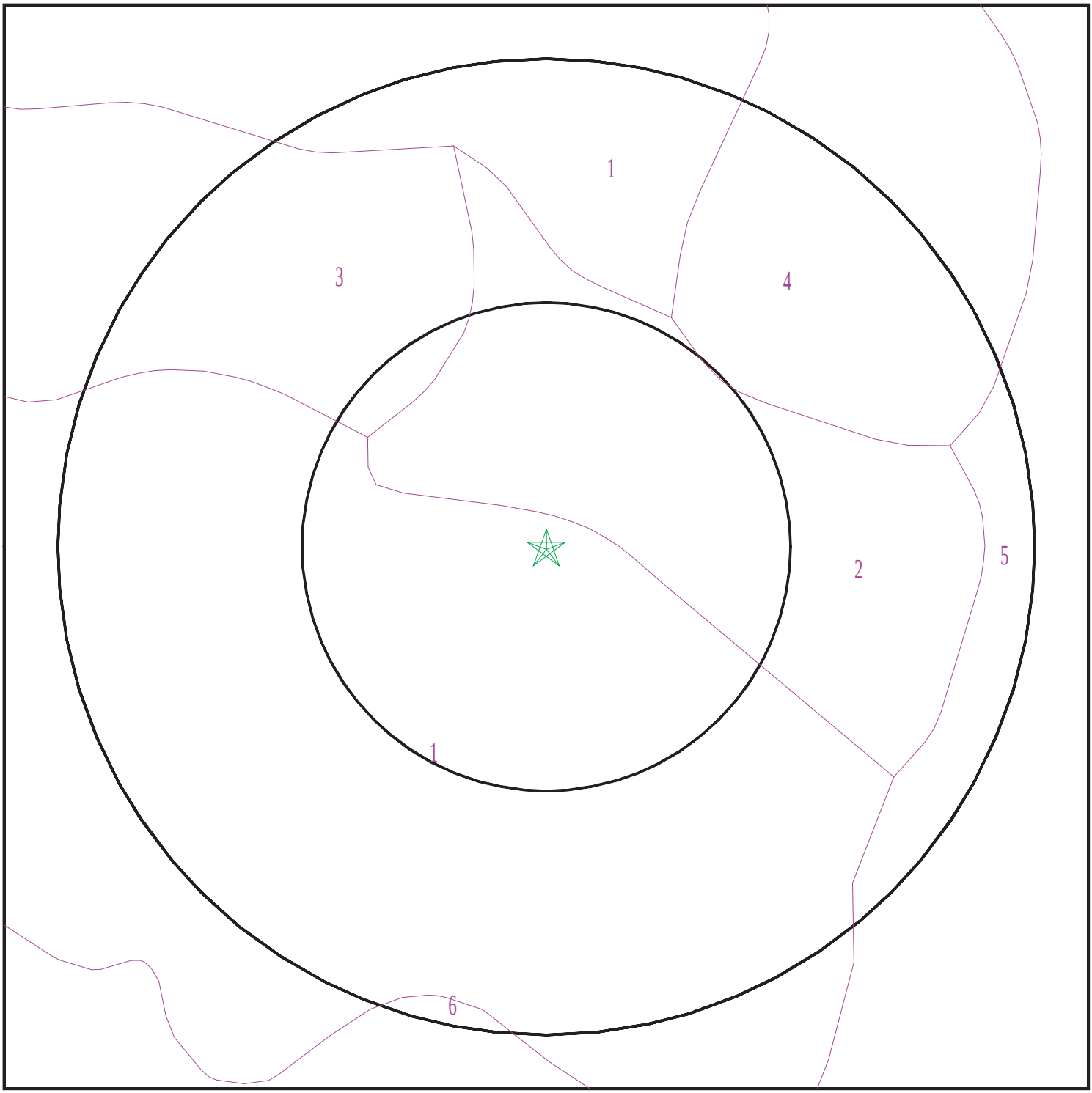
Era:	Mesozoic
System:	Cretaceous
Series:	Lower Cretaceous
Code:	lK *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

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).

SSURGO SOIL MAP - 7249630.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Novato Property	CLIENT:	AllWest Environmental Inc.
ADDRESS:	7711 Redwood Blvd Novato CA 94945	CONTACT:	Belinda Blackie
LAT/LONG:	38.127431 / 122.568534	INQUIRY #:	7249630.2s
		DATE:	February 10, 2023 9:18 am

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: LOS OSOS

Soil Surface Texture: loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
2	18 inches	38 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
3	38 inches	42 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:

Soil Map ID: 2

Soil Component Name: BLUCHER

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Somewhat poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	silt 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	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.4
2	7 inches	22 inches	silt 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	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.4
3	22 inches	59 inches	clay 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	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.4

Soil Map ID: 3

Soil Component Name: MONTARA

Soil Surface Texture: clay loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 33 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	12 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: Min:	Max: Min:
2	12 inches	16 inches	unweathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: Min:	Max: Min:

Soil Map ID: 4

Soil Component Name: GILROY

Soil Surface Texture: loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 46 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
2	11 inches	20 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
3	20 inches	29 inches	gravelly clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
4	29 inches	33 inches	unweathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:

Soil Map ID: 5

Soil Component Name: REYES

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Somewhat poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Elastic silt.	Max: 1.4 Min: 0.42	Max: 6 Min: 3.6
2	14 inches	62 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Elastic silt.	Max: 1.4 Min: 0.42	Max: 6 Min: 3.6

Soil Map ID: 6

Soil Component Name: CLEAR LAKE

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	27 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.4

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	27 inches	59 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.4

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

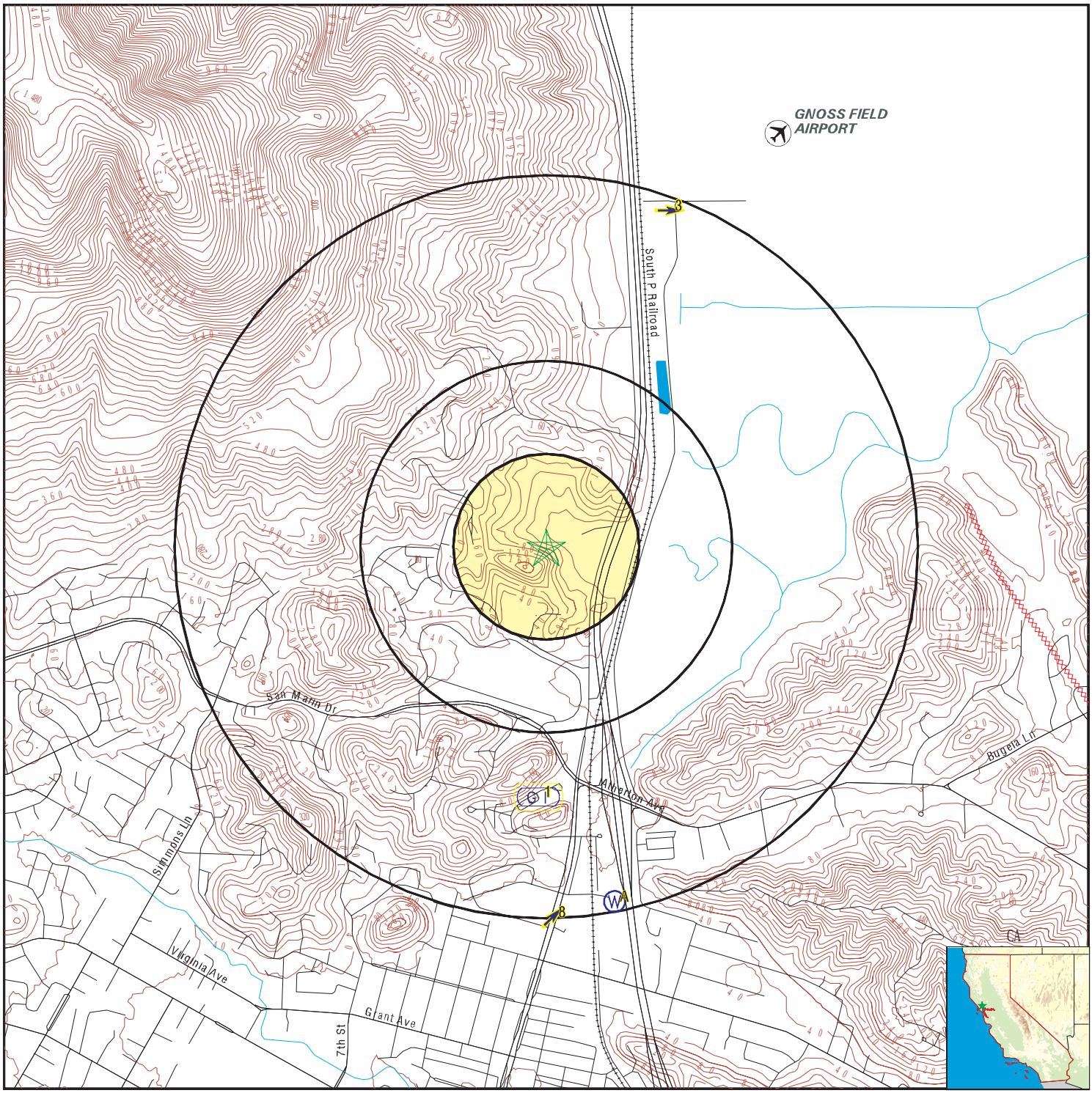
MAP ID	WELL ID	LOCATION FROM TP
A2	CAEDF0000005332	1/2 - 1 Mile South

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A4	CAEDF0000062718	1/2 - 1 Mile South
A5	CAEDF0000014101	1/2 - 1 Mile SSE
A6	CAEDF0000087524	1/2 - 1 Mile SSE
A7	CAEDF0000041610	1/2 - 1 Mile South

PHYSICAL SETTING SOURCE MAP - 7249630.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	Novato Property	CLIENT:	AllWest Environmental Inc.
ADDRESS:	7711 Redwood Blvd Novato CA 94945	CONTACT:	Belinda Blackie
		INQUIRY #:	7249630.2s
LAT/LONG:	38.127431 / 122.568534	DATE:	February 10, 2023 9:17 am

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

			Database	EDR ID Number
1 **South** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	21-0051 E, SE, Varie 8.43 11.92 Not Reported 01/22/1998	**AQUIFLOW**	**39087**

A2
South
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000005332**

Well ID:	T0604100156-MW-2	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-2
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0604100156&assigned_name=MW-2&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0604100156&assigned_name=MW-2		

			Database	EDR ID Number
3 **NNE** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	21-0298 E 4.5 6 Not Reported 10/31/1995	**AQUIFLOW**	**39238**

A4
South
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000062718**

Well ID:	T0604100156-MW-6	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-6
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0604100156&assigned_name=MW-6&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0604100156&assigned_name=MW-6		

A5
SSE
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000014101**

Well ID:	T0604100156-MW-3	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-3
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0604100156&assigned_name=MW-3&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0604100156&assigned_name=MW-3		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

		Database	EDR ID Number
A6 **SSE** **1/2 - 1 Mile** **Lower**		**CA WELLS**	**CAEDF0000087524**

Well ID:	T0604100156-MW-D1	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-D1
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0604100156&assigned_name=MW-D1&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0604100156&assigned_name=MW-D1		

		Database	EDR ID Number
A7 **South** **1/2 - 1 Mile** **Lower**		**CA WELLS**	**CAEDF0000041610**

Well ID:	T0604100156-MW-10	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-10
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T0604100156&assigned_name=MW-10&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T0604100156&assigned_name=MW-10		

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8 **South** **1/2 - 1 Mile** **Lower**	Site ID:	21-0159	**AQUIFLOW**	**39191**
	Groundwater Flow:	NE		
	Shallow Water Depth:	4.23		
	Deep Water Depth:	7.02		
	Average Water Depth:	Not Reported		
	Date:	01/21/1999		

1G **NNE** **1/2 - 1 Mile** **Lower**	Site ID:	21-0298	**AQUIFLOW**	**39238**
	Groundwater Flow:	E		
	Shallow Water Depth:	4.5		
	Deep Water Depth:	6		
	Average Water Depth:	Not Reported		
	Date:	10/31/1995		

2G **South** **1/2 - 1 Mile** **Lower**	Site ID:	21-0051	**AQUIFLOW**	**39087**
	Groundwater Flow:	E, SE, Varie		
	Shallow Water Depth:	8.43		
	Deep Water Depth:	11.92		
	Average Water Depth:	Not Reported		
	Date:	01/22/1998		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
3G **South** **1/2 - 1 Mile** **Lower**	Site ID:	21-0159	**AQUIFLOW**	**39191**
	Groundwater Flow:	NE		
	Shallow Water Depth:	4.23		
	Deep Water Depth:	7.02		
	Average Water Depth:	Not Reported		
	Date:	01/21/1999		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
94945	29	0

Federal EPA Radon Zone for MARIN County: 3

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 Zip Code: 94945

Number of sites tested: 6

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	-0.083 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

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, 2010 and 2015 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.

OTHER STATE DATABASE INFORMATION

Groundwater Ambient Monitoring & Assessment Program
State Water Resources Control Board
Telephone: 916-341-5577
The GAMA Program is Californias comprehensive groundwater quality monitoring program. GAMA collects data by testing the untreated, raw water in different types of wells for naturally-occurring and man-made chemicals. The GAMA data includes Domestic, Monitoring and Municipal well types from the following sources, Department of Water Resources, Department of Heath Services, EDF, Agricultural Lands, Lawrence Livermore National Laboratory, Department of Pesticide Regulation, United States Geological Survey, Groundwater Ambient Monitoring and Assessment Program and Local Groundwater Projects.

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.

California Oil and Gas Well Locations
Source: Dept of Conservation, Geologic Energy Management Division
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

PHYSICAL SETTING SOURCE RECORDS SEARCHED

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.

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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Novato Property

7711 Redwood Blvd

Novato, CA 94945

Inquiry Number: 7249630.3

February 09, 2023

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

02/09/23

Site Name:

Novato Property
7711 Redwood Blvd
Novato, CA 94945
EDR Inquiry # 7249630.3

Client Name:

AllWest Environmental Inc.
2141 Mission Street, Suite 100
San Francisco, CA 94110
Contact: Belinda Blackie

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Certified Sanborn Results:

Certification # 0921-48E4-8D47

PO # NA

Project 23023.20

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 #: 0921-48E4-8D47

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- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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Novato Property

7711 Redwood Blvd

Novato, CA 94945

Inquiry Number: 7249630.8

February 09, 2023

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

02/09/23

Site Name:

Novato Property
7711 Redwood Blvd
Novato, CA 94945
EDR Inquiry # 7249630.8

Client Name:

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San Francisco, CA 94110
Contact: Belinda Blackie

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*
2020	1"=500'	Flight Year: 2020	USDA/NAIP
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1993	1"=500'	Acquisition Date: July 10, 1993	USGS/DOQQ
1982	1"=500'	Flight Date: July 08, 1982	USDA
1973	1"=500'	Flight Date: September 25, 1973	USGS
1970	1"=500'	Flight Date: May 14, 1970	USGS
1968	1"=500'	Flight Date: April 16, 1968	USGS
1963	1"=500'	Flight Date: June 24, 1963	EDR Proprietary Aerial Viewpoint
1952	1"=500'	Flight Date: June 03, 1952	USGS
1942	1"=500'	Flight Date: July 23, 1942	USDA

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INQUIRY #: 7249630.8
YEAR: 2020
= 500'
N
EDR


INQUIRY #: 7249630.8
YEAR: 2016
= 500'
N
EDR


INQUIRY #: 7249630.8
YEAR: 2012
= 500'
N
EDR

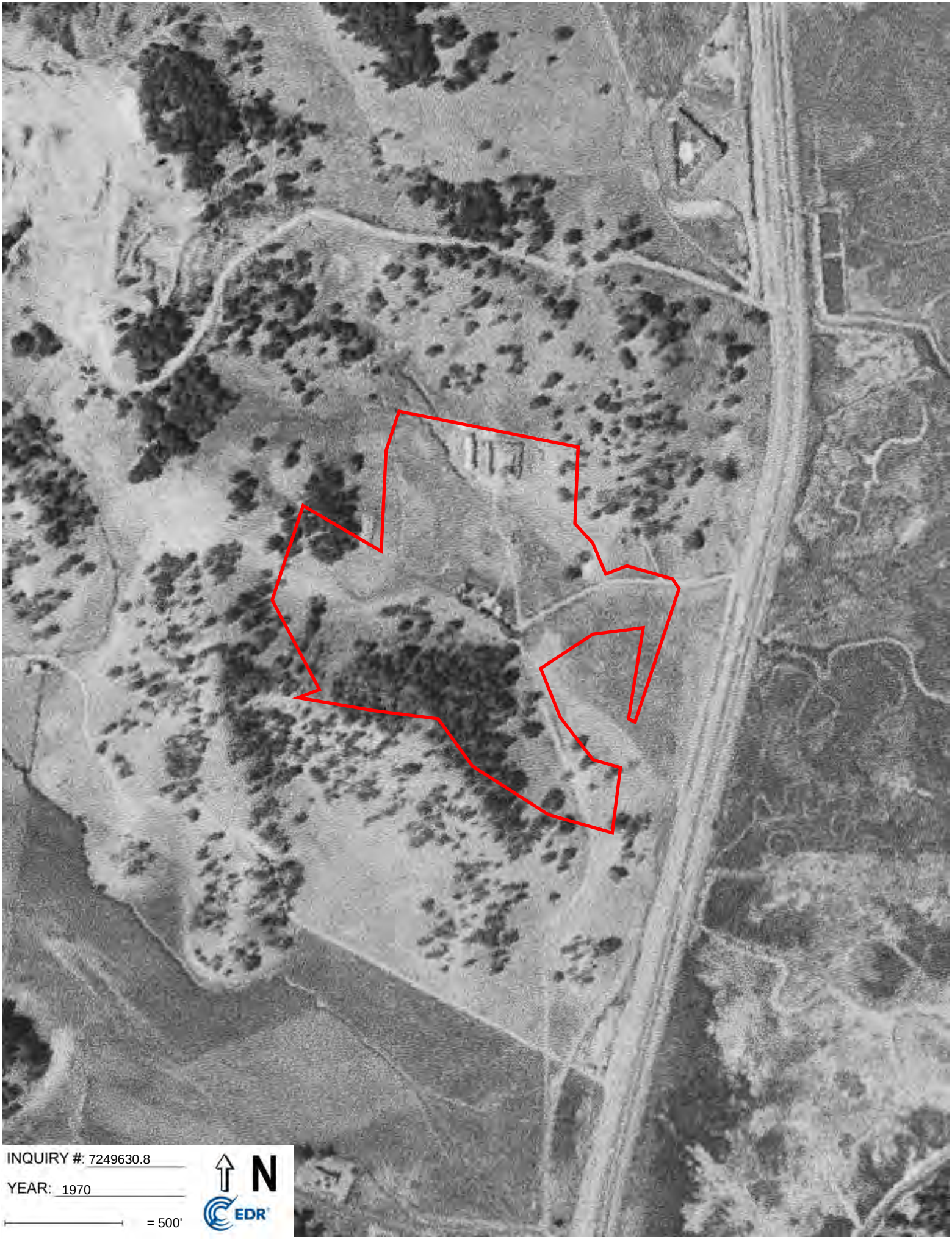

INQUIRY #: 7249630.8
YEAR: 2009
= 500'
N
EDR


INQUIRY #: 7249630.8
YEAR: 2006
= 500'
N
EDR


INQUIRY #: 7249630.8
YEAR: 1993
= 500'
N
EDR


INQUIRY #: 7249630.8
YEAR: 1982
= 500'
N
EDR


INQUIRY #: 7249630.8
YEAR: 1973
= 500'
N
EDR



INQUIRY #: 7249630.8

YEAR: 1970

= 500'

N

EDR


INQUIRY #: 7249630.8
YEAR: 1968
= 500'
N
EDR


INQUIRY #: 7249630.8
YEAR: 1963
= 500'
N
EDR


INQUIRY #: 7249630.8
YEAR: 1952
= 500'
N
EDR


INQUIRY #: 7249630.8
YEAR: 1942
= 500'
N
EDR

Novato Property
7711 Redwood Blvd
Novato, CA 94945

Inquiry Number: 7249630.4
February 09, 2023

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

02/09/23

Site Name:

Novato Property
7711 Redwood Blvd
Novato, CA 94945
EDR Inquiry # 7249630.4

Client Name:

AllWest Environmental Inc.
2141 Mission Street, Suite 100
San Francisco, CA 94110
Contact: Belinda Blackie

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by AllWest Environmental Inc. 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.# NA
Project: 23023.20

Coordinates:

Latitude:	38.127431 38° 7' 39" North
Longitude:	-122.568534 -122° 34' 7" West
UTM Zone:	Zone 10 North
UTM X Meters:	537816.00
UTM Y Meters:	4220041.82
Elevation:	50.86' above sea level

Maps Provided:

2018	1914
2015	
2012	
1980	
1973	
1968	
1954	
1942	

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2018 Source Sheets



Petaluma River
2018
7.5-minute, 24000



Novato
2018
7.5-minute, 24000

2015 Source Sheets



Petaluma River
2015
7.5-minute, 24000



Novato
2015
7.5-minute, 24000

2012 Source Sheets



Petaluma River
2012
7.5-minute, 24000



Novato
2012
7.5-minute, 24000

1980 Source Sheets



Novato
1980
7.5-minute, 24000
Aerial Photo Revised 1979



Petaluma River
1980
7.5-minute, 24000
Aerial Photo Revised 1978

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1973 Source Sheets

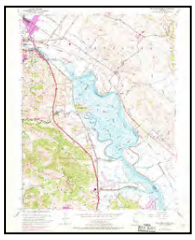


Petaluma River
1973
7.5-minute, 24000
Aerial Photo Revised 1973

1968 Source Sheets



Novato
1968
7.5-minute, 24000
Aerial Photo Revised 1968



Petaluma River
1968
7.5-minute, 24000
Aerial Photo Revised 1968

1954 Source Sheets



Novato
1954
7.5-minute, 24000
Aerial Photo Revised 1952

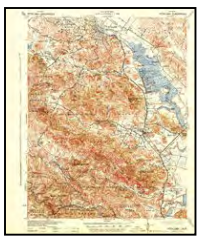


Petaluma River
1954
7.5-minute, 24000
Aerial Photo Revised 1952



Petaluma Creek
1954
7.5-minute, 24000
Aerial Photo Revised 1952

1942 Source Sheets



Petaluma
1942
15-minute, 62500
Aerial Photo Revised 1937

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

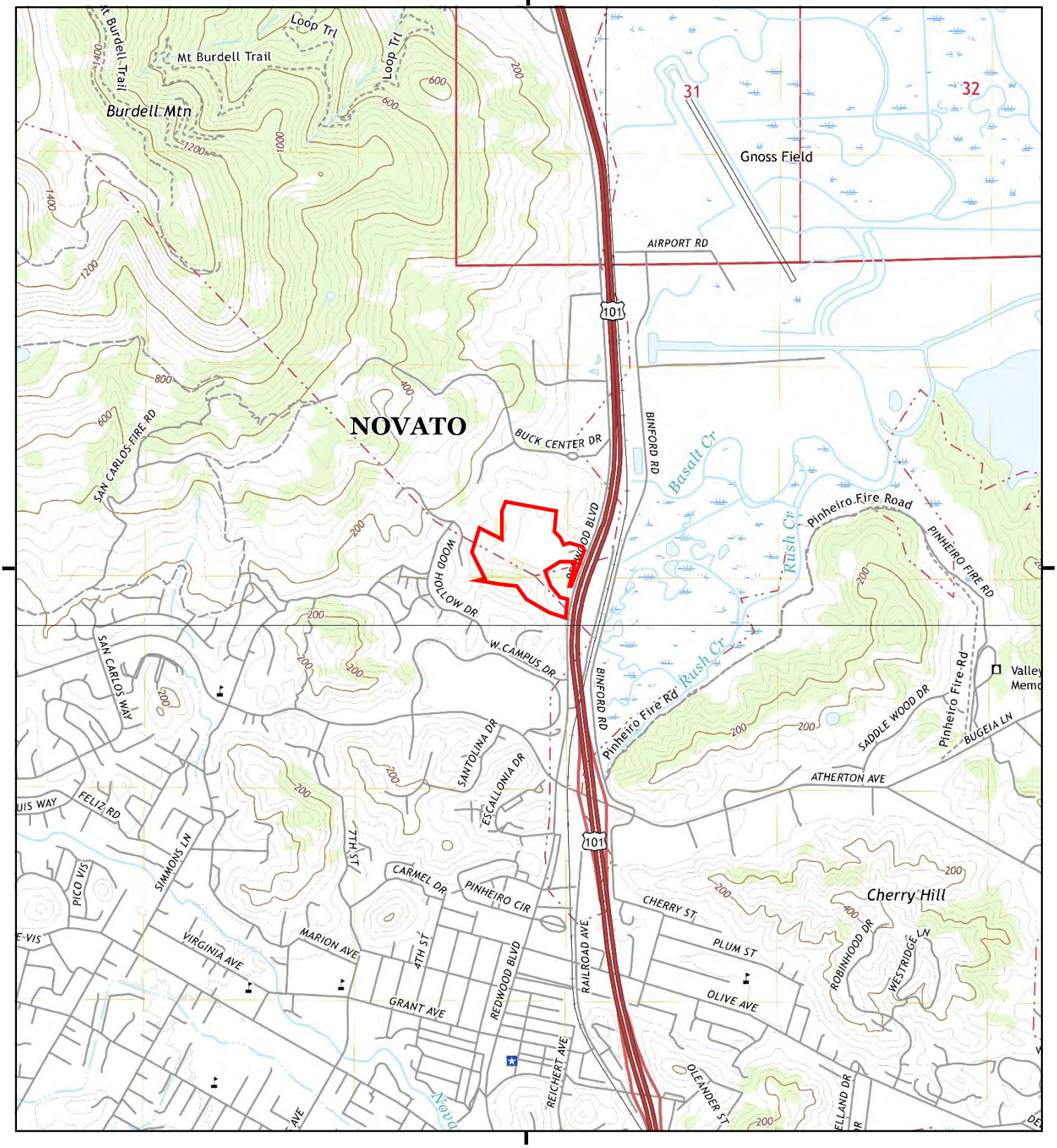
1914 Source Sheets



Petaluma
1914
15-minute, 62500

Historical Topo Map

2018



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

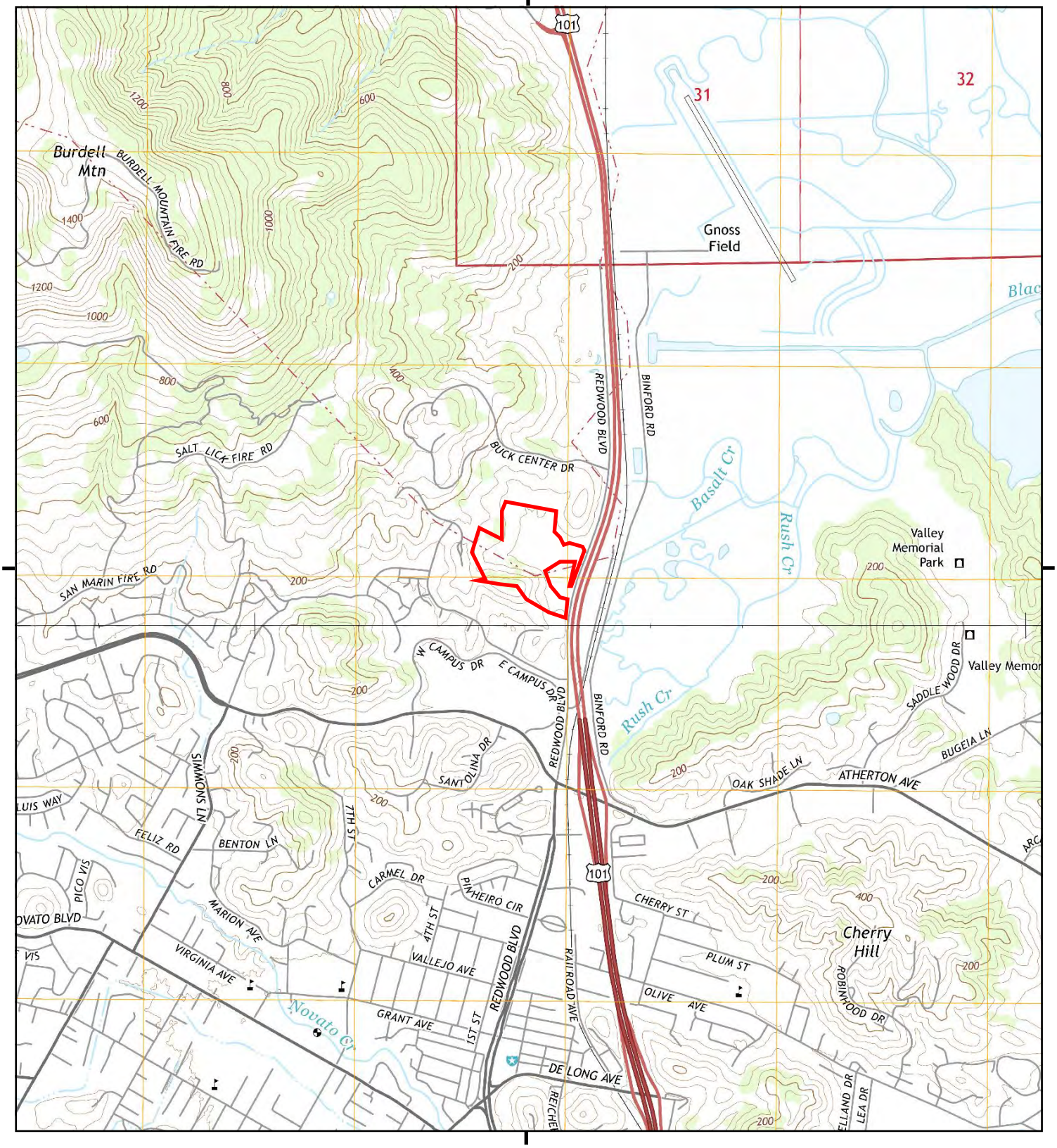
TP, Petaluma River, 2018, 7.5-minute
S, Novato, 2018, 7.5-minute

SITE NAME: Novato Property
ADDRESS: 7711 Redwood Blvd
Novato, CA 94945
CLIENT: AllWest Environmental Inc.

N

Historical Topo Map

2015



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

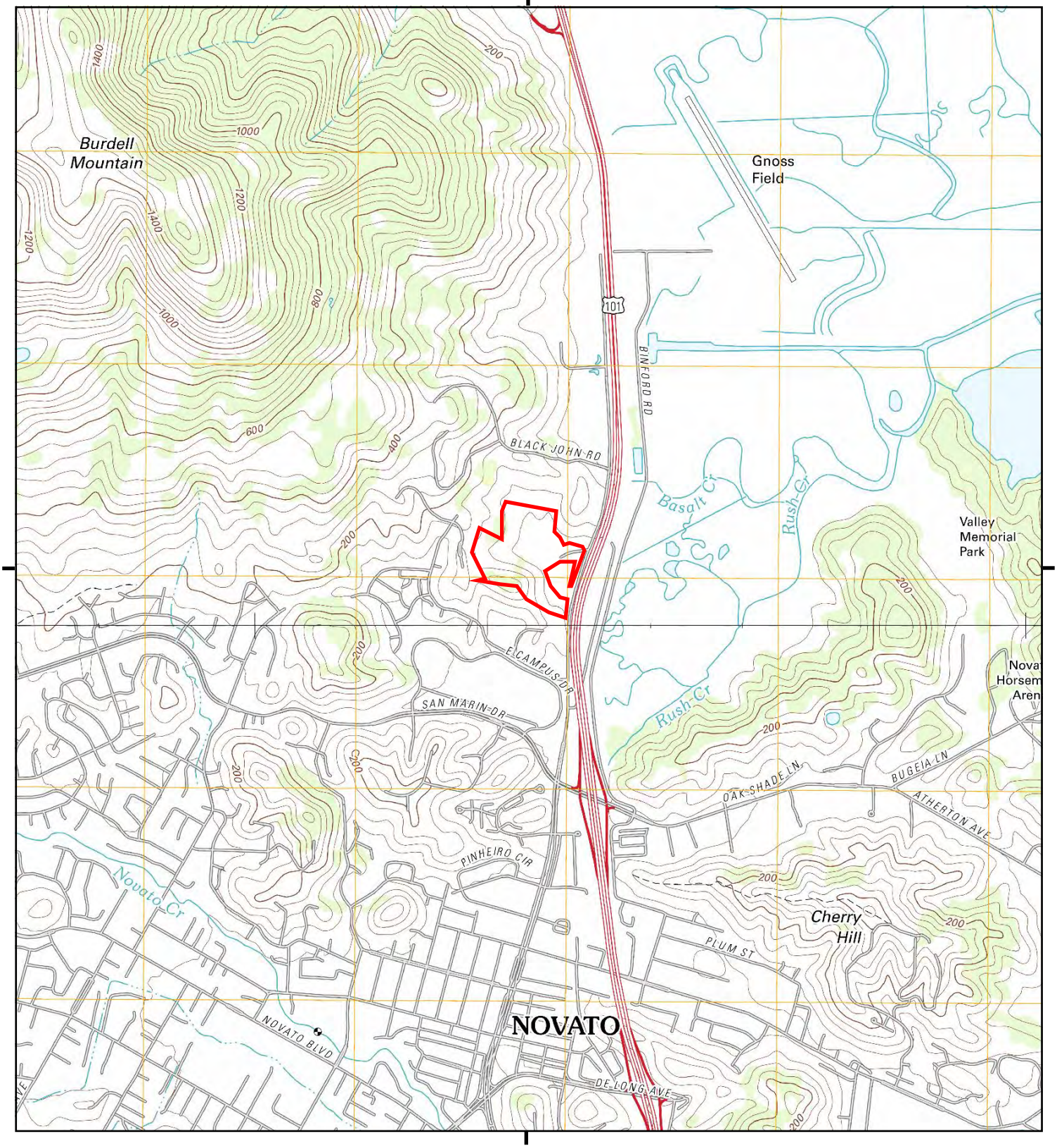
TP, Petaluma River, 2015, 7.5-minute
S, Novato, 2015, 7.5-minute

SITE NAME: Novato Property
ADDRESS: 7711 Redwood Blvd
Novato, CA 94945
CLIENT: AllWest Environmental Inc.

N

Historical Topo Map

2012



This report includes information from the following map sheet(s).

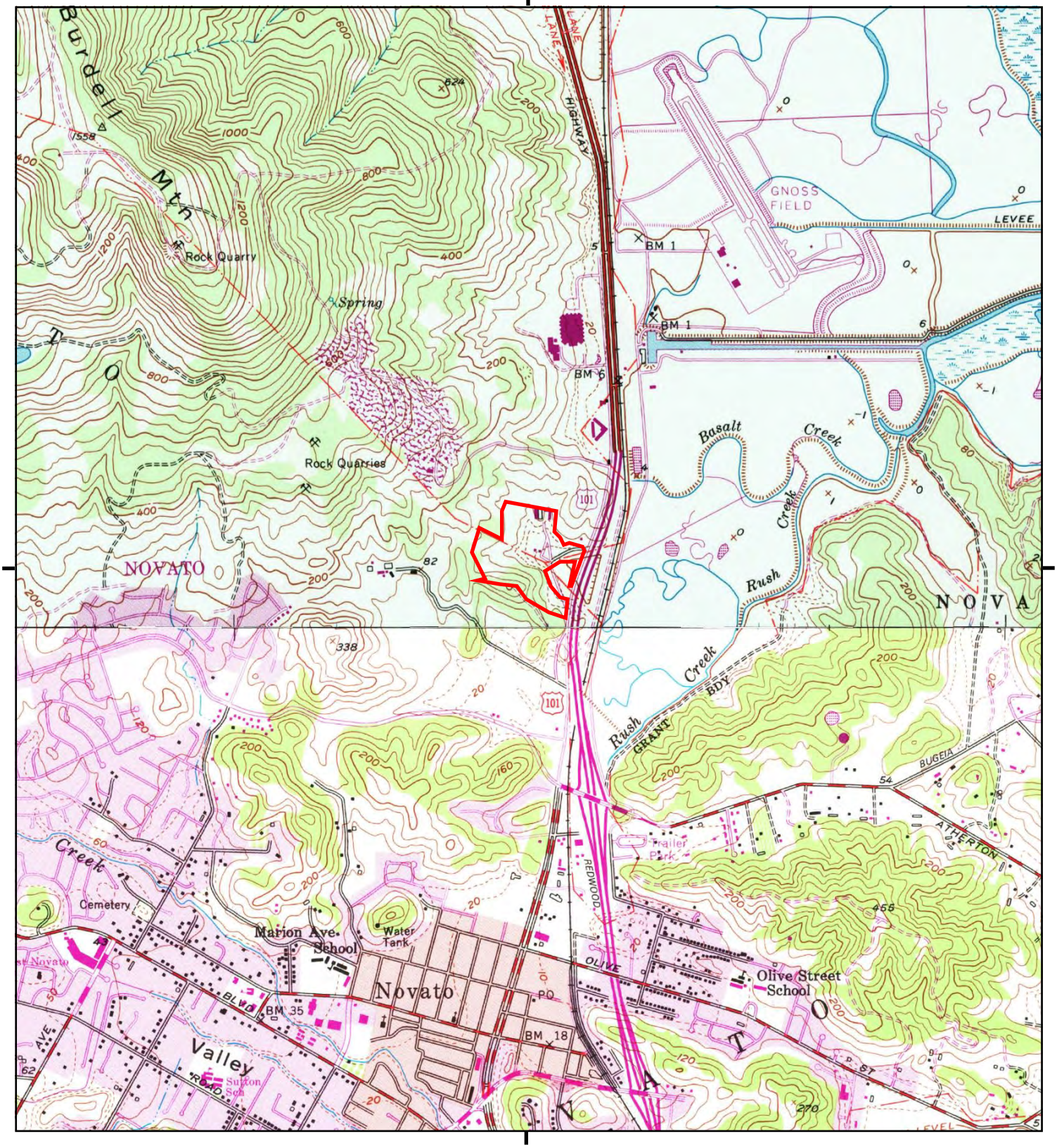
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Petaluma River, 2012, 7.5-minute
S, Novato, 2012, 7.5-minute

SITE NAME: Novato Property
ADDRESS: 7711 Redwood Blvd
Novato, CA 94945
CLIENT: AllWest Environmental Inc.

N



This report includes information from the following map sheet(s).

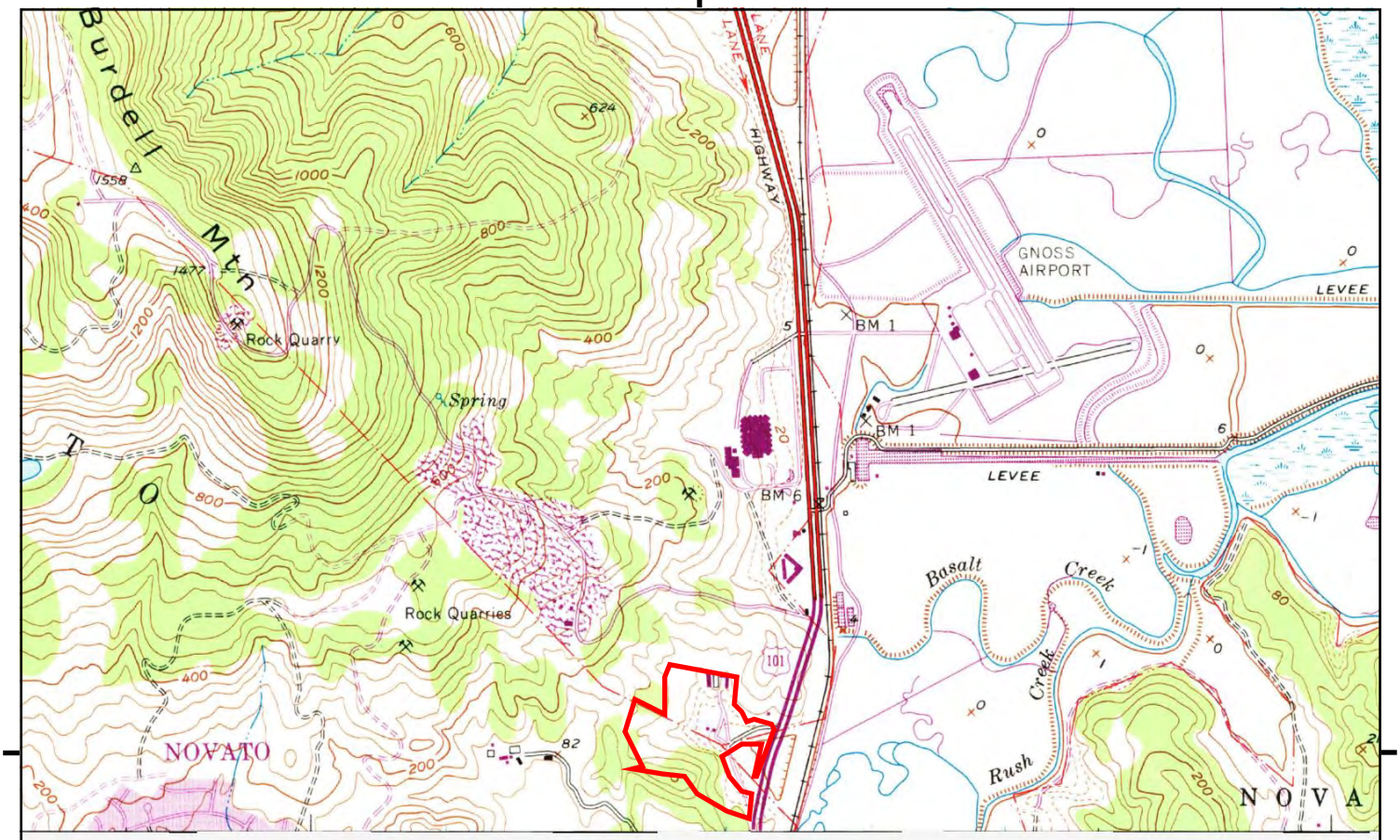
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Petaluma River, 1980, 7.5-minute
S, Novato, 1980, 7.5-minute

SITE NAME: Novato Property
ADDRESS: 7711 Redwood Blvd
Novato, CA 94945
CLIENT: AllWest Environmental Inc.

N



UNMAPPED

This report includes information from the following map sheet(s).

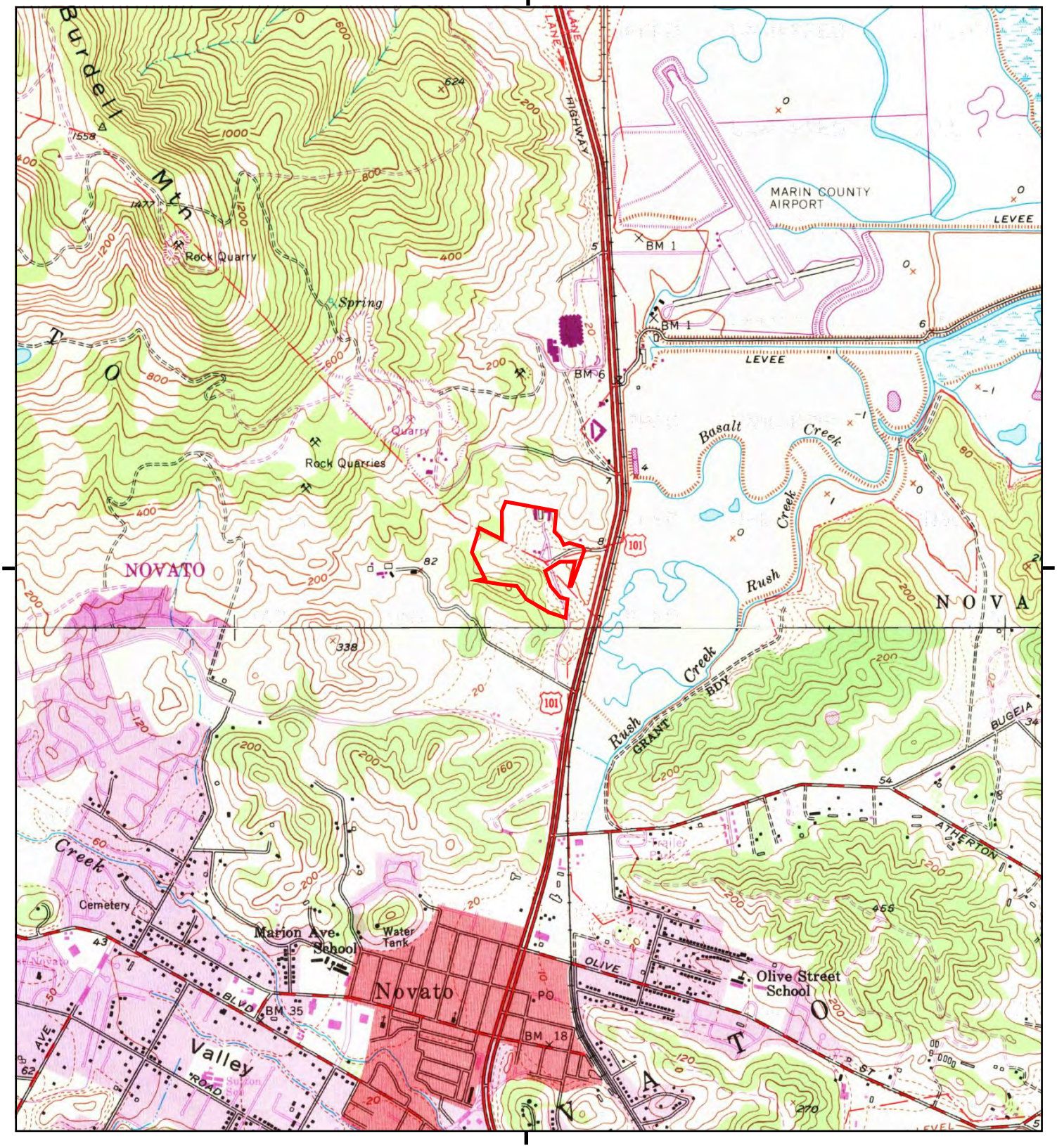
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Petaluma River, 1973, 7.5-minute

SITE NAME: Novato Property
ADDRESS: 7711 Redwood Blvd
Novato, CA 94945
CLIENT: AllWest Environmental Inc.

N



This report includes information from the following map sheet(s).

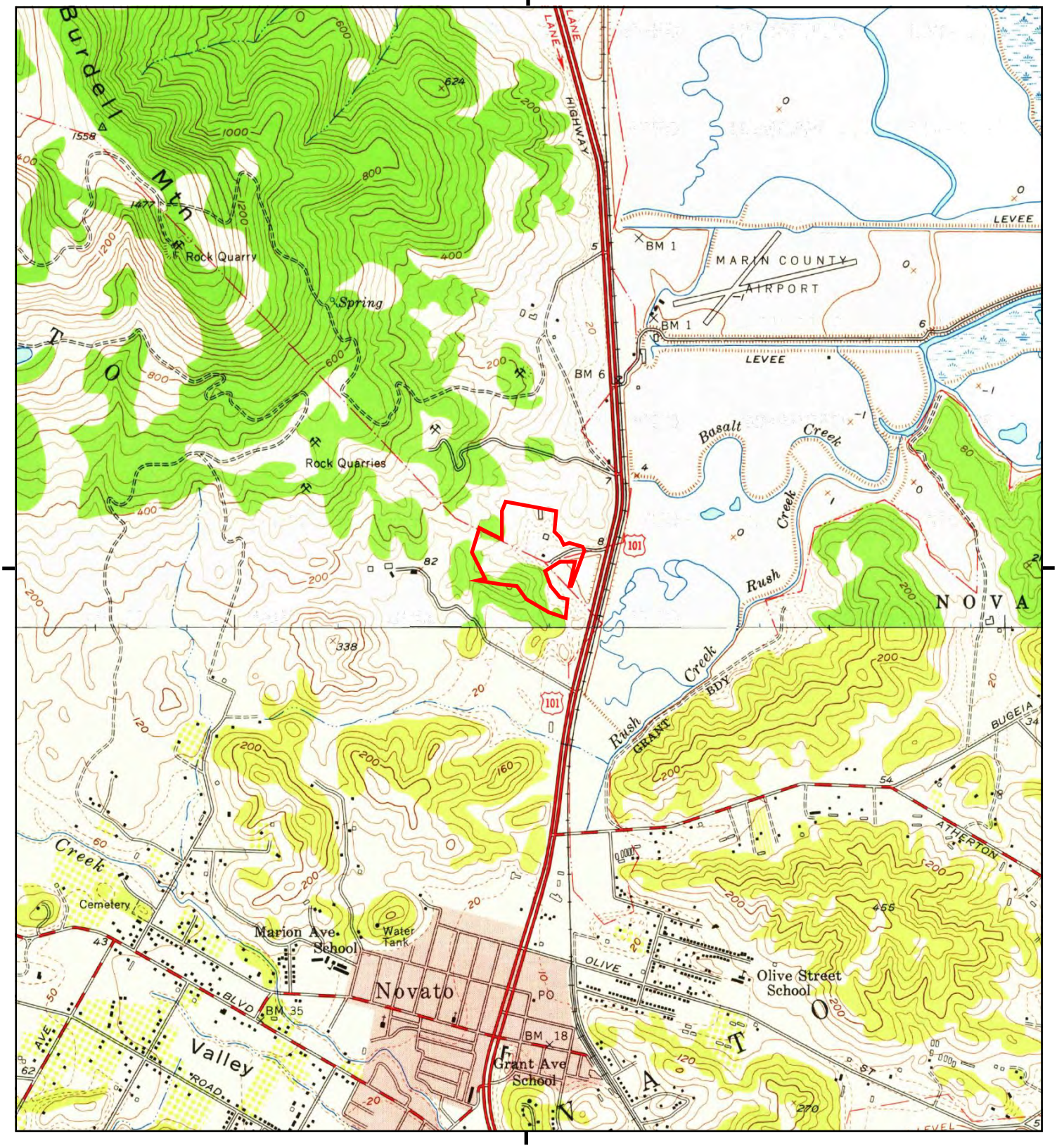
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Petaluma River, 1968, 7.5-minute
S, Novato, 1968, 7.5-minute

SITE NAME: Novato Property
ADDRESS: 7711 Redwood Blvd
Novato, CA 94945
CLIENT: AllWest Environmental Inc.

N



This report includes information from the following map sheet(s).

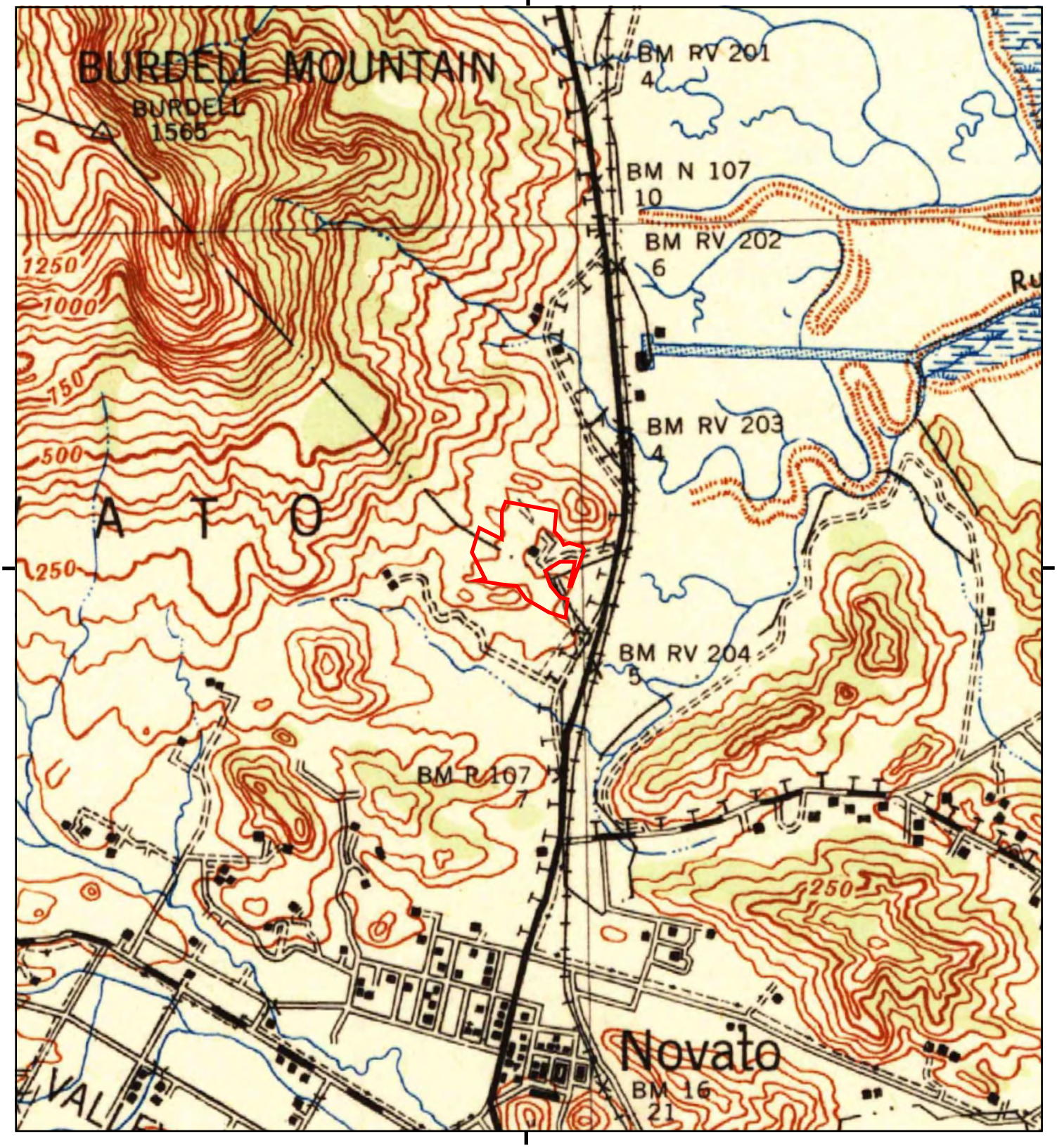
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Petaluma River, 1954, 7.5-minute
S, Novato, 1954, 7.5-minute
TP, Petaluma Creek, 1954, 7.5-minute

SITE NAME: Novato Property
ADDRESS: 7711 Redwood Blvd
Novato, CA 94945
CLIENT: AllWest Environmental Inc.

N



This report includes information from the following map sheet(s).

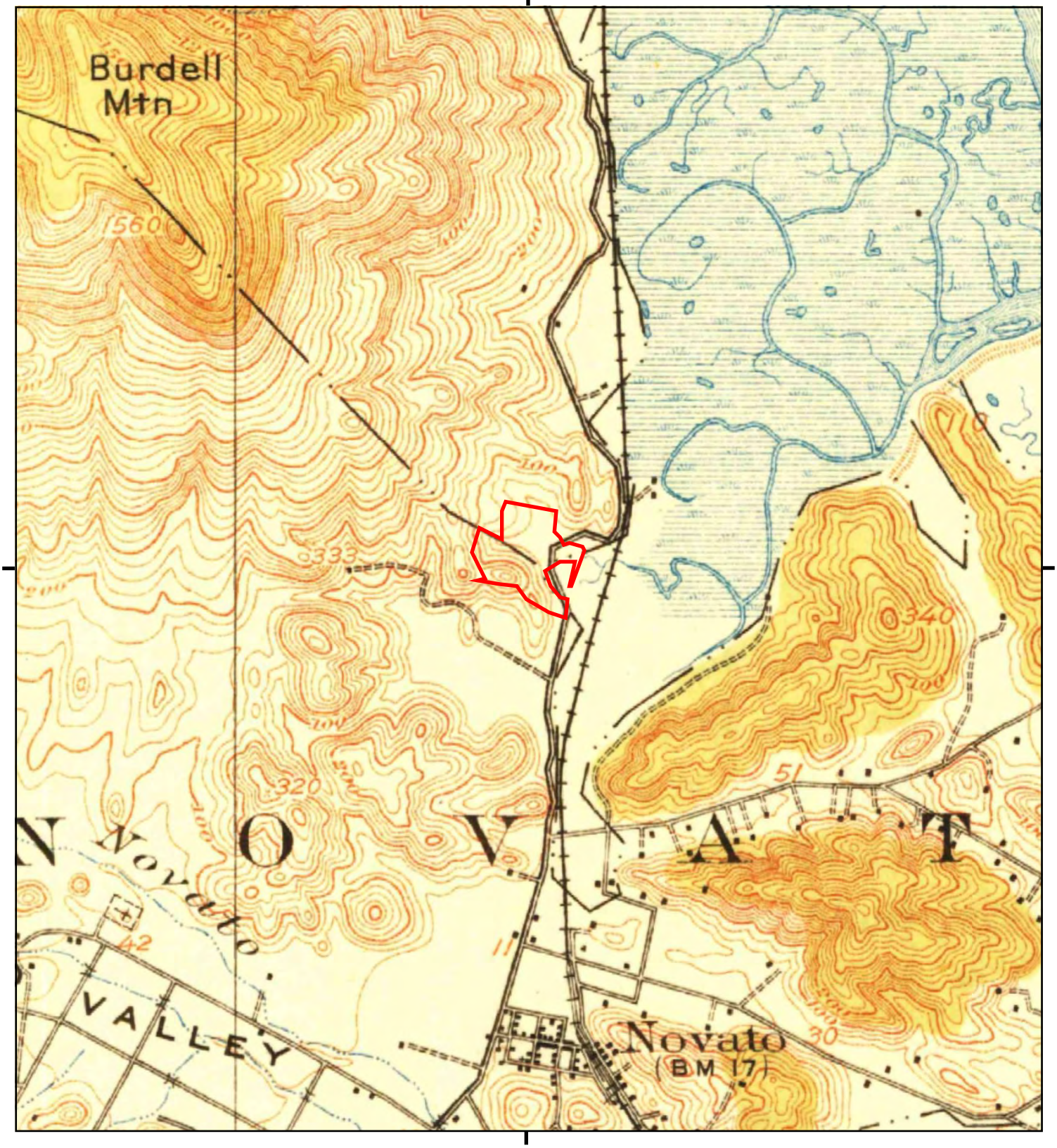
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Petaluma, 1942, 15-minute

SITE NAME: Novato Property
ADDRESS: 7711 Redwood Blvd
Novato, CA 94945
CLIENT: AllWest Environmental Inc.

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, Petaluma, 1914, 15-minute

SITE NAME: Novato Property
ADDRESS: 7711 Redwood Blvd
Novato, CA 94945
CLIENT: AllWest Environmental Inc.

N

Novato Property
7711 Redwood Blvd
Novato, CA 94945

Inquiry Number: 7249630.5
February 13, 2023

The EDR-City Directory Image Report

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

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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 Report 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 Report includes a search of available city directory data at 5 year intervals.

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. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2017	☑	☑	EDR Digital Archive
2014	☑	☑	EDR Digital Archive
2010	☑	☑	EDR Digital Archive
2005	☑	☑	EDR Digital Archive
2000	☑	☑	EDR Digital Archive
1995	☑	☑	EDR Digital Archive
1992	☑	☑	EDR Digital Archive
1986	☑	☐	Haines Criss-Cross Directory
1981	☑	☐	Haines Criss-Cross Directory
1977	☑	☐	Haines Criss-Cross Directory
1973	☑	☐	Haines Criss-Cross Directory

FINDINGS

TARGET PROPERTY STREET

7711 Redwood Blvd
Novato, CA 94945

Year	*CD Image*	*Source*

REDWOOD BLVD

2017	pg A2	EDR Digital Archive
2014	pg A6	EDR Digital Archive
2010	pg A10	EDR Digital Archive
2005	pg A14	EDR Digital Archive
2000	pg A18	EDR Digital Archive
1995	pg A22	EDR Digital Archive
1992	pg A26	EDR Digital Archive
1986	pg A29	Haines Criss-Cross Directory
1981	pg A30	Haines Criss-Cross Directory
1981	pg A31	Haines Criss-Cross Directory
1977	pg A32	Haines Criss-Cross Directory
1977	pg A33	Haines Criss-Cross Directory
1973	pg A34	Haines Criss-Cross Directory
1973	pg A35	Haines Criss-Cross Directory

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*	
WOOD HOLLOW DR			
2017	pg. A5	EDR Digital Archive	
2014	pg. A9	EDR Digital Archive	
2010	pg. A13	EDR Digital Archive	
2005	pg. A17	EDR Digital Archive	
2000	pg. A21	EDR Digital Archive	
1995	pg. A25	EDR Digital Archive	
1992	pg. A28	EDR Digital Archive	
1986	-	Haines Criss-Cross Directory	Street not listed in Source
1981	-	Haines Criss-Cross Directory	Street not listed in Source
1977	-	Haines Criss-Cross Directory	Street not listed in Source
1973	-	Haines Criss-Cross Directory	Street not listed in Source

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

REDWOOD BLVD 2017

7299	ASHLEY, RONALD P
	VILLAGOMEZ, NATALIA
7300	SHELL
7320	PEETS COFFEE
	PEETS COFFEE & TEA
	SMASHBURGER
	YOGAWORKS NOVATO
7325	ONE STOP AUTO REPAIR
7333	A DIRECT DISH SATELLITE TV
	WESTAMERICA BANK
7340	ILS WAYPORT
	MCDONALDS
7370	GRANLEE, GARY D
	MORENO, RAPHAEL
	PHELAN, COLLEEN
	TRAN, DUNG
7374	NOVATO FAMILY MARTIAL ART
	OLIVER AUTOMOTIVE
	OLIVER, MICHAEL
	VALE AUTO REPAIR
7375	DECADENCE SALON
7377	BEST CHOICE AUTO SALES
	THE VIKING COCKTAIL LOUNGE
7380	PERRY S DELICATESSN
7388	BEERCRAFT
	OLD TOWN ANTIQUES
7395	NOVATO LOCK
	THE CLOCK MAKER
7400	L PARDIS SALON
	TEENY CAKE
7401	BACONS AUTO SERVICE
	ENTERPRISE RENTACAR
7416	CHIANTI RISTORANTE
7417	NOVATO MUFFLER & BRAKE
7426	NAPA AUTO PARTS
7427	BIG O TIRES
7428	PARTITION SPECIALTIES
	PROJECT INVISION
	SIGHTDESIGN
7430	POOL SCENE NOVATO
	RUSHTON HAWLEY INC
7435	BUDGET TRUCK RENTAL
7445	DON JOHNSONS POOL & SPA
	MALONEY CONSTRUCTION
7460	CLAYTON J PERRY DDS
	MAHSA HAKIM DDS
	NOVATO FAMILY DENTAL CARE
	TUTOR MAX
	VINCENT J FREEMANTLE DDS
7473	MIWOK SHELL

REDWOOD BLVD 2017 (Cont'd)

7473	SHELL
7474	76
	CHEVRON
	SALKHI FAMILY HOLDING
7503	COLORFAST MAIN ACCOUNT
7505	FIREHOUSE SUBS NOVATO
	HERTZ
	HERTZ CAR RENTAL
	RANDALL BROS USED CARS
	RANDALL BROTHERS AUTOMOTIVE INC
7506	NOVATO GATEWAY LLC
7514	DRAPPER CLEANERS
	PHARMACA INTEGRATIVE PHARMACY
	STARBUCKS
	TRADER JOES
7515	DONUT WORKS
	J R AUTO REPAIR
	QUICK SMOG
	QUIK SMOG
7546	DAIRYMENS MILLING CO
	NOVATO HORSE & PET SUPPLY
7586	CASCADE ROOFING
	CUSTOM TS NOVATO
	DOUGHTY LANDSCAPING BILL
	NOVATO LUMBER & FENCE CO
7595	BLACKPOINT PARTNERS LLC
	CENTAUR FINANCIAL SERVICES
	DESALVO CHIROPRACTIC
	GALLINA LLP
	MRINETWORK
	NORTH BAY PROPERTY SERVICES
	NOVATO ENDOSCOPY CENTER
	THOMPSON TAX & ASSOCIATES LLC
7596	COLORED GRAVEL
7599	CTX MORTGAGE
	DELTA GROUP REALTY
	GRANCELL LEBOVITZ STANDER
	GROUP X INC
	REHABILITATION INSTITUTES OF AMERICA
	SPERRY VAN NESS
	THOMPSON TAX & ASSOCIATES
	TURRENTINE BROKERAGE
7600	AMERICAS BEST VALUE INN
	AMERICAS BEST VALUE INNNOVATO MARIN
	TRAVELODGE
	WINDSHIELD REPLACEMENT ON SITE
7655	BOERIO DI PASQUA & ASSOCIATES CPAS
	REALMANAGE
	SLR FINANCIAL
7665	AMPLEXUS CORP

REDWOOD BLVD 2017 (Cont'd)

7665	AT HOME CAREGIVERS
	BEAR FLAG MARKETING
	BETA BREAKERS
	BUSINESS GREETINGS EXPRESS
	DAVIS CHARLES A LAW OFFICE
	HOMEWATCH CAREGIVERS
	LAW OFFICES OF JAMES D RUSH
	LAW OFFICES OF JAMES D RUSH A PROF
	PALMER & JONES
	RUSH JAMES D ATTORNEY AT LAW
	YORKE ENGINEERING LLC
8001	BUCK INSTITUTE
8141	DAYS INN
	DAYS INN NOVATO SAN FRANCISCO
	EMERGENCY HEATING & AIR CONDITIONING
8171	BIRKENSTOCK USA

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

WOOD HOLLOW DR 2017

100	100 WOOD HOLLOW DR OWNERS LLC
	CALIFORNIA SERVICE BUREAU
400	OJONG, MALIE
408	SWANSON, THOMAS D
412	POURTABIB, MAHSH
416	KIM, HYUN J
420	PORTABIB, MAHYAR Y
424	PERLIC, WALTER R
428	CHANG, MEI L
429	PHILLIPS, MURRY L
432	BUTLER, BARBARA
433	BLANKENBURG, SUSAN J
437	WASSERMAN, HAROLD I
440	COLLINS, JOAN C
441	HAUSER, HENRY P
444	TORRE, DONALD J
445	ARATA, GREGORY C
448	TSIPLAKOS, JAMES
452	HAMMER, JON T
456	KRAMME, STEVE H
459	HOFFMAN, JOSEPH J
460	LOUIE, MATT A
463	MIRVISS, ANTHONY N
464	ROSKO, MATT G
467	SEARS, DYLAN J
468	MANCUSO, DENNIS J

Target Street	Cross Street	Source
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REDWOOD BLVD 2014

7299	ASHLEY, RONALD P
	VILLAGOMEZ, NATALIA
7300	NORTH BAY AUTOMOTIVE & MUFFLER
	NOVATO SHELL AUTOMOTIVE
7320	SMASHBURGER
	SMASHBURGER RESTAURANTS
7325	ONE STOP AUTO
7333	A DIRECT DISH SATELLITE TV
	CABLE TV ALTERNATIVES
	WESTAMERICA BANK
7340	ILS WAYPORT
	MCDONALDS
7370	GRANLEE, GARY D
	MORENO, RAPHAEL
	TRAN, DUNG
7374	NOVATO FAMILY MARTIAL ART
	OLIVER AUTOMOTIVE
	OLIVER, MICHAEL
7375	BRENNAN DEBI J
	DECADENCE SALON
7377	BEST CHOICE AUTO SALES
	VIKING COCKTAIL LOUNGE THE
7380	PERRY S DELICATESSN NO 2
	PERRYS DELICATESSEN NO 2
7388	MAINTENANCE MCC BUILDING
	OLD TOWN ANTIQUES
7395	BELFOR MOVING
	BELFOR MOVING INC
	CLOCK MAKER THE
	CLOCKMAKER THE
	NOVATO LOCK
	NOVATO LOCK INC
7400	L PARDIS SALON
	TRESCH APPLIANC
7401	BACONS AUTO SERVICE
	ENTERPRISE
7416	CHIANTI RISTORANTE
7426	LEONARDI AUTO ELECTRIC
	LUNARDI AUTOMOTIVE
	NAPA AUTO PARTS
	NORTH MARIN AUTO PARTS
7427	BIG O TIRES
7428	PARTITION SPECIALTIES
	PROJECT INVISION
7430	POOL SCENE NOVATO
	RUSHTON HAWLEY INC
7445	DON JOHNSONS POOL & SPA
	MALONEY CONSTRUCTION
7454	GLASSMAKER JOHN R
	NOVATO VETERINARY HOSPITAL

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

REDWOOD BLVD 2014 (Cont'd)

7460	FREEMANTLE VINCENT J DDS
	HAKIM MAHSA DDS
	NOVATO FAMILY DENTAL CARE
	PERRY CLAYTON J DDS
7473	MIWOK SHELL
7474	CHEVRON STATION NOVATO
	PETROLEUM GRAND
	SANTA ROSA PETROLEUM
7503	COLORFAST MAIN ACCOUNT
7505	HERTZ
	RANDALL BROS USED CARS
	RANDALL BROTHERS AUTOMOTIVE INC
7506	NOVATO GATEWAY LLC
7514	PHARMACA INTEGRATIVE PHARMACIES INC
	TRADER JOES
7515	DONUT WORKS
	J R AUTO REPAIR
	QUIK SMOG
7530	SANTOS, ANTHONY
7546	DAIRYMENS MILLING CO
	NOVATO HORSE & PET SUPPLY
7552	SHAMROCK MATERIALS INC
7576	NOVATO DISPOSAL SERVICE INC
7586	CASCADE GUTTERS
	CASCADE ROOFING CO
	DOUGHTY LANDSCAPING BILL
	NOVATO LUMBER & FENCE CO
	SHACK RECORDING
7595	CAUSEY JEFF D DDS
	CENTAUR FINANCIAL
	CENTAUR FINANCIAL SERVICES
	CENTER HEART TO HEART MEDICAL
	DESALVO CHIROPRACTIC & INJURY CENT
	DESALVO CHIROPRATIC
	FINANCIAL CENTAUR
	GALLINA LLP
	MANAGEMENT RECRUITERS OF NOVATO
	NOVATO ENDOSCOPY CENTER
	SARAH M HUNTER MD
	THOMPSON TAX & ASSOCIATES LLC
7596	COLORED GRAVEL
	MARIN LANDSCAPE MATERIALS
7599	CTX MORTGAGE
	GROUP X INC
	REHABILITATION INSTITUTES OF AMERICA
	SPERRY VAN NESS
	TURRENTINE BROKERAGE
7600	AMERICAS BEST VALUE INNNOVATOMARIN
	TRAVELODGE
7655	REALMANAGE

Target Street	Cross Street	Source
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REDWOOD BLVD 2014 (Cont'd)

7665	ALANIZ MARKETING
	AMPLEXUS CORP
	AT HOME CARE GIVERS
	AT HOME CAREGIVERS
	BEAR FLAG MARKETING
	BETA BREAKERS
	BUSINESS GREETINGS EXPRESS
	DAVIS CHARLES A LAW OFFICE OF
	LARKSPUR DATA INC
	LAW OFFICES OF JAMES D RUSH A PROFES
	PALMER & JONES
	RUSH JAMES D ATTORNEY AT LAW
	THOS P MCNALLY
	YORKE ENGINEERING LLC
8001	BUCK INSTITUTE
8141	DAYS INN
	MANDARIN RESTAURANT
	NOVATO DAYS INN
	NOVATO MOTEL
8161	OCCUPANT UNKNOWN,
8171	BIRKENSTOCK USA

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

WOOD HOLLOW DR 2014

100	INDURA ASSISSTANCE
	KAIMAL, JAY
400	BIRD, TOMMY A
404	LOCOCO, ALBERT J
408	SWANSON, THOMAS D
412	POURTABIB, MAHSH
416	KIM, HYUN J
420	POURTABIB, FUNG J
424	LANG, JAMES E
428	DULEBOHN, MICHELLE R
429	PHILLIPS, MURRY L
432	BUTLER, BARBARA
433	BLANKENBERG, SUSAN J
436	WILSON, STEVEN A
437	WASSERMAN, HAROLD I
440	RENTSCH, JOAN C
441	HAUSER, HENRY P
444	TORRE, DONALD J
445	ARATA, GREGORY C
448	FORTE, EMMETT
452	HAMMER, JON T
456	KRAMME, STEVE H
459	HOFFMAN, JOSEPH J
460	CHING, RANDALL
463	MIRVISS, ANTHONY
464	ROSKO, MATT G
467	OCCUPANT UNKNOWN,
468	MANCUSO, DENNIS J

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

REDWOOD BLVD 2010

7299	ASHLEY, RONALD P
	GARCIA, MARIA E
	GONZALES, LILLIAN
	JIMENEZ, MARIA
	MOTA, PEDRO
	PURETT, RICK
	REFUGIO, MARIA
	SANCHEZ, VILLAGOMEZ N
	ZAVALA, TOBIAS
7300	DELONG AVENUE SHELL
	REDWOOD SHELL SVC CTR
7325	ONE STOP AUTO REPAIR
7330	MILLS RESTAURANT
7333	A DIRECT DISH SATELLITE TV
	WESTAMERICA BANK
7340	MC DONALDS
7370	ATALLAH, OSAMA A
	GRANLEE, GARY D
	MORENO, ENEDINA H
	PHELAN, C
7374	NOVATO FAMILY MARTIAL ART
	OCCUPANT UNKNOWN,
	OLIVER AUTOMOTIVE
7375	DECADENCE SALON
7377	BEST CHOICE AUTO SALES
	VIKING COCKTAIL LOUNGE
7380	PERRYS DELICATESSEN
7388	JANILINE
	SPA WARRIOR
7395	BELFOR MOVING INC
	CLOCK MAKER
	NOVATO LOCK
7400	BRANDSOURCE
	TRESCH GALLERIA
7401	BACONS AUTO SVC
	ENTERPRISE RENTACAR
7417	NOVATO 76 AUTOMOTIVE
7426	LEONARDI AUTOMOTIVE
	NAPA AUTO PARTS
7427	BIG O TIRES
	NOW & THEN ANTIQUES
7428	ATIRA TECHNOLOGY
	FRANCISCO INTERNATIONAL FRWDNG
	SIGHTDESIGN
	TOYS FOR BOB INC
	WHATSNEWCOM
7430	POOL SCENE INC
	RUSHTON HAWLEY INC
	SEMPHONIC
7435	BUDGET RENT A CAR

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

REDWOOD BLVD 2010 (Cont'd)

7435	BUDGET TRUCK RENTAL
	HOLLYWOOD DETAILS
7445	DON JOHNSONS POOL & SPA
7454	NOVATO VETERINARY HOSPITAL
7455	LYONS AUTOMOTIVE
7460	NOVATO FAMILY DENTAL CARE
	TUTOR MAX
7473	MIWOK SHELL
7474	NOVATO BP
7503	COLORFAST
7505	HARAIS CO
	HERTZ RENT A CAR
	RANDALL BROTHERS AUTOMOTIVE
7514	PHARMACA INTEGRATIVE
	STARBUCKS
	TRADER JOES
7515	DONUT WORKS
	J R AUTO REPAIR
	QUIK SMOG
7546	DAIRYMENS MILLING CO
	NAVATO HORSE & PET SUPPLY
	NOVATO HORSE & PET SUPPLY
7552	SHAMROCK MATERIALS INC
7576	NOVATO DISPOSAL SVC INC
7586	BILL DOUGHTY LANDSCAPING
	CASCADE ROOFING CO
	MARIN KARTING
	NORTHBAY GUTTER CO
	NOVATO LUMBER & FENCE CO
7591	PRIVATE CAPITAL CORP
7595	BLACKPOINT PARTNERS LLC
	CAUSEY JEFF D DDS
	CAUSEY, JEFF
	DE SALVO CHIROPRACTIC
	FULL CAPTURE SOLUTIONS INC
	GLOBAL EDGE SOLUTIONS LLC
	HUNTER SARAH M MD
	MANAGEMENT RECRUITERSNOVATO
	NOVATO ENDOSCOPY CTR
	P J RHODES CORP
	RONIN ENTERTAINMENT
7596	COLORED GRAVEL
	MARIN LANDSCAPE MATERIALS
7599	ALEXANDER MORFORD & WOO INS
	AMERICAN WORK ADVENTURES
	CORPORATE TRANSITION CNSLTNG
	FINANCIAL EXIT PLANNING
	HERONGATE PROPERTIES INC
	REHABILITATION INSTITUTESAMER
	TURRENTINE BROKERAGE

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

REDWOOD BLVD 2010 (Cont'd)

7600	TRAVELODGENOVATO
7655	MARIN COUNTY CHILD SUPPORT SVC
7665	ALANIZ MARKETING
	AMPLEXUS CORP
	BARTLEY LAW OFFICES
	BEAR FLAG MARKETING
	BETA BREAKERS
	BUSINESS GREETINGS EXPRESS
	CHARLES A DAVIS LAW OFFICES
	CLEEK & ELIN
	HOMEWATCH CAREGIVERSNOVATO CA
	JAMES D RUSH ATTORNEY AT LAW
	LARKSPUR DATA INC
	PALMER & JONES
8001	BUCK INSTITUTEAGE RESEARCH
8141	DAYS INNNOVATO
	GARDEN COURT RESTAURANT
8161	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

WOOD HOLLOW DR 2010

100	GREENPOINT MORTGAGE FUNDING
400	HERMAN, JERRY R
404	FARRAR-LOCOCO, KENDAL
408	SWANSON, THOMAS D
412	POURTABIB, MAHSH
416	KIM, HYUN J
420	PORTABIB, MAHYAR Y
424	REIMER, JAMES W
428	DULEBOHN, MICHELLE
432	BAY COMMERCIAL ADVISORS
	WAGONER, BUMPER
433	BLANKENBERG, SUSAN J
436	LUBEY, CRAIG E
437	WASSERMAN, HAROLD I
440	COLLINS, JOAN C
441	HAUSER, HENRY P
444	TORRE, DONALD J
445	ARATA CONSULTING & MARKETING
	ARATA, GREGORY C
448	RYKEN, DALTON M
452	HAMMER, JON T
456	KRAMME, STEVE H
459	HOFFMAN, JOSEPH H
460	LOUIE, CALVIN W
463	MIRVISS, RICHARD E
464	ROSKO, GEORGE G
467	KORZHENKOV, MAKSIM
468	MANCUSO, DENNIS J
479	RUSSELL, TIM

Target Street	Cross Street	Source
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REDWOOD BLVD 2005

7299	ASHLEY, RONALD P
	CLAROS, SONIA
	CUFFEL, DALE
	ECHEVERRIA, CINDY
	GARCIA, JOSE D
	GRAMAJO, MAINOR
	GUILLERMO, JAVIER T
	PARKER, DAVID
	RODRIGUEZ, RAFAEL
	ROSS, MELISSA
	TELLO, LETICIA
7300	DANVILLE PETROLEUM INC
	REDWOOD SHELL
7330	GARDENS RESTAURANT
	PEPPERS RESTAURANT
7333	WESTAMERICA BANK
7340	MCDONALDS
7370	ATALLAH, OSAMA
	BARRAGAN, LOURDES C
	GRANLEE, GARY D
7374	OCCUPANT UNKNOWN,
	OLIVER AUTOMOTIVE
7377	VIKING COCKTAIL LOUNGE THE
	WHAT EVER
7380	PERRYS DELI
7388	AD PRO ADVERTISING PROMOTIONS
	ALPHA DIGAGRAPHICS
	OLD TOWN INTERIORS
7395	CLOCK MAKER
	NOVATO LOCK & KEY
	REMAL MUSIC GROUP
7400	TRESCH APPLIANCE
	TRESCH GALLERIA
7416	CAPRAS ITALIAN VILLAGE
7426	LEONARDI AUTOMOTIVE
7427	NOW & THEN ANTIQUES
7428	PROFESSIONAL SEARCH
	REECE, L C
	RUSHTON HAWLEY INC
	SIGHTDESIGN
	STEPHENS MCCARTHY LLC
	TECHSTORE INC
	TOYS FOR BOB INC
	WHATZNEW COM
7430	ELECTRIC BEACH
	POOL SCENE NOVATO
7435	ALL COUNTY TOW
	RYDER TRUCK RENTAL ONE WAY
7445	DON JOHNSONS POOL & SPA
	KIRKWOOD ENTERPRISES

Target Street	Cross Street	Source
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REDWOOD BLVD 2005 (Cont'd)

7445	SUITS MARIN SWIMWEAR
7454	GLASSMAKER JOHN R
7460	NOVATO FAMILY DENTAL CARE
	PERRY CLAYTON J DDS
	PREMIER PAYROLL SERVICES INC
7473	FOOD STORE
7474	NOVATO B P
7503	COLORFAST PAINT AND WALLPAPER
7505	COLORFAST
	HARAIS CO
	HERTZ LOCAL EDITION
	RANDALL BROTHERS AUTOMOTIVE INC
7506	MARIN LANDSCAPE MATERIALS & GARDEN S
7514	SPRINKLER IRRIGATION SPECIALISTS
	UNITED GREEN MARK INC
7515	DONUT WORKS
	QUIK SMOG
7517	WINTERS WINDOWS
7520	DON WILSON DDS MSD INC
7546	ARENA FEED & PET SUPPLY
7552	SHAMROCK MATERIALS OF NOVATO
7586	MARIN GUTTER CO
	MARIN KARTING LLC
7595	GLOBAL EDGE SOLUTIONS LLC
	HUNTER SARAH M MD
	JEFF D CAUSEY DDS
	NOVATO ENDOSCOPY CENTER
	RONIN ENTERTAINMENT
7596	COLORED GRAVEL MARIN LANDSCAPE
	MARIN LANDSCAPE
	MARIN LANDSCAPE MATERIALS
7599	ALEXANDER MORFORD AND WOO INSURANCE
	CTX MORTGAGE
	FIRMAN, CATRINA
	GRANCELL, BARNES
	HASLER, H
	HERONGATE PROPERTIES INC
	JOHNSON BRITT REALTOR
	PATTERSON, J
	REHABILITATION INSTITUTES OF AMERICA
	REMARK GROUP CREATIVE SERVICES
	REMARK USA INC
	STEWART, BILL
	TIMBERLINE SOLUTIONS CORP
	TURRENTINE BROKERAGE
7600	TRAVELODGE OF NOVATO
7665	AMPLEXUS CORP
	CLEEK & ELIN
	FACILITIES & SERVICES
	FRB MANAGEMENT LLC

Target Street	Cross Street	Source
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REDWOOD BLVD 2005 (Cont'd)

7665 MAXIMILIAN HOPKINS PC
PALMER & JONES
8141 GARDEN COURT RESTAURANT
NOVATO MOTEL
8161 OCCUPANT UNKNOWN,
8171 BIRKENSTOCK FOOTPRINT SANDALS INC
SPHERION

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

WOOD HOLLOW DR 2005

100	GREENPOINT MORTGAGE FUNDING INC
400	HERMAN, JERRY J
404	OCCUPANT UNKNOWN,
408	SWANSON, THOMAS A
412	POURTABIB, MAHSHID M
416	KIM, HYUN J
420	PORTABIB, MAHYAR Y
424	PERLIC, WALTER R
428	FOGAL, MICHAEL
429	RUSSELL, TIM J
432	WAGONER, HILLARY S
433	BLANKENBERG, SUSAN J
436	LUBEY, CRAIG E
	MICHELLE A LUBEY BOOKKEEPING
437	WASSERMAN, HAROLD I
440	CLINTON, MICHAEL W
441	HAUSER, HENRY P
444	TORRE, DONALD J
445	ARATA CONSULTING & MARKETING
	ARATA, GREGORY C
448	OCCUPANT UNKNOWN,
452	CARAMUCCI, KEVIN J
456	KRAMME, STEVE H
459	HOFFMAN, JOSEPH H
460	LOUIE, CALVIN W
463	MIRVISS, RICHARD E
464	ROSKO, GEORGE G
468	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

REDWOOD BLVD 2000

7299	AN YOUNG TAE
	AN, Y
	CARBAJAL, REYES
	CARDENAS, SANDRA
	GARCIA, JOSE D
	MONTIEL, NORMA
	TOKKO, YONG
7300	REDWOOD SHELL SERVICE CENTER
7325	ONE STOP AUTO SERVICE INCORPORATED
	SPEEDEE OIL CHANGE & TUNE UP
7330	DENNYS RESTAURANT
7340	MCDONALDS RESTAURANTS
7370	GRANLEE, GARY
	SELLIG, MARK
7374	NOVATO FAMILY MARTIAL ART
	OLD TOWN IMPORT AUTOMOTIVE SERVICE
7375	CLAXTON & ASSOCIATES
	DELTA GROUP REALTY
	PACIFIC GUARANTEE MORTGAGE
	REVOC, ROBERT T
7377	KOM PACK MOTORS
	VIKING COCKTAIL LOUNGE THE
7380	PERRYS DELICATESSEN NO 2
7388	OLD TOWN ANNTIQUES AUCTION HOUSE
7395	1ST GENERAL SERVICES OF SAN FRANCISCO
	CLOCK MAKER THE
	NOVATO LOCK & KEY
7401	NORTHBAY AUTO NOVATO NISSAN SERVICE
	NOVATO AUTO DETAILING
	NOVATO NISSAN USED CARS
7409	AUGUSTO, WENDY S
7416	CAPRAS ITALIAN VILLAGE
	ITALIAN VILLAGE
7417	NOVATO MUFFLER & BRAKE INCORPORATED
7426	CARPETS PLUS
	LEONARDI AUTO & ELECTRIC
	NAPA AUTO PARTS
	NORTH MARIN AUTO PARTS
	NOVATO CARPETS
7427	BIG O TIRE STORES
	LABOR READY
7428	CLASSIC BILLIARD II
	FRANCISCO INTERNATIONAL FORWARDING
	HARDIN CAPITAL BARRY NIDIFFER
	QUINTO & YOUNG INCORPORATED
	RUSHTON CONSTRUCTION INCORPORATED
7430	OCCUPANT UNKNOWN,
	POOL SCENE INCORPORATED
7435	HOLLYWOOD DETAILS
	REDWOOD AUTO SALES

Target Street	Cross Street	Source
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REDWOOD BLVD 2000 (Cont'd)

7435 RENT A WRECK
RYDER TRCK RENT ONE WAY INCORPORATED NEIGHBORHOOD DEALERS
Z-BEST CARS OFFICE
7445 DON JOHNSONS POOL & SPA
SUITS MARIN SWIMWEAR
7454 GLASSMAKER JOHN R NOVATO VETERINARY HOSPITAL
NOVATO VETERINARY HOSPITAL
OCCUPANT UNKNOWN,
7455 LYONS AUTOMOTIVE
U HAUL COMPANY INDEPENDENT DEALERS
7460 HUANG SAMUEL T DDS
MARIN HIGHLANDS VENTURES LIMITED
NOVATO FAMILY DENTAL CARE SAMUEL T HUANG DDS CLAYTON
OCCUPANT UNKNOWN,
PERRY CLAYTON J DDS
7473 FOOD STORE THE
7505 NOVATO TOYOTA INCORPORATED
TOYOTA OF NOVATO SERVICE & PARTS
TOYOTA SALES AND SERVICE NOVATO
7514 SPRINKLER IRRIGATION
SPRINKLER IRRIGATION SPECIALISTS
UNITED GREEN MARK
UNITED GREEN MARK CORPORATE OFFICE
7515 ATD AUTOMOTIVE
BACONS AUTO SERVICE
DONUT WORKS
7517 WINTERS GLASS CO OF NOVATO
7518 COLORFAST
7530 AIKEN, SCOTT C
AMES, DONALD
BALDWIN, GENOA
CATEDIO, ANTHONY
DALY, GAY
DAVIS, SUSAN
HENSON, JACK R
KNIFFIN, PETER J
LATIMORE, KYLE A
MCGINLEY, DENNIS
PINSON, MICHAEL J
QUINN, JAMES
REED, J
RUSSELL, THOMAS
SIMMS, MARIE A
WOOD, JOHN
7533 PINHEIRO, FRANK
7546 DAIRYMANS MILLING COMPANY
TOBYS FEED BARN II NOVATO
7552 SHAMROCK MATERIALS INC. READY MIX CONCRETE
7586 CASCADE ROOFING COMPANY
NOVATO LUMBER & FENCE COMPANY

REDWOOD BLVD 2000 (Cont'd)

7595	CAPITAL ADVISORS
	CAUSEY JEFF D DDS
	CONTAINERS PROVIDERS INCORPORATED
	DUFF LEONARD DC
	GOLDBERG JIM VENTURE RESOURCES
	IDD
	INTERACTIVE DATA DISTRIBUTION
	KLANER PUBLIC RELATIONS
	MARCELLA ENTERPRISES
	PIEPER JEFFREY C CLU
	RONIN ENTERTAINMENT
	STUDIO NORTH
7596	COLORED GRAVEL MARIN LANDSCAPE MATERIALS
	MARIN LANDSCAPE MATERIALS
7599	BLASLAND BOUCK & LEE INCORPORATED
	CHIESA JOSEPH M JR ARCHITECT
	DKWS ENTERPRISES INCORPORATED
	GRANCELL LEBOVITZ STANDER MARX & BARNES
	HERONGATE PROPERTIES INCORPORATED
	HURD MILLWORK COMPANY
	KRAMER PAPER & PULP INCORPORATED
	REMARK DIRECT RESPONSE
	REMARK GROUP CREATIVE
	ROBERT DALTON & COMPANY
	TELFER CHIESA ARCHITECTS
	TELFER G THOMAS ARCHITECT
	TIME LINE SOLUTIONS CORPORATION
	VISTA INTERNATIONAL INSURANCE BROKERS
7600	NOVATO TRAVELODGE
	TRAVELODGE
7665	CALIFORNIA STATE OF PARKS & RECREATION
	ELIN CATHERINE A ATTORNEY AT LAW
	FACILITIES AND SERVICES CORPORATIONS
	JONES DAVID PRICE PALMER JONES & HAWKINS
	PALMER JONES & HAWKINS
	WILLIAMS & MARTINET PC
8001	BUCK CENTER FOR RESEARCH IN AGING
	WALSH CONSTRUCTION COMPANY
8141	DAYS INN NOVATO
	GARDEN COURT RESTAURANT
	NOVATO DAYS INN GARDEN COURT RESTAURANT
	NOVATO MOTEL
	SPORTSMANS LODGE
8171	BIRKENSTOCK FOOTPRINT SANDALS INCORPORATED

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

WOOD HOLLOW DR 2000

404	PISCHKE, MARY
408	OCCUPANT UNKNOWN,
412	POURTABIB, MAHSHID
416	KIM, SOON
420	POURTABIB, FUNG J
424	OCCUPANT UNKNOWN,
428	DELUNA, D
429	MCGRATH, TERRY
432	HONEYCUTT, EDWARD R
433	BLANKENBURG, SUSAN J
436	LUBEY, CRAIG E
437	WASSERMAN, HAROLD I
440	CLINTON, MICHAEL
441	OCCUPANT UNKNOWN,
444	TORRE, DONALD M
445	ARATA, GREGORY
448	KOHLER, HELEN K
452	SARTI, V
456	HENRY, DONALD B
459	HOFFMANN, JOSEPH H

Target Street	Cross Street	Source
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REDWOOD BLVD 1995

7299	CASKEY, MARY
	FLORES, F
	JOHNSON, ITIA
	KELLER, JAMES
	MANJARES, VICTOR R
	NAVARRO, SERGIO
7300	REDWOOD SHELL
7325	SPEE DEE OIL CHANGE & TUNE UP
7330	DENNYS
7340	MC DONALDS
7369	PERACHIOTTI REALTY
7370	GRANLEE, GARY
7374	OCCUPANT UNKNOWNN
	OLD TOWN IMPORT AUTOMOTIVE SVC
	RECYCLED RELICS
7375	CLAXTON & ASSOC
7377	KOM PACK MOTORS
	VIKING COCKTAIL LOUNGE
7380	PERRYS DELICATESSEN
7388	GREKA SIGN CO
	NOW & THEN
	OLD TOWN ANTIQUES
7395	INCIARDI, STEPHEN P
	KNUTTE REALTY
	NOVATO LOCK & KEY
7400	NOVATO TRADING CO
7401	NOVATO AUTO DETAILING
	NOVATO NISSAN DAIHATSU INC
7416	CAPRAS ITALIAN VILLAGE
7426	CARPETS PLUS
	H & J TIRE
	NOVATO CARPETS
	TRAVIS BUILDERS INC
	TRAVIS KITCHENS
7427	BIG O TIRE STORE
7435	HOLLYWOOD DETAILS
	ZBEST CARS
7445	DON JOHNSONS POOL & SPA
	SUITS MARIN SWIMWEAR
7454	NOVATO VETERINARY HOSPITAL
7460	GREAT SIERRA EXPLORATION
	JAMES R PURVIS DDS
	NOVATO FAMILY DENTAL CARE
7473	FOOD STORE
7474	NOVATO BP
	NOVATO, B P
7505	NOVATO TOYOTA WHOLESALE PARTS
7515	DONUT WORKS
	G & W AUTOMOTIVE MACHINE SHOP
	NOVATO MUFFLER & BRAKE SVC

REDWOOD BLVD 1995 (Cont'd)

7517 JOHN BISHOP CONSTRUCTION
7530 CRAIG, RUFUS
EL NOVATO TRAILER COURT
7533 MCNUTT, ROY
PINHEIRO, FRANK
7546 DAIRYMENS MILLING CO
TOBYS FEED BARN II
7552 SHAMROCK MATERIALS INC
7576 CERVANTES CONTRACTING
7586 NOVATO LUMBER & FENCE CO
7595 ANGELO SCAVARDA MD
CAUSEY, JEFF D
DEAN, KATHY E
DEAN, NORMAN E
DUFF, LEONARD
HINES & JONES
JEFF D CAUSEY DDS
LIFETIME OPTOMETRIC CTR
MARCELLA ENTERPRISES
MICHAEL M BRONSHVAG MD
ROSS VALLEY MEDICAL GROUP
7596 MARIN LANDSCAPE MATERIALS
7599 BROKER CONNECTION
CARL H ENGEL
CHIESA, JOSEPH M JR
COLETTE BIAVA
DEAN PETRIE & HAAS CORP
DUNHAM, ALAN T
GLOVER, SARAH
HURD MILLWORD CO
JOHNSON ENGINEERING
KAREN DAHLIN REALTOR
KURT J PETRIE
OWENS, COLETTE
PAMELA J DAVIS CPA
PERRY, CRAIG
PRUDENTIAL INSURANCE CO
RDI GROUP
TELFER CHIESA DUNHAM & JOHNSON
TELFER, G T
7600 TRAVELODGE
7655 HARDING CONSTRUCTION SVC INC
7665 BRUCE M PALMER
CLARK M PALMER
CLEEK, ROBERT J
DAVID P JONES
E MARK ZUNINO
KENNETH F STRONG
LAURA T HAWKINS
PALMER DUCKWORTH JONES HAWKINS

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

REDWOOD BLVD 1995 (Cont'd)

7665	RICHARD A HIRSCH LAW OFFFICES
	ROBERT J CLEEK
8141	BALIHAI RESTAURANT
	CHANG, JUCIN
	DEKO, PACIFIC
	FARMERS INSURANCE GROUP
	GAYLEN CHANG
	NOVATO MOTEL
	OVERIN, WENDY
	U HAUL CO
	WONG, FRANK H
8161	MIKES AUTO REPAIR & BODY SHOP
8171	BIRKENSTOCK FOOTPRINT SANDALS

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

WOOD HOLLOW DR 1995

404	CLARK, TERRY
	SARNI, DENNIS
408	OCCUPANT UNKNOWNN
412	POURTABIB, MAHSHID
416	YU, SANG H
420	POURTABIB, FUNG J
424	OCCUPANT UNKNOWNN
428	RUTKOWSKI, ROBERT
	RUTOWSKI, R
429	MCGRATH, TERRY
432	KINDER, COLETTE
433	AMY, RON
	KRANZ, HOLLIE
436	GOLDBERG, JAMES
437	OCCUPANT UNKNOWNN
440	CLINTON, MICHAEL
441	HAUSER, MARY J
444	OCCUPANT UNKNOWNN
445	ARATA, GREGORY
448	PIERCE, ROBERT
456	CONNOLLY, PETER P
459	HOFFMANN, JOSEPH H
460	LOUIE, CALVIN W
463	MIRVISS, RICHARD E
464	ROSKO, GEORGE

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

REDWOOD BLVD 1992

7299	ALAMEDA, ERNEST
	CASKEY, MARY
	GARCIA, ROSA
	ODONOGHUE, GABRIEL
	VALENCIA, IGNACIO
7300	REDWD SHELL SV CNTR
7325	SPEEDEE OIL CHANGE
7330	DENNYS RESTAURANT
7340	MCDONALDS OF NOVATO
7369	PERACHIOTTI REALTY
7370	GRANLEE, GARY
	WEBER, TIMOTHY
7374	EASTSIDE AUTO PARTS
	OLD TOWN AUTOMOTIVE
7375	CLAXTON&ASSOCIATES
	SCHREIBER FOOD INC
7377	KOMPACK MOTORS
	VIKING COCKTAIL LNG
7380	PERRYS DELI NO 2
7388	GREKA SIGN CO INC
	NOW&THEN
7395	A NAIL EXPERIENCE
	KNUTTE REALTY
	NOVATO LOCK&KEY
7400	NOVATO TRADING CO
7401	NOVATO AUTO DETLNG
7409	A A ENTPRS TIDY CAR
7416	ITALIAN VILLAGE
7426	CARPETS PLUS
	H&J TIRE GOODYEAR
	NOVATO CARPETS
	TRAVIS KITCHENS
7427	BOG O TIRE STORES
7435	HOLLYWOOD DETAILS
	ZBEST CARS
7445	DON JOHNSON POOL SV
	SUITS MARIN SWIMWR
7454	NOVATO VET HOSPITAL
7455	U HAUL CO NBRHD DLR
7460	GREAT SIERRA GROUP
	HUANG, SAMUEL T
	KEDWELL SOFTWARE
	PURVIS JAS R DDS
7473	FOOD STORE THE
7505	NOVATO TOYOTA INC
	TOYOTA OF NOV SALES
7515	DONUT WORKS
	G&W AUTOMTV MCHNE
	NOVATO MUFFLER INC
7517	BISHOP JOHN CONSTR

REDWOOD BLVD 1992 (Cont'd)

7517 WINTERS GLASS CO
7530 EL NOVATO TRLR CRT
7533 MARIN HAY&FIREWOOD
MCNUTT, ROY
PINHEIRO, FRANK
7546 DAIRYMENS MILLING
TOBYS FEED BARN 2
U HAUL CO NBRHD DLR
7552 SHAMROCK MATERIALS
7576 CERVANTES S H
7586 NOVATO LUMBER&FENCE
7595 MARCELLA ENTPRS
7596 COLORED GRAVEL
7599 BROKER CONNECTION
JOHNSON ENGINEERING
PRUDENTIAL INS
STAT NURSING SERV
TELFER CHIESA
7600 NOVATO TRAVELODGE
7655 HARDING LAWSON ASC
7665 CLEEK, ROBERT J
HIRSCH RICHARD LAW
JONES DAVID PRICE
PROFSNL PROBATE SRV
8141 BALIHAI RESTAURANT
CHANG JU CHIN
CHANG, JU C
8161 MIKES AUTO REPAIR

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

WOOD HOLLOW DR 1992

404	CLARK, TERRY
	SARNI, DENNIS
412	POURTABIB, MAHSHID
416	KIM, SOON
420	POURTABIB, FUNG J
429	MCGRATH, TERRY
433	AMY, RON
	KRANZ, HOLLIE
436	CHENNELL, DOUGLAS
440	CLINTON, MICHAEL
	ROSSI, JOHN
445	ARATA, GREGORY
448	PIERCE, ROBERT
463	ROWE, TED
468	MARLOW, GEORGE R

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

REDWOOD BLVD 1986

7505	NOVATO TOYOTA INC	892-1801	7
	TOYOTA OF NOV SALES	897-3191	9
	TOYOTA OF NOV SERV	893-1501	9
7514	XXXX	00	
7515	DONUT WORKS	897-7144	+6
	NOVATO MUFFLER INC	897-2181	1
	TWO WAY MOTORS	802-5904	0
7517	XXXX	00	
7530	XXXX	00	
7546	DAIRYMENS MILLING	892-4745	1
	DAIRTMENS MILLNG CO	892-1030	2
7552	SHAMROCK MATERIALS	892-1571	
7565	XXXX	00	
7576	CERVANTES S H JR	697-3866	
A	HANS FORGN CAR RPR	892-8018	+6
7596	COLORED GRAVEL	897-1337	
	MARIN LANDSCP MTRLS	897-1337	
7655	HARDING LAWSON ASOC	892-0821	1
7665	DUCKWORTH JAMES A	892-1616	1
	EVENSEH LEIF W CPA	892-3553	1
	GRDNDSTROM ED V	892-1616	
	INTER ACTN FNCL TM	892-0628	3
	JONES DAVID PRICE	892-1616	2
	KETRON RDSSELL	892-0996	+6
	MELDE CLAIRE E	892-0928	3
	NEVINS SHEILA S	892-1618	5
	PALMER BRUCE M	892-1818	
	PALMER CLARK M	892-1616	
	PALMER GRDNDSTROM	692-1616	
	SIMS DWIGHT J PHD	892-0928	1
	TEAM FOR FINANCIAL	892-0929	1
8141	BALIHAI RESTAURANT	692-8700	4
	CHANG JU CHIN	892-8277	3
	NOVATO MOTEL	897-7111	7
	NOVATO MOTEL BALHAI	892-6700	4
	PAPE CHET	892-8243	3
	SPORTSMANS LODGE	697-7111	8
8161	MIKES AUTO REPAIR	692-0601	1
8171	MCGRAW NILL BOOK CO	697-5201	
8180	XXXX	00	
8932	FLEISCHMAN L B	892-9617	2
8934	BRUNNER ENTP INC	892-3346	5
8950	TRIPP STEVE	892-3901	4
9102	NOVATO TRAP CLUB	892-9933	8
	TRAP CLUB OF NOVATO	897-9712	6
NO #	NOVATO BLDG MATRLS	697-1166	
NO #	NOVATO FENCE CO	697-1166	
NO #	NOVATO LUMBER CO	897-1166	
NO #	TURRINIS AUTO SLVGE	897-2090	
★	109 BUS 87 RES	40 NEW	

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

REDWOOD BLVD 1981

7505	MIZEL STEVEN M	897-3191	9
	NOVATO TOYOTA INC	892-1501	7
	TOYOTA OF NOV SALES	897-3191	9
	TOYOTA OF NOV SERV	892-1501	9
7515	COFFEE BREAK	892-0893	+1
	DISCOUNT AUTO PARTS	897-2182	7
	NOVATO MUFFLER INC	897-2181	+1
	RONS AUTOMOTIVE	892-1471	+1
	TWO WAY MOTORS	892-6904	0
7517	XXXX	00	
7530	RICHERT STEVEN	897-8388	0
7546	DAIRYMENS MILLING	892-4748	+1
7552	SHAMROCK MATERIALS	892-1571	6
7565	WILLIAMS DESMOND	897-9036	+1
7576	CERVANTES S H JR	897-3866	
7595½	FOCHT JAS	892-7044	+1
7596	COLORED GRAVEL	897-1337	5
	MARIN LANDSCP MTRLS	897-1337	
7655	HARDING LAWSON ASOC	892-0821	+1
	NORTH MARIN EXCTV S	892-0802	+1
7665	DUCKWORTH JAMES A	892-1616	+1
	EVENSEN LEIF W CPA	892-3553	+1
	GRUNDSTROM ED V	892-1616	+1
	HEITMAN LISA K	892-1616	+1
	INTER ACTN FNCL TM	892-0828	+1
	INTERNTL DIAMOND CO	499-1188	+1
	KETRON R W	892-0928	+1

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

REDWOOD BLVD 1981

..REDWOOD BLVD		94947 CONT..
	KETRON ROBT G	892-0928 +1
	PALMER BRUCE M	892-1616+1
	PALMER CLARK M	892-1616+1
	PALMER GRUNDSTROM&	892-1616+1
	SIMS DWIGHT J	892-0928 +1
	TEAM FOR FINANCIAL	892-0929+1
8141	NATIONAL TRUCK SCH	892-6959 0
	NOVATO MOTEL	897-7111 7
	SPORTSMANS LODGE	897-7111 8
8161	MIKES AUTO REPAIR	892-0601+1
8171	FIREMANS FUND	897-9644 9
	MCGRAW HILL BOOK CO	897-5201
8180	XXXX	00
8932	ERNST CHAS	892-3153 +1
	WINEMAN ROBT M	892-3153 +1
9102	NOVATO TRAP CLUB	892-9933 8
	TRAP CLUB OF NOVATO	897-9712 8
NO #	NOVATO BLDG MATRLS	897-1166
NO #	NOVATO FENCE CO	897-1166+1
NO #	NOVATO LUMBER CO	897-1166
NO #	NUNES A T	892-3715
NO #	NUNES JOE A	892-3618
NO #	TURRINIS AUTO SLVGE	897-2090 5
★	93 BUS 90 RES	75 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

REDWOOD BLVD 1977

```
7455*BILL LYONS UNION 76897-7600 5
7473*SKIS SHELL SERVICE 897-3739+7
7505*NOVATO TOYOTA INC  892-1501+7
    *TOYOTA OF NOVATO   892-1501+7
7515*DISCOUNT AUTO PARTS897-2182+7
    *REDWD AUTO SALES   892-1255+7
7517*NOVATO BILLS COIN  897-2070+7
7530 BUTLER LEE         897-7867+7
7586*A ALLEN TERMITE    897-1168+7
8141 BRUDENELL CLYDE W  897-7826+7
    *NOVATO MOTEL       897-7111+7
NO #*ACTIVE TREE SER    892-2646+7
NO #*CONDIOTTI ENTRPRSES897-4558+7
NO #*WESTERN OAKS THE   892-1262+7
    *  23 BUS   73 RES   73 NEW
```

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

REDWOOD BLVD 1977

```
 7499   XXXX                          00
 7505*MARIN RENT A CAR      897-5101
     *NOVATO TOYOTA INC     897-3191
     *THRIFTY RENT A CAR    897-5101
     *TOYOTA OF NOVATO      897-3191  2
 7514*YOUNG BROS HM FRNSH   892-1646  6
 7515*DISCOUNT AUTO PARTS   897-2181  6
 7517*NATIONAL AUTO GLASS   897-3185  5
     *STRAW UPHOLSTERY      897-8252  6
     *WINTERS GLASS CO      897-3185  6
7530....YOUNG BROS MBL HMS
      HYDE DAYTON O         892-2970  5
7530.........................
 7533 PINHEIRO FRANK        892-2096
 7546*DAIRYMENS MILLING     892-2843
 7552*POZZI E COMPANY INC   892-1571  6
     *SHAMROCK MATERIALS    892-1571  6
 7576*CERVANTES S H JR      897-3866
    A*HANS FRGN CAR RPR     897-9822  5
 7595*SIMONTACCHI JOE       897-9708  2
 7596*COLORED GRAVEL        897-1337  5
     *MARIN LNOSCPG MTRLS   897-1337  2
 8141 HILL HARRY G          892-2644  5
 8171*MCGRAW HILL BOOK CO   897-5201
 8180*BRITISH&FOREIGN CAR   897-3383
      LIND PETER            897-2077  4
     *NOVATO AUTO BODY      897-2525  5
 9102 LYNCH LYNN            897-9207  6
 9201 WILLIAMS FRANK H      892-2978  4
 NO #*AVIS RENT A CAR       883-4922+7
```

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

REDWOOD BLVD 1973

7505*CHAMPION MOTOR HMS 897-5101+2
*MARIN RENT A CAR 897-5101
*NOVATO TOYOTA INC 897-3191
*THRIFTY RENT A CAR 897-5101
*TOYOTA OF NOVATO B97-3191+2
7514*YOUNG BROS OF NCV 892-5610
7515*DISCOUNT AUTO PARTS 897-2182+2
7517*WALKERS UPHOL&INTRS 897-8252+2
*WINTERS GLASS 897-3185+2
7530 LIND PETER 897-2077
LONG JOHN W 897-8598+2
PARKS GEO A 897-9225+2
PAYNE NONDAY C 897-3765+2
SCHWARM BOB 897-7828+2
SCHWARM EDNA 897-5862+2
*YOUNG BROS MBL HMS 897-4151
7533 PINHEIRO FRANK 892-2096
7546*DAIRYMENS MILLING 892-2843
7552*POZZI E COMPANY INC 892-3136
*SHAMROCK MATERIALS 892-3136
7576 CERVANTES S H JR 897-3866
7595*SIMONTACCHI JOE 897-9708+2
7596*MARIN LANDSCP MATLS 897-1337+2
8141*LODGE THE 897-2151

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

REDWOOD BLVD 1973

```
..REDWOOD HWY                94947 CONT..
       SHIPWRECK PETES        897-2410
      *SPORTSMAN LODGE NOV    897-2151
      *THE LODGE              897-2151
 8161*HERTZ RENTAL            897-6667+2
      *INTERSTATE RNT A CR    897-5949
      *JACKS 66               897-6969
 8171*MCGRAW HILL BOOK CO     897-5201
 8180*AQUARIAN GLSS DMNSN     897-4958
      *BRITISH&FOREIGN CAR    897-3383
      *REDWOOD MOTORCYCLE     897-3058
       SIMMONDS DOUGLAS       897-4958
 8901*C BAR N RNCHS&STBLE     897-7272+2
      *GOLDSMITH W SADDLRY     892-9982
      *SADDLERY GOLDSMITH      892-9982
 8930 WILLIAMS LAWRENCE       897-3308+2
 9201*WILLIAMS RED WORMS      892-2978+2
NO  #*CNTRY CLB SHELL SV      883-5500
NO  #*COUNTRY CLUB SHELL      883-5500+2
NO  # ERNST CHAS               892-3153
NO  #*GULF SERVICE OF NOV     897-5766
NO  #*MARIN AVIATION INC      897-5185
NO  #*MARIN COUNTY AIRPRT     897-1754
NO  #*MASTERS WTR SKI SCH     897-9785
NO  #*MCPHAILS INC            897-2115
NO  #*MIRA MONTE MARINA       897-9785
NO  #*MIRA MONTE MARINE       897-3282
NO  # MONTGOMERY LOIS          897-4952+2
NO  #*NOVATO GULF SERVICE     897-5766
NO  #*NOVATO TRAP CLUB        897-9712
NO  # NUNES A T               892-3715
NO  # NUNES JOE A             892-3618
NO  #*SPECTRUM AIR INC        897-6900
NO  #*WILLIE THE WCODPEKR     892-2646
NO  # WINEMAN ROBT M          892-3153
     * 119 BUS  111 RES   95 NEW
```

APPENDIX B

AllWest Environmental
Environmental Phase I - Due Diligence Questionnaire

Project No. 23023.20

Please return by 2/15/23 **Sent on:** 2/9/23

AllWest

General Information

Property Name	Valley Oaks
Property Owner	WCJA, LP
All Known Site Addresses	None
Parcel Size (acres/sq. ft.)	37.2 acres
Building Size (sq. ft.)	Quonset hut - approx 4,000 sq.ft
Site Contact	Michael Hooper

Parcel Number	415 298 7571	Number of Buildings	1	Construction Date	Spring 2024

Report Purpose

Acquisition		Refinance		Disposition	X	Management	

Land Use of Environmental Concern - On-Site and Adjacent, Past and Present

Indicate, if applicable	ON-SITE	ADJACENT	Notes:
Gasoline Stations	None	None	
Dry Cleaners	None	None	
Industrial Uses	None	None	
Other	None	None	

General Information	Yes	No	N/A	Notes
1. Are you aware of any environmental liens filed or recorded against the property under federal, tribal, state or local law?		X		
2. Are you aware of environmental activity and use limitations (AULs), including engineering and institutional controls limiting exposure to known hazardous substances, that are in place, have been filed and/or recorded against the property?		X		
3. Do you have any specialized knowledge or experience material in identifying soil or groundwater contamination due to certain processes or chemicals used at the subject or adjoining properties?		X		
4. Does the purchase price of the property reasonably reflect the fair market value of the property?	X			
5. Are you aware of a reduction in the property value due to environmental issues?		X		
6. Are you aware of commonly known information about the property (past uses, specific chemicals used, spills or releases, environmental clean-ups) that would assist AllWest to identify potential soil or groundwater contamination?		X		
7. Based on your knowledge and experience related to the property are there any obvious indicators that suggest the presence or likely presence of hazardous materials releases at the property?		X		
8. Do you possess construction drawings, specs., a site plan, an ALTA survey, Chain of Title or Rent Roll?	X			
9. Have previous environmental investigations been performed at the site? Indicate report type below.		X		

Investigation Type:	Yes	No	N/A	On-Site Operations	Yes	No	N/A	Available Permits/Records	Yes	No	N/A	Notes
Phase I ESA	X			Stored Chemicals		X		Environmental Permits		X		
Phase II ESA		XX		Underground Storage Tanks		X		Industrial Storage		X		
Tank Tightness Testing				Above Ground Storage Tanks		X		POTW (NPDES)		X		
Asbestos Survey		X		Spills and/or Releases		X		Hazardous Waste Generator		X		
Radon		X		Dump Areas/Landfills		X		Air Quality		X		
Lead Based Paint		X		Water Treatment Systems		X		Flammable Materials		X		
Lead in Water		X		Clarifiers/Separators		X		Waste Manifest(s)		X		
O&M Plan(s)		X		Air Stacks/Vents/Odors		X		Other	X			Abandoned water well
Mold		X		Floor Drains/Sumps		X		Wall or window leaks		X		
Other:		X		Stained Soil/Impacted Vegetation		X		Roof leaks		X		
				On-Site Owned Elec. Transformer		X		Recent roof repairs		X		
				Hydraulic Lifts/ Elevators		X		Signs of mold		X		
				Wetlands/Flooding	X							
Please provide copies of the above, if available.				Environmental Clean-ups		X						
				Oil/Gas/Water Monitoring Wells		X						

Provide a description of issues checked in the above table and note any issues to elaborate on or issues you are concerned about:

Please return this document by email to:

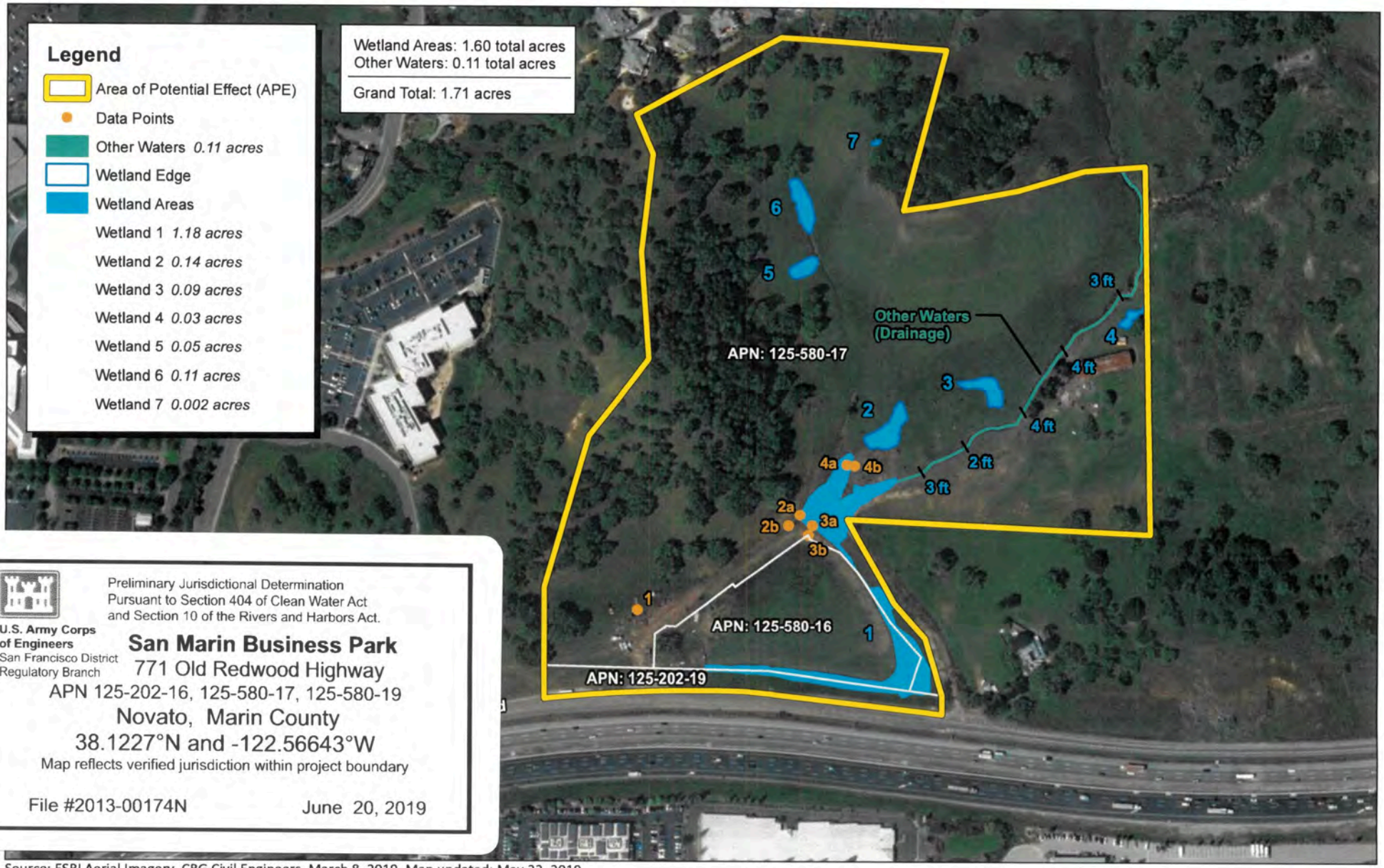
Prepared By:	MICHAEL R .HOOPER		Date: 2/15/23	Contact #:	415 298 7571
Company:	CAMPUS PROPERTIES, LLC	Email:	MHOOPER@CAMPUSPROPERTY.COM		



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Sheet 1. Draft Aquatic Resources Delineation Map
100 Black John Road Project Site
Novato, California

Delineation Conducted by: Sarah Lynch, Christy Owens & Monica Matthews
Delineation Dates: 2/4/20 & 11/12/20
Aerial Photograph Source: ESRI
Map Preparation Date: January 7, 2021



Preliminary Jurisdictional Determination
Pursuant to Section 404 of Clean Water Act
and Section 10 of the Rivers and Harbors Act.

U.S. Army Corps of Engineers
San Francisco District
Regulatory Branch

San Marin Business Park

771 Old Redwood Highway
APN 125-202-16, 125-580-17, 125-580-19
Novato, Marin County
38.1227°N and -122.56643°W
Map reflects verified jurisdiction within project boundary

File #2013-00174N June 20, 2019

Source: ESRI Aerial Imagery. CBG Civil Engineers, March 8, 2019. Map updated: May 22, 2019.
ACE Inspection on May 16, 2019. Confirmed by the Corps (Roberta Morgenstern) on May 16, 2019.
Note: Wetland Edge as determined by FCS using GPS in field survey.

FIRSTCARBON SOLUTIONS™

350 175 0 350
Feet

Aquatic Resources Map

44000005 • 05/2019 | aquatic_resources_map.mxd

LANDS AT REDWOOD BOULEVARD AND BLACK JOHN ROAD, NOVATO
APNS: 125-580-16, 125-580-17, 125-202-19
CITY OF NOVATO, CALIFORNIA

RECORDING REQUESTED BY:
Michael R. Hooper
PO Box 564
Larkspur, CA 94977

AND WHEN RECORDED MAIL TO:
CITY OF NOVATO
ATTN: Christopher J. Blunk
City Engineer
922 Machin Avenue
Novato, CA 94945

SPACE ABOVE THIS LINE FOR RECORDER'S USE ONLY

CITY OF NOVATO

APPROVAL OF LOT LINE ADJUSTMENT
PURSUANT TO GOVERNMENT CODE, SECTION 66412(d)

NOTICE IS HEREBY GIVEN that the application of Michael R. Hooper for adjustment of the property line between **Parcel 1**, Lands of WCJA, LP owned by WCJA, LP a California Limited Partnership and more particularly described in DN 2020-0008770, Marin County Records, and **Parcle 2,** Lands of Wright Trust owned by Patricia Lee Wright, Trustee of the Wright 2003 Revocable Trust - Survivor's Trustee and more particularly described in DN 2003-0080872, Marin County Records, was approved by the City of Novato City Engineer on _____, 2022.

The portion of **Parcel 1** that is being conveyed to **Parcel 2** is described in Exhibit "A-1" and shown on Exhibit "B-1" attached hereto. The portion of **Parcel 2** that is being conveyed to **Parcel 1** is described in Exhibit "A-2" and shown on Exhibit "B-2" attached hereto. The City Engineer has determined that the proposed lot line adjustment conforms to the requirements of the City of Novato zoning, subdivision and building ordinances.

This certificate does not constitute the actual transfer of title of any portion of the parcels. It is to be recorded concurrent with the grant deed and deeds of reconveyance necessary to transfer the title of the portion or portions of parcels proposed by this lot line adjustment. The property lines described in Exhibit "A-3" and shown on Exhibit "B-3", and as described in Exhibit "A-4" and shown on Exhibit "B-4" are now recognized by this office as the lines delineating **Parcel 2** and **Parcel 1**, respectively.

_____ _____
Christopher J. Blunk Date
City Engineer
City of Novato

We the undersigned owners of record hereby acknowledge our consent to the above-described lot line adjustment.

OWNERS of **Parcel 1**: WCJA, LP a California Limited Partnership

By: DAVID M WEBB Date: MARCH 16, 2022

Name:

Title: CO MANAGING GENERAL PARTNER

All signatures must be notarized.

STATE OF ARIZONA }
COUNTY OF maricopa } SS.

This instrument was acknowledged before me this 16 day of March, 2022 by Lewis R. Reynolds

In witness whereof I herewith set my hand and official seal

NOTARY PUBLIC

LEWIS R. REYNOLDS
Notary Public - Arizona
Maricopa County
Commission # 584418
My Comm. Exp. July 9, 2024

We the undersigned owners of record hereby acknowledge our consent to the above-described lot line adjustment.

OWNER of **Parcel 2**: Patricia Lee Wright, Trustee of the Wright 2003 Revocable Trust - Survivor's Trustee

By: _____ Date: _____

Name:

Title:

All signatures must be notarized.

Date: 02/10/2022
Project: 1910189

EXHIBIT "A - 1"

LEGAL DESCRIPTION
LOT LINE ADJUSTMENT
TRANSFER AREA 1 (WCJA LP TO WRIGHT TRUST)

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE CITY OF NOVATO, COUNTY OF MARIN, STATE OF CALIFORNIA, BEING **A LOT LINE ADJUSTMENT DESCRIPTION FOR LAND TO BE TRANSFERED FROM WCJA, LP TO WRIGHT 2003 REVOCABLE TRUST** OVER A PORTION OF LANDS OF WCJA, LP, A CALIFORNIA LIMITED PARTNERSHIP, BEING A PORTION OF PARCEL TWO AS DESCRIBED IN APPROVAL OF LOT LINE ADJUSTMENT, RECORDED MARCH 05, 2020 AS INSTRUMENT NUMBER 2020-0008769, MARIN COUNTY RECORDS, AND MORE PARTICULARLY DESCRIBED AS FOLLOWED:

COMMENCING AT THE INTERSECTION OF THE COURSES "SOUTH 22°47'23" WEST 448.38 FEET" AND "NORTH 88°29'39" EAST 149.10 FEET" AS SHOWN ON THAT CERTAIN MAP ENTITLED "PARCEL MAP OF SAN MARIN BUSINESS PARK PHASE 2", FILED IN BOOK 24 OF PARCEL MAPS, PAGE 68 (24 PM 68), MARIN COUNTY RECORDS, SAID POINT ALSO BEING ON THE WESTERLY LINE OF REDWOOD BOULEVARD; THENCE ALONG SAID WESTERLY LINE OF REDWOOD BOULEVARD, SOUTH 22°47'23" WEST, A DISTANCE OF 89.73 FEET; THENCE LEAVING SAID WESTRELY LINE OF REDWOOD BOULEVARD, NORTH 67°12'28" WEST, A DISTANCE OF 30.00 FEET; THENCE NORTH 53°00'00" WEST, A DISTANCE OF 216.87 FEET; THENCE SOUTH 76°00'00" WEST, A DISTANCE OF 130.00 FEET; THENCE NORTH 49°00'00" WEST, A DISTANCE OF 60.00 FEET; THENCE NORTH 00°00'00" EAST, A DISTANCE OF 140.50 FEET TO THE EASTERLY LINE OF SAID LANDS AND **THE POINT OF BEGINNING;**

THENCE LEAVING SAID EASTERLY LINE, NORTH 26°26'14" WEST, A DISTANCE OF 59.66 FEET;

THENCE NORTH 03°42'51" EAST, A DISTANCE OF 219.94 FEET TO THE NORTHERLY LINE OF SAID LANDS;

THENCE ALONG SAID NORTHERLY LINE, SOUTH 75°45'21" EAST, A DISTANCE OF 95.61 FEET TO THE EASTERLY LINE OF SAID LANDS;

THENCE ALONG SAID EASTERLY LINE, SOUTH 17°51'37" WEST, A DISTANCE OF 262.00 FEET TO **THE POINT OF BEGINNING.**

SAID TRANSFER AREA 1 CONTAINING 15,796 SQUARE FEET MORE OR LESS.

SEE EXHIBIT "B-1" ATTACHED HERETO AND MADE PART HEREOF.

THE BASIS OF BEARINGS FOR THIS MAP IS BASED ON THAT CERTAIN MAP ENTITLED "PARCEL MAP SAN MARIN BUSINESS PARK PHASE 2", FILED IN BOOK 24 OF PARCEL MAPS, PAGE 68, MARIN COUNTY RECORDS.

Date: 02/10/2022
Project: 1910189

PREPARED BY:
CSW/STUBER-STROEH ENGINEERING, INC.

JOSH WOELBING, PLS 9387

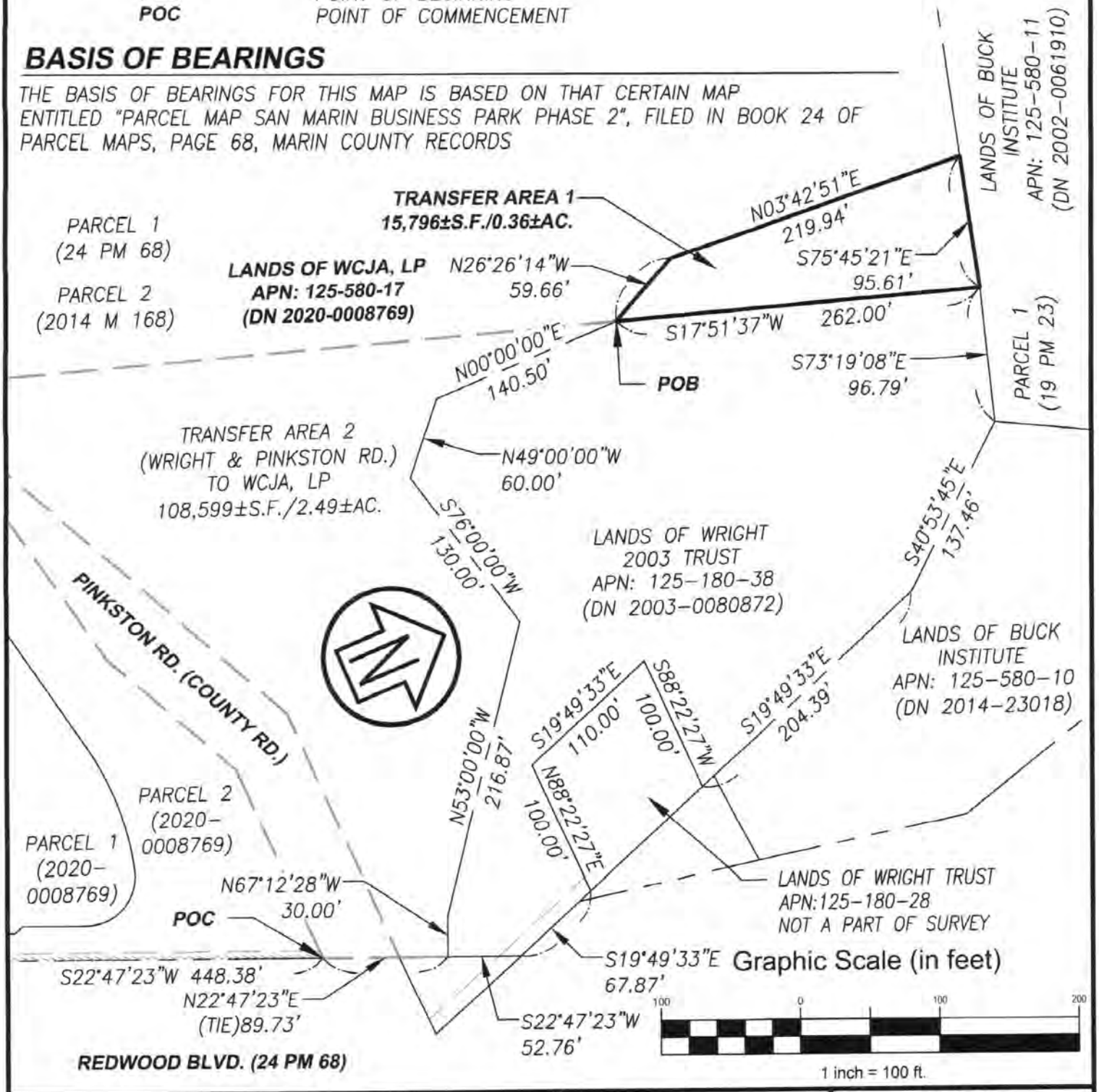


LEGEND

———	ADJUSTED BOUNDARY
— — — — — —	EXISTING PARCEL LINE TO BE EXTINGUISHED
——— — — ———	BOUNDARY ADJACENT PROPERTIES
POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS MAP IS BASED ON THAT CERTAIN MAP ENTITLED "PARCEL MAP SAN MARIN BUSINESS PARK PHASE 2", FILED IN BOOK 24 OF PARCEL MAPS, PAGE 68, MARIN COUNTY RECORDS



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Rev. -	Date: 02/10/2022
Job No. 2010140	Scale: 1" = 100'

EXHIBIT "B-1"

TRANSFER AREA 1

PLAT TO ACCOMPANY LEGAL DESCRIPTION

NOVATO MARIN COUNTY CALIFORNIA

Date: 02/10/2022
Project: 1910189

EXHIBIT "A - 2"

LEGAL DESCRIPTION
LOT LINE ADJUSTMENT
TRANSFER AREA 2
(WRIGHT TRUST AND PINKSTON ROAD TO WCJA)

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE CITY OF NOVATO, COUNTY OF MARIN, STATE OF CALIFORNIA, BEING **A LOT LINE ADJUSTMENT DESCRIPTION FOR LAND TO BE TRANSFERRED FROM WRIGHT 2003 REVOCABLE TRUST TO WCJA, LP,** A CALIFORNIA LIMITED PARTNERSHIP OVER A PORTION OF THE LANDS, AS DESCRIBED IN DOCUMENT NUMBER 2003-0080872, RECORDED JULY 08, 2003, AND PINKSTON ROAD, MORE PARTICULARLY DESCRIBED AS FOLLOWED:

BEGINNING AT THE INTERSECTION OF THE COURSES "SOUTH 22°47'23" WEST 448.38 FEET" AND "NORTH 88°29'39" EAST 149.10 FEET" AS SHOWN ON THAT CERTAIN MAP ENTITLED "PARCEL MAP OF SAN MARIN BUSINESS PARK PHASE 2", FILED IN BOOK 24 OF PARCEL MAPS, PAGE 68 (24 PM 68), MARIN COUNTY RECORDS, SAID POINT ALSO BEING ON THE WESTERLY LINE OF REDWOOD BOULEVARD;

THENCE LEAVING SAID WESTERLY LINE OF REDWOOD BOULEVARD AND ALONG THE NORTHERLY LINE OF PARCEL 1 AS SHOWN ON SAID PARCEL MAP (24 PM 68), SOUTH 88°29'39" WEST, A DISTANCE OF 149.10 FEET;

THENCE SOUTH 63°40'39" WEST, A DISTANCE OF 122.00 FEET;

THENCE SOUTH 77°32'39" WEST, A DISTANCE OF 227.60 FEET;

THENCE SOUTH 63°40'29" WEST, A DISTANCE OF 15.50 FEET TO THE EASTERLY LINE OF SAID PARCEL 1 (24 PM 68) AND WESTERLY LINE OF SAID LANDS;

THENCE ALONG SAID EASTERLY LINE OF PARCEL 1 AND WESTERLY LINE OF SAID LANDS, NORTH 17°51'37" EAST, A DISTANCE OF 511.92 FEET;

THENCE LEAVING SAID EASTERLY LINE OF PARCEL 1 AND WESTERLY LINE OF SAID LANDS, SOUTH 00°00'00" EAST, A DISTANCE OF 140.50 FEET;

THENCE SOUTH 49°00'00" EAST, A DISTANCE OF 60.00 FEET;

THENCE NORTH 76°00'00" EAST, A DISTANCE OF 130.00 FEET;

THENCE SOUTH 53°00'00" EAST, A DISTANCE OF 216.87 FEET;

THENCE SOUTH 67°12'28" EAST, A DISTANCE OF 30.00 FEET TO THE WESTERLY LINE OF REDWOOD BOULEVARD;

THENCE ALONG SAID WESTERLY LINE OF REDWOOD BOULEVARD, SOUTH 22°47'23" WEST, A DISTANCE OF 89.73 FEET TO **THE POINT OF BEGINNING.**

Date: 02/10/2022
Project: 1910189

SAID TRANSFER AREA 2 CONTAINING 108,599 SQUARE FEET MORE OR LESS.

SEE EXHIBIT "B-2" ATTACHED HERETO AND MADE PART HEREOF.

THE BASIS OF BEARINGS FOR THIS DESCRIPTION IS BASED ON THAT CERTAIN MAP ENTITLED "PARCEL MAP SAN MARIN BUSINESS PARK PHASE 2", FILED IN BOOK 24 OF PARCEL MAPS, PAGE 68, MARIN COUNTY RECORDS.

PREPARED BY:
CSW/STUBER-STROEH ENGINEERING, INC.

JOSH WOELBING, PLS 9387

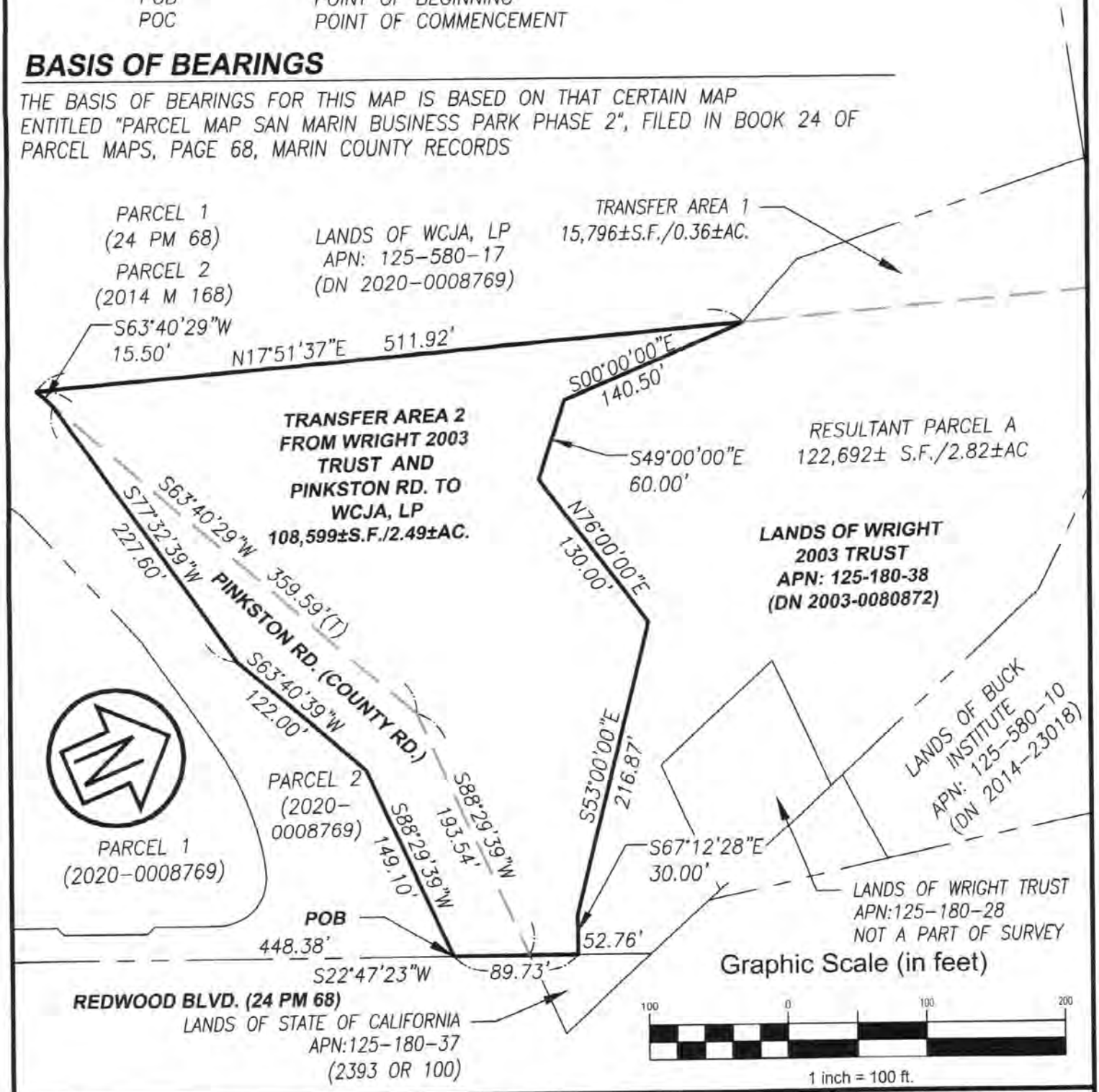


LEGEND

———	ADJUSTED BOUNDARY
— — — — — —	EXISTING PARCEL LINE TO BE EXTINGUISHED
——— — — ———	BOUNDARY ADJACENT PROPERTIES
POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS MAP IS BASED ON THAT CERTAIN MAP ENTITLED "PARCEL MAP SAN MARIN BUSINESS PARK PHASE 2", FILED IN BOOK 24 OF PARCEL MAPS, PAGE 68, MARIN COUNTY RECORDS



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EXHIBIT "B-2"

TRANSFER AREA 2

PLAT TO ACCOMPANY LEGAL DESCRIPTION

NOVATO MARIN COUNTY CALIFORNIA

Date: 02/09/2022
Project: 1910189

EXHIBIT "A - 3"

LEGAL DESCRIPTION
LOT LINE ADJUSTMENT
RESULTANT PARCEL A (LANDS OF WRIGHT TRUST)

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE CITY OF NOVATO, COUNTY OF MARIN, STATE OF CALIFORNIA, BEING **A LOT LINE ADJUSTMENT DESCRIPTION FOR LANDS OF WRIGHT 2003 REVOCABLE TRUST** OVER A PORTION OF LANDS, AS DESCRIBED IN DOCUMENT NUMBER 2003-0080872, RECORDED JULY 08, 2003, AND OVER A PORTION OF LANDS OF WCJA, LP, A CALIFORNIA LIMITED PARTNERSHIP, BEING A PORTION OF PARCEL TWO AS DESCRIBED IN APPROVAL OF LOT LINE ADJUSTMENT, RECORDED MARCH 05, 2020 AS INSTRUMENT NUMBER 2020-0008769, MARIN COUNTY RECORDS, AND MORE PARTICULARLY DESCRIBED AS FOLLOWED:

COMMENCING AT THE INTERSECTION OF THE COURSES "SOUTH 22°47'23" WEST 448.38 FEET" AND "NORTH 88°29'39" EAST 149.10 FEET" AS SHOWN ON THAT CERTAIN MAP ENTITLED "PARCEL MAP OF SAN MARIN BUSINESS PARK PHASE 2", FILED IN BOOK 24 OF PARCEL MAPS, PAGE 68 (24 PM 68), MARIN COUNTY RECORDS, SAID POINT ALSO BEING ON THE WESTERLY LINE OF REDWOOD BOULEVARD; THENCE ALONG SAID WESTERLY LINE OF REDWOOD BOULEVARD, NORTH 22°47'23" EAST, A DISTANCE OF 89.73 FEET TO **THE POINT OF BEGINNING;**

THENCE LEAVING SAID WESTRELY LINE OF REDWOOD BOULEVARD, NORTH 67°12'28" WEST, A DISTANCE OF 30.00 FEET;

THENCE NORTH 53°00'00" WEST, A DISTANCE OF 216.87 FEET;

THENCE SOUTH 76°00'00" WEST, A DISTANCE OF 130.00 FEET;

THENCE NORTH 49°00'00" WEST, A DISTANCE OF 60.00 FEET;

THENCE NORTH 00°00'00" EAST, A DISTANCE OF 140.50 FEET TO THE EASTERLY LINE OF PARCEL 1 AS SHOWN ON SAID PARCEL MAP (24 PM 68);

THENCE LEAVING SAID EASTERLY LINE OF PARCEL 1, NORTH 26°26'14" WEST, A DISTANCE OF 59.66 FEET;

THENCE NORTH 03°42'51" EAST, A DISTANCE OF 219.94 FEET TO THE NORTHERLY LINE OF SAID PARCEL 1;
THENCE ALONG SAID NORTHERLY LINE OF PARCEL 1, SOUTH 75°45'21" EAST, A DISTANCE OF 95.61 FEET TO THE MOST NORTHERLY CORNER OF PARCEL ONE, AS DESCRIBED IN SAID DOCUMENT NUMBER 2003-00080872 (LANDS OF WRIGHT TRUST);

THENCE ALONG THE NORTHERLY LINE OF SAID PARCEL ONE, SOUTH 73°19'08" EAST, A DISTANCE OF 96.79 FEET;

THENCE SOUTH 40°53'45" EAST, A DISTANCE OF 137.46 FEET TO THE EASTERLY LINE OF SAID PARCEL ONE;

Date: 02/09/2022
Project: 1910189

THENCE ALONG SAID EASTERLY LINE OF PARCEL ONE, SOUTH 19°49'33" EAST, A DISTANCE OF 204.39 FEET TO THE NORTHEASTERLY CORNER OF PARCEL TWO, AS DESCRIBED IN SAID DOCUMENT NUMBER 2003-00080872 (LANDS OF WRIGHT TRUST);

THENCE ALONG THE NORTHERLY LINE OF SAID PARCEL TWO, SOUTH 88°22'27" WEST, A DISTANCE OF 100.00 FEET TO THE WESTERLY LINE OF SAID PARCEL TWO;

THENCE ALONG SAID WESTERLY LINE OF PARCEL TWO, SOUTH 19°49'33" EAST, A DISTANCE OF 110.00 FEET TO THE SOUTHERLY LINE OF SAID PARCEL TWO;

THENCE ALONG SAID SOUTHERLY LINE OF PARCEL TWO, NORTH 88°22'27" EAST, A DISTANCE OF 100.00 FEET TO THE EASTERLY LINE OF SAID PARCEL ONE (2003-0080872);

THENCE ALONG SAID EASTERLY LINE OF PARCEL ONE, SOUTH 19°49'33" EAST, A DISTANCE OF 67.87 FEET TO THE WESTERLY LINE OF REDWOOD BOULEVARD;

THENCE ALONG SAID WESTERLY LINE OF REDWOOD BOULEVARD, SOUTH 22°47'23" WEST, A DISTANCE OF 52.76 FEET TO **THE POINT OF BEGINNING.**

SAID RESULTANT PARCEL A CONTAINING 122,692 SQUARE FEET MORE OR LESS.

SEE EXHIBIT "B-3" ATTACHED HERETO AND MADE PART HEREOF.

THE BASIS OF BEARINGS FOR THIS DESCRIPTION IS BASED ON THAT CERTAIN MAP ENTITLED "PARCEL MAP SAN MARIN BUSINESS PARK PHASE 2", FILED IN BOOK 24 OF PARCEL MAPS, PAGE 68, MARIN COUNTY RECORDS.

PREPARED BY:
CSW/STUBER-STROEH ENGINEERING, INC.

JOSH WOELBING, PLS 9387

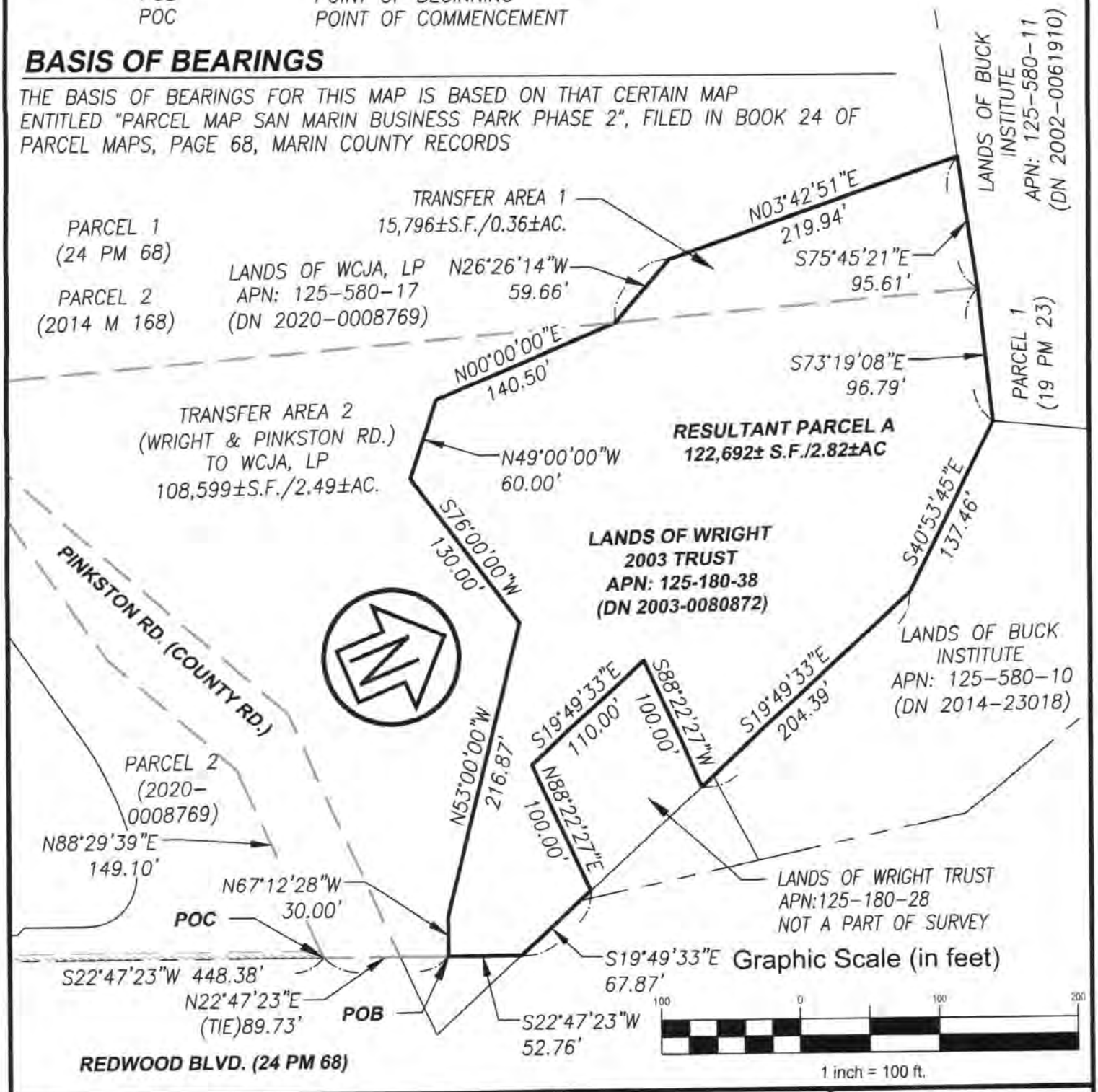


LEGEND

———	ADJUSTED BOUNDARY
— — — — — —	EXISTING PARCEL LINE TO BE EXTINGUISHED
——— — — ———	BOUNDARY ADJACENT PROPERTIES
POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS MAP IS BASED ON THAT CERTAIN MAP ENTITLED "PARCEL MAP SAN MARIN BUSINESS PARK PHASE 2", FILED IN BOOK 24 OF PARCEL MAPS, PAGE 68, MARIN COUNTY RECORDS



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Rev. -	Date: 02/10/2022
Job No. 2010140	Scale: 1" = 100'

EXHIBIT "B-3"

RESULTANT PARCEL A

PLAT TO ACCOMPANY LEGAL DESCRIPTION

NOVATO MARIN COUNTY CALIFORNIA

Rev.: 03/09/2022
Date: 02/10/2022
Project: 1910189

EXHIBIT "A - 4"

LEGAL DESCRIPTION
LOT LINE ADJUSTMENT (LANDS OF WCJA, LP)
RESULTANT PARCEL B

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE CITY OF NOVATO, COUNTY OF MARIN, STATE OF CALIFORNIA, BEING **A LOT LINE ADJUSTMENT DESCRIPTION FOR LANDS OF WCJA, LP,** A CALIFORNIA LIMITED PARTNERSHIP OVER A PORTION OF PARCEL TWO, AS DESCRIBED IN APPROVAL OF LOT LINE ADJUSTMENT, RECORDED MARCH 05, 2020 AS INSTRUMENT NUMBER 2020-0008769, AND OVER A PORTION OF LANDS OF WRIGHT 2003 REVOCABLE TRUST, AS DESCRIBED IN DOCUMENT NUMBER 2003-0080872, RECORDED JULY 08, 2003, MARIN COUNTY RECORDS, AND PINKSTON ROAD, MORE PARTICULARLY DESCRIBED AS FOLLOWED:

BEING ALL OF PARCEL TWO AS DESCRIBED IN SAID INSTRUMENT NUMBER 2020-0008769,

TOGETHER THEREWITH THE FOLLOWING DESCRIBED PARCEL OF LAND:

TRANSFER AREA 2

BEING A PORTION OF THE LANDS OF WRIGHT 2003 REVOCABLE TRUST, AS DESCRIBED IN DOCUMENT NUMBER 2003-0080872, RECORDED JULY 08, 2003, MARIN COUNTY RECORDS, AND PINKSTONE ROAD, MORE PARTICULARLY DESCRIBED AS FOLLOWED:

BEGINNING AT THE INTERSECTION OF THE COURSES "SOUTH 22°47'23" WEST 448.38 FEET" AND "NORTH 88°29'39" EAST 149.10 FEET" AS SHOWN ON THAT CERTAIN MAP ENTITLED "PARCEL MAP OF SAN MARIN BUSINESS PARK PHASE 2", FILED IN BOOK 24 OF PARCEL MAPS, PAGE 68 (24 PM 68), MARIN COUNTY RECORDS, SAID POINT ALSO BEING ON THE WESTERLY LINE OF REDWOOD BOULEVARD;

THENCE LEAVING SAID WESTERLY LINE OF REDWOOD BOULEVARD AND ALONG THE NORTHERLY LINE OF PARCEL 1 AS SHOWN ON SAID PARCEL MAP (24 PM 68), SOUTH 88°29'39" WEST, A DISTANCE OF 149.10 FEET;

THENCE SOUTH 63°40'39" WEST, A DISTANCE OF 122.00 FEET;

THENCE SOUTH 77°32'39" WEST, A DISTANCE OF 227.60 FEET;

THENCE SOUTH 63°40'29" WEST, A DISTANCE OF 15.50 FEET TO THE EASTERLY LINE OF SAID PARCEL 1 (24 PM 68) AND WESTERLY LINE OF SAID LANDS;

THENCE ALONG SAID EASTERLY LINE OF PARCEL 1 AND WESTERLY LINE OF SAID LANDS, NORTH 17°51'37" EAST, A DISTANCE OF 511.92 FEET;

THENCE LEAVING SAID EASTERLY LINE OF PARCEL 1 AND WESTERLY LINE OF SAID LANDS, SOUTH 00°00'00" EAST, A DISTANCE OF 140.50 FEET;

THENCE SOUTH 49°00'00" EAST, A DISTANCE OF 60.00 FEET;

THENCE NORTH 76°00'00" EAST, A DISTANCE OF 130.00 FEET;

THENCE SOUTH 53°00'00" EAST, A DISTANCE OF 216.87 FEET;

THENCE SOUTH 67°12'28" EAST, A DISTANCE OF 30.00 FEET TO THE WESTERLY LINE OF REDWOOD BOULEVARD;

THENCE ALONG SAID WESTERLY LINE OF REDWOOD BOULEVARD, SOUTH 22°47'23" WEST, A DISTANCE OF 89.73 FEET TO **THE POINT OF BEGINNING.**

CONTAINING 108,599 SQUARE FEET MORE OR LESS.

EXCEPTING THEREFROM THE FOLLOWING DESCRIBED PARCEL OF LAND:

TRANSFER AREA 1

BEING A PORTION OF PARCEL TWO AS DESCRIBED IN APPROVAL OF LOT LINE ADJUSTMENT, RECORDED MARCH 05, 2020 AS INSTRUMENT NUMBER 2020-0008769, MARIN COUNTY RECORDS, AND MORE PARTICULARLY DESCRIBED AS FOLLOWED:

COMMENCING AT THE INTERSECTION OF THE COURSES "SOUTH 22°47'23" WEST 448.38 FEET" AND "NORTH 88°29'39" EAST 149.10 FEET" AS SHOWN ON THAT CERTAIN MAP ENTITLED "PARCEL MAP OF SAN MARIN BUSINESS PARK PHASE 2", FILED IN BOOK 24 OF PARCEL MAPS, PAGE 68 (24 PM 68), MARIN COUNTY RECORDS, SAID POINT ALSO BEING ON THE WESTERLY LINE OF REDWOOD BOULEVARD; THENCE ALONG SAID WESTERLY LINE OF REDWOOD BOULEVARD, SOUTH 22°47'23" WEST, A DISTANCE OF 89.73 FEET; THENCE LEAVING SAID WESTRELY LINE OF REDWOOD BOULEVARD, NORTH 67°12'28" WEST, A DISTANCE OF 30.00 FEET; THENCE NORTH 53°00'00" WEST, A DISTANCE OF 216.87 FEET; THENCE SOUTH 76°00'00" WEST, A DISTANCE OF 130.00 FEET; THENCE NORTH 49°00'00" WEST, A DISTANCE OF 60.00 FEET; THENCE NORTH 00°00'00" EAST, A DISTANCE OF 140.50 FEET TO THE EASTERLY LINE OF SAID LANDS AND **THE POINT OF BEGINNING;**

THENCE LEAVING SAID EASTERLY LINE, NORTH 26°26'14" WEST, A DISTANCE OF 59.66 FEET;

THENCE NORTH 03°42'51" EAST, A DISTANCE OF 219.94 FEET TO THE NORTHERLY LINE OF SAID LANDS;

THENCE ALONG SAID NORTHERLY LINE, SOUTH 75°45'21" EAST, A DISTANCE OF 95.61 FEET TO THE EASTERLY LINE OF SAID LANDS;

THENCE ALONG SAID EASTERLY LINE, SOUTH 17°51'37" WEST, A DISTANCE OF 262.00 FEET TO **THE POINT OF BEGINNING.**

CONTAINING 15,796 SQUARE FEET MORE OR LESS.

SAID RESULTANT PARCEL B CONTAINING 1,660,640 SQUARE FEET OR 38.12 ACRES MORE OR LESS.

Rev.: 03/09/2022
Date: 02/10/2022
Project: 1910189

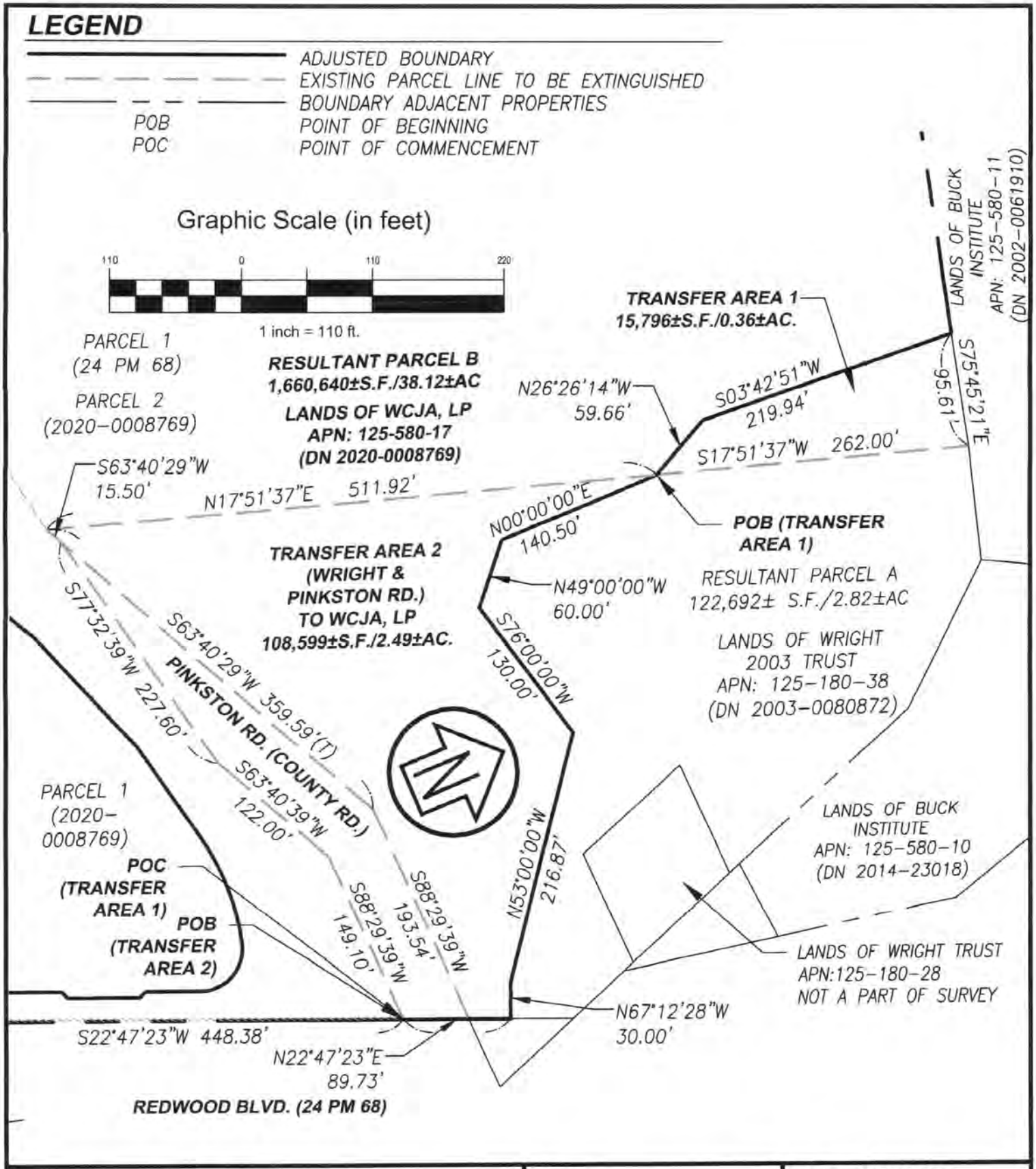
SEE EXHIBITS "B-4" ATTACHED HERETO AND MADE PART HEREOF.

THE BASIS OF BEARINGS FOR THIS DESCRIPTION IS BASED ON THAT CERTAIN MAP ENTITLED "PARCEL MAP SAN MARIN BUSINESS PARK PHASE 2", FILED IN BOOK 24 OF PARCEL MAPS, PAGE 68, MARIN COUNTY RECORDS.

PREPARED BY:
CSW/STUBER-STROEH ENGINEERING, INC.

JOSH WOELBING, PLS 9387





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Job No. 2010140	Scale: 1" = 110'

EXHIBIT "B-4"

RESULTANT PARCEL B

PLAT TO ACCOMPANY LEGAL DESCRIPTION

NOVATO MARIN COUNTY CALIFORNIA

POR. RANCHO OLOMPALI

Tax Area Code
77-030
10-090

125-58

1" = 500'

THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA SHOWN. ASSESSOR'S PARCELS MAY NOT COMPLY WITH LOCAL SUBDIVISION OR BUILDING ORDINANCES.

18 — 20 — 51 — 48 — 63

12 Pcl. 1
1.508 Ac.±
Ptn. Remainder D

13 Pcl. 2
1.275 Ac.±
Ptn. Remainder D

14 Pcl. 3
1.504 Ac.±
Ptn. Remainder D

Ptn. Lot 2
07
93.6 Ac.

Ptn. Lot 2
10
58.13 Ac.

11
23.75 Ac.

23 Pcl. 2
36 Ac.

03 RM 1999-79 Remainder A

04

SEE DETAIL 1 Remainder D

SEE DETAIL 2

SEE DETAIL 3

Remainder C

DETAIL 1
SCALE: 1"=100'

(1)	S06°W	12.04	(11)	S51°E	9.90	(21)	S69°W	9.90
(2)	S51°E	13.00	(12)	S39°W	11.06	(22)	S21°E	11.06
(3)	S06°W	6.25	(13)	S06°W	31.85	(23)	S51°E	31.85
(4)	S51°E	12.29	(14)	S51°W	6.58	(24)	S69°W	6.58
(5)	S06°W	9.61	(15)	S39°W	18.00	(25)	S21°E	18.00
(6)	S51°E	18.00	(16)	S51°E	9.61	(26)	S69°W	9.61
(7)	N09°E	6.58	(17)	S69°W	12.29	(27)	S06°W	12.29
(8)	N69°E	31.85	(18)	S51°E	6.25	(28)	S69°W	6.25
(9)	S51°E	11.06	(19)	S39°W	13.00	(29)	S21°E	13.00
(10)	N09°E	9.90	(20)	S51°E	12.04	(30)	S69°W	12.04

DETAIL 2
SCALE: 1"=50'

(1)	R=1.50	3.14
(2)	S56°47'W	16.36
(3)	S33°12'E	10.00
(4)	N56°47'E	12.29
(5)	S33°12'E	9.00

DETAIL 3
SCALE: 1"=200'

(1)	N59°00'E	52.09
(2)	N42°06'E	49.99
(3)	N60°40'E	38.12
(4)	S22°47'W	46.00

01/13/2021 JSB

CHANGES

BLK	PRIOR APN	NEW APN	YR	AUTH	
580	125-580-05	12, 13, & 14	11	004	
			12	SBE 11-001	
202	125-202-18	125-580-15	15	043	Reblocked
580	125-580-15	16 & 17	15	043	
580	125-580-16	18, 19, & 20	21	007	
580	125-580-17	21 & 22	21	007	
580	18, 19, & 22	125-580-23	21	007	
580	20 & 21	125-580-24	21	007	
580	125-580-24	125-630-81	21	035	Reblocked

NOTE – Assessor's Block Numbers Shown in Ellipses.
Assessor's Parcel Numbers Shown in Circles.

CITY Of NOVATO
Assessor's Map Bk.125 Pg.58
County of Marin, Calif.

Before

POR. RANCHO OLOMPALI

Tax Area Code
77-030
10-090

125-58

1" = 500'

After

THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA SHOWN. ASSESSOR'S PARCELS MAY NOT COMPLY WITH LOCAL SUBDIVISION OR BUILDING ORDINANCES

DETAIL 1
SCALE: 1"=100'

(1)	S06°W	12.04	(11)	S51°E	9.90
(2)	S81°E	13.00	(12)	S39°W	11.06
(3)	S09°W	6.25	(13)	S06°W	31.85
(4)	S81°E	12.29	(14)	S81°W	6.58
(5)	S09°W	9.81	(15)	S39°W	18.00
(6)	S81°E	18.00	(16)	S51°E	9.81
(7)	N09°E	6.58	(17)	S69°W	12.29
(8)	N80°E	31.85	(18)	S51°E	6.25
(9)	S81°E	11.06	(19)	S39°W	13.00
(10)	N09°E	9.90	(20)	S51°E	12.04
			(21)	S60°W	9.90
			(22)	S21°E	11.06
			(23)	S51°E	31.85
			(24)	S69°W	6.58
			(25)	S21°E	18.00
			(26)	S82°W	9.81
			(27)	S09°W	12.29
			(28)	S69°W	6.25
			(29)	S21°E	13.00
			(30)	S60°W	12.04

11/08/2022 JSB

CHANGES

BLK	PRIOR APN	NEW APN	YR	AUTH	
580	125-580-05	12, 13, & 14	11	004	
			12	SBE 11-001	
202	125-202-18	125-580-15	15	043	Reblocked
580	125-580-15	16 & 17	15	043	
580	125-580-16	18, 19, & 20	21	007	
580	125-580-17	21 & 22	21	007	
580	18, 19, & 22	125-580-23	21	007	
580	20 & 21	125-580-24	21	007	
580	125-580-24	125-630-81	21	035	Reblocked
580	125-180-49 125-180-80 125-180-75 125-180-81 125-180-74 125-180-59 125-180-37 125-180-38 125-180-28	125-580-25 125-580-26 125-580-27 125-580-28 125-580-29 125-580-30 125-580-31 125-580-32 125-580-33	23	033	Reblocked
580	125-580-31	Retired, Error Corr.	23	033	Correction
580	125-580-32	34 & 35	23	033	
580	125-580-23	36 & 37	23	033	
580	35 & 36	125-580-38	23	033	

Map Update

(12) Pcl. 1
1.508 Ac.±
Ptn. Remainder D

(13) Pcl. 2
1.275 Ac.±
Ptn. Remainder D

(14) Pcl. 3
1.504 Ac.±
Ptn. Remainder D

(03) RM 1999-79
Remainder A

Ptn. Lot 2
(07)
93.6 Ac.

SEE DETAIL 1
Remainder D

(04)

(10)
58.13 Ac.

(01)
SEE DETAIL 2

(11)
23.75 Ac.

Remainder C

(27)
1.99± Ac.

PTN. S.B.E.
135-21-27A-1

(25)
13.56 Ac.

(26)
4.26 Ac.
P.M.21-45

O.S. 11-85

(28)

SEE DETAIL 4

DETAIL 4
SCALE: 1"=50'

(29)
8.88 Ac.

(38)
2.82 Ac.

(34)
2.01 Ac.

(30)
SEE DETAIL 5

DETAIL 5
SCALE: 1"=300'

(37) Pcl. 2
36 Ac.

(63)
Pcl. 1

SEE DETAIL 3

PINKSTON RD.

DETAIL 3
SCALE: 1"=200'

(1) N59°00'E 52.09
(2) N42°06'E 49.99
(3) N60°40'E 38.12
(4) S22°47'W 46.00

DETAIL 2
SCALE: 1"=50'

(1) R=1.50 3.14
(2) S56°47'W 16.36
(3) S33°12'E 10.00
(4) N56°47'E 12.29
(5) S33°12'E 9.00

Lot 1

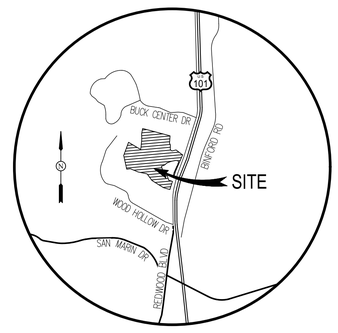
NOVATO

CITY LIMITS

18 19 20 47 48 51

NOTE – Assessor's Block Numbers Shown in Ellipses.
Assessor's Parcel Numbers Shown in Circles.

CITY Of NOVATO
Assessor's Map Bk.125 Pg.58
County of Marin, Calif.



VICINITY MAP

NOT TO SCALE



GENERAL NOTES

1.	ASSESSORS PARCEL NO:	125-580-23, 125-180-38 (PORTION)
2.	SITE ADDRESS:	REDWOOD BLVD. & PINKSTON RD., NOVATO, CA 94945 (VALLEY OAKS NORTH) REDWOOD BLVD. & VERANDAH AVE., NOVATO, CA 94945 (VALLEY OAKS SOUTH)
3.	GENERAL PLAN DESIGNATION:	BUSINESS AND PROFESSIONAL OFFICES (BPO)
4.	CURRENT ZONING:	PLANNED DISTRICT (PD)
5.	EXISTING USE:	VACANT/CATTLE GRAZING
6.	SITE AREA:	37.62± AC
7.	DWELLING UNITS:	61 SINGLE FAMILY DWELLING UNITS (VALLEY OAKS NORTH) + 20 TOWNHOUSE UNITS (CONDOMINIUMS, VALLEY OAKS SOUTH) = 81 TOTAL UNITS
8.	DENSITY:	2.2 DU/AC (GROSS)
9.	BENCHMARK:	ELEVATIONS SHOWN ON THIS PLAN ARE BASED ON THE NVGD 29 DATUM. TO CONVERT TO NAVD88 DATUM, ADD 2.70' TO THE ELEVATIONS SHOWN HEREIN (NAVD88 = NGVD29 + 2.70').
10.	BASIS OF BEARINGS:	THE BASIS OF BEARING FOR THIS MAP IS TAKEN AS N10°55'30"E BETWEEN HIGHWAY MONUMENTS "NV-23" AND "NV-25" AS SHOWN ON THE PARCEL MAP OF SAN MARIN BUSINESS PARK PHASE 2 (24 P.M. 68) OF THE COUNTY OF MARIN.
11.	EXISTING STRUCTURES:	TO BE REMOVED (EXCEPT FOR EXISTING PG&E GAS LINES ARE TO REMAIN)
12.	WELLS ONSITE:	NONE
13.	FLOOD ZONE:	ZONE X: AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD. SOURCE: FEDERAL EMERGENCY AGENCY (FEMA) FLOOD INSURANCE RATE MAP, MAP NUMBER 06041C0164E (EFFECTIVE MARCH 16, 2016).
14.	UTILITY PROVIDERS: WATER: SANITARY SEWER: STORM DRAIN: GAS & ELECTRIC: TELEPHONE: CABLE TV: FIRE:	 NORTH MARIN WATER DISTRICT (NMWD) NOVATO SANITARY DISTRICT CITY OF NOVATO PG&E AT&T COMCAST NOVATO FIRE PROTECTION DISTRICT
15.	UTILITIES:	ALL WATER SYSTEM UTILITIES TO BE OWNED & MAINTAINED BY NORTH MARIN WATER DISTRICT (NMWD). ALL SANITARY SEWER UTILITIES TO BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION. ALL STORM DRAIN (IN TRACT) TO BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION. ALL STORM DRAIN IN PUBLIC RIGHT OF WAY TO BE OWNED & MAINTAINED BY THE CITY OF NOVATO.
16.	STREETS:	ALL STREETS WITHIN THE DEVELOPMENT WILL BE PRIVATELY OWNED & MAINTAINED BY THE HOMEOWNER'S ASSOCIATION. ACCESS AND UTILITY EASEMENTS WILL BE PROVIDED TO UTILITY OWNERS AS NECESSARY.
17.	STREET LIGHTS:	STREET LIGHTS ON PRIVATE PROPERTY WILL BE PRIVATELY OWNED AND MAINTAINED.
18.	STREET TREES:	STREET TREES SHALL BE PROVIDED AS REQUIRED BY THE CITY AND WILL BE PRIVATELY MAINTAINED.
19.	LANDSCAPING:	ALL LANDSCAPING WITHIN BOUNDARY WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.
20.	GRADING:	ALL GRADING AS SHOWN IS SUBJECT TO FINAL DESIGN.
21.	EROSION CONTROL:	ALL DISTURBED SLOPES SHALL BE PLANTED WITH APPROPRIATE EROSION CONTROL PLANTING.
22.	DIMENSIONS:	ALL DIMENSIONS ARE PRELIMINARY AND SUBJECT TO FINAL SUBDIVISION MAP.
23.	CONDOMINIUM MAP:	A CONDOMINIUM MAP WILL BE RECORDED FOR LOTS 62-65. THE SUBDIVISION IS A CONDOMINIUM PROJECT AS DEFINED IN SECTION 1350 ET. SEQ. OF THE CIVIL CODE OF THE STATE OF CALIFORNIA AND FILED PURSUANT TO THE SUBDIVISION MAP ACT. THE TOTAL NUMBER OF CONDOMINIUM DWELLING UNITS SHALL BE NO MORE THAN 20 UNITS.
24.	PARCELS:	ALL PARCELS SHOWN ON THE VESTING TENTATIVE MAP WILL BE OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.
25.	PHASING:	THE PROJECT MAY INCLUDE MULTIPLE PHASES AND FINAL MAPS.

CONTACTS

1.	APPLICANT:	CAMPUS PROPERTIES, LLC MICHAEL HOOPER P.O. BOX 1613 GLEN ELLEN, CA 95442 (415) 298-7571
2.	OWNERS:	APN: 125-580-23, 125-180-38 (PORTION) WCJA, LP C/O CAMPUS PROPERTIES, LLC MICHAEL HOOPER P.O. BOX 1613 GLEN ELLEN, CA 95442 (415) 298-7571
3.	CIVIL ENGINEER:	CARLSON, BARBEE & GIBSON, INC. JASON NERI 2633 CAMINO RAMON, SUITE 350 SAN RAMON, CA 94583 (925) 866-0322
4.	ARCHITECT:	WILLIAM HEZMALHALCH ARCHITECTS, INC. ADAM GARDNER 5000 EXECUTIVE PARKWAY SAN RAMON, CA 94583 (925) 302-7240
5.	LANDSCAPE ARCHITECT:	SWA JOE RUNCO 2200 BRIDGEWAY SAUSALITO, CA 94965 (415) 332-5100

LEGEND

EXISTING	PROPOSED	
		PROJECT BOUNDARY
		RIGHT-OF-WAY
		PROPERTY LINE
		EASEMENT LINE
		RELINQUISHMENT OF ABUTTER RIGHTS
		CURB, GUTTER & SIDEWALK
		CONCRETE DITCH
		RETAINING WALL
		PROPOSED PAVEMENT
		BIORETENTION TREATMENT AREA

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
BLDG	BUILDING
CL	CENTERLINE
DWY	DRIVEWAY
DU	DWELLING UNIT
EX	EXISTING
EVAE	EMERGENCY VEHICLE ACCESS EASEMENT
FF	FINISHED FLOOR
JADU	JUNIOR ACCESSORY DWELLING UNIT
P	PAD
PL	PROPERTY LINE
PSDE	PRIVATE STORM DRAIN EASEMENT
PSSE	PRIVATE SANITARY SEWER EASEMENT
PUE	PUBLIC UTILITY EASEMENT
PAE	PRIVATE ACCESS EASEMENT
R	RADIUS
R/W	RIGHT-OF-WAY
RW	RECYCLED WATER
SD	STORM DRAIN
SF	SQUARE FEET
S/W	SIDEWALK
TC	TOP OF CURB
TYP	TYPICAL

SHEET INDEX

SHEET NO.	DESCRIPTION
C.1	TITLE SHEET AND NOTES
C.2	LOTTING PLAN – VALLEY OAKS NORTH
C.3	LOTTING PLAN – VALLEY OAKS SOUTH
C.4	EXISTING CONDITIONS
C.5	PRELIMINARY SITE PLAN – VALLEY OAKS NORTH
C.6	PRELIMINARY SITE PLAN – VALLEY OAKS SOUTH
C.7	PRELIMINARY GRADING PLAN – VALLEY OAKS NORTH
C.8	PRELIMINARY GRADING PLAN – VALLEY OAKS SOUTH
C.9	PRELIMINARY GRADING SECTIONS
C.10	PRELIMINARY UTILITY PLAN – VALLEY OAKS NORTH
C.11	PRELIMINARY UTILITY PLAN – VALLEY OAKS SOUTH
C.12	PRELIMINARY STORMWATER CONTROL PLAN – VALLEY OAKS NORTH
C.13	PRELIMINARY STORMWATER CONTROL PLAN – VALLEY OAKS SOUTH

TITLE SHEET AND NOTES

VESTING TENTATIVE MAP

VALLEY OAKS

CITY OF NOVATO MARIN COUNTY CALIFORNIA

SCALE: 1" = 50' DATE: JANUARY 2023

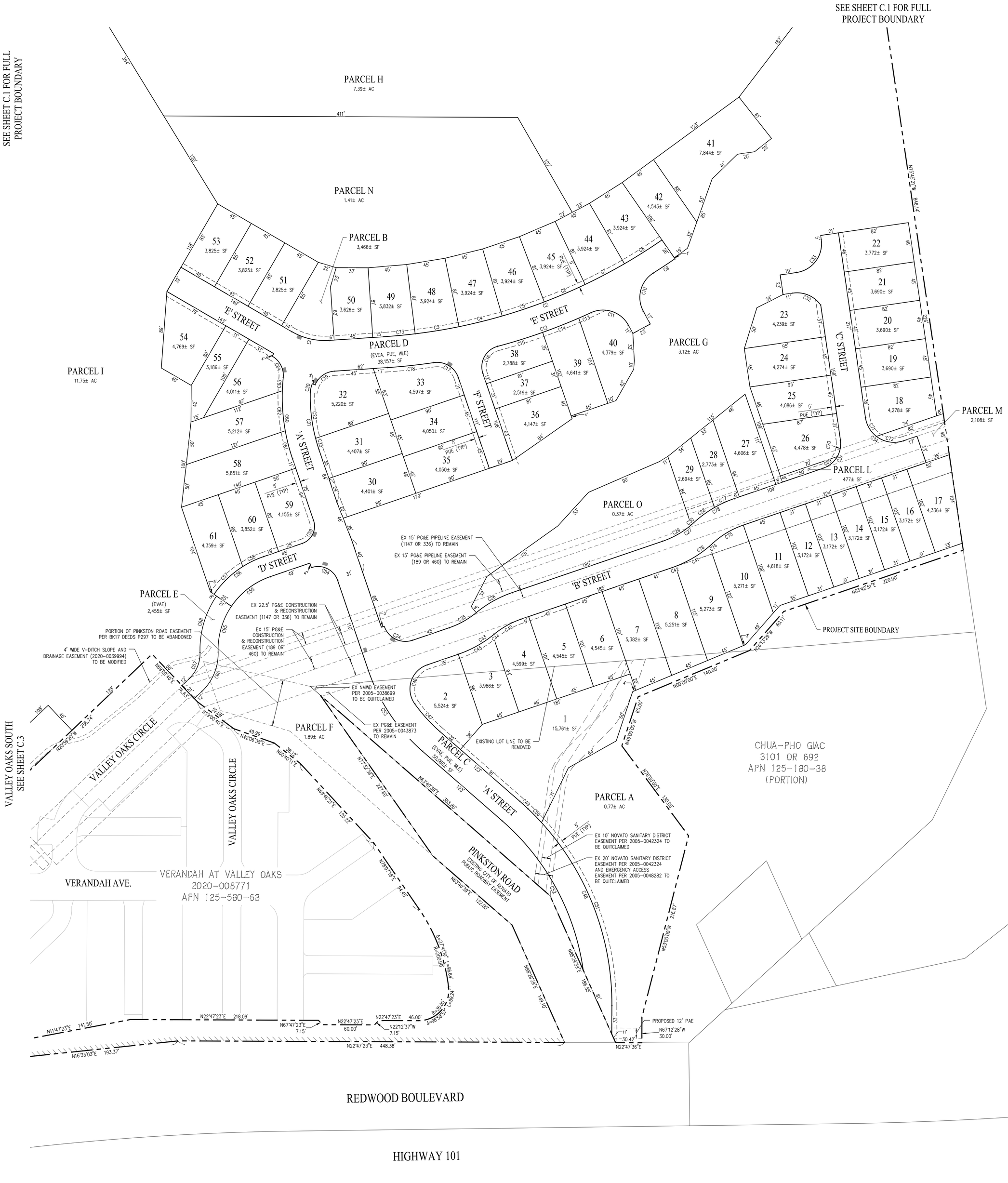
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SHEET NO. C.1 OF 13 SHEETS

F:\2935-010\ACAD\TM01_TITLE SHEET AND NOTES.DWG



LOT AREAS - VALLEY OAKS NORTH

LOT	AREA (SF±)	LOT	AREA (SF±)
1	15,761	32	5,220
2	5,524	33	4,597
3	3,986	34	4,050
4	4,599	35	4,050
5	4,545	36	4,147
6	4,545	37	2,519
7	5,382	38	2,788
8	5,251	39	4,641
9	5,273	40	4,379
10	5,271	41	7,844
11	4,618	42	4,543
12	3,172	43	3,924
13	3,172	44	3,924
14	3,172	45	3,924
15	3,172	46	3,924
16	3,172	47	3,924
17	4,336	48	3,924
18	4,278	49	3,832
19	3,690	50	3,626
20	3,690	51	3,825
21	3,690	52	3,825
22	3,772	53	3,825
23	4,239	54	4,769
24	4,274	55	3,186
25	4,086	56	4,011
26	4,478	57	5,212
27	4,606	58	5,851
28	2,773	59	4,155
29	2,694	60	3,852
30	4,401	61	4,359
31	4,407	TOTAL AREA (LOTS 1–61)	266,679

PARCEL AREAS - VALLEY OAKS NORTH

PARCEL	AREA (SF±)
A	33,481
B	3,466
C	50,060
D	38,157
E	2,455
F	82,222
G	135,960
H	321,692
I	511,857
L	477
M	2,108
N	61,527
O	16,258
TOTAL AREA (PARCELS A–O)	1,259,720

CURVE TABLE			
NO	RADIUS	DELTA	LENGTH
C1	76.00'	34°00'00"	45.10'
C2	638.00'	27°46'52"	309.35'
C3	638.00'	4°37'49"	51.56'
C4	638.00'	4°37'49"	51.56'
C5	638.00'	4°37'49"	51.56'
C6	638.00'	4°37'49"	51.56'
C7	638.00'	4°37'49"	51.56'
C8	638.00'	4°37'49"	51.56'
C9	664.50'	2°35'17"	30.02'
C10	33.50'	86°18'13"	50.46'
C11	33.50'	86°20'06"	50.48'
C12	670.50'	9°51'13"	115.31'
C13	670.50'	1°18'57"	15.40'
C14	670.50'	3°51'01"	45.06'
C15	670.50'	4°41'15"	54.86'
C16	24.50'	93°56'06"	40.17'
C17	26.00'	79°34'20"	36.11'
C18	674.00'	4°34'20"	53.79'
C19	26.00'	63°31'16"	28.82'
C20	29.50'	21°10'25"	10.90'
C21	189.50'	20°18'19"	67.16'
C22	189.50'	16°06'14"	53.26'
C23	189.50'	4°12'05"	13.90'
C24	26.00'	90°00'00"	40.84'
C25	100.00'	20°41'37"	36.12'

CURVE TABLE			
NO	RADIUS	DELTA	LENGTH
C26	132.50'	20°41'37"	47.86'
C27	100.00'	23°56'20"	41.78'
C28	132.50'	13°01'09"	30.11'
C29	100.00'	21°48'07"	38.05'
C30	100.00'	2°08'13"	3.73'
C31	30.00'	79°28'12"	41.61'
C32	33.50'	63°34'32"	37.17'
C33	33.50'	90°00'00"	52.62'
C34	33.50'	100°31'48"	58.78'
C40	100.00'	20°41'37"	36.12'
C41	132.50'	19°59'07"	46.22'
C42	132.50'	1°52'37"	4.34'
C43	132.50'	20°43'24"	47.92'
C44	132.50'	0°52'17"	2.02'
C45	132.50'	19°51'07"	45.91'
C46	29.50'	106°42'03"	54.94'
C47	187.50'	13°20'09"	43.64'
C48	312.50'	49°06'51"	267.88'
C49	312.50'	2°25'21"	13.21'
C50	312.50'	3°40'10"	20.01'
C51	312.50'	43°01'20"	234.65'
C52	282.00'	40°49'09"	200.90'
C53	218.00'	30°02'12"	114.28'
C54	24.00'	90°00'00"	37.70'
C55	89.50'	36°55'25"	57.68'

CURVE TABLE			
NO	RADIUS	DELTA	LENGTH
C56	114.00'	36°55'25"	73.47'
C57	114.00'	23°29'15"	46.73'
C58	114.00'	13°26'10"	26.73'
C59	21.00'	90°00'00"	32.99'
C60	222.00'	24°36'47"	95.37'
C61	222.00'	8°41'26"	33.67'
C62	222.00'	12°01'46"	46.61'
C63	222.00'	3°53'36"	15.09'
C64	26.00'	65°36'47"	29.77'
C65	89.50'	35°59'25"	56.22'
C66	60.50'	48°12'39"	50.91'
C67	39.50'	48°12'39"	33.24'
C68	110.50'	35°59'25"	69.41'
C69	30.00'	41°24'35"	21.68'
C70	30.00'	38°03'37"	19.93'
C71	33.50'	44°03'03"	25.76'
C72	33.50'	56°28'45"	33.02'
C73	638.00'	3°05'12"	34.37'
C74	132.50'	2°04'36"	4.80'
C75	100.00'	23°56'20"	41.78'
C76	132.50'	23°56'20"	55.36'
C77	132.50'	10°55'11"	25.25'
C78	132.50'	23°56'20"	55.36'

LEGEND

EXISTING	PROPOSED	
		PROJECT BOUNDARY
		RIGHT-OF-WAY
		PROPERTY LINE
		EASEMENT LINE
		RELINQUISHMENT OF ABUTTER RIGHTS

ABBREVIATIONS

AC	ACRES
CL	CENTERLINE
EX	EXISTING
EVAE	EMERGENCY VEHICLE ACCESS EASEMENT
PL	PROPERTY LINE
PUE	PUBLIC UTILITY EASEMENT
PAE	PRIVATE ACCESS EASEMENT
R	RADIUS
R/W	RIGHT-OF-WAY
SF	SQUARE FEET
TYP	TYPICAL
WLE	WATER LINE EASEMENT

LOTTING PLAN - VALLEY OAKS NORTH
VESTING TENTATIVE MAP
VALLEY OAKS

CITY OF NOVATO MARIN COUNTY CALIFORNIA

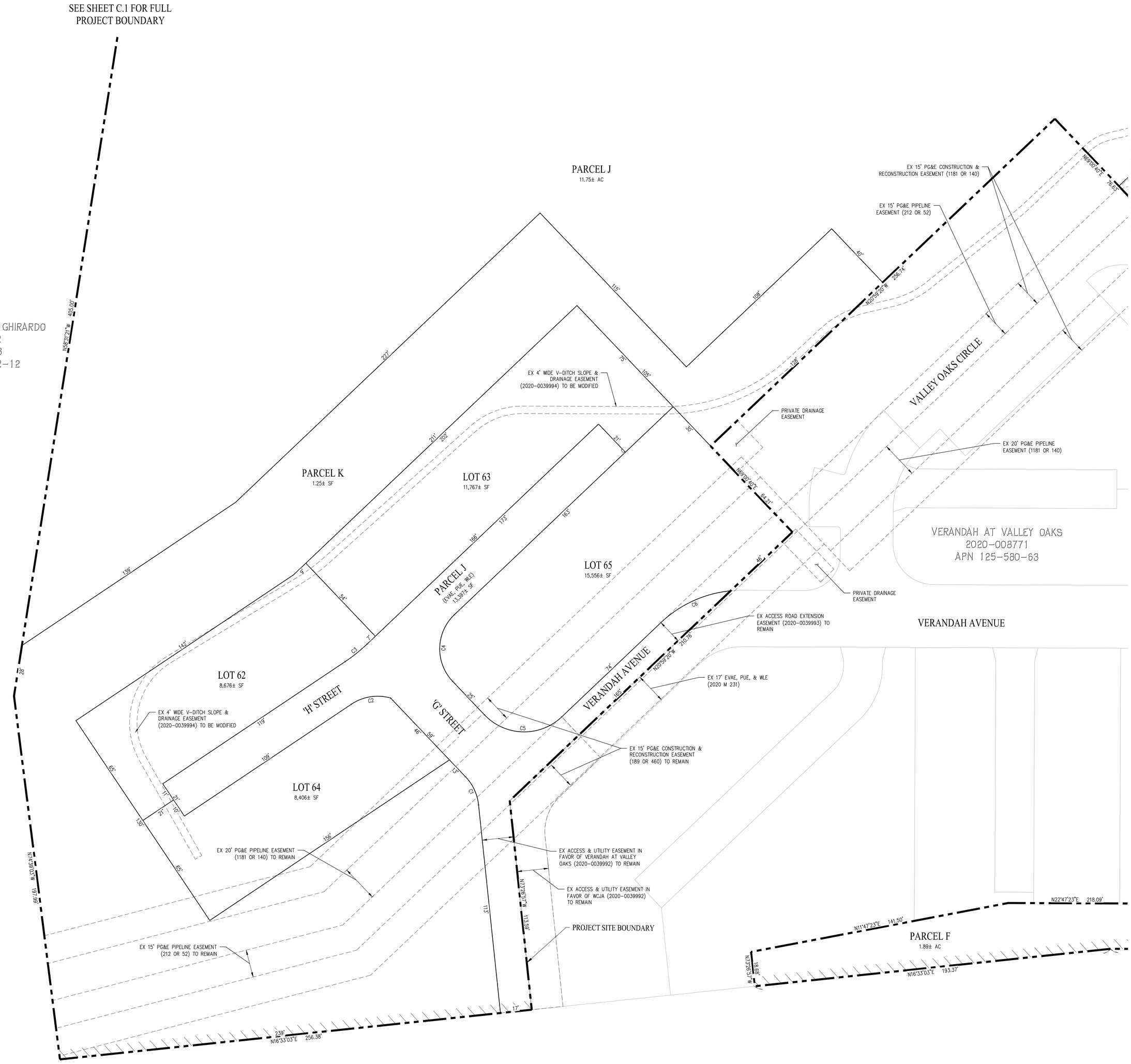
SCALE: 1" = 40' DATE: JANUARY 2023

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SHEET NO. C.2 OF 13 SHEETS

F:\2935-010\ACAD\TM\02_LOTTING PLAN - VALLEY OAKS NORTH.DWG



LOT AREAS - VALLEY OAKS SOUTH	
LOT	AREA (SF±)
62	8,676
63	11,767
64	8,406
65	15,556
TOTAL AREA (LOTS 62-65)	44,405

PARCEL AREAS - VALLEY OAKS SOUTH	
PARCEL	AREA (SF±)
J	13,397
K	54,369
TOTAL AREA (PARCELS J-K)	67,766

CURVE TABLE			
NO	RADIUS	DELTA	LENGTH
C1	26.00'	37°32'23"	17.03'
C2	25.50'	49°53'44"	22.21'
C3	89.50'	9°43'51"	15.20'
C4	25.50'	90°00'00"	40.06'
C5	29.50'	90°00'00"	46.34'
C6	63.50'	38°03'24"	42.18'

LEGEND

EXISTING	PROPOSED	
		PROJECT BOUNDARY
		RIGHT-OF-WAY
		PROPERTY LINE
		EASEMENT LINE
		RELINQUISHMENT OF ABUTTER RIGHTS

ABBREVIATIONS

AC	ACRES
CL	CENTERLINE
EX	EXISTING
EVAE	EMERGENCY VEHICLE ACCESS EASEMENT
PL	PROPERTY LINE
PUE	PUBLIC UTILITY EASEMENT
PAE	PRIVATE ACCESS EASEMENT
R	RADIUS
R/W	RIGHT-OF-WAY
SF	SQUARE FEET
TYP	TYPICAL
WLE	WATER LINE EASEMENT

LOTTING PLAN - VALLEY OAKS SOUTH
VESTING TENTATIVE MAP
VALLEY OAKS

CITY OF NOVATO MARIN COUNTY CALIFORNIA

SCALE: 1" = 20' DATE: JANUARY 2023

0 20 40 60

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SHEET NO.
C.3
OF 13 SHEETS

F:\2935-010\ACAD\TM\03_LOTTING PLAN - VALLEY OAKS SOUTH.DWG

EXISTING WETLAND AREA #7 PER FIRSTCARBON SOLUTIONS JURISDICTION MAP (MARCH 2019) 0.002± AC

EXISTING WETLAND AREA #6 PER FIRSTCARBON SOLUTIONS JURISDICTION MAP (MARCH 2019) 0.11± AC

EXISTING WETLAND AREA #5 PER FIRSTCARBON SOLUTIONS JURISDICTION MAP (MARCH 2019) 0.05± AC

2020-008771
APN 125-580-23

TOE OF MAPPED LANDSLIDE AREA SEE GEOTECHNICAL REPORT BY ENGEO, INC. FOR ADDITIONAL INFORMATION

EXISTING WETLAND AREA #4 PER FIRSTCARBON SOLUTIONS JURISDICTION MAP (MARCH 2019) 0.03± AC

EXISTING TOP OF BANK PER MONK & ASSOCIATES

EXISTING OTHER WATERS PER FIRSTCARBON SOLUTIONS JURISDICTION MAP (MARCH 2019) 0.11± AC

EXISTING WETLAND AREA #3 PER FIRSTCARBON SOLUTIONS JURISDICTION MAP (MARCH 2019) 0.09± AC

EXISTING "OTHER WATERS"

EXISTING STRUCTURES TO BE REMOVED

LANDS OF GERALD GHIRARDO
PARCEL 2
24 PM 68
APN 125-202-12

EXISTING WETLAND AREA #2 PER FIRSTCARBON SOLUTIONS JURISDICTION MAP (MARCH 2019) 0.14± AC

EX 22.5' PG&E CONSTRUCTION & RECONSTRUCTION EASEMENT (1147 OR 336) TO REMAIN

EX 15' CONSTRUCTION & RECONSTRUCTION EASEMENT (189 OR 460) TO REMAIN

EXISTING PG&E HIGH PRESSURE GAS LINES TO REMAIN

EXISTING WETLAND AREA #1 PER FIRSTCARBON SOLUTIONS JURISDICTION MAP (MARCH 2019) 1.18± AC

EX 15' PG&E PIPELINE EASEMENT (1147 OR 336) TO REMAIN

EX 15' PG&E PIPELINE EASEMENT (189 OR 460) TO REMAIN

PROJECT SITE BOUNDARY

PORTION OF PINKSTON ROAD EASEMENT PER BK17 DEEDS P297 TO BE ABANDONED

EX NORTH MARIN WATER DISTRICT EASEMENT PER 2005-0038699 TO BE QUITCLAIMED

EX PG&E EASEMENT PER 2005-0043873 TO REMAIN

EX 15' PG&E CONSTRUCTION & RECONSTRUCTION EASEMENT (1181 OR 140)

EXISTING WETLAND AREA W1 PER MONK & ASSOCIATES DELINEATION MAP (JANUARY 2021) 0.015± AC

EX 15' PG&E PIPELINE EASEMENT (212 OR 52)

EX 20' PG&E PIPELINE EASEMENT (1181 OR 140)

EX 4' WIDE V-DITCH SLOPE & DRAINAGE EASEMENT (2020-0039994) TO BE MODIFIED

VALLEY OAKS CIR.

EXISTING WETLAND AREA W2 PER MONK & ASSOCIATES DELINEATION MAP (JANUARY 2021) 0.029± AC

CHUA-PHO GIAC
3101 OR 692
APN 125-180-38
(PORTION)

EXISTING PRIVATE DRAINAGE EASEMENT TO REMAIN

EX 17' EVAE, PUE, & WLE (2020 M 231)

EX 20' NOVATO SANITARY DISTRICT EASEMENT PER 2005-0042324 AND EMERGENCY ACCESS EASEMENT PER 2005-0048282 TO BE QUITCLAIMED

EX 10' NOVATO SANITARY DISTRICT EASEMENT PER 2005-0042324 TO BE QUITCLAIMED

PINKSTON ROAD
EXISTING CITY OF NOVATO PUBLIC ROADWAY EASEMENT

EXISTING STRUCTURES TO REMAIN

EX 15' PG&E CONSTRUCTION & RECONSTRUCTION EASEMENT (189 OR 460) TO REMAIN

EX ACCESS ROAD EXTENSION EASEMENT (2020-0039993) TO REMAIN

VERANDAH AT VALLEY OAKS
2020-008771
APN 125-580-63

VERANDAH AVE.

EXISTING STORM DRAIN OUTFALL

EXISTING STRUCTURES TO REMAIN

EX 20' PG&E PIPELINE EASEMENT (1181 OR 140) TO REMAIN

EX ACCESS & UTILITY EASEMENT IN FAVOR OF VERANDAH AT VALLEY OAKS (2020-0039992) TO REMAIN

EX ACCESS & UTILITY EASEMENT IN FAVOR OF WCJA (2020-0039992) TO REMAIN

EXISTING DRIVEWAY ACCESS TO BE RELOCATED

REDWOOD BOULEVARD

EX 15' PG&E PIPELINE EASEMENT (212 OR 52) TO REMAIN

HIGHWAY 101

LEGEND

- PROJECT BOUNDARY
- EX PROPERTY LINE
- EX EASEMENT LINE
- EX 16" GAS — EX GAS LINE
- EX 12" SD — EX STORM DRAIN
- EX 6" SS — EX SANITARY SEWER
- EX 8" W — EX WATER
- OHW — EX OVERHEAD ELECTRIC
- x — EX FENCE
- JT — EX JOINT TRENCH
- EX 25% SLOPE LINE
- WAIVER OF VEHICULAR ACCCESS
- EX MANHOLE
- EX DRAIN INLET
- EX FIRE HYDRANT
- EX VALVE
- EX VAULT
- EX POWER POLE
- EX GUY WIRE
- EX ELECTROLIER
- EXISTING WETLAND AREA

EXISTING CONDITIONS
VESTING TENTATIVE MAP
VALLEY OAKS

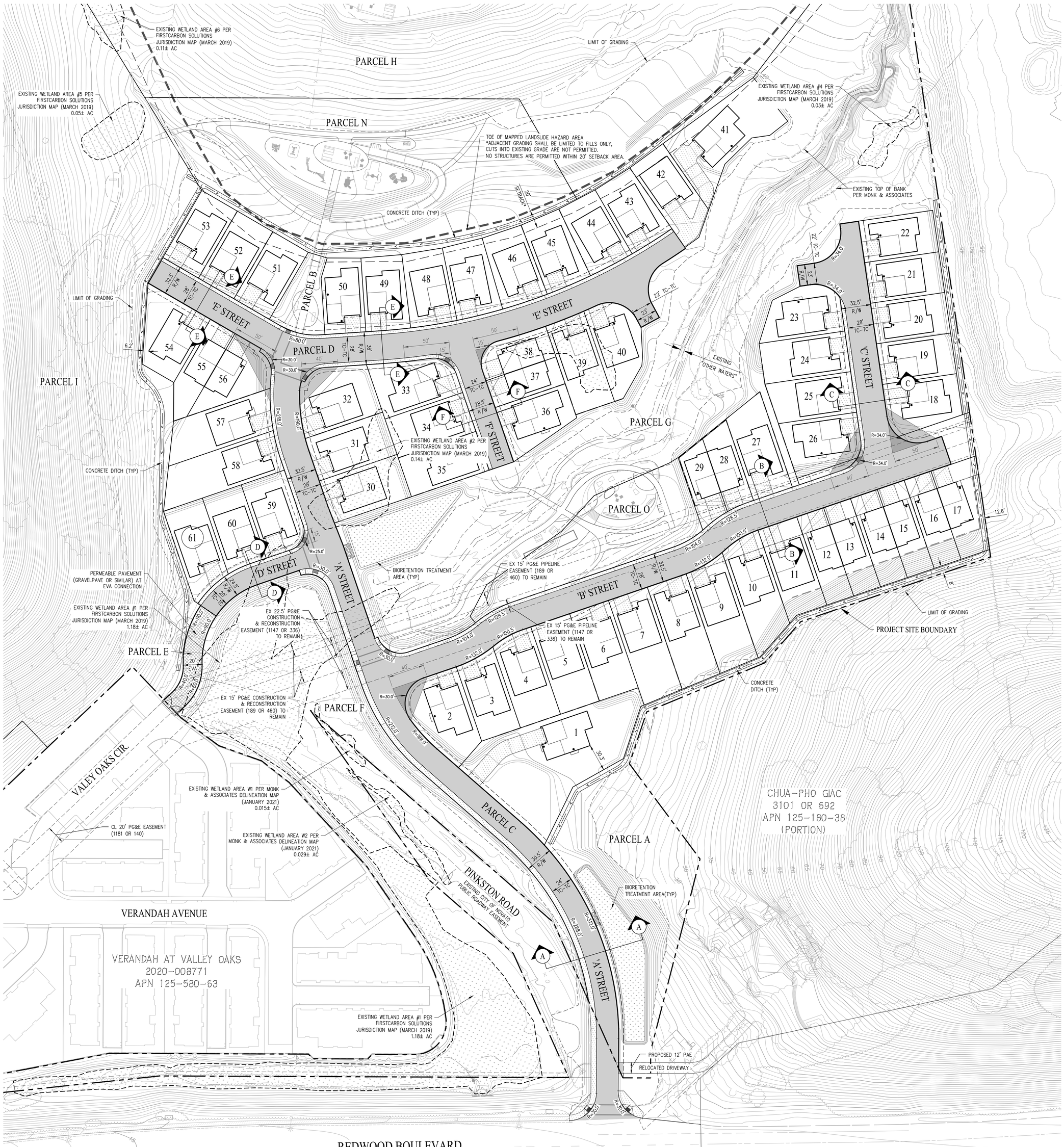
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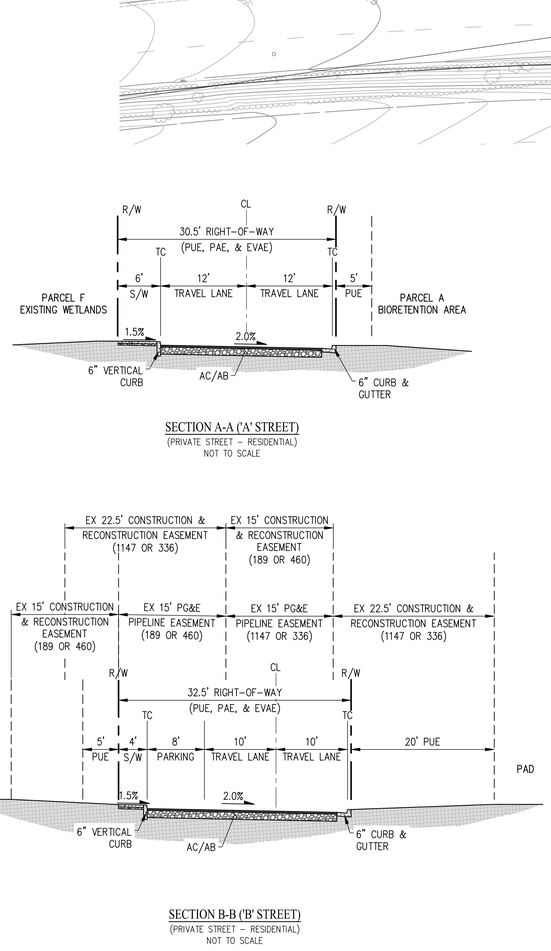
SCALE: 1" = 50' DATE: JANUARY 2023

0 50 100 150

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SHEET NO. C.4 OF 13 SHEETS

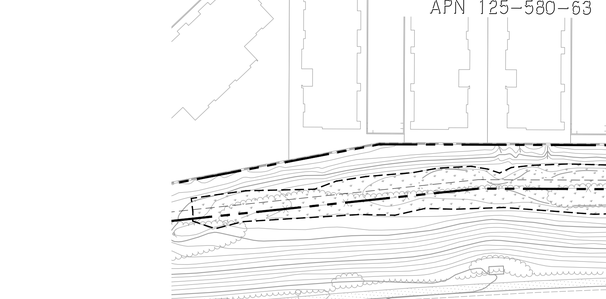




SECTION A-A ('A' STREET)
(PRIVATE STREET – RESIDENTIAL)
NOT TO SCALE

SECTION C-C ('C' STREET)
(PRIVATE STREET – MINOR RESIDENTIAL)
NOT TO SCALE

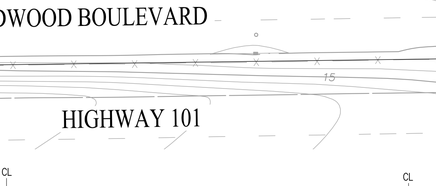
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(PRIVATE STREET – LIMITED RESIDENTIAL)
NOT TO SCALE



SECTION B-B ('B' STREET)
(PRIVATE STREET – RESIDENTIAL)
NOT TO SCALE

SECTION E-E ('E' STREET - NORTH)
(PRIVATE STREET – RESIDENTIAL)
NOT TO SCALE

SECTION E-E ('E' STREET - SOUTH)
(PRIVATE STREET – MINOR RESIDENTIAL)
NOT TO SCALE



SECTION F-F ('F' STREET)
(PRIVATE STREET – MINOR RESIDENTIAL)
NOT TO SCALE

LEGEND

EXISTING	PROPOSED	
		PROJECT BOUNDARY (POST LLA)
		RIGHT-OF-WAY
		PROPERTY LINE
		EASEMENT LINE
		CURB, GUTTER & SIDEWALK
		CONCRETE DITCH
		RETAINING WALL
		PROPOSED PAVEMENT
		BIORETENTION TREATMENT AREA
		EXISTING WETLAND AREA
		VISIBILITY TRIANGLE (40' MIN AT CORNER LOTS, 15' MIN AT ALLEYS)

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
BLDG	BUILDING
CL	CENTERLINE
DWY	DRIVEWAY
DU	DWELLING UNIT
EX	EXISTING
EVAE	EMERGENCY VEHICLE ACCESS EASEMENT
FF	FINISHED FLOOR
P	PAD
PL	PROPERTY LINE
PSDE	PRIVATE STORM DRAIN EASEMENT
PSSE	PRIVATE SANITARY SEWER EASEMENT
PUE	PUBLIC UTILITY EASEMENT
PAE	PRIVATE ACCESS EASEMENT
R	RADIUS
R/W	RIGHT-OF-WAY
RW	RECYCLED WATER
SD	STORM DRAIN
SF	SQUARE FEET
S/W	SIDEWALK
TC	TOP OF CURB
TYP	TYPICAL

PRELIMINARY SITE PLAN - VALLEY OAKS NORTH

VESTING TENTATIVE MAP

VALLEY OAKS

CITY OF NOVATO MARIN COUNTY CALIFORNIA

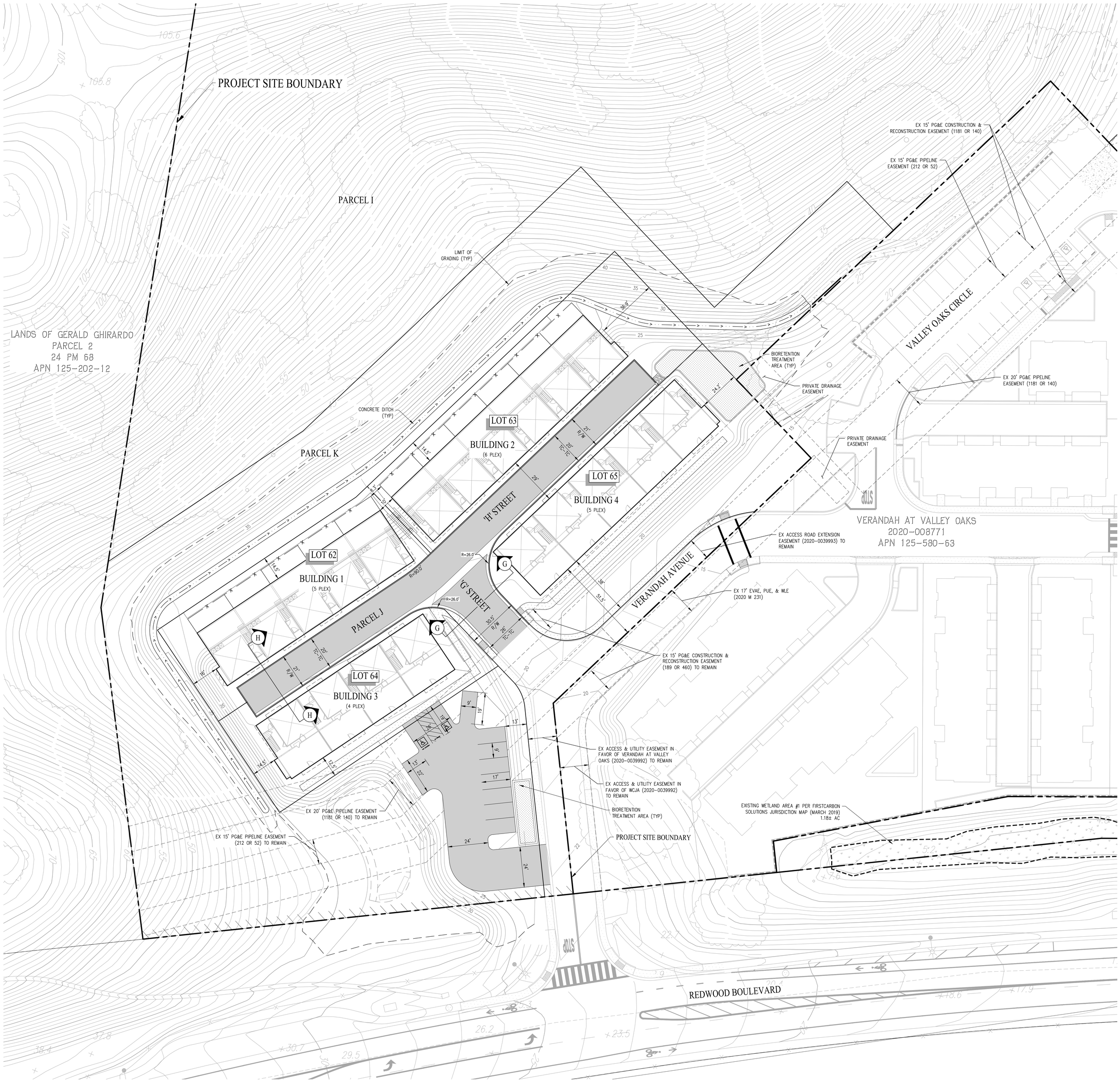
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SECTION G-G ('G' STREET)
(PRIVATE STREET – RESIDENTIAL)
NOT TO SCALE

SECTION H-H ('H' STREET)
(PRIVATE STREET – MINOR RESIDENTIAL)
NOT TO SCALE

LEGEND

EXISTING	PROPOSED	
		PROJECT BOUNDARY (POST LLA)
		RIGHT-OF-WAY
		PROPERTY LINE
		EASEMENT LINE
		CURB, GUTTER & SIDEWALK
		CONCRETE DITCH
		RETAINING WALL
		PROPOSED PAVEMENT
		BIORETENTION TREATMENT AREA
		EXISTING WETLAND AREA

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
BLDG	BUILDING
CL	CENTERLINE
DWY	DRIVEWAY
DU	DWELLING UNIT
EX	EXISTING
EVAE	EMERGENCY VEHICLE ACCESS EASEMENT
FF	FINISHED FLOOR
P	PAD
PL	PROPERTY LINE
PSDE	PRIVATE STORM DRAIN EASEMENT
PSSE	PRIVATE SANITARY SEWER EASEMENT
PUE	PUBLIC UTILITY EASEMENT
PAE	PRIVATE ACCESS EASEMENT
R	RADIUS
R/W	RIGHT-OF-WAY
RW	RECYCLED WATER
SD	STORM DRAIN
SF	SQUARE FEET
S/W	SIDEWALK
TC	TOP OF CURB
TYP	TYPICAL

PRELIMINARY SITE PLAN - VALLEY OAKS SOUTH

VESTING TENTATIVE MAP

VALLEY OAKS

CITY OF NOVATO MARIN COUNTY CALIFORNIA

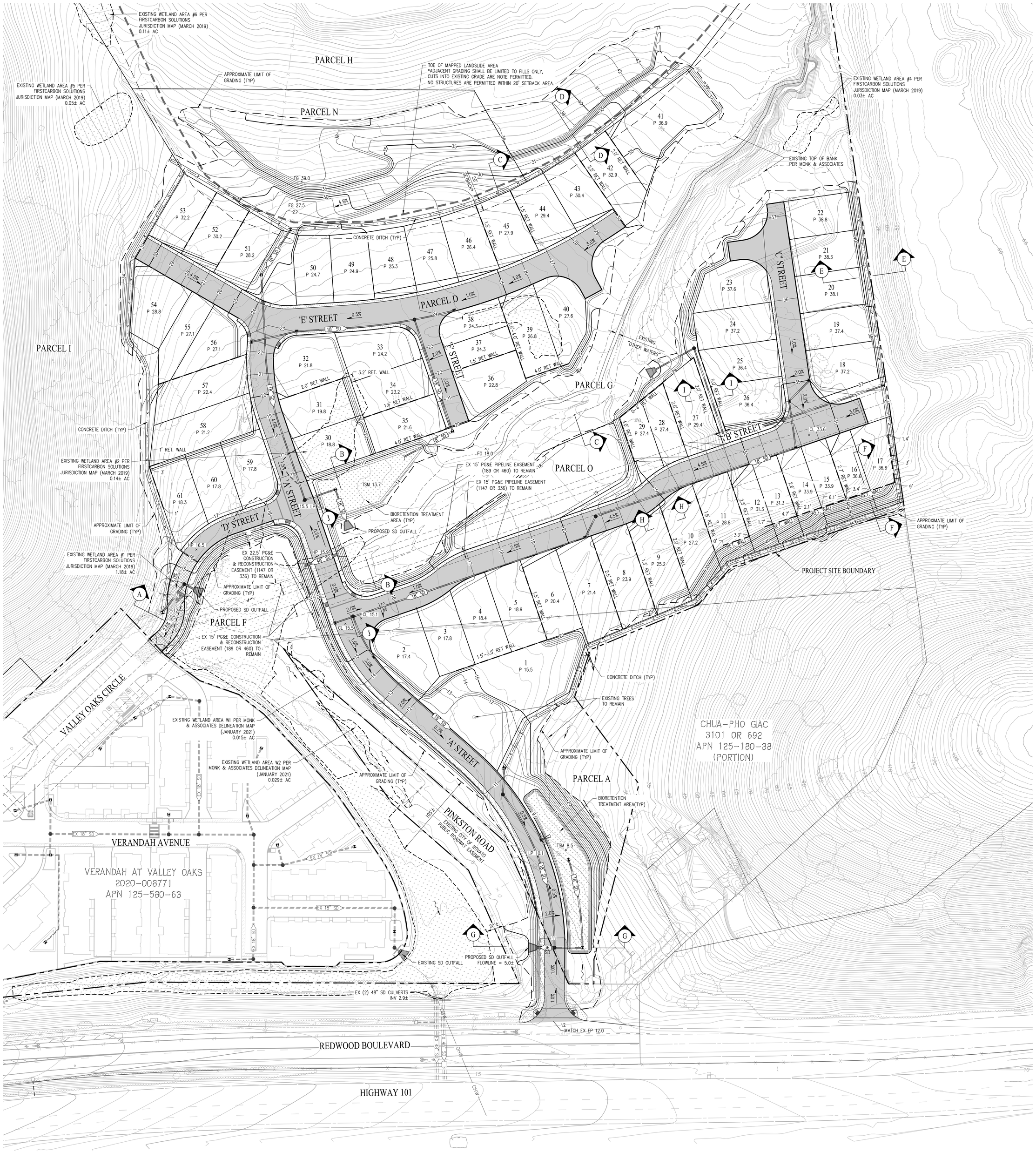
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C.6
OF 13 SHEETS

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EARTHWORK SUMMARY
(VALLEY OAKS - NORTH)

DESCRIPTION	CUT	FILL
SITE ROUGH GRADE	8,800 CY±	52,900 CY±
FOUNDATION SPOILS	600 CY±	–
UTILITY TRENCH SPOILS	2,700 CY±	–
SUBTOTAL	12,100 CY±	52,900 CY±
NET (IMPORT)	–	40,800 CY±

EARTHWORK NOTES:

1. EARTHWORK CALCULATIONS ASSUME ADDITIONAL SPOILS FOR THICKENED FOUNDATION (12"X18" TURNDOWN AT BUILDING EDGES).
2. EARTHWORK CALCULATIONS ASSUME 12" ROADWAY STREET SECTION.
3. EARTHWORK CALCULATIONS ASSUME THE FOLLOWING TRENCH DETAILS FOR UNDERGROUND WET UTILITY SPOILS,.
   - STORM DRAIN : ASSUMED A TRENCH SECTION WITH 12" COVER ON TOP, 6" COVER ON SIDES AND 6" COVER AT THE BOTTOM.
   - SANITARY SEWER: NOVATO SANITARY SEWER DISTRICT DETAIL SD-16
   - WATER: NORTH MARINE WATER DISTRICT DETAIL STD-1
4. EARTHWORK CALCULATIONS ASSUME A [3.5'(D) X 2.5'(W)] JOINT TRENCH SECTION (APPROX 3,900 LF).
5. EARTHWORK CALCULATIONS ASSUME NATIVE MATERIAL TO BE USED IN UTILITY TRENCHES ABOVE INITIAL BACKFILL.
6. NO ADJUSTMENTS WERE MADE FOR SOIL SHRINKAGE OR EXPANSION.

LEGEND

EXISTING	PROPOSED	
		PROJECT BOUNDARY
		DAYLIGHT
		CURB, GUTTER & SIDEWALK
		RETAINING WALL
535.4 ×	535.4 ×	SPOT ELEVATION
		CONCRETE DITCH
		BIORETENTION TREATMENT AREA (APPROXIMATELY 3' DEEP)
		EXISTING WETLAND

ABBREVIATION

BRW	BOTTOM OF RETAINING WALL
CL	CENTER LINE
EX	EXISTING
FF	FINISHED FLOOR
GUP	GARAGE LIP
P	PAD
PL	PROPERTY LINE
TC	TOP OF CURB
TRW	TOP OF RETAINING WALL

NOTES:
1. GRADING SHOWN IS PRELIMINARY AND SUBJECT TO FINAL DESIGN.
2. BUILDING FOUNDATION IS ASSUMED TO BE 12" SECTION FROM PAD TO FINISHED FLOOR. FINAL FOUNDATION SECTION TO BE CONFIRMED BY STRUCTURAL ENGINEER.
3. PRELIMINARY GRADING SHOWN EQUATES TO APPROXIMATELY 4,500 CY± OF CUT AND 3,000 CY± OF FILL, AND A NET EXPORT OF 1,500 CY±. FINAL EARTHWORK QUANTITIES TO BE CONFIRMED BY FINAL DESIGN.

FOR GRADING SECTIONS SEE SHEET C.9

PRELIMINARY GRADING PLAN - VALLEY OAKS NORTH
VESTING TENTATIVE MAP
VALLEY OAKS

CITY OF NOVATO MARIN COUNTY CALIFORNIA

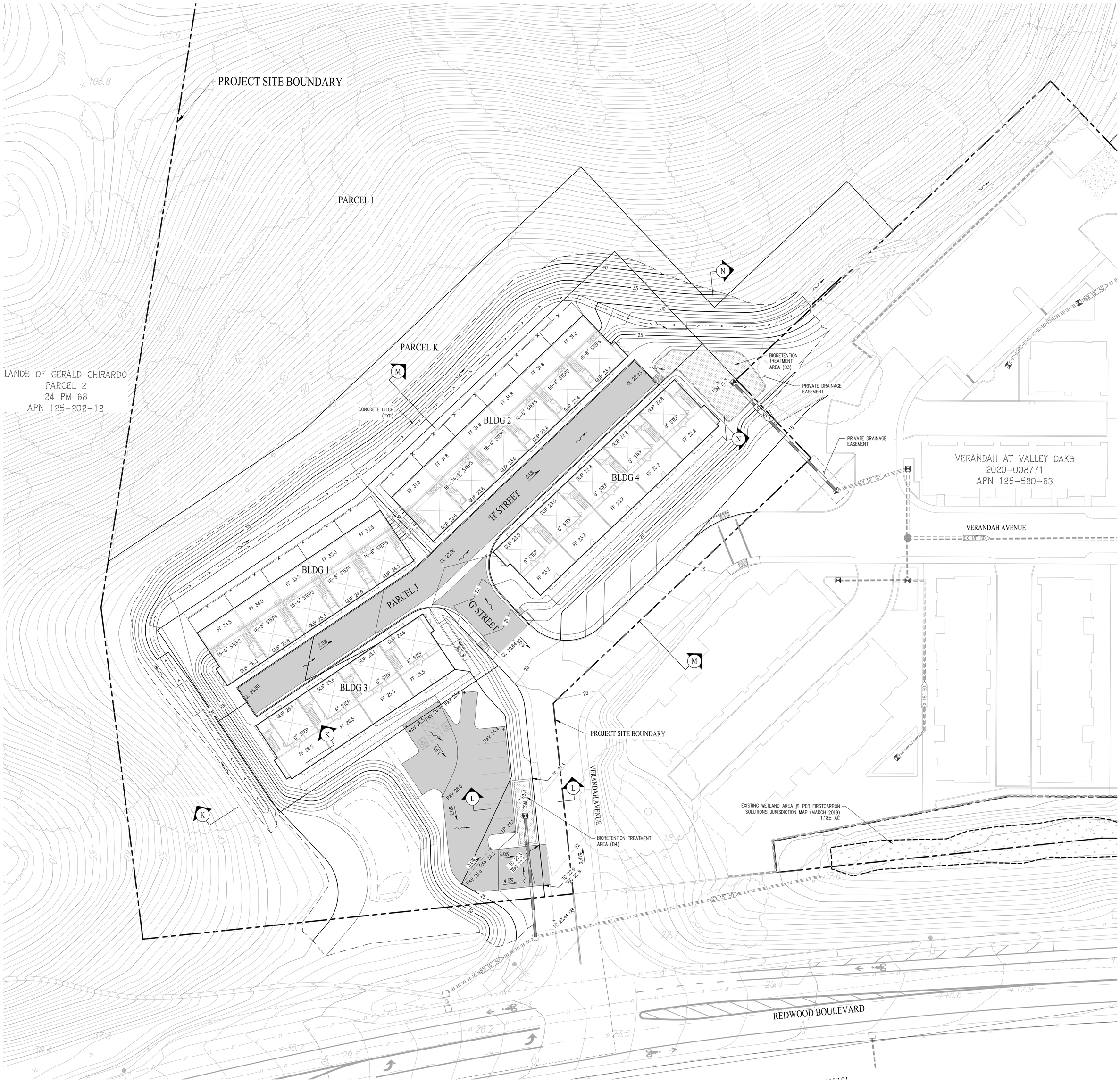
SCALE: 1" = 40' DATE: JANUARY 2023

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SHEET NO. C.7 OF 13 SHEETS

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EARTHWORK SUMMARY (VALLEY OAKS - SOUTH)		
DESCRIPTION	CUT	FILL
SITE ROUGH GRADE	4,800 CY±	2,600 CY±
FOUNDATION SPOILS	200 CY±	–
UTILITY TRENCH SPOILS	200 CY±	–
SUBTOTAL	5,200 CY±	2,600 CY±
NET (EXPORT)	2,600 CY±	–

EARTHWORK NOTES:

1. EARTHWORK CALCULATIONS ASSUME ADDITIONAL SPOILS FOR THICKENED FOUNDATION (12"X18" TURNDOWN AT BUILDING EDGES).
2. EARTHWORK CALCULATIONS ASSUME 12" ROADWAY STREET SECTION.
3. EARTHWORK CALCULATIONS ASSUME THE FOLLOWING TRENCH DETAILS FOR UNDERGROUND WET UTILITY SPOILS,.
   - STORM DRAIN : ASSUMED A TRENCH SECTION WITH 12" COVER ON TOP, 6" COVER ON SIDES AND 6" COVER AT THE BOTTOM.
   - SANITARY SEWER: NOVATO SANITARY SEWER DISTRICT DETAIL SD-16
   - WATER: NORTH MARINE WATER DISTRICT DETAIL STD-1
4. EARTHWORK CALCULATIONS ASSUME A [3.5'(D) X 2.5'(W)] JOINT TRENCH SECTION.
5. EARTHWORK CALCULATIONS ASSUME NATIVE MATERIAL TO BE USED IN UTILITY TRENCHES ABOVE INITIAL BACKFILL.
6. NO ADJUSTMENTS WERE MADE FOR SOIL SHRINKAGE OR EXPANSION.

LEGEND

EXISTING	PROPOSED	
		PROJECT BOUNDARY
		DAYLIGHT
		CURB, GUTTER & SIDEWALK
		RETAINING WALL
535.4 ×	535.4 ×	SPOT ELEVATION
		BIORETENTION TREATMENT AREA (APPROXIMATELY 3' DEEP)
		EXISTING WETLAND

ABBREVIATION

BRW	BOTTOM OF RETAINING WALL
CL	CENTER LINE
EX	EXISTING
FF	FINISHED FLOOR
GLIP	GARAGE LIP
P	PAD
PL	PROPERTY LINE
TC	TOP OF CURB
TRW	TOP OF RETAINING WALL

NOTES:
1. GRADING SHOWN IS PRELIMINARY AND SUBJECT TO FINAL DESIGN.
2. BUILDING FOUNDATION IS ASSUMED TO BE 12" SECTION FROM PAD TO FINISHED FLOOR. FINAL FOUNDATION SECTION TO BE CONFIRMED BY STRUCTURAL ENGINEER.
3. PRELIMINARY GRADING SHOWN EQUATES TO APPROXIMATELY 4,500 CY± OF CUT AND 3,000 CY± OF FILL, AND A NET EXPORT OF 1,500 CY±. FINAL EARTHWORK QUANTITIES TO BE CONFIRMED BY FINAL DESIGN.

PRELIMINARY GRADING PLAN - VALLEY OAKS SOUTH
VESTING TENTATIVE MAP
VALLEY OAKS

CITY OF NOVATO MARIN COUNTY CALIFORNIA

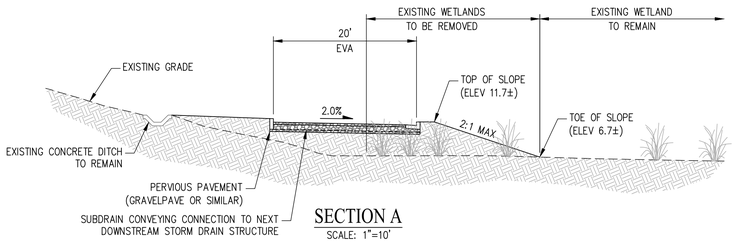
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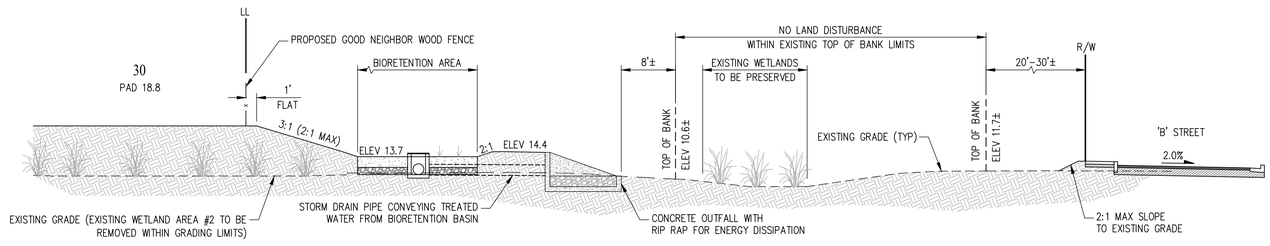
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SHEET NO. C.8 OF 13 SHEETS

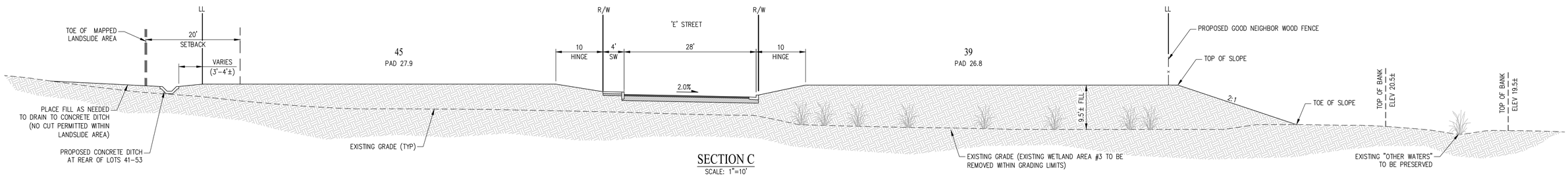
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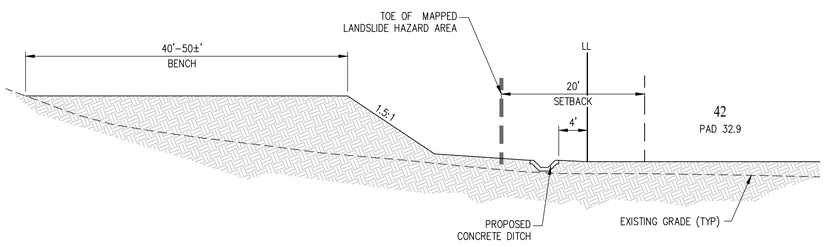
SECTION A
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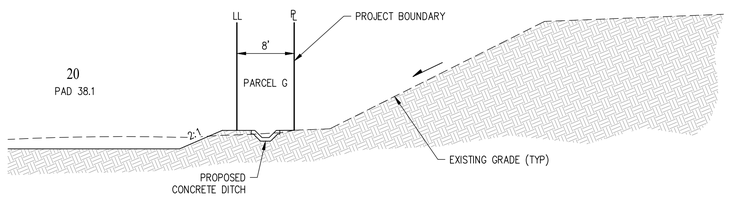
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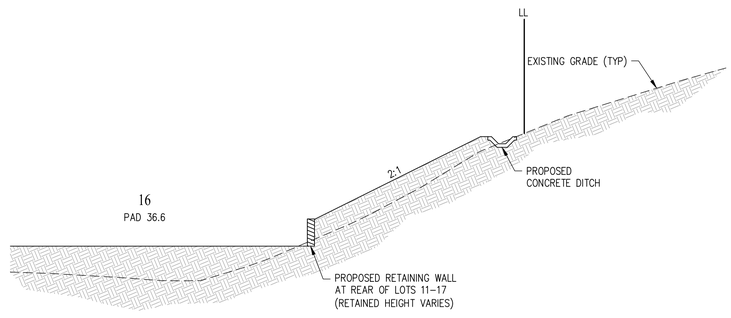
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SCALE: 1"=10'



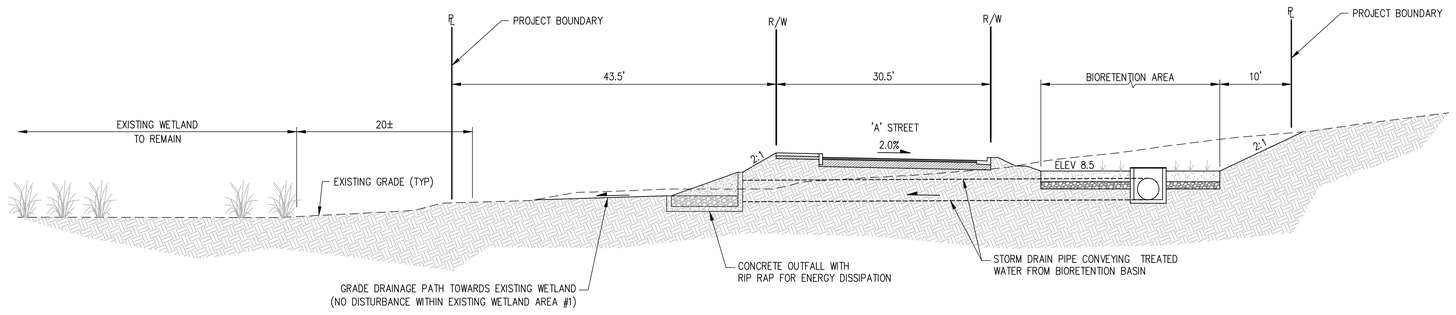
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SCALE: 1"=10'



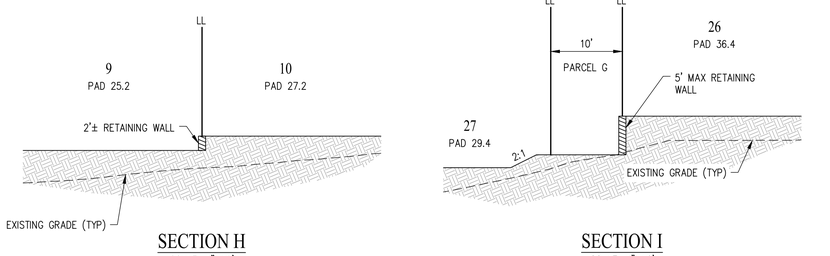
SECTION E
SCALE: 1"=10'



SECTION F
SCALE: 1"=10'

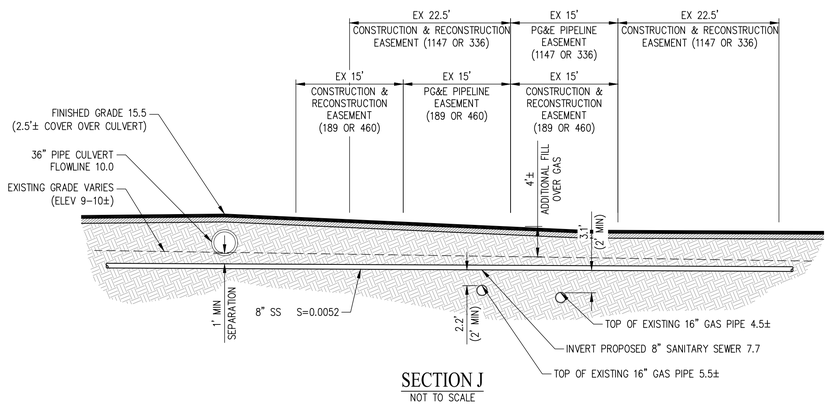


SECTION G
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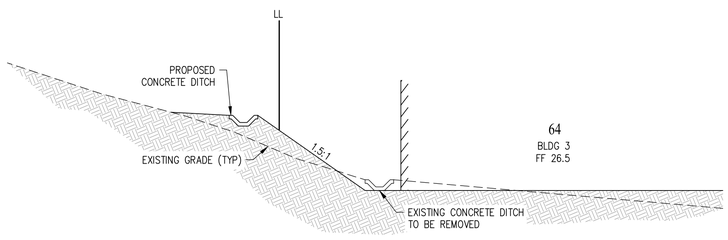


SECTION H
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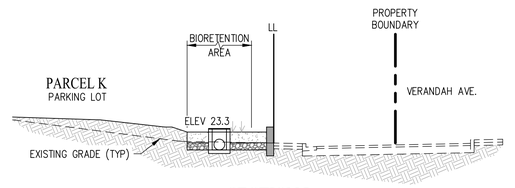
SECTION I
SCALE: 1"=10'



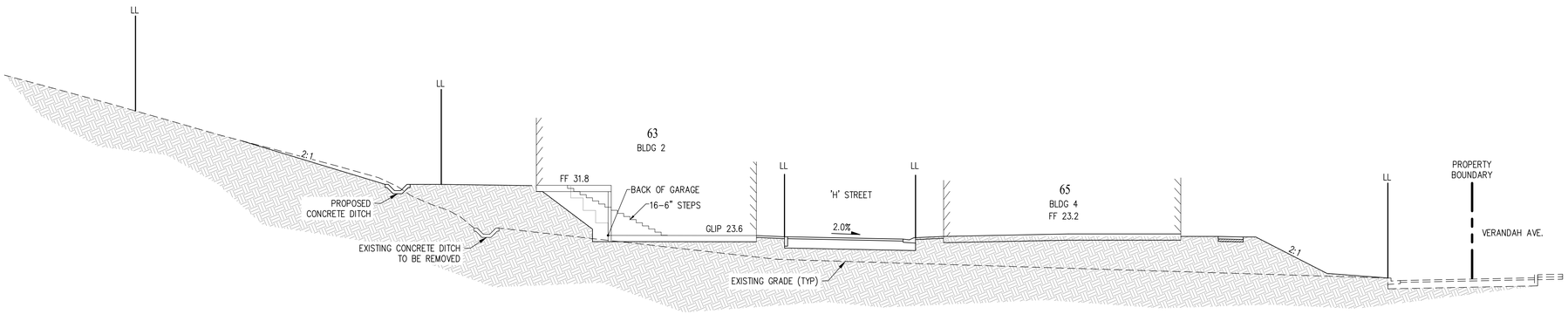
SECTION J
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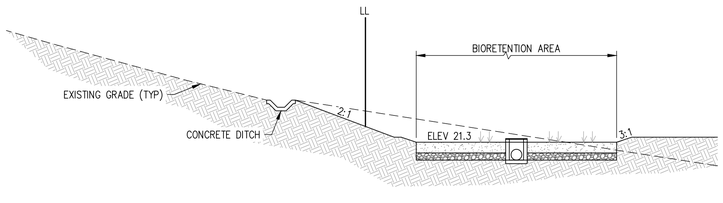
SECTION K
SCALE: 1"=10'



SECTION L
SCALE: 1"=10'



SECTION M
SCALE: 1"=10'



SECTION N
SCALE: 1"=10'

PRELIMINARY GRADING SECTIONS
VESTING TENTATIVE MAP
VALLEY OAKS

CITY OF NOVATO MARIN COUNTY CALIFORNIA

SCALE: 1" = 10' DATE: JANUARY 2023

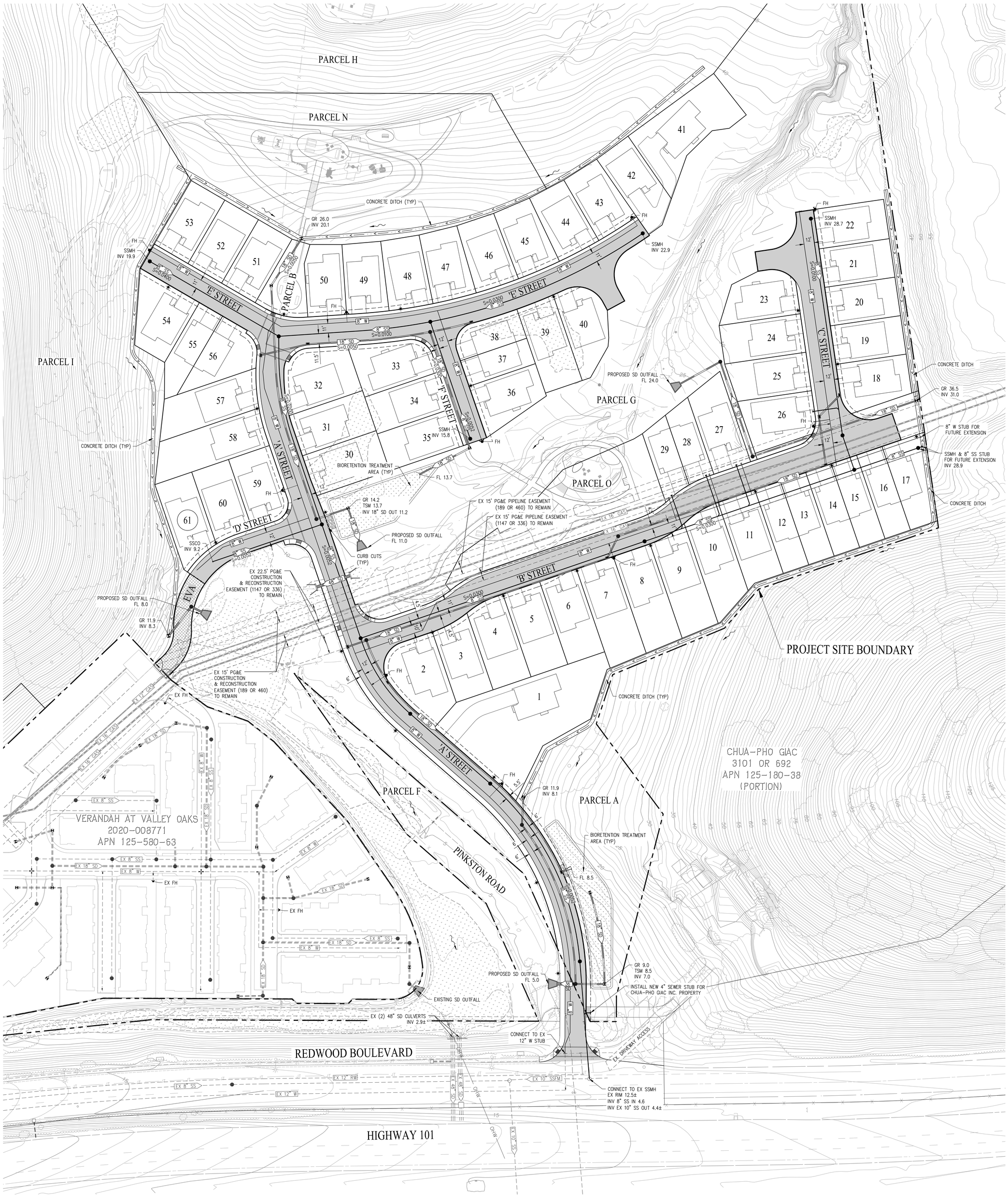
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LEGEND

EXISTING	PROPOSED	
		PROJECT BOUNDARY (POST LLA)
		RIGHT-OF-WAY
		PROPERTY LINE
		EASEMENT LINE
		RELINQUISHMENT OF ABUTTER RIGHTS
		CURB, GUTTER & SIDEWALK
		CONCRETE DITCH
		PROPOSED PAVEMENT
		BIORETENTION TREATMENT AREA
		EXISTING WETLAND AREA
		FLOW DIRECTION
EX 12" SD	18" SD	STORM DRAIN
EX 6" SS	8" SS	SANITARY SEWER
EX 8" W	8" W	WATER PIPE
		MANHOLE
		STORM DRAIN CATCH BASIN/FIELD INLET
		FIRE HYDRANT
		SANITARY SEWER CLEANOUT
		STORM DRAIN OUTFALL
		WATER SERVICE METER
		VALVE
		THRU CURB DRAIN
		ELECTROLIER
EX 16" GAS		GAS LINE
		UTILITY VAULT
		POWER POLE
		GUY WIRE
OHW		OVERHEAD ELECTRIC WIRE
X		FENCE
JT		JOINT TRENCH

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
BLDG	BUILDING
CL	CENTERLINE
DWY	DRIVEWAY
DU	DWELLING UNIT
EX	EXISTING
EVAE	EMERGENCY VEHICLE ACCESS EASEMENT
FF	FINISHED FLOOR
FH	FIRE HYDRANT
INV	INVERT
P	PAD
PL	PROPERTY LINE
PSDE	PRIVATE STORM DRAIN EASEMENT
PSSE	PRIVATE SANITARY SEWER EASEMENT
PUE	PUBLIC UTILITY EASEMENT
PAE	PRIVATE ACCESS EASEMENT
R	RADIUS
R/W	RIGHT-OF-WAY
RW	RECYCLED WATER
S	SLOPE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SF	SQUARE FEET
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEANOUT
SSMH	SANITARY SEWER MANHOLE
S/W	SIDEWALK
TC	TOP OF CURB
TYP	TYPICAL
W	WATER PIPE

NOTES:

1. ALL PROPOSED UTILITES SHOWN ARE PRELIMINARY AND SUBJECT TO FINAL DESIGN.
2. ALL NEW WATER MAINS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH CURRENT NORTH MARIN WATER DISTRICT STANDARDS

PRELIMINARY UTILITY PLAN - VALLEY OAKS NORTH

VESTING TENTATIVE MAP

VALLEY OAKS

CITY OF NOVATO MARIN COUNTY CALIFORNIA

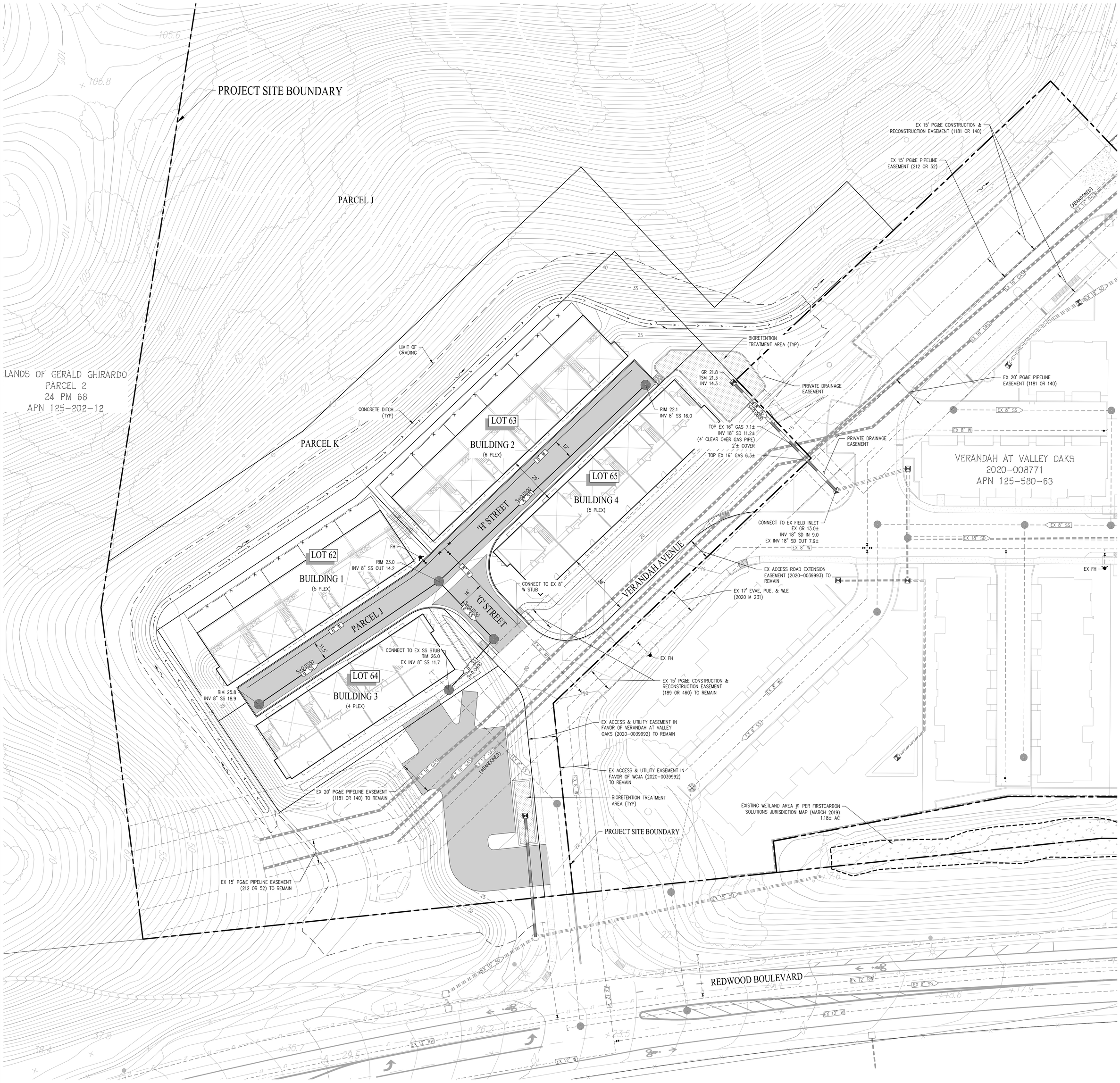
SCALE: 1" = 40' DATE: JANUARY 2023

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C.10
OF 13 SHEETS

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LEGEND

EXISTING	PROPOSED	
		PROJECT BOUNDARY (POST LLA)
		RIGHT-OF-WAY
		PROPERTY LINE
		EASEMENT LINE
		RELINQUISHMENT OF ABUTTER RIGHTS
		CURB, GUTTER & SIDEWALK
		CONCRETE DITCH
		PROPOSED PAVEMENT
		BIORETENTION TREATMENT AREA
		EXISTING WETLAND AREA
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EX 12" SD	18" SD	STORM DRAIN
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		THRU CURB DRAIN
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NOTES:

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PRELIMINARY UTILITY PLAN - VALLEY OAKS SOUTH

VESTING TENTATIVE MAP

VALLEY OAKS

CITY OF NOVATO MARIN COUNTY CALIFORNIA

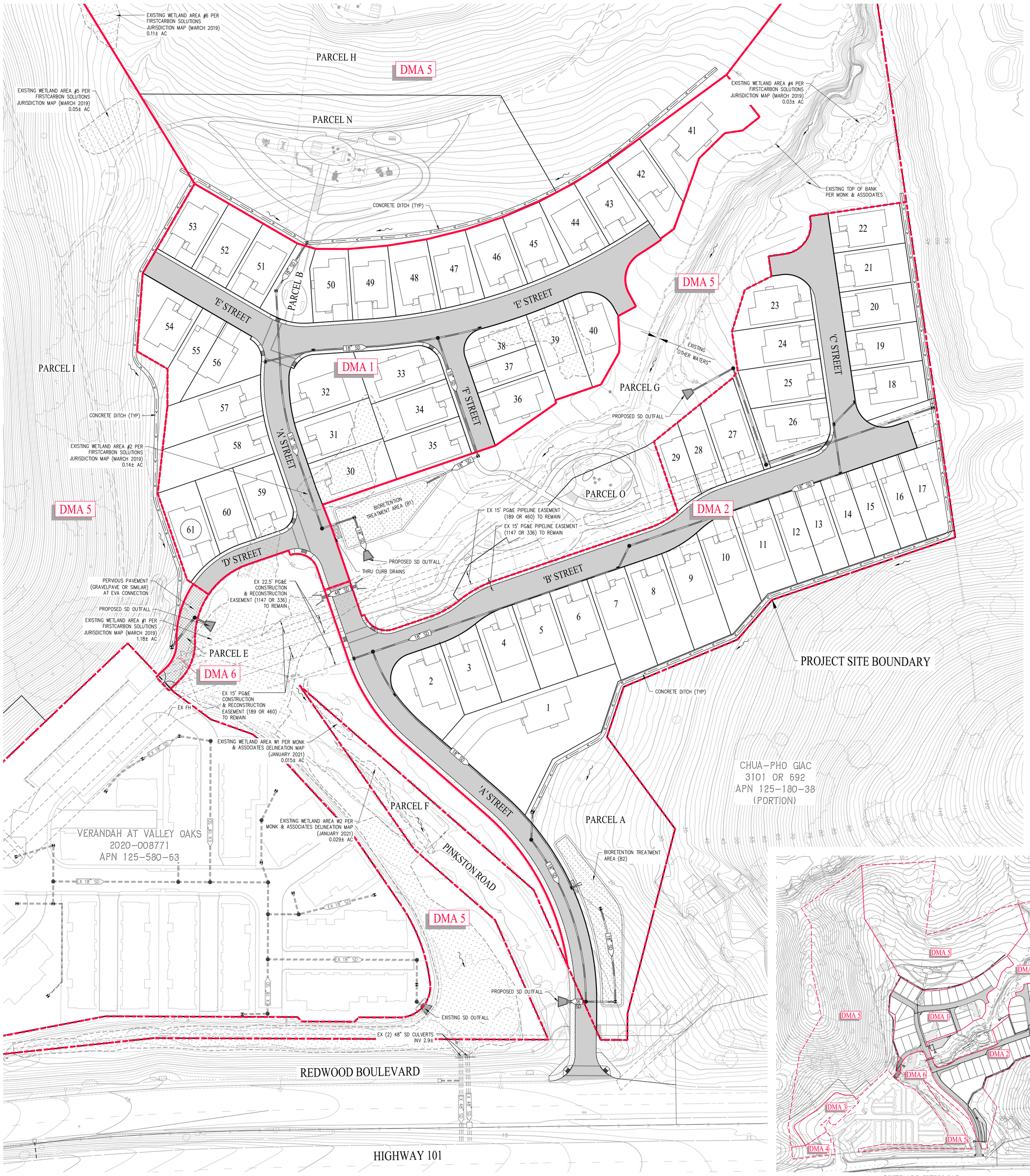
SCALE: 1" = 20' DATE: JANUARY 2023

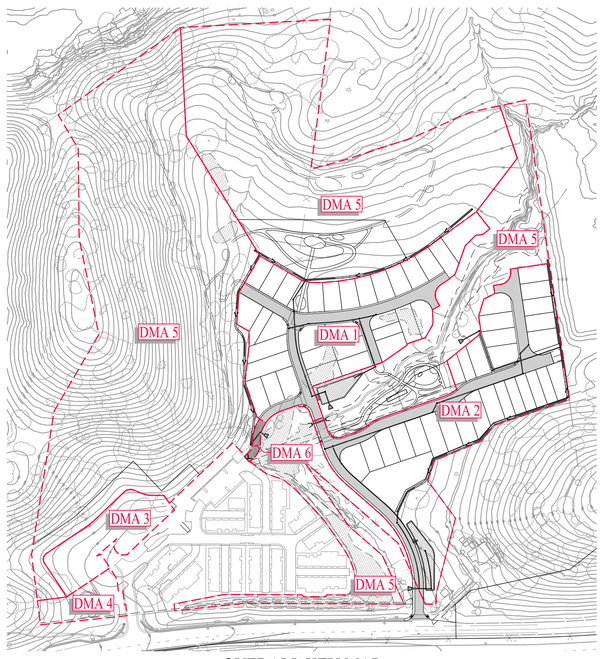
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OVERALL KEY MAP

LEGEND

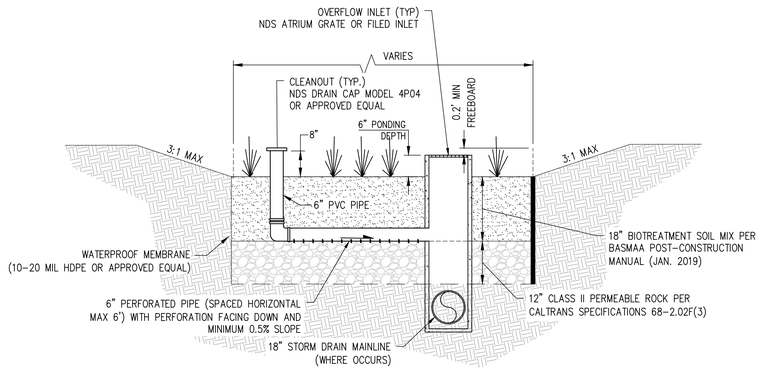
EXISTING	PROPOSED	
		PROJECT BOUNDARY (POST LLA)
		RIGHT-OF-WAY
		PROPERTY LINE
		EASEMENT LINE
		RELINQUISHMENT OF ABUTTER RIGHTS
		CURB, GUTTER & SIDEWALK
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		PROPOSED PAVEMENT
		BIORETENTION AREA
		EXISTING WETLAND AREA
		FLOW DIRECTION
EX 12" SD	18" SD	STORM DRAIN
		MANHOLE
		STORM DRAIN CATCH BASIN/FIELD INLET
		STORM DRAIN OUTFALL
		THRU CURB DRAIN
		DRAINAGE MANAGEMENT AREA (DMA) BOUNDARY
	DMA 1	DRAINAGE MANAGEMENT AREA (DMA)

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
BLDG	BUILDING
CL	CENTERLINE
DWY	DRIVEWAY
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S/W	SIDEWALK
TC	TOP OF CURB
TYP	TYPICAL
W	WATER PIPE

STORMWATER SUMMARY

DMA	TOTAL DMA AREA (SF)	TOTAL IMPERVIOUS AREA (SF)	TOTAL PERVIOUS AREA (SF)	EFFECTIVE IMPERVIOUS AREA (SF)	TREATMENT METHOD	BIORETENTION AREA REQUIRED (SF)	BIORETENTION AREA PROVIDED (SF)
1	177,900	104,700	73,200	112,020	BIORETENTION	4,480	4,560
2	219,280	114,750	104,530	125,200	BIORETENTION	5,010	5,090
3	45,200	34,250	10,950	35,345	BIORETENTION	1,400	1,460
4	22,000	6,450	15,550	8,005	BIORETENTION	320	330
5	1,157,600	42,700	1,114,900	–	SELF-TREATING	–	–
6	2,500	–	2,500	–	SELF-TREATING (PERVIOUS PAVEMENT)	–	–



TYPICAL BIORETENTION DETAIL

(ADJACENT TO ROADWAYS AND SIDEWALK)
NOT TO SCALE

PRELIMINARY STORMWATER CONTROL PLAN - VALLEY OAKS NORTH

VESTING TENTATIVE MAP

VALLEY OAKS

CITY OF NOVATO MARIN COUNTY CALIFORNIA

SCALE: 1" = 40' DATE: JANUARY 2023

0 40 80 120

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PROJECT SITE BOUNDARY

PARCEL I

DMA 5

LIMIT OF GRADING

LANDS OF GERALD GHIRARDO
PARCEL 2
24 PM 68
APN 125-202-12

PARCEL K

CONCRETE DITCH (TYP)

LOT 62
BUILDING 2
(6 PLEX)

LOT 64
BUILDING 4
(5 PLEX)

'H' STREET

DMA 3

LOT 61
BUILDING 1
(5 PLEX)

PARCEL J

'G' STREET

LOT 63
BUILDING 3
(4 PLEX)

EX 20' PG&E PIPELINE EASEMENT (1181 OR 140) TO REMAIN

EX 15' PG&E PIPELINE EASEMENT (212 OR 52) TO REMAIN

DMA 4

EX 15' PG&E CONSTRUCTION & RECONSTRUCTION EASEMENT (1181 OR 140)

EX 15' PG&E PIPELINE EASEMENT (212 OR 52)

BIORETENTION TREATMENT AREA (TYP)

PRIVATE DRAINAGE EASEMENT

EX 20' PG&E PIPELINE EASEMENT (1181 OR 140)

PRIVATE DRAINAGE EASEMENT

VERANDAH AT VALLEY OAKS
2020-008771
APN 125-580-63

VERANDAH AVENUE

EX 17' EVAE, PUE, & WLE (2020 M 231)

EX 15' PG&E CONSTRUCTION & RECONSTRUCTION EASEMENT (189 OR 460) TO REMAIN

BIORETENTION TREATMENT AREA (B4)

EXISTING WETLAND AREA #1 PER FIRSTCARBON SOLUTIONS JURISDICTION MAP (MARCH 2019) 1.18± AC

PROJECT SITE BOUNDARY

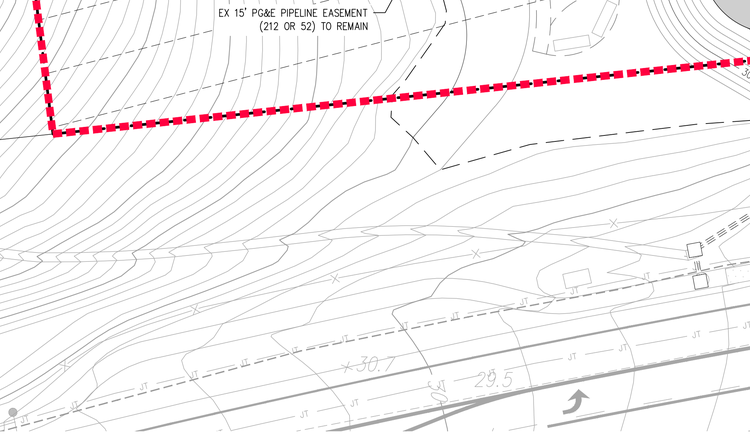
DMA 5

REDWOOD BOULEVARD

EX 12" GAS
EX 16" GAS
EX 18" SD
EX 15" SD

STORMWATER SUMMARY

DMA	TOTAL DMA AREA (SF)	TOTAL IMPERVIOUS AREA (SF)	TOTAL PERVIOUS AREA (SF)	EFFECTIVE IMPERVIOUS AREA (SF)	TREATMENT METHOD	BIORETENTION AREA REQUIRED (SF)	BIORETENTION AREA PROVIDED (SF)
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4	22,000	6,450	15,550	8,005	BIORETENTION	320	330
5	1,157,600	42,700	1,114,900	–	SELF-TREATING	–	–
6	2,500	–	2,500	–	SELF-TREATING (PERVIOUS PAVEMENT)	–	–



TYPICAL BIORETENTION DETAIL
(IN LANDSCAPE)
NOT TO SCALE

LEGEND

EXISTING	PROPOSED	
		PROJECT BOUNDARY (POST LLA)
		RIGHT-OF-WAY
		PROPERTY LINE
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		RELINQUISHMENT OF ABUTTER RIGHTS
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TYP	TYPICAL
W	WATER PIPE

PRELIMINARY STORMWATER CONTROL PLAN - VALLEY OAKS SOUTH

VESTING TENTATIVE MAP

VALLEY OAKS

CITY OF NOVATO MARIN COUNTY CALIFORNIA

SCALE: 1" = 20' DATE: JANUARY 2023

0 20 40 60

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C.13
OF 13 SHEETS

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APPENDIX C

Belinda P. Blackie, environmental engineer, has 20 years of experience performing Phase I environmental site assessments and related studies, and more than nine years of experience performing soil and ground water quality investigations, underground storage tank (UST) removals and replacements, remediation projects, hazardous materials facility closures, environmental compliance projects, visual asbestos surveys, and storm water and small water system management. She is well-practiced in the ASTM E 1527-05 (AAI) Phase I environmental site assessment standard. Ms. Blackie's experience also includes subsurface exploration, monitoring well installation and sampling, collection of surface water, ground water, and drinking water samples, storm water pollution prevention and monitoring, water treatment system monitoring and oversight, surface water monitoring for nutrient concentrations and algal growth, aerial photograph interpretation, soil and ground water modeling, soil and ground water remediation, hazardous materials facility closure, and vicinity hazardous materials users surveys. Ms. Blackie received her Master of Science degree in civil engineering from San Jose State University and her Bachelor of Arts degree in zoology from the University of California at Berkeley. She is a registered professional civil engineer in the State of California, No. 056448.

APPENDIX D

APPLICATION FOR AUTHORIZATION TO USE

REPORT TITLE: **ENVIRONMENTAL SITE ASSESSMENT**

APNs 125-580-34 & -37
Novato, CA 94945

PROJECT NUMBER: 23023.20

To: AllWest Environmental, Inc.
2141 Mission Street, Suite 100
San Francisco, CA 94110

From (Applicant): _____

_____

_____

(Please clearly identify name and address of person/entity applying for permission to use or copy this document)

Ladies and Gentlemen:

Applicant states they have thoroughly reviewed the report and had the opportunity to discuss with AllWest the report's methodology, findings and conclusion(s).

Applicant hereby applies for permission to rely upon AllWest's work product, as described above, for the purpose of (state here the purpose for which you wish to rely upon the work product):

Applicant only can accept and rely upon AllWest work product under the strict understanding that Applicant is bound by all provisions in the General Conditions to the Work Authorization Agreement provided below. Every report, recommendation, finding, or conclusion issued by AllWest shall be subject to the limitations stated in the Agreement and subject report(s). If this is agreeable, please sign below and return one copy of this letter to us along with the applicable fees. Upon receipt and if acceptable, our signed letter will be returned. AllWest may withhold permission at its sole discretion or require additional re-use fees or terms.

FEES: A $1,950 coordination and reliance fee, payable in advance, will apply. If desired, for an additional $250 report reproduction fee, we will reissue the report in the name of the Applicant; the report date, however, will remain the same. All checks will be returned if your request for reliance is not approved.

REQUESTED BY	**APPROVED BY**
_____	**AllWest Environmental, Inc.**
Applicant Company	
_____	_____
Print Name and Title	Print Name and Title
_____	_____
Signature and Date	Signature and Date

GENERAL CONDITIONS TO THE WORK AUTHORIZATION AGREEMENT

It is hereby agreed that the Client retains AllWest to provide services as set forth in the Work Authorization attached hereto (the "Work"). This contract shall be controlled by the following terms and conditions, and these terms and conditions shall also control any further assignments performed pursuant to this Work Authorization. Client's signature on this Work Authorization constitutes Client's agreement to the all terms to this contract, including these General Conditions.

FEES AND COSTS

1. AllWest shall charge for work performed by its personnel at the rates identified in the Work Authorization. These rates are subject to reasonable increases by AllWest upon giving Client 30 days advance notice. Reimbursable Costs will be charged to the Client in addition to the fees for the basic services under this Agreement and all Additional Services (defined below) under the Agreement. Reimbursable Costs include, but are not limited to, expenses for travel, including transportation, meals, lodging, long distance telephone and other related expenses, as well as the costs of reproduction of all drawings for the Client's use, costs for specifications and type-written reports, permit and approval fees, automobile travel reimbursement, costs and fees of subcontractors, and soil and other materials testing. No overtime is accrued for time spent in travel. All costs incurred which relate to the services or materials provided by a contractor or subcontractor to AllWest shall be invoiced by AllWest on the basis of cost plus twenty percent (20%). Automobile travel reimbursement shall be at the rate of fifty- eight cents ($0.58) per mile. All other reimbursable costs shall be invoiced and billed by AllWest at the rate of 1.1 times the direct cost to AllWest. Reimbursable costs will be charged to the client only as outlined in the Work Authorization if the scope of work is for Phase I Environmental Site Assessment, Property Condition Assessment, Seismic Assessment or ALTA survey. Invoices for work performed shall be submitted monthly. Payment will be due upon receipt of invoice. Client shall pay interest on the balance of unpaid invoices which are overdue by more than 30 days, at a rate of 18% per annum as well as all attorney fees and costs incurred by AllWest to secure payment of unpaid invoices. AllWest may waive such fees at its sole discretion.

STANDARD OF CARE

2. AllWest will perform its work in accordance with the standard of care of its industry, as it is at the time of the work being performed, and applicable in the locale of the work being performed. AllWest makes no other warranties, express or implied regarding its work.

LIMITATION OF REMEDIES

3. Client expressly agrees that to the fullest extent permitted by law, Client's remedies for any liability incurred by AllWest, and/or its employees or agents, for any and all claims arising from AllWest's services, shall be $50,000 or its fees, whichever is greater.

Client may request a higher limitation of remedies, but must do so in writing. Upon such written request, AllWest may agree to increase this limit in exchange for a mutually negotiated higher fee commensurate with the increased risk to AllWest. Any such agreed increase in fee and limitation of remedies amount must be memorialized by written agreement which expressly amends the terms of this clause.

As used in this section, the term "limitation of remedies" shall apply to claims of any kind, including, but not limited to, claims brought in contract, tort, strict liability, or otherwise, for any and all injuries, claims, losses, expenses, or damages whatsoever arising out of or in any way related to AllWest's services or the services of AllWest's subcontractors, consultants, agents, officers, directors, and employees from any cause(s). AllWest shall not be liable for any claims of loss of profits or any other indirect, incidental, or consequential damages of any nature whatsoever. Client & AllWest have specifically negotiated this limitation.

INDEMNIFICATION

4. Notwithstanding any other provision of this Agreement, Client agrees, to the fullest extent permitted by law, to waive any claim against, release from any liability or responsibility for, and indemnify and hold harmless AllWest, its employees, agents and sub-consultants (collectively, Consultant) from and against any and all damages, liabilities, claims, actions or costs of any kind, including reasonable attorney's fees and defense costs, arising or alleged to arise out of or to be in any way connected with the Project or the performance or non-performance of Consultant of any services under this Agreement, except to the extent any such liabilities are determined by a court or other forum of competent jurisdiction to have been caused by the negligence or willful misconduct of Consultant.

Client further agrees to indemnify Consultant for any liability Consultant suffers to a third person to the extent that liability exceeds the limitation of liability amounts stated in Limitation of Remedies paragraph. This provision shall be in addition to any rights of indemnity Consultant may have under the law and shall survive and remain in effect following the termination of this Agreement for any reason. Should any part of this provision be determined to be unenforceable, AllWest and Client agree the rest of the provision shall apply to the maximum extent permitted by law. The Client's duty to defend AllWest shall arise immediately upon tender of any matter potentially covered by the above obligations to indemnify and hold harmless.

AllWest agrees to indemnify and hold harmless CLIENT, its officers, directors, partners, employees, and any other entity or person for which AllWest is legally liable, from and against any damages, losses, liabilities, judgments, settlements, expenses, and costs (including reasonable attorneys' fees, costs and expenses recoverable under applicable law), that CLIENT incurs from claims by third parties, to the extent caused by negligent acts, errors or omissions or willful misconduct of AllWest in the performance of professional services under this Agreement and any other entity or person for which AllWest is legally liable.

Notwithstanding the foregoing, if AllWest's obligation to defend, indemnify, and/or hold harmless arises out of AllWest's performance of "design professional" services (as that term is defined under California Civil Code Section 2782.8), AllWest's obligations shall be as stated in California Civil Code Section 2782.8, which is fully incorporated herein as it was in effect as of the date of this Agreement. AllWest's indemnification obligation shall be limited to claims to the extent caused by the negligence, recklessness, or willful misconduct of AllWest, and, upon AllWest obtaining a final adjudication by a court of competent jurisdiction, AllWest's liability for such claim, including the cost to defend, shall not exceed AllWest's proportionate percentage of fault. AllWest is not obligated to indemnify and hold harmless CLIENT for CLIENT'S active or sole negligence, or willful misconduct.

MEDIATION & JUDICIAL REFERENCE

5. In an effort to resolve any conflicts or disputes that arise regarding the performance of this agreement, the Client & AllWest agree that all such disputes shall be submitted to non-binding mediation, using a mutually agreed upon mediation service experienced in the resolution of construction disputes. Unless the parties mutually agree otherwise, such mediation shall be a condition precedent to the initiation of any other adjudicative proceedings. It is further agreed that any dispute that is not settled pursuant to such mediation shall be adjudicated by a court appointed referee in accordance with the Judicial Reference procedures as set forth in California Code of Civil Procedure Section 638 et seq. The parties hereby mutually agree to waive any right to a trial by jury regarding any dispute arising out of this agreement.

The parties further agree to include a similar mediation, Judicial Reference & waiver of jury trial provision in their agreements with other independent contractors & consultants retained for the project and require them to similarly agree to these dispute resolution procedures. The cost of said Mediation shall be split equally between the parties. This agreement to mediate shall be specifically enforceable under the prevailing law of the jurisdiction in which this agreement was signed.

HAZARDOUS WASTE

6. Client acknowledges that AllWest and its sub-contractors have played no part in the creation of any hazardous waste, pollution sources, nuisance, or chemical or industrial disposal problem, which may exist, and that AllWest has been retained for the sole purpose of performing the services set out in the scope of work within this Agreement, which may include, but is not necessarily limited to such services as assisting the Client in assessing any problem which may exist and in assisting the Client in formulating a remedial program. Client acknowledges that while necessary for investigations, commonly used exploration methods employed by AllWest may penetrate through contaminated materials and serve as a connecting passageway between the contaminated material and an uncontaminated aquifer or groundwater, possibly inducing cross contamination. While back-filling with grout or other means, according to a state of practice design is intended to provide a seal against such passageway, it is recognized that such a seal may be imperfect and that there is an inherent risk in drilling borings of performing other exploration methods in a hazardous waste site.

AllWest will not sign or execute hazardous waste manifests or other waste tracking documents on behalf of Client unless Client specifically establishes AllWest as an express agent of Client under a written agency agreement approved by AllWest. In addition, Client agrees that AllWest shall not be required to sign any documents, no matter requested by whom, that would have the effect of AllWest providing any form of certification, guarantee, or warranty as to any matter or to opine on conditions for which the existence AllWest cannot ascertain. Client also agrees that it shall never seek or otherwise attempt to have AllWest provide any form of such certification, guarantee or warranty in exchange for resolution of any disputes between Client and AllWest, or as a condition precedent to making payment to AllWest for fees and costs owing under this Agreement.

Client understands and agrees that AllWest is not, and has no responsibility as, a generator, operator, treater, storer, transporter , arranger or disposer of hazardous or toxic substances found or identified at the site, including investigation-derived waste. The Client shall undertake and arrange for the removal, treatment, storage, disposal and/or treatment of hazardous material and investigation derived waste (such as drill cuttings) and further, assumes full responsibility for such wastes to the complete exclusion of any responsibility, duty or obligation upon AllWest. AllWest's responsibilities shall be limited to recommendations regarding such matters and assistance with appropriate arrangements if authorized by Client.

FORCE MAJUERE

7. Neither party shall be responsible for damages or delays in performance under this Agreement caused by acts of God, strikes, lockouts, accidents or other events or condition (other than financial inability) beyond the other Party’s reasonable control.

TERMINATION

8. This Agreement may be terminated by either party upon ten (10) days' written notice should the other party substantially fail to perform in accordance with its duties and responsibilities as set forth in this Agreement and such failure to perform is through no fault of the party initiating the termination. Client agrees that if it chooses to terminate AllWest for convenience, and AllWest has otherwise satisfactorily performed its obligations under this Agreement to that point, AllWest shall be paid no less than eighty percent (80%) of the contract price, provided, however, that if AllWest shall have completed more than eighty percent of the Work at the time of said termination, AllWest shall be compensated as provided in the Work Authorization for all services performed prior to the termination date which fall within the scope of work described in the Work Authorization and may as well, at its sole discretion and in accordance with said Schedule of Fees, charge Client, and Client agrees to pay AllWest’s reasonable costs and labor in winding up its files and removing equipment and other materials from the Project.

Upon notice of termination by Client to AllWest, AllWest may issue notice of such termination to other consultants, contractors, subcontractors and to governing agencies having jurisdiction over the Project, and take such other actions as are reasonably necessary in order to give notice that AllWest is no longer associated with the Project and to protect AllWest from claims of liability from the work of others.

DOCUMENTS

9. Any documents prepared by AllWest, including, but not limited to proposals, project specifications, drawings, calculations, plans and maps, and any ideas and designs incorporated therein, as well as any reproduction of the above are instruments of service and shall remain the property of AllWest and AllWest retains copyrights to these instruments of service. AllWest grants to Client a non-exclusive license to use these instruments of service for the purpose of completing and maintaining the Project. The Client shall be permitted to retain a copy of any instruments of service, but Client expressly agrees and acknowledges that the instruments of service may not be used by the Client on other projects, or for any other purpose, except the project for which they were prepared, unless Client first obtains a written agreement expanding the license to such use from AllWest, and with appropriate compensation to AllWest. Client further agrees that such instruments of service shall not be provided to any third parties without the express written permission of AllWest.

Client shall furnish, or cause to be furnished to AllWest all documents and information known to Client that relate to the identity, location, quantity, nature, or characteristics of any asbestos, PCBs, or any other hazardous materials or waste at, on or under the site. In addition, Client will furnish or

cause to be furnished such reports, data, studies, plans, specifications, documents and other information on surface or subsurface site conditions, e.g., underground tanks, pipelines and buried utilities, required by AllWest for proper performance of its services. IF Client fails to provide AllWest with all hazardous material subject matter reports including geotechnical assessments in its possession during the period that AllWest is actively providing its services (including up to 30 days after its final invoice), Client shall release AllWest from any and all liability for risks and damages the Client incurs resulting from its reliance on AllWest's professional opinion. AllWest shall be entitled to rely upon Client - provided documents and information in performing the services required in this Agreement; however, AllWest assumes no responsibility or liability for the accuracy or completeness of Client-provided documents. Client-provided documents will remain the property of the Client.

ACCESS TO PROJECT

10. Client grants to AllWest the right of access and entry to the Project at all times necessary for AllWest to perform the Work. If Client is not the owner of the Project, then Client represents that Client has full authority to grant access and right of entry to AllWest for the purpose of AllWest's performance of the Work. This right of access and entry extends fully to any agents, employees, contractors or subcontractors of AllWest upon reasonable proof of association with AllWest. Client's failure to provide such timely access and permission shall constitute a material breach of this Agreement excusing AllWest from performance of its duties under this Agreement.

CONFIDENTIAL INFORMATION

11. Both Client and AllWest understand that in conjunction with AllWest's performance of the Work on the project, both Client and AllWest may receive or be exposed to Proprietary Information of the other. As used herein, the term "Proprietary Information" refers to any and all information of a confidential, proprietary or secret nature which may be either applicable to, or relate in any way to: (a) the personal, financial or other affairs of the business of each of the Parties, or (b) the research and development or investigations of each of the Parties. Proprietary Information includes, for example and without limitation, trade secrets, processes, formulas, data, know-how, improvements, inventions, techniques, software technical data, developments, research projects, plans for future development, marketing plans and strategies. Each of the Parties agrees that all Proprietary Information of the other party is and shall remain exclusively the property of that other party. The parties further acknowledge that the Proprietary Information of the other party is a special, valuable and unique asset of that party, and each of the Parties agrees that at all times during the terms of this Agreement and thereafter to keep in confidence and trust all Proprietary Information of the other party, whether such Proprietary Information was obtained or developed by the other party before, during or after the term of this Agreement. Each of the Parties agrees not to sell, distribute, disclose or use in any other unauthorized manner the Proprietary Information of the other party. AllWest further agrees that it will not sell, distribute or disclose information or the results of any testing obtained by AllWest during the performance of the Work without the prior written approval of Client unless required to do so by federal, state or local statute, ordinance or regulation.

INDEPENDENT CONTRACTOR

12. Both Client and AllWest agree that AllWest is an independent contractor in the performance of the Work under this Agreement. All persons or parties employed by AllWest in connection with the Work are the agents, employees or subcontractors of AllWest and not of Client. Accordingly, AllWest shall be responsible for payment of all taxes arising out of AllWest's activities in performing the Work under this Agreement.

ENTIRE AGREEMENT

13. This Agreement contains the entire agreement between the Parties pertaining to the subject matter contained in it and supersedes and replaces in its entirety all prior and contemporaneous proposals, agreements, representations and understandings of the Parties. The Parties have carefully read and understand the contents of this Agreement and sign their names to the same as their own free act.

INTEGRATION

14. This is a fully integrated Agreement. The terms of this Agreement may be modified only by a writing signed by both Parties. The terms of this Agreement were fully negotiated by the Parties and shall not be construed for or against the Client or AllWest but shall be interpreted in accordance with the general meaning of the language in an effort to reach the intended result.

MODIFICATION / WAIVER / PARTIAL INVALIDITY

15. Failure on the part of either party to complain of any act or omission of the other, or to declare the other party in default, shall not constitute a waiver by such party of its rights hereunder. If any provision of this Agreement or its application be unenforceable to any extent, the Parties agree that the remainder of this Agreement shall not be affected and shall be enforced to the greatest extent permitted by law.

INUREMENT / TITLES

16. Subject to any restrictions on transfers, assignments and encumbrances set forth herein, this Agreement shall inure to the benefit of and be binding upon the undersigned Parties and their respective heirs, executors, legal representatives, successors and assigns. Paragraph titles or captions contained in this Agreement are inserted only as a matter of convenience, and for reference only, and in no way limit, define or extend the provisions of any paragraph. , et al., incurred in that action or proceeding, in addition to any other relief to which it or they may be entitled.

AUTHORITY

17. Each of the persons executing this Agreement on behalf of a corporation does hereby covenant and warrant that the corporation is duly authorized and existing under the laws of its respective state of incorporation, that the corporation has and is qualified to do business in its respective state of incorporation, that the corporation has the full right and authority to enter into this Agreement, and that each person signing on behalf of the corporation is authorized to do so. If the Client is a joint venture, limited liability company or a partnership, the signatories below warrant that said entity is properly

and duly organized and existing under the laws of the state of its formation and pursuant to the organizational and operating document of the entity, and the laws of the state of its formation, said signatory has authority act on behalf of and commit the entity to this Agreement.

COUNTERPARTS

18. This Agreement may be signed in counterparts by each of the Parties hereto and, taken together, the signed counterparts shall constitute a single document.

THIRD PARTY BENEFICIARIES / CONTROLLING LAW

19. There are no intended third party beneficiaries of this Agreement. The services, data & opinions expressed by AllWest are for the sole use of the client, are for a particular project and may not be relied upon by anyone other than the client. This Agreement shall be controlled by the laws of the State of California and any action by either party to enforce this Agreement shall be brought in San Francisco County, California.

TIME BAR TO LEGAL ACTION

20. Any legal actions by either party against the other related to this Agreement, shall be barred after one year has passed from the time the claimant knew or should have known of its claim, and under no circumstances shall be initiated after two years have passed from the date by which AllWest completes its services.

HYDROLOGY AND HYDRAULICS REPORT FOR THE VALLEY OAKS PROJECT

Report prepared for:
Carlson, Barbee, and Gibson, Inc.

Prepared by:
Denise Tu and Ed Ballman

Balance Hydrologics, Inc.

February 2023

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Hydrology and Hydraulics Report for The Valley Oaks Project

© 2023 Balance Hydrologics, Inc. Project Assignment: 220224
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February 6, 2023

TABLE OF CONTENTS

1. INTRODUCTION 1
1.1 Project Location and Description 1
1.2 Purpose of the Study 1
2. SITE CHARACTERISTICS 2
2.1 Climate 2
2.2 Topography 2
2.3 Soils 2
3. PROJECT FEATURES 3
3.1 Project Sub-watersheds 3
3.1.1 Existing sub-watersheds 3
3.1.2 Proposed Sub-watersheds 4
3.2 Stormwater Drainage System 5
4. HYDROLOGY 6
4.1 General Approach 6
4.2 Hydrologic Modeling Summary 9
5. HYDRAULICS 11
5.1 General Approach 11
5.2 Hydraulic Model Results 12
6. CONCLUSIONS 13

LIST OF TABLES

Table 1. NOAA Atlas Design Storms

Table 2. Pre-Project HEC-HMS Input Variables

Table 3. Post-Project HEC-HMS Input Variables

Table 4. Pre-Project HEC-HMS Peak Flows by DMA

Table 5. Post-Project HEC-HMS Peak Flows by DMA

Table 6. Water Surface Elevations at Redwood Boulevard

Table 7. Water Surface Elevations at Upstream of Street “A”

LIST OF FIGURES

Figure 1. Project Vicinity Map

Figure 2. HEC-HMS pre-project sub-watersheds

Figure 3. HEC-HMS post-project sub-watersheds

Figure 4. HEC-RAS terrain and model extents

Figure 5. Post-project 25-year modeled depths

APPENDICES

Appendix A. Soil Mapping Information

Appendix B. Valley Oaks Stormwater Control Plan

1. INTRODUCTION

1.1 Project Location and Description

The Valley Oaks Project ("Project") is comprised of single family and townhouse units located on 37.2 acres in the City of Novato in Marin County, California. The Project (illustrated in **Figure 1**) is bounded by Redwood Boulevard. and U.S. Route 101 ("Highway 101") to the east, Wood Hollow Drive to the south, vacant land to the north and residential to the west.

1.2 Purpose of the Study

The Project is proposed on vacant land adjacent to an unnamed drainage channel which exits to Rush Creek Slough through two 48-inch culverts running under Redwood Boulevard and Highway 101. Stormwater from the Project and surrounding hillsides will be collected via Project infrastructure and then will flow to the unnamed drainage channel before exiting to Rush Creek Slough through existing two 48-inch culverts. Additionally, proposed Street "A" will cross this unnamed drainage channel and its 48-inch culvert will be designed to convey the predicted 100-year flows.

In conjunction with the Stormwater Control Plan (SWCP) written by CBG, this hydraulics and hydrology (H&H) study is intended to show how the Project complies with Bay Area Stormwater Management Agencies Association (BASMAA) regulations, Provision E.12 of the Phase II Small MS4 General Permit, and peak flow requirements for drainage infrastructure design.

2. SITE CHARACTERISTICS

2.1 Climate

The climate characteristics of the site reflect the general Mediterranean climate of the San Francisco Bay Area of California. The climate regime is characterized by cool, wet winters and hot, dry summers. The Project lies between the 20- and 22-inch isohyet lines mapped by Marin County, California[1].

2.2 Topography

The Project is situated in the lower portions of an unnamed drainage channel sub-watershed within the larger Rush Creek watershed. Proposed development is located on sites with elevations ranging from approximately 10 to 46 feet, NGVD. On a larger scale, this study includes run-on from uphill sub-watersheds with elevations up to approximately 565 feet and extends down to Rush Creek Slough with an elevation of approximately 0 feet. Existing terrain was compiled using a digital elevation model ("DEM") based on 2018 USGS LiDAR and is illustrated in **Figure 3**. [2]

2.3 Soils

Soil mapping prepared by the Natural Resources Conservation Service shows that the Project site is made up of soils classified in Hydrologic Soil Groups C and D with slow to very slow infiltration rates. In other words, these soil types are characterized by high and very high runoff potential. A majority of the proposed development lies on Blucher-Cole complex, 2 to 5 percent slopes soil which is classified as Hydrologic Soil Group C/D. The soil report is detailed in **Appendix A**.

[1] Precipitation isohyet lines visualized via Marin County GIS map viewer: https://www.marinmap.org/Html5Viewer/Index.html?viewer=smmdataviewer

[2] The DEM has a cell size resolution of 1.5 by 1.5 feet; all spatial data are in 1983 State Plane Zone 3 and use the North American Vertical Datum of 1988 (NAVD88). When necessary, a local conversion of -2.70 feet was used to convert from NAVD88 to National Geodetic Vertical Datum of 1929 (NGVD29). All elevations throughout this report are presented with a vertical datum of NGVD29.

3. PROJECT FEATURES

3.1 Project Sub-watersheds

Pre-project and post-project sub-watersheds are described below and visualized in **Figures 2** and **Figure 3** respectively. To accurately characterize overall flows exiting through the two 48-inch culverts to Rush Creek Slough, the analysis included run-on from upstream sub-watersheds in addition to Project sub-watersheds. Existing and proposed outfall structures are shown in detail in **Appendix B**.

3.1.1 Existing sub-watersheds

The pre-project sub-watersheds define vacant land and existing development (sub-watershed 3) draining to the unnamed drainage channel flowing to two existing 48-inch culverts at Redwood Boulevard.

Sub-watershed A - The Buck Institute is situated northwest of the Project with their own detention basin draining to the unnamed drainage channel upstream of the Project. Its sub-watershed is 58.7 acres. It was assumed that the 25-year flows from sub-watershed A would not overtop the detention basin's spillway.[3]

Sub-watershed B – 6.9 acres of vacant land draining to the unnamed drainage channel upstream of the Project.

Sub-watershed C – 11.0 acres of vacant land draining to the unnamed drainage channel upstream of the Project.

Sub-watershed D – 20.6 acres of vacant land north of the unnamed drainage channel.

Sub-watershed E – 29.1 acres of vacant land southwest of the unnamed drainage channel.

Sub-watershed F – 6.2 acres of vacant land west of sub-watershed 3.

Sub-watershed G – 8.0 acres of vacant land north of sub-watershed 3.

[3] Buck Institute was contacted for their stormwater and detention basin plans. No response was provided therefore the 25-year flow was assumed to not overtop the Buck Institute's detention basin spillway.

Sub-watershed 3 – Verandah at Valley Oaks (APN 12-580-63) development of 5.9 acres with existing outfall just upstream the existing two 48-inch culverts.

3.1.2 Proposed Sub-watersheds

Sub-watersheds A, B, and C - Remain the same under proposed conditions. Flows from these DMAs act as the upstream boundary conditions under post-project scenarios.

Sub-watershed D – 8.3 acres of vacant land. Runoff from sub-watershed D flow through the proposed culverts at Street "A" crossing.

Sub-watershed E – 20.9 acres of vacant land west of the proposed development. Sub-watershed E's stormwater is routed under street "A" and has a common outfall with sub-watershed 1/bioretention basin 1 to the unnamed drainage channel.

Sub-watershed F – 8.9 acres of vacant land south of sub-watershed 1. Stormwater is routed under street "D" and its outfall is downstream of the street "A" drainage channel crossing.

Sub-watershed G – 5.1 acres of drainage along Redwood Boulevard sub-watershed G outfall is located just upstream of the existing two 48-inch culverts running under Redwood Boulevard and Highway 101.

Sub-watershed H – 4.5 acres of vacant land north of sub-watershed 2. Proposed stormwater infrastructure routes stormwater from sub-watershed D under street "B" with an outfall upstream of street "A" drainage channel crossing by lot 28.

Sub-watershed I – 5.6 acres of vacant land northeast of sub-watershed 2. Stormwater is routed under street "A" and has a common outfall with sub-watershed 2/bioretention basin 2.

Sub-watershed 1 – 4.5 acres of proposed development (lots 30-61) and streets "E" and "F" and portions of streets "A" and "D". sub-watershed 1 drains to bioretention basin 1 upstream of where street "A" crosses the drainage channel.

Sub-watershed 2 – 5.9 acres of proposed development (lots 1-29) and streets "C" and "B" and portions of street "A". Sub-watershed 2 drains into bioretention basin 2.

3.2 Stormwater Drainage System

The Project's storm drain infrastructure will be designed to comply with water quality and peak discharge requirements outlined by BASMAA and Provision E.12 of the Phase II Small MS4 General Permit. Proposed stormwater drainage infrastructure along with other related hydrologic features are as follows:

- Overland flow from upslope open areas will drain to the unnamed drainage channel directly or will be routed through proposed storm drain infrastructure with outfalls to the unnamed drainage channel. These outfalls described above in Section 3.1 and visualized in **Appendix B**.
- All runoff from developed portions of the Project will be routed through one of two bioretention basins designed to comply with water quality requirements. Sub-watershed 1 includes lots 30-61 and drains to bioretention basin 1. Similarly, sub-watershed 2 includes lots 1-29 and drains to bioretention basin 2.
- Street "A" will cross the unnamed drainage channel with a proposed 48-inch culvert to convey the predicted 100-year peak flows.
- Downstream of the Project, two existing 48-inch culverts[4] cross under Redwood Boulevard and Highway 101 allowing all stormwater and overland flow from the unnamed drainage channel sub-watershed to exit to Rush Creek Slough.
- Rush Creek Slough is a tidally influenced slough. The closest NOAA tide station is Point San Quentin (Sta 9414873) showing a mean high water of 2.64 feet, NGVD and a mean higher high water of 3.25 feet, NGVD29.

[4] In the absence of material type, reinforced concrete pipe (RCP) was assumed.

4. HYDROLOGY

4.1 General Approach

The U. S. Army Corps of Engineers (USACE) HEC-HMS software (Version 4.10, July 2022) was selected to simulate the storm events for each sub-watershed associated with the Project and run-on from upstream vacant land watersheds. Inputs for the hydrologic model included design storm depths, basin area, representative curve numbers, and associated lag times. For each sub-watershed the HEC-HMS model was run to estimate 2-, 10-, 25-, and 100-year flows under pre-project and proposed conditions using the following input parameters:

- Drainage basins were delineated and areas calculated using CAD. The sub-watershed boundaries were refined based on the proposed storm drain pipe network provided by CBG and drainage flow lines generated from overland topography. The boundaries of the sub-watersheds are illustrated in **Figure 3**.

- Design storm depths were sourced from the National Oceanic and Atmospheric Administration's Atlas 14 point-precipitation data server. Modeling focused on the 24-hour duration event. Rainfall distribution was based on the SCS Type 1A event.

- The predominant land cover is grassland with scattered oak. Subsequently a curve number of 80 was assumed for undeveloped areas reflecting the underlying soil type.

- Aerial assessment of each sub-watershed determined impervious percentages which range from 0 percent (vacant land) to 75 percent (high-density development). Impervious cover percentages were entered directly into HEC-HMS for each sub-watershed (e.g., composite curve numbers were not used).

- Lag times were calculated using the longest flow path, slope, and assumed flow path flow roughness within each sub-watershed.

- The bioretention basins proposed for sub-watersheds 1 and 2 are not specifically designed to maximize peak flow attenuation but were included in the modeling to assess the sizing of the overflow grates that will be engaged large events.

- The earlier Verandah Project includes a system of distributed water-quality facilities (bioretention) that were not included in the modeling for the sake of simplicity. As such, overall peak flow rates at Redwood Boulevard are likely somewhat overestimated, particularly for storms of magnitude in the 2- to 10-year range.

HEC-HMS input variables are summarized in **Tables 1**, **2**, and **3** below.

Table 1. NOAA Atlas14 Design Storms Depths

Event	Depth *(inches)*
2-yr 24-hr	3.1
10-yr 24-hr	4.6
25-yr 24-hr	5.5
100-yr 24-hr	7.0

Table 2. Pre-Project HEC-HMS Input Variables

Sub-watershed	Area *(acres)*	Area *(sq miles)*	Impervious *(%)*	CN *(no units)*	Flow Path *(miles)* (Longest)	Flow Path *(miles)* (Centroid)	Elevations *(feet)* (High)	Elevations *(feet)* (Low)	Slope *(ft/mile)*	N	Lag *(minutes)*
A (Buck)	58.74	0.0918	15	80	0.633	0.390	534	124	648	0.05	12.4
B	6.91	0.0108	0	80	0.186	0.081	223	49	937	0.075	6.0
C	11.02	0.0172	0	80	0.239	0.121	269	47	930	0.075	7.7
D	20.60	0.0322	0	80	0.309	0.180	153	8	470	0.075	11.2
E	29.08	0.0454	0	80	0.314	0.148	170	8	515	0.075	10.3
F	6.16	0.0096	0	80	0.159	0.091	91	14	484	0.075	6.7
G	7.99	0.0125	5	80	0.220	0.034	72	4	310	0.075	5.7
3	5.85	0.0091	55	80	0.193	0.100	40	10	155	0.042	5.2

Table 3. Post-Project HEC-HMS Input Variables

Sub-watershed	Area (acres)	Area (sq miles)	Impervious (%)	CN (no units)	Flow Path (miles) (Longest)	Flow Path (miles) (Centroid)	Elevations (feet) (High)	Elevations (feet) (Low)	Slope (ft/mile)	N	Lag (minutes)
A (Buck)	58.74	0.0918	15	80	0.633	0.390	534	124	648	0.05	12.4
B	6.91	0.0108	0	80	0.186	0.081	223	49	937	0.075	6.0
C	11.02	0.0172	0	80	0.239	0.121	269	47	930	0.075	7.7
D	8.31	0.0130	0	80	0.284	0.169	153	12	496	0.075	10.5
E	20.91	0.0327	0	80	0.237	0.100	170	26	608	0.075	7.7
F	8.94	0.0140	0	80	0.159	0.106	91	14	484	0.075	7.1
G	5.14	0.0080	10	80	0.220	0.076	72	4	310	0.075	7.7
H	4.54	0.0071	0	80	0.114	0.041	128	38	788	0.075	4.0
I	5.58	0.0087	0	80	0.239	0.149	112	21	381	0.075	9.8
1	4.51	0.0070	65	80	0.117	0.044	35	18	145	0.045	3.4
2	5.86	0.0092	60	80	0.227	0.131	40	15	110	0.042	6.5
3	5.90	0.0092	75	80	0.193	0.100	40	10	155	0.042	5.2

4.2 Hydrologic Modeling Summary

The HEC-HMS modeling utilized a simulation time of 30 hours. This allowed the 2-, 10-, 25-, and 100-year, 24-hour storms to adequately rise and fall. The resulting peak flows are provided below in **Tables 4** and **5**. The subsequent hydrographs were used as input boundary conditions to the HEC-RAS hydraulic models.

Table 4. Pre-Project HEC-HMS Peak Flows by Sub-watershed

Sub-watershed	Peak Flow *(cfs)*			
	2-year	*10-year*	*25-year*	*100-year*
A	13.9	22.7	27.1	39.4
B	1.9	4.0	5.4	7.7
C	3.0	6.4	8.6	12.3
D	5.1	11.1	15.1	21.6
E	7.4	16.0	21.7	31.0
F	1.7	3.6	4.8	6.9
G	2.3	4.8	6.5	9.1
3	3.0	4.9	6.1	8.0
At Redwood	36.2	69.3	90.2	123.6

Table 5. Post-Project HEC-HMS Peak Flows by Sub-watershed

Sub-watershed	Peak Flow *(cfs)*			
	2-year	*10-year*	*25-year*	*100-year*
A	13.9	22.7	27.1	39.4
B	1.9	4.0	5.4	7.7
C	3.0	6.4	8.6	12.3
D	2.1	4.6	6.2	8.8
E	5.6	12.1	16.4	23.3
F	2.4	5.2	7.0	10.0
G	1.6	3.2	4.3	6.0
H	1.23	2.64	3.57	5.08
I	1.4	3.1	4.2	6.0
Bio Basin 1	1.0	3.4	4.4	5.8
Bio Basin 2	1.8	4.4	5.6	7.4
3	3.5	5.5	6.7	8.6
At Redwood	35.9	72.9	94.2	127.9

As shown in **Tables 4** and **5**, the modeling indicates that a modest increase in peak flow rate can be expected at the downstream end of the Project (at the existing twin 48-inch culverts under Redwood Boulevard and Highway 101)for all design storms except the 2-year event. For the 100-year, 24-hour design event, the predicted increase is 4.3 cfs or 3.5 percent. Although the Project essentially discharges into hardened pipes and then tidal channels in Rush Creek Slough and could therefore be considered exempt from hydromodification management requirements, the modeling shows a small decrease in the peak with 2-year flow rate, which is the compliance standard in that regard.

5. HYDRAULICS

5.1 General Approach

The output from the hydrologic modeling and other pertinent input information was used to set up and run a two-dimensional model of the main drainage network in the project. Modeling was carried out using the U.S. Army Corps of Engineers HEC-RAS platform (Version 6.3, August 2022).

Separate models were created to represent pre-project conditions and the proposed Project. The model terrain and extents are illustrated in **Figure 4**. The HEC-RAS model was configured with a number of parameters and boundary conditions based on generally available data, including:

- Hydrographs were generated in HEC-HMS software as described in the above hydrologic modeling section. The resultant 2-, 10-, 25-, and 100- year unsteady-state flows were used as upstream and internal boundary conditions.

- The underlying topographic information combines 2018 LiDAR and site-specific aerial topography collected by CBG.

- The two-dimensional model mesh has a total of 6,856 cells with an average floodplain cell size of 15 x 15 feet, average channel and road cells of 10 x 10 feet.

- Manning's roughness values were assumed to be 0.045 for the channel areas corridor and 0.06 for the remaining floodplain within the model area.

- The culverts were defined by a SA/2D area connection as a culvert and bridge (internal to 2D flow area) respectively.

- The drainage channel and road centerlines were enforced as break lines within the 2D model area.

- The downstream boundary was set at 3 feet, an average between mean high tide and mean higher high tide.

5.2 Hydraulic Model Results

The model was run under pre- and post-project conditions. These scenarios are compared downstream of the project at the existing two 48-inch culverts running under Redwood Boulevard and Highway 101. The predicted water surface elevations are presented in **Table 6** below.

Table 6. Water Surface Elevations at Redwood Boulevard

	2-yr	10-yr	25-yr	100-yr
Pre-Project	4.6	5.4	5.7	6.3
Post-Project	4.6	5.4	5.8	6.3

Note:
Redwood Blvd crown elevation is 12.9 ft, NGVD

As shown in **Table 6**, predicted flood elevations at Redwood Boulevard are the same under pre- and post-project conditions. 2-year water surface elevations are predicted to be on the order of 4.6 feet, leaving over 8 feet of freeboard when compared to the crown of Redwood Boulevard at the culvert crossing. Similarly, the 100-yr flood elevations are modeled at 6.3 feet, which leaves over 6 feet of freeboard. Ultimately, at the downstream end of the Project (at Redwood Boulevard), the Project does not adversely impact freeboard at the existing culverts.

To inform infrastructure design modeled water surface elevations were extracted upstream of the proposed crossing at Street "A". The output values are summarized in **Table 7** below. Modeled maximum 25-year depths under post-project conditions are shown in **Figure 5.**

Table 7. Water Surface Elevations Upstream of Street "A"

	2-yr	10-yr	25-yr	100-yr
Upstream Street "A"	12.3	13.3	13.8	14.6

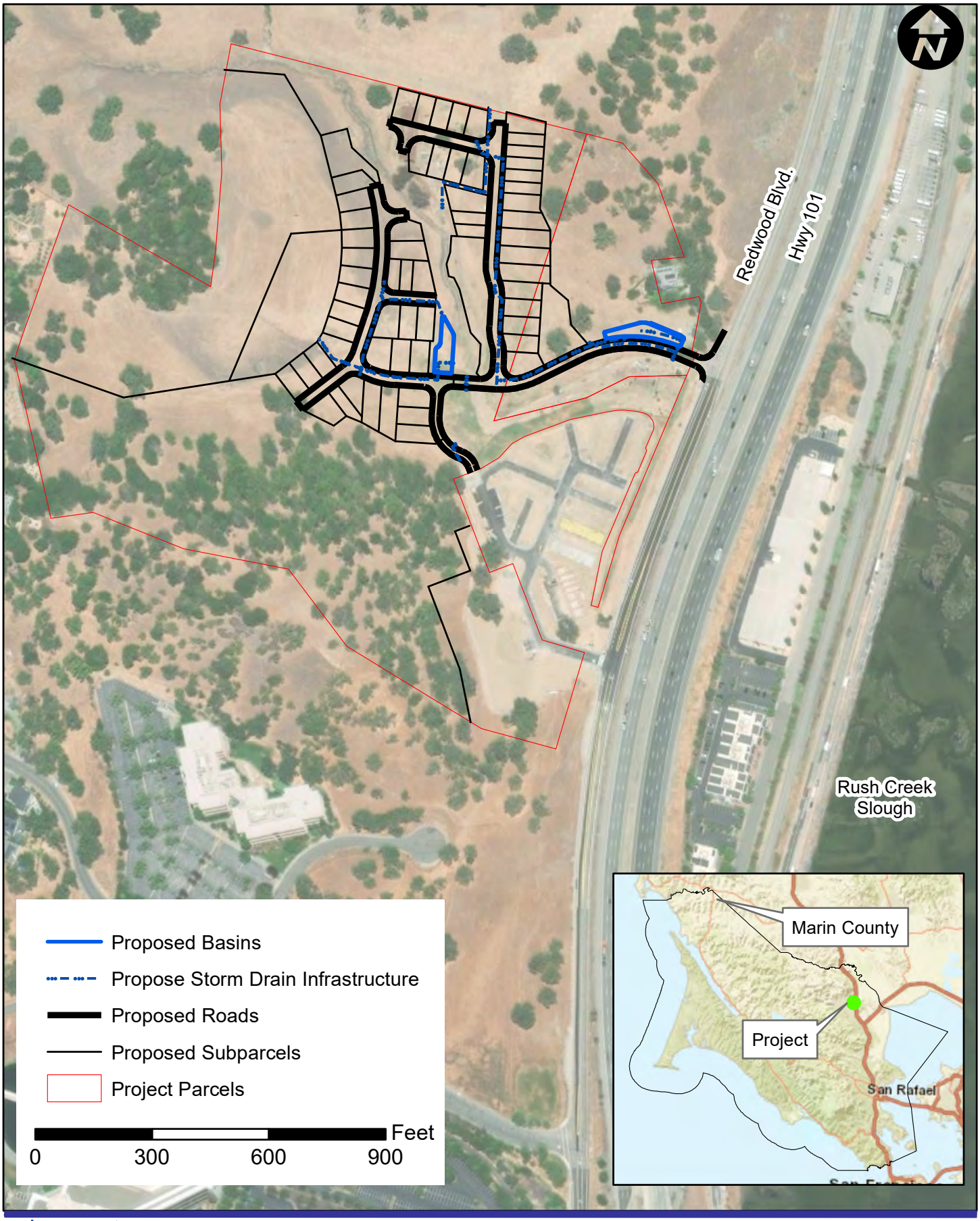
Note:
Street "A" and "B" intersection centerline elevation is 15.1 ft, NGVD

Street "A" and "B" elevations along with the proposed 48-inch culvert under Street "A" were designed to convey the 100-yr storm event. The 2-year freeboard is 2.8 feet when comparing WSE to the street "A" and "B" intersection. Likewise, during the 100-year event, 0.5 feet of freeboard is predicted.

6. CONCLUSIONS

In conjunction with the Stormwater Control Plan (SWCP) written by CBG, this hydrology and hydraulics (H&H) study shows that the Project complies with Bay Area Stormwater Management Agencies Association (BASMAA) regulations, Provision E.12 of the Phase II Small MS4 General Permit, and peak flow requirements for drainage infrastructure design. Project infrastructure, including the proposed 48-inch culvert at the Street "A" crossing and road elevations, were designed to convey all peak flows from the upslope main drain channel through the project without roadway overtopping. Additionally, the Project complies with hydromodification requirements for the 2-year storm event and does not negatively impact existing infrastructure at Redwood Boulevard and Highway 101 (existing twin 48-inch culverts).

FIGURES



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Figure 1. Project Location, Valley Oaks, Marin County, California

Source: Marin County, CBG

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Figure 2. HEC-HMS Pre-Project Sub-**watersheds**, **Valley Oaks**, Marin County, California

Source: Marin County, CBG

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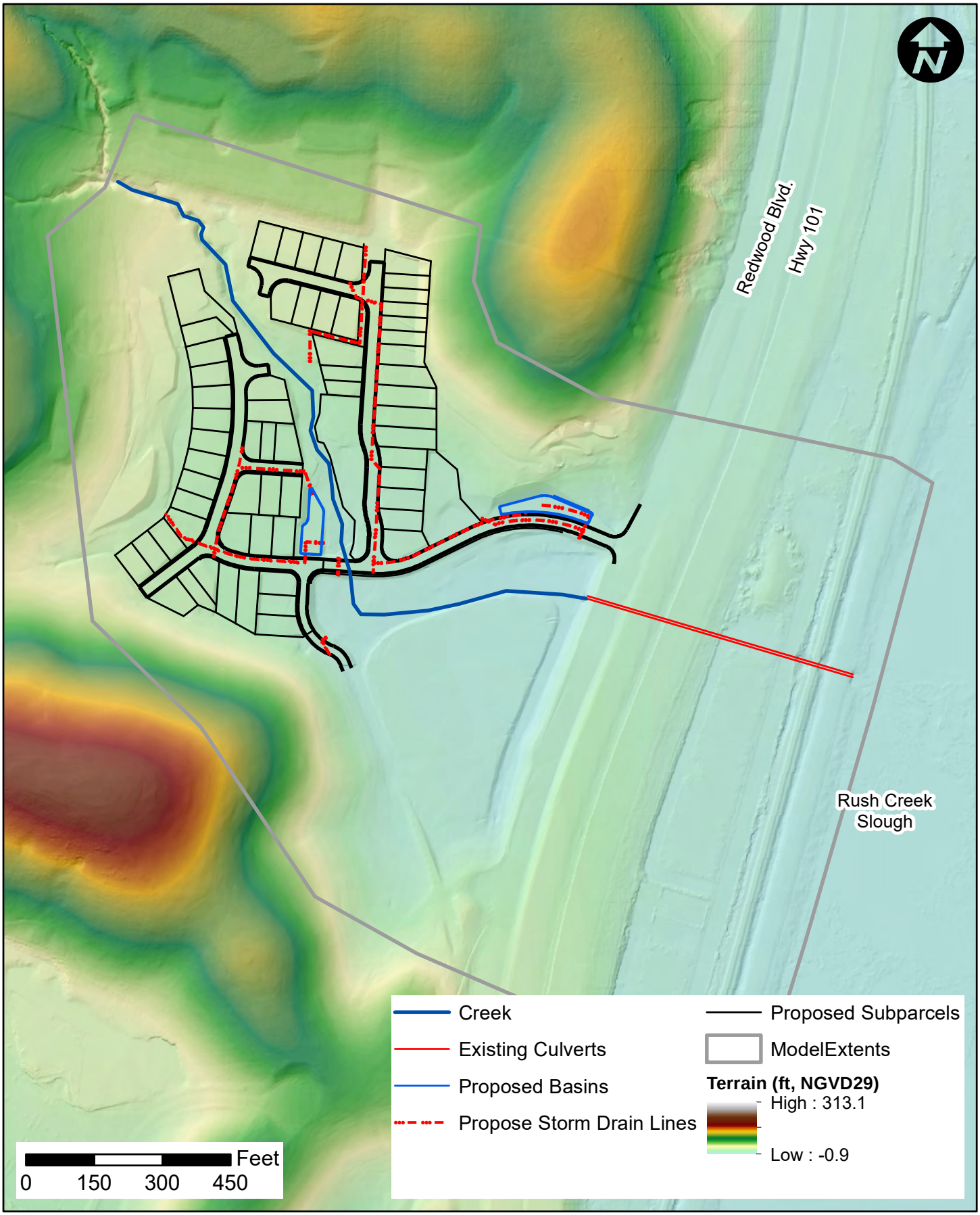
Balance Hydrologics

Figure 3. HEC-HMS Post-Project Subbasins, Valley Oaks, Marin County, California

Source: Marin County, CBG

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Balance Hydrologics

Figure **4**. HEC-RAS Extents and Terrain, Valley Oaks, Marin County, California

Source: Marin County, CBG

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Figure 5. Post-Project 25-year Modeled Depths, Valley Oaks,Marin County, California

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APPENDICES

APPENDIX A

Soil Mapping Information

Hydrologic Soil Group—Marin County, California
(ProjectParcels)



Map Scale: 1:4,150 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Marin County, California
Survey Area Data: Version 16, Sep 13, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 26, 2022—Apr 25, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
105	Blucher-Cole complex, 2 to 5 percent slopes	C/D	14.7	36.1%
128	Gilroy-Typic Argixerolls-Bonnydoon, 30 to 50 percent slopes	C	4.4	10.7%
141	Los Osos-Bonnydoon complex, 15 to 30 percent slopes	D	17.8	43.5%
146	Montara clay loam, 15 to 30 percent slopes	D	4.0	9.8%
Totals for Area of Interest			**40.8**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

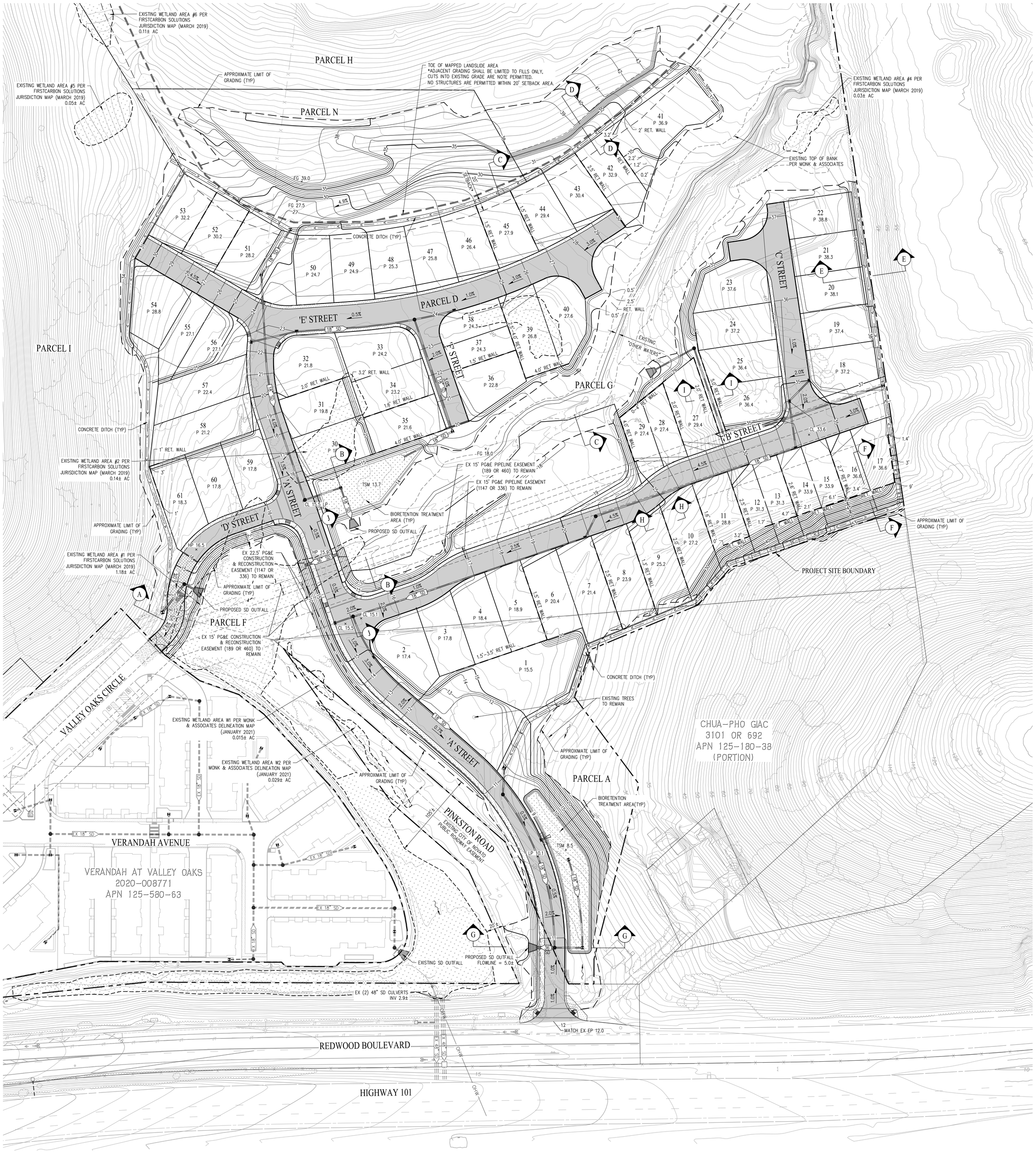
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX B

Valley Oaks Stormwater Control Plan



EARTHWORK SUMMARY
(VALLEY OAKS - NORTH)

DESCRIPTION	CUT	FILL
SITE ROUGH GRADE	8,800 CY±	52,900 CY±
FOUNDATION SPOILS	600 CY±	–
UTILITY TRENCH SPOILS	2,700 CY±	–
SUBTOTAL	12,100 CY±	52,900 CY±
NET (IMPORT)	–	40,800 CY±

EARTHWORK NOTES:

1. EARTHWORK CALCULATIONS ASSUME ADDITIONAL SPOILS FOR THICKENED FOUNDATION (12"X18" TURNDOWN AT BUILDING EDGES).
2. EARTHWORK CALCULATIONS ASSUME 12" ROADWAY STREET SECTION.
3. EARTHWORK CALCULATIONS ASSUME THE FOLLOWING TRENCH DETAILS FOR UNDERGROUND WET UTILITY SPOILS,.
   - STORM DRAIN : ASSUMED A TRENCH SECTION WITH 12" COVER ON TOP, 6" COVER ON SIDES AND 6" COVER AT THE BOTTOM.
   - SANITARY SEWER: NOVATO SANITARY SEWER DISTRICT DETAIL SD-16
   - WATER: NORTH MARINE WATER DISTRICT DETAIL STD-1
4. EARTHWORK CALCULATIONS ASSUME A [3.5'(D) X 2.5'(W)] JOINT TRENCH SECTION (APPROX 3,900 LF).
5. EARTHWORK CALCULATIONS ASSUME NATIVE MATERIAL TO BE USED IN UTILITY TRENCHES ABOVE INITIAL BACKFILL.
6. NO ADJUSTMENTS WERE MADE FOR SOIL SHRINKAGE OR EXPANSION.

LEGEND

EXISTING	PROPOSED	
		PROJECT BOUNDARY
		DAYLIGHT
		CURB, GUTTER & SIDEWALK
		RETAINING WALL
535.4 ×	535.4 ×	SPOT ELEVATION
		CONCRETE DITCH
		BIORETENTION TREATMENT AREA (APPROXIMATELY 3' DEEP)
		EXISTING WETLAND

ABBREVIATION

BRW	BOTTOM OF RETAINING WALL
CL	CENTER LINE
EX	EXISTING
FF	FINISHED FLOOR
GLIP	GARAGE LIP
P	PAD
PL	PROPERTY LINE
TC	TOP OF CURB
TRW	TOP OF RETAINING WALL

NOTES:
1. GRADING SHOWN IS PRELIMINARY AND SUBJECT TO FINAL DESIGN.
2. BUILDING FOUNDATION IS ASSUMED TO BE 12" SECTION FROM PAD TO FINISHED FLOOR. FINAL FOUNDATION SECTION TO BE CONFIRMED BY STRUCTURAL ENGINEER.
3. PRELIMINARY GRADING SHOWN EQUATES TO APPROXIMATELY 4,500 CY± OF CUT AND 3,000 CY± OF FILL, AND A NET EXPORT OF 1,500 CY±. FINAL EARTHWORK QUANTITIES TO BE CONFIRMED BY FINAL DESIGN.

FOR GRADING SECTIONS
SEE SHEET C.9

PRELIMINARY GRADING PLAN - VALLEY OAKS NORTH
VESTING TENTATIVE MAP
VALLEY OAKS

CITY OF NOVATO MARIN COUNTY CALIFORNIA

SCALE: 1" = 40' DATE: JANUARY 2023

0 40 80 120

cbg CIVIL ENGINEERS ▪ SURVEYORS ▪ PLANNERS
SAN RAMON ▪ (925) 866-0322
ROSEVILLE ▪ (916) 788-4456
WWW.CBANDG.COM

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VALLEY OAKS PROJECT
NOISE AND VIBRATION ASSESSMENT

Novato, California

May 23, 2023

Prepared for:

Michael Hooper
Campus Property Group

Prepared by:

Carrie J. Janello
Michael S. Thill

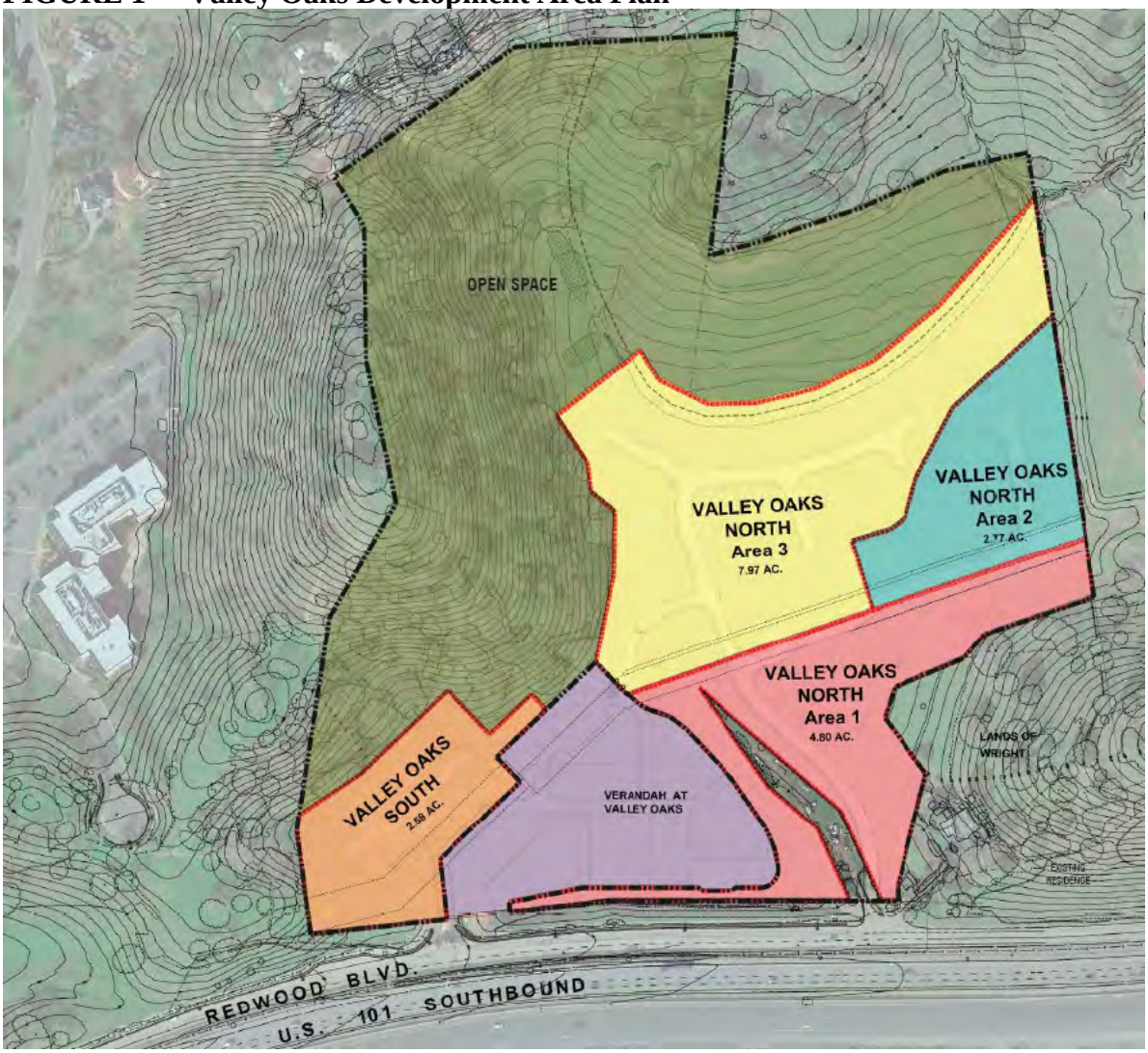
ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
429 East Cotati Avenue
Cotati, CA 94931
(707) 794-0400

Project: 23-019

INTRODUCTION

A residential development is proposed on the vacant land adjoining 100 Pinkston Road in Novato, California. The project comprises 61 two-story single-family homes and duets and 20 two- and three-story condominium townhomes with some roof decks in two distinct development areas: Valley Oaks North (Area 1, Area 2, and Area 3) and Valley Oaks South. Valley Oaks North would be accessed from Redwood Boulevard via the new Pinkston Road, and Valley Oaks South would be accessed from Verandah Avenue. Figure 1 shows all three Valley Oaks North Areas, Valley Oaks South, Verandah at Valley Oaks (under construction), and Open Space.

FIGURE 1 Valley Oaks Development Area Plan



This report evaluates the project's potential to result in significant noise and vibration impacts with respect to applicable California Environmental Quality Act (CEQA) guidelines. The report is divided into three sections: 1) the Setting Section provides a brief description of the fundamentals of environmental noise and groundborne vibration, summarizes applicable regulatory background, and describes the existing ambient noise environment at the project site; 2) the Plan Consistency

Analysis Section discusses noise and land use compatibility utilizing applicable regulatory background; and, 3) the Impacts and Mitigation Measures Section describes the significance criteria used to evaluate project impacts, provides a discussion of each project impact, and presents measures, where necessary, to mitigate the impacts of the project on sensitive receptors in the vicinity.

SETTING

Fundamentals of Environmental Noise

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its *pitch* or its *loudness*. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is the intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A *decibel (dB)* is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 1.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level (dBA).* This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This *energy-equivalent sound/noise descriptor* is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 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 added to quiet-time noise events. The *Community Noise Equivalent Level* (*CNEL*) is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 pm - 10:00 pm) and a 10 dB addition to nocturnal (10:00 pm - 7:00 am) noise levels. The *Day/Night Average Sound Level* (L_{dn} or *DNL*) 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.

Effects of Noise

Sleep and Speech Interference

The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noises of sufficient intensity (above 35 dBA) and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA L_{dn}. Typically, the highest steady traffic noise level during the daytime is about equal to the L_{dn} and nighttime levels are 10 dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12 to 17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling. Sleep and speech interference is therefore possible when exterior noise levels are about 57 to 62 dBA L_{dn} with open windows and 65 to 70 dBA L_{dn} if the windows are closed. Levels of 55 to 60 dBA are common along collector streets and secondary arterials, while 65 to 70 dBA is a typical value for a primary/major arterial. Levels of 75 to 80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed; those facing major roadways and freeways typically need special glass windows.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that the causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. When measuring the percentage of the population highly annoyed, the threshold for ground vehicle noise is about 50 dBA L_{dn}. At a L_{dn} of about 60 dBA, approximately 12 percent of the population is highly annoyed. When the L_{dn} increases to 70 dBA, the percentage of the population highly annoyed increases to about 25 to 30 percent of the population. There is, therefore, an increase of about 2 percent per dBA between a L_{dn} of 60 to 70 dBA. Between a L_{dn} of 70 to 80 dBA, each decibel increases by about 3 percent the percentage of the population highly annoyed. People appear to respond more adversely to aircraft noise. When the L_{dn} is 60 dBA, approximately 30 to 35 percent of the

population is believed to be highly annoyed. Each decibel increase to 70 dBA adds about 3 percentage points to the number of people highly annoyed. Above 70 dBA, each decibel increase results in about a 4 percent increase in the percentage of the population highly annoyed.

Fundamentals of Groundborne Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One method is the Peak Particle Velocity (PPV). The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. In this report, a PPV descriptor with units of mm/sec or in/sec is used to evaluate construction generated vibration for building damage and human complaints. Table 3 displays the reactions of people and the effects on buildings that continuous or frequent intermittent vibration levels produce. The guidelines in Table 3 represent syntheses of vibration criteria for human response and potential damage to buildings resulting from construction vibration.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generates the highest construction related groundborne vibration levels. Because of the impulsive nature of such activities, the use of the PPV descriptor has been routinely used to measure and assess groundborne vibration and almost exclusively to assess the potential of vibration to cause damage and the degree of annoyance for humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life, are evaluated against different vibration limits. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Structural damage can be classified as cosmetic only, such as paint flaking or minimal extension of cracks in building surfaces; minor, including limited surface cracking; or major, that may threaten the structural integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher. The damage criteria presented in Table 3 include several categories for ancient, fragile, and historic structures, the types of structures most at risk to damage. Most buildings are included within the categories ranging from “Historic and some old buildings” to “Modern industrial/commercial buildings”. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

The annoyance levels shown in Table 3 should be interpreted with care since vibration may be found to be annoying at lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage.

TABLE 1 Definition of Acoustical Terms Used in this Report

Term	Definition
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20 micro Pascals.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e. g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 p.m. and 7:00 a.m.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 p.m.to 10:00 p.m. and after addition of 10 decibels to sound levels measured in the night between 10:00 p.m. and 7:00 a.m.
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.

Source: Handbook of Acoustical Measurements and Noise Control, Harris, 1998.

TABLE 2 Typical Noise Levels in the Environment

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110 dBA	Rock band
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Quiet urban nighttime	40 dBA	Theater, large conference room
Quiet suburban nighttime		
	30 dBA	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20 dBA	
		Broadcast/recording studio
	10 dBA	
	0 dBA	

Source: Technical Noise Supplement (TeNS), California Department of Transportation, September 2013.

TABLE 3 Reaction of People and Damage to Buildings from Continuous or Frequent Intermittent Vibration Levels

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.01	Barely perceptible	No effect
0.04	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structure
0.08	Distinctly perceptible to strongly perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.1	Strongly perceptible	Threshold at which there is a risk of damage to fragile buildings with no risk of damage to most buildings
0.25	Strongly perceptible to severe	Threshold at which there is a risk of damage to historic and some old buildings.
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential structures
0.5	Severe – Vibrations considered unpleasant	Threshold at which there is a risk of damage to new residential and modern commercial/industrial structures

Source: Transportation and Construction Vibration Guidance Manual, California Department of Transportation, April 2020.

Regulatory Background – Noise

The State of California and the City of Novato have established noise criteria, and the California Department of Transportation (Caltrans) have established vibration criteria, that are applicable in this assessment. The State of California Environmental Quality Act (CEQA) Guidelines, Appendix G, are used to assess the potential significance of impacts pursuant to local General Plan policies, Municipal Code standards, or the applicable standards of other agencies. A summary of the applicable regulatory criteria is provided below.

Federal

Federal Transit Administration. The Federal Transit Administration (FTA) has identified construction noise thresholds in the *Transit Noise and Vibration Impact Assessment Manual*,[1] which limit daytime construction noise to 80 dBA L_{eq} at residential land uses and to 90 dBA L_{eq} at commercial and industrial land uses.

State of California

State CEQA Guidelines. CEQA contains guidelines to evaluate the significance of effects of environmental noise attributable to a proposed project. Under CEQA, noise impacts would be considered significant if the project would result in:

[1] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, FTA Report No. 0123, September 2018.

(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; or

(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, if the project would expose people residing or working in the project area to excessive noise levels.

2022 California Building Code, Title 24, Part 2. The current version of the California Building Code (CBC) requires interior noise levels in multi-family residential units attributable to exterior environmental noise sources to be limited to a level not exceeding 45 dBA L_{dn}/CNEL in any habitable room.

Local

City of Novato General Plan 2035.[2] The City of Novato's General Plan includes goals and policies to protect the community from elevated and adverse noise impacts. The goals and policies that apply to the proposed project are as follows:

Goal NS 1: Maintain a quiet community.

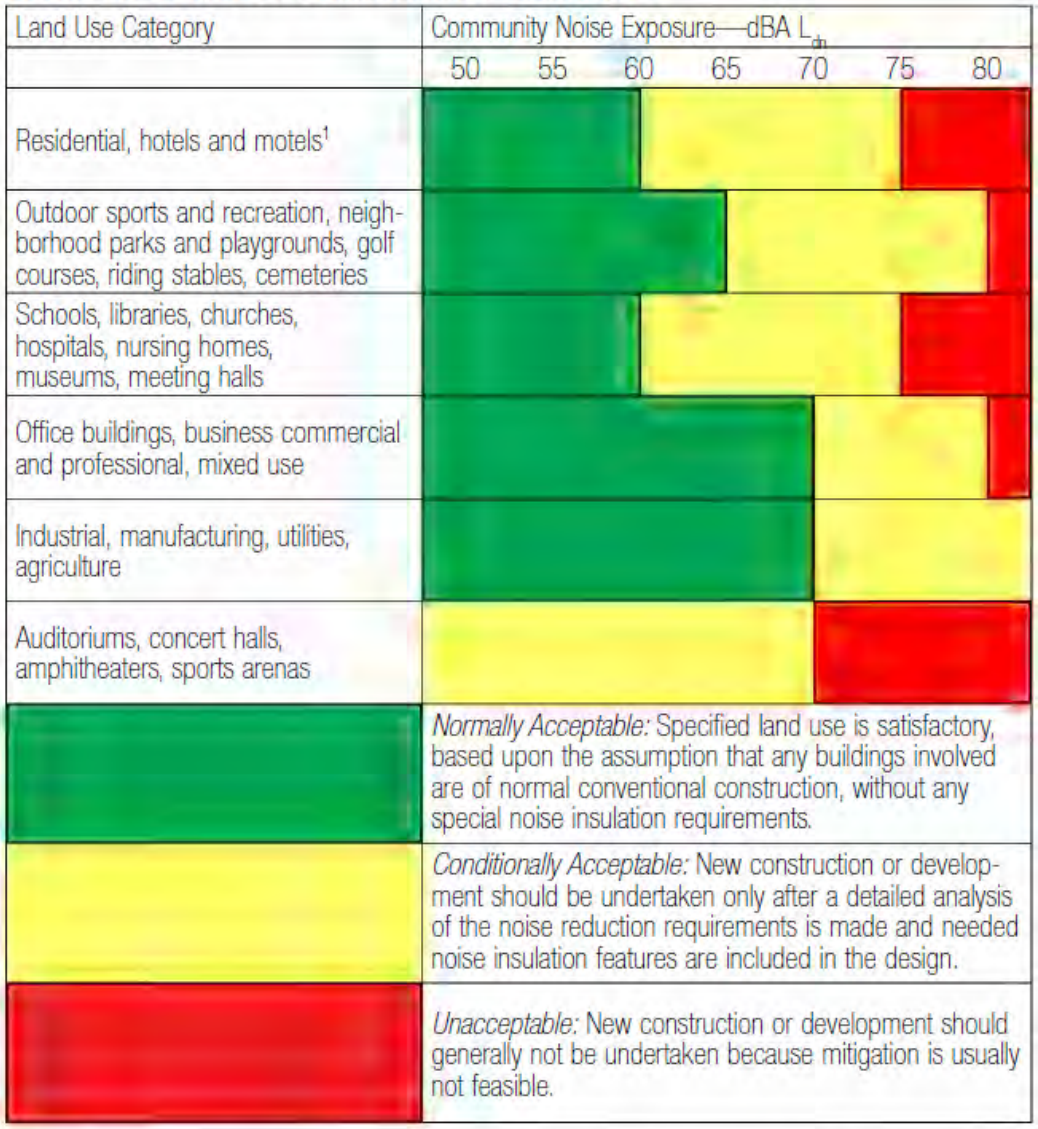
NS 1: Compatibility of New Development. Protect people in new development from excessive noise by applying the Land Use Compatibility Standards in Figure LW-5 in locating and designing new development.

> **NS 1a: Acoustical Compatibility Study.** Require an acoustical study for all new residential projects with a future exterior noise exposure of 60 dBA L_{dn} or greater as shown on Figure LW-6 and consider mitigation measures to lower noise exposure.
>
> **NS 1b: Indoor Noise Standard.** The maximum acceptable interior noise level for all new residential development, including hotels and motels, is 45 dBA L_{dn}.
>
> **NS 1c: Residential Near Gnoss Field.** An acoustical investigation and noise mitigation and noise mitigation should be considered for residential development within the 55 dBA CNEL contour. For any residential development where outdoor noise exceeds 60 dBA L_{dn} require deed disclosure to all residents of the noise levels anticipated.
>
> **NS 1d: Exterior Noise Standard.** New residential development should be located in areas where outdoor noise levels are no greater than 60 dBA L_{dn} in areas where outdoor use is a major consideration, such as backyards in single family developments and recreation areas in multifamily developments. This standard should not be applied to outdoor areas such as small decks and balconies typically associated with multifamily residential developments,

[2] City of Novato General Plan 2035, adopted October 27, 2020.

which can have a higher standard of 65 dBA L_{dn}. This standard shall not apply to outdoor areas for residences in mixed use developments. Additional standards may be applied on a case-by-case basis where supported by acoustical analysis to mitigate the effects of single-event noise sources such as aircraft noise.

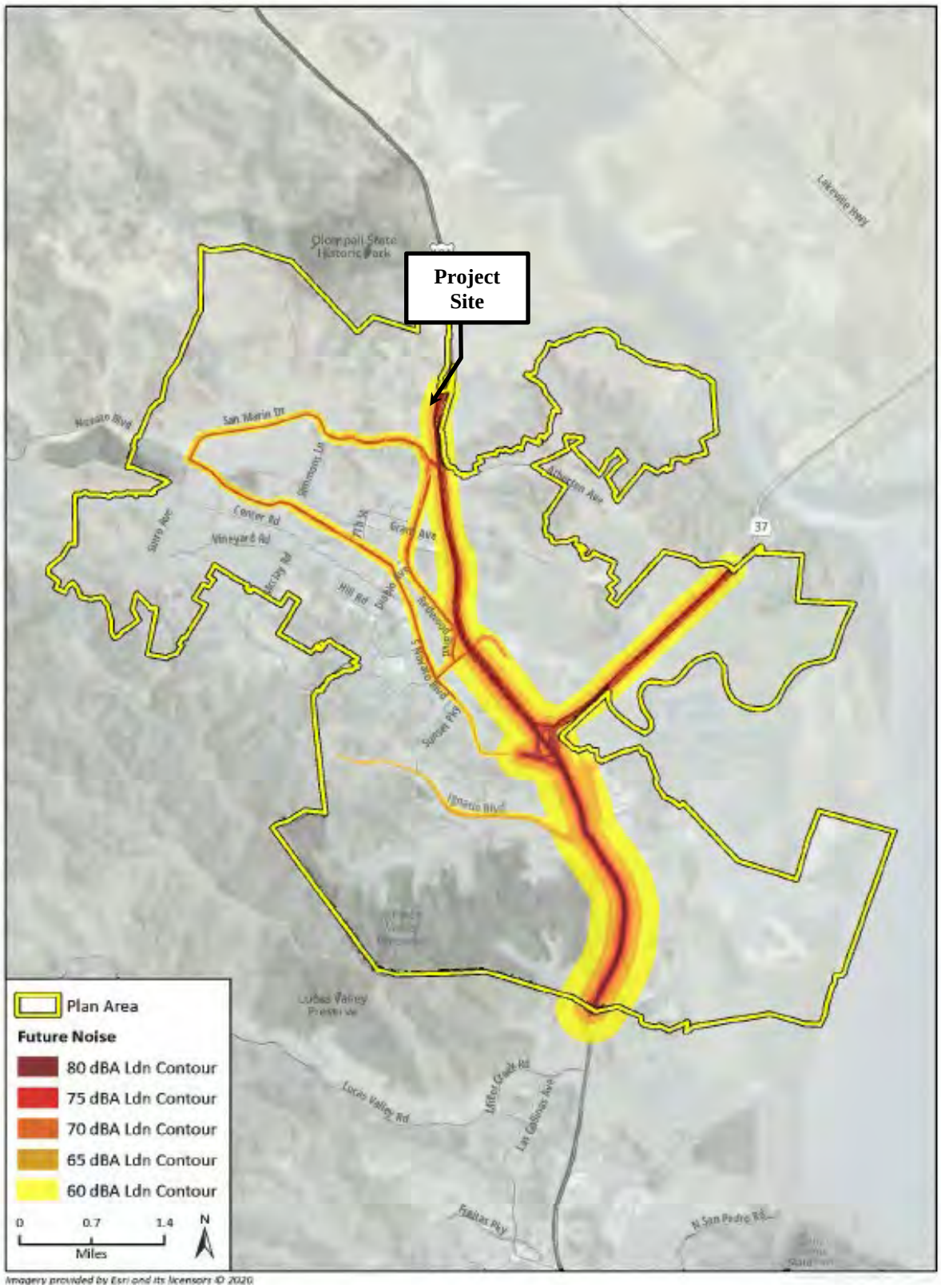
FIGURE LW-5 LAND USE COMPATIBILITY STANDARDS



1 Outdoor areas of multi-family developments are allowed a higher noise compatibility standard of 65 dBA Ldn.

Source: City of Novato General Plan 2023, adopted October 27, 2020.

FIGURE LW-6 PROJECTED FUTURE NOISE CONTOURS



Source: City of Novato General Plan 2023, adopted October 27, 2020.

NS 2: Noise Impacts of Development. Prevent land uses which increase surrounding noise levels above acceptable standards.

> **NS 2a: Acoustic Impact Study.** Require acoustical studies and mitigation measures for new developments and transportation improvements which affect sensitive receptors such as schools, hospitals, libraries, group care facilities, and convalescent homes.
>
> **NS 2b: Noise Mitigation.** Consider mitigation measures for new projects or land uses that would cause a substantial increase in noise (i.e., cause an increase above 60 dBA L_{dn} or cause an increase of 5 dBA L_{dn} or more in the noise ambient noise levels) in adjacent residential areas or in residential areas affected by traffic generated by the proposed project.

NS 3: Noise Mitigation – Sound Walls. To minimize noise impacts consider site planning options prior to consideration of sound wall construction, such as increasing the distance from the noise source and receiver, careful building placement and taking advantage of the natural shape and terrain of the landscape. Avoid sound walls where possible, but where necessary, reduce visual impacts with interesting wall design and extensive landscaping.

NS 4: Traffic Noise. Minimize traffic noise through law enforcement, land use policies and landscaping.

> **NS 4a: Caltrans Noise Mitigation.** Work with Caltrans to ensure that adequate noise studies are prepared and alternative noise mitigation measures are considered in State projects, and request that Caltrans obtain City concurrence prior to initiating any noise mitigation project in Novato.
>
> **NS 4b: Vehicle Code Noise Enforcement.** Enforce the California Vehicle Code pertaining to excessively loud vehicles operated on city streets.
>
> **NS 4c: Roadway Surfacing.** Consider the use of paving material for street surfacing and/or other materials that absorb and minimize noise for arterial and collector streets in high-noise environments.
>
> **NS 4b: Vehicle Code Noise Enforcement.** Enforce the California Vehicle Code pertaining to excessively loud vehicles operated on city streets.

City of Novato Municipal Code. The City of Novato Municipal Code includes noise level performance limits and construction allowable hours. The following apply to the proposed project:

Chapter 19.22.070 – Noise and Construction Hours.

A. *Applicability.* Uses, activities, and processes shall not generate or emit any noise or sound in excess of the levels provided in Table 3-5 beyond the property line of the parcel on which they are located, except as provided in subsection B of this section.

B. *Exceptions.* The following are exempt from the allowable noise level requirements of Table 3-5 as noted.

3. Airport, and railroad operations;

4. Authorized construction activities, including warming-up or servicing of equipment, and any preparation for construction between 7:00 a.m. and 6:00 p.m. on weekdays, and between 10:00 a.m. and 5:00 p.m. on Saturdays. No construction is allowed on Sundays or official federal national holidays, except as otherwise authorized herein by the community development director;

5. Authorized grading activities and equipment operations between 7:00 a.m. to 6:00 p.m. weekdays only, when City inspectors are available;

6. Routine maintenance activities;

7. Other construction activities as authorized in writing by the community development director.

C. *Noise Measurement.* Exterior noise levels shall be measured at the property line of the noise source. Noise measurement shall be made with a sound level meter using the "A" weighted scale at slow meter response. Fast meter response shall be used only for an impulsive noise.

Table 3-5

Allowable Exterior Noise Levels

Type of Land Use	Allowable Exterior Levels (1)	
	Time Interval	Maximum Noise Level (2)
Residential	10 p.m. to 6 a.m.	45 dBA
	6 a.m. to 10 p.m.	60 dBA
Commercial	10 p.m. to 6 a.m.	60 dBA
	6 a.m. to 10 p.m.	70 dBA
Industrial or manufacturing	Any time	70 dBA

Notes: (1) Each of the noise limits specified in Table 3-5 shall be reduced by 5 dBA for impulse or simple tone noises. If the ambient noise exceeds the resulting stanard, the ambient shall be the standard.
(2) Maximum noise levels shall not be exceeded for an aggregate period of more than three minutes within a one-hour time period or by more than 20 dBA at any time.

Regulatory Background – Vibration

California Department of Transportation. To avoid damage to buildings, Caltrans recommends that construction vibration levels are limited to 0.5 in/sec PPV for buildings structurally sound and designed to modern engineering standards, to 0.3 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, to 0.25 in/sec PPV for historic and some old buildings, and to 0.08 in/sec PPV for ancient buildings or buildings that are documented to be structurally weakened (see Table 3).

Existing Noise Environment

The project site is located west of U.S. Highway 101 and Redwood Boulevard and north of the Birkenstock USA LP building in the City of Novato, California. The site is mostly undeveloped with hilly terrain. A single structure is located on the site at the terminus of Pinkston Road and would be demolished as part of the project. The site is bound to the east by Redwood Boulevard; to the south by the Birkenstock building and undeveloped land; to the west by an existing residential development; and to the north by a single-family residence (100 Pinkston Road) and the Buck Institute for Research in Ageing. Opposite Redwood Boulevard and Highway 101 to the east is a self-storage facility, a rental car facility, and office buildings.

The noise environment at the site and in the surrounding area results primarily from vehicular traffic along Highway 101. Aircraft associated with Gnoss Field-DVO Airport also contributes to the noise environment.

A noise monitoring survey, which included three long-term (LT-1 through LT-3) and two short-term noise (ST-1 and ST-2) measurements, was performed at the site beginning on Thursday March 30, 2023 and concluding on Monday April 3, 2023. All measurement locations are shown in Figure 2. It should be noted that the Verandah at Valley Oaks (shown in Figure 1 in purple) is currently under construction. Most of the measurement locations were selected where construction activities would not affect the noise measurements; however, some construction noise was measured during the noise monitoring survey.

Long-term noise measurement LT-1 was made at the eastern boundary of the project site, approximately 190 feet from the centerline of the nearest through lane along southbound Highway 101 and approximately 125 feet from the centerline of Redwood Boulevard. Weekday hourly average noise levels at LT-1 typically ranged from 61 to 68 dBA L_{eq} during the daytime hours and from 56 to 68 dBA L_{eq} during nighttime hours. On weekends, hourly average noise levels typically ranged from 62 to 66 dBA L_{eq} during daytime hours and from 57 to 64 dBA L_{eq} during nighttime hours. The day-night average noise level (L_{dn}) ranged from 67 dBA L_{dn} on weekends to 71 dBA L_{dn} on weekdays. The daily trends in noise levels at LT-1 are shown in Figures A1 through A5 in the Appendix of this report.

LT-2 was made in the southwestern corner of the portion of the project site to be developed with housing, approximately 1,065 feet from the centerline of the nearest through lane along southbound Highway 101 and approximately 1,000 feet from the centerline of Redwood Boulevard. Weekday hourly average noise levels at LT-2 typically ranged from 45 to 57 dBA L_{eq} during the daytime hours and from 42 to 55 dBA L_{eq} at night. On weekends, hourly average noise levels typically ranged from 47 to 57 dBA L_{eq} during daytime hours and from 41 to 50 dBA L_{eq} during nighttime hours. The day-night average noise level (L_{dn}) ranged from 53 dBA L_{dn} on weekends to 58 dBA L_{dn} on weekdays. The daily trends in noise levels at LT-2 are shown in Figures A6 through A10 in the Appendix of this report.

LT-3 was made near the existing residences located west of the project site, approximately 1,640 feet from the centerline of the nearest through lane along southbound Highway 101 and approximately 1,575 feet from the centerline of Redwood Boulevard. Weekday hourly average

noise levels at LT-3 typically ranged from 40 to 50 dBA L_{eq} during the daytime hours and from 38 to 49 dBA L_{eq} at night. On weekends, hourly average noise levels typically ranged from 40 to 54 dBA L_{eq} during daytime hours and from 35 to 43 dBA L_{eq} during nighttime hours. The day-night average noise level (L_{dn}) ranged from 48 dBA L_{dn} on weekends to 51 dBA L_{dn} on weekdays. The daily trends in noise levels at LT-3 are shown in Figures A11 through A15 in the Appendix of this report.

Each short-term noise measurement was made on Monday April 3, 2023 in 10-minute intervals between 9:00 a.m. and 9:10 a.m. Table 4 summarizes the metrics measured at all three short-term measurements.

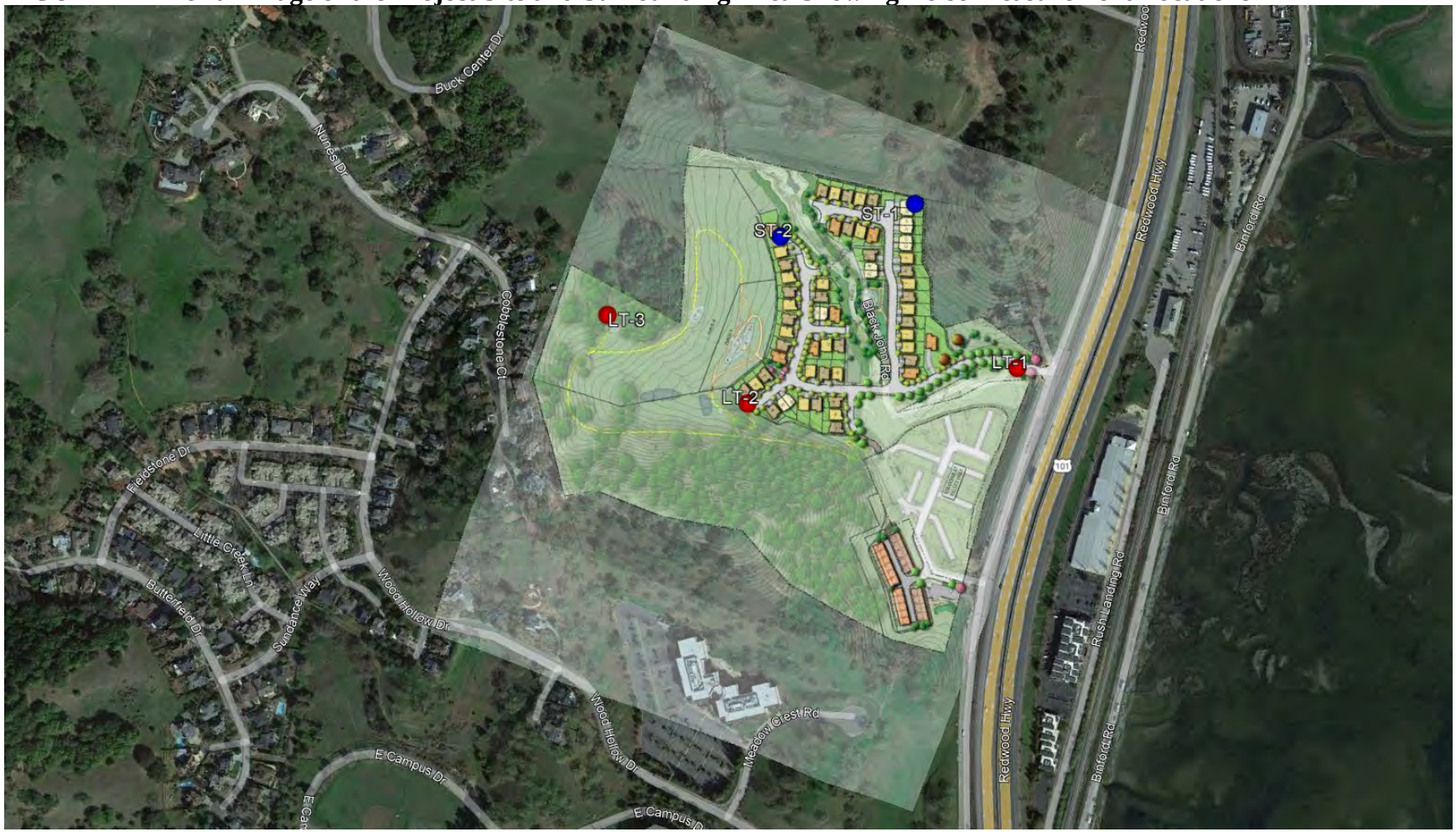
ST-1 was made in the northeastern corner of the project site, approximately 730 feet west of the centerline of the nearest through lane of southbound Highway 101. ST-1 was shielded from Highway 101 by a hill; however, the noise environment at ST-1 was still dominated by traffic noise from Highway 101, which generated noise levels ranging from 45 to 55 dBA. The nearby construction activities at the Verandah at Valley Oaks site generated noise levels up to 57 dBA at ST-1. The 10-minute average noise levels at ST-1 during this measurement period was 48 dBA L_{eq}.

ST-2 was set back farther from Highway 101 than ST-1 (approximately 1,155 feet west of the centerline of the nearest through lane in the southbound direction), to the west of the existing barn currently located on the site. Traffic noise from Highway 101 was the dominant noise source at ST-2 despite the shielding from the hill. Traffic noise levels typically ranged from 45 to 54 dBA at ST-2. A gate slamming was also observed at ST-2, generating noise levels up to 63 dBA. The 10-minute average noise level at ST-2 was 49 dBA L_{eq}.

TABLE 4 Summary of Short-Term Noise Measurement Data (dBA)

Noise Measurement Location	Date, Time	L_{max}	$L_{(1)}$	$L_{(10)}$	$L_{(50)}$	$L_{(90)}$	10-min L_{eq}
ST-1: ~730 feet from the centerline of the nearest through lane of southbound Highway 101	4/3/2023, 9:00-9:10 a.m.	60	54	51	47	45	48
ST-2: ~1,155 feet from the centerline of the nearest through lane of southbound Highway 101	4/3/2023, 9:00-9:10 a.m.	63	55	51	48	46	49

FIGURE 2 Aerial Image of the Project Site and Surrounding Area Showing Noise Measurement Locations



Source: Google Earth, 2023.

PLAN CONSISTENCY ANALYSIS

Noise and Land Use Compatibility

Policy NS-1 and Figure LW-5 of the City's General Plan require exterior noise levels at the residential backyards of the single-family homes to be maintained at or below 60 dBA L_{dn} to be considered normally acceptable. Outdoor areas, such as small decks and balconies typically associated with multifamily residential developments, should be maintained at or below 65 dBA L_{dn}. Additionally, residential interior noise levels are required to meet the performance standard of 45 dBA L_{dn}.

The future noise environment at the project site would continue to be dominated by traffic along Highway 101. The traffic study completed for the proposed project did not include volumes along Highway 101 but included 62 project trips during the peak AM hour and 75 project trips during the peak PM hour. To estimate a traffic noise increase along Highway 101 under future conditions, a conservative 1% to 2% increase in traffic volumes each year for the next 20 years was assumed for standard traffic volume increase in a developed area. Under this assumption, the total increase by the year 2043 would be about 2 dBA L_{dn} at the project site.

Future Exterior Noise Environment

The single-family residences located on each of the Valley Oaks North Areas would have backyards subject to the City's exterior noise threshold of 60 dBA L_{dn}. Additionally, some of the townhome units in Valley Oaks South would have rooftop decks. While specific units with rooftop decks have not been indicated, these outdoor spaces would be subject to the City's 65 dBA L_{dn} threshold.

Valley Oaks North

Single-family backyards with direct line-of-sight to Highway 101 would include Lots 1 through 10 on the Valley Oaks North Area 1 site. Backyards of Lots 11 through 17 would face Highway 101 but would be mostly shielded from the existing hill. The centers of the backyards at Lots 1 through 3 would range from 500 to 535 feet from the centerline of the nearest through lane of Highway 101 southbound. At these distances, future exterior noise levels would range from below 60 to 63 dBA L_{dn}, which would exceed the 60 dBA L_{dn} threshold by up to 3 dBA. The center of Lot 10 would be set back approximately 650 feet, which would result in future exterior noise levels ranging from below 60 to 61 dBA L_{dn}.

All other backyards would be facing away from Highway 101 with the residences providing shielding, would be located behind the hill, would be shielded by other intervening residential buildings on the site, or would be 800 feet or more from the centerline of the nearest through lane of Highway 101 southbound. Future exterior noise levels at the centers of all other backyards located on the Valley Oaks North site would be less than 60 dBA L_{dn}.

Valley Oaks South

Rooftop decks located on the third floors of the Valley Oaks South townhomes would be set back approximately 260 to 470 feet from the centerline of the nearest through lane of Highway 101

southbound. Due to these distances, the rooftop decks would receive little attenuation from the elevations of the third-floor locations. Future exterior noise levels at the centers of the rooftop decks would range from 60 to 69 dBA L_{dn}, which would exceed the City's 65 dBA L_{dn} threshold.

Summary

Backyards of the single-family residences located on Lots 1 through 10 would have direct line-of-sight to Highway 101 and would be exposed to future exterior noise levels exceeding 60 dBA L_{dn} by up to 3 dBA. Noise control measures would be required to meet the City's exterior noise limits.

Future exterior noise levels at the centers of the rooftop decks of the Valley Oaks South townhomes would exceed the City's 65 dBA L_{dn} by 4 dBA. Since the future exterior noise levels would fall within the conditionally acceptable range for exterior noise, the City could permit these outdoor use areas without measures to reduce noise levels to 65 dBA L_{dn} or below on a conditional basis. If, however, the City requires 65 dBA L_{dn} to be met at each rooftop deck, noise control measures would be required to reduce noise levels.

Recommended Measures to Reduce Exterior Noise Levels

Methods available to reduce exterior noise levels at the backyards with direct line-of-sight to Highway 101 (Lots 1 through 10 of Valley Oaks North) include site planning alternatives (e.g., increased setbacks and using the proposed buildings as noise barriers), the construction of traditional noise barriers or earth berms, or a combination of the above. For the proposed project, the following options would effectively reduce noise levels to 60 dBA L_{dn} or below at residential backyards:

- Reorientating the residences so the backyards are shielded from the roadway by the structures would adequately shield the backyards from traffic noise.[3]

- Increasing setbacks of the centers of the backyards to 750 feet or more from the centerline of the nearest through lane of Highway 101 southbound, would reduce noise levels in the backyards to 60 dBA L_{dn} or below.[3]

- Constructing sound walls, specially-designed barrier fences, or berm/wall combinations capable of reducing noise levels by up to 3 dBA. Privacy fences constructed around each residential property line would adequately block the line-of-sight of each backyard to Highway 101. The minimum height required would be five feet, as measured from the pad elevation of each residence. The proposed barriers should be continuous from grade to top, with no cracks or gaps, and have a minimum surface density of three lbs/ft^2 (e.g., one-inch thick wood fence boards, ½-inch laminated glass, concrete masonry units (CMU), or masonry). In the case of a berm/wall combination, the combined height should be five feet, with no cracks between the top of the berm and the bottom of the wall.

For the rooftop decks, increased setbacks would not be a feasible option due to the limitations of the Valley Oaks South site. The optimal solution, therefore, would be to construct barriers around the perimeters of the rooftop decks. To maintain aesthetic appeal, laminated glass barriers with a

[3] This recommendation would require redesigning the site.

minimum surface density of three lbs/ft^2 would be recommended. The minimum height required would be five feet, as measured from the floor of the rooftop. Assuming no cracks or gaps in the rooftop barriers, future exterior noise levels would be reduced to 65 dBA L_{dn} or below.

The final recommendations for noise attenuation shall be confirmed when detailed site plans and grading plans are available during final design of the project. A qualified acoustical consultant shall be retained to study the final plans and confirm final recommendations capable of reducing future exterior noise levels to 60 dBA L_{dn} or below at the centers of each proposed residential backyard in Valley Oaks North and to 65 dBA L_{dn} or below at the centers of the rooftop decks in Valley Oaks South.

Future Interior Noise Environment

Standard residential construction provides approximately 15 dBA of exterior-to-interior noise reduction, assuming the windows are partially open for ventilation. Standard construction with the windows closed provides approximately 20 to 25 dBA of noise reduction in interior spaces. Where exterior noise levels range from 60 to 65 dBA L_{dn}, the inclusion of adequate forced-air mechanical ventilation is often the method selected to reduce interior noise levels to acceptable levels by closing the windows to control noise. Where noise levels exceed 65 dBA L_{dn}, forced-air mechanical ventilation systems and sound-rated construction methods are normally required. Such methods or materials may include a combination of smaller window and door sizes as a percentage of the total building façade facing the noise source, sound-rated windows and doors, sound rated exterior wall assemblies, and mechanical ventilation so windows may be kept closed at the occupant's discretion.

The nearest façade of the single-family residence on Lot 1 would be set back 495 feet from the centerline of the nearest through lane of Highway 101 southbound. At this distance, the units facing the roadway would be exposed to future exterior noise levels up to 64 dBA L_{dn}. Assuming windows to be partially open, future interior noise levels in the residence on Lot 1 would be up to 48 dBA L_{dn}.

All other single-family residences in Valley Oaks North would be set back farther from Highway 101 and would be exposed to future exterior noise levels at or below 64 dBA L_{dn}. Assuming windows to be partially open, future interior noise levels in all other single-family residences would be at or below 48 dBA L_{dn}.

The end townhome unit of Building 3 on the Valley Oaks South site would be closest unit to Highway 101, with a setback of approximately 240 feet from the centerline of the nearest through lane in the southbound direction. At this distance, the townhome would be exposed to future exterior noise levels up to 70 dBA L_{dn}. Assuming windows to be partially open, future interior noise levels in the end unit of Building 3 would be at or below 55 dBA L_{dn}.

The townhome unit located at the south end of Building 4, which also has direct line-of-sight to Highway 101, would be set back approximately 320 feet from the centerline of the nearest through lane in the southbound direction. At this distance, the townhome would be exposed to future

exterior noise levels up to 67 dBA L_{dn}. Assuming windows to be partially open, future interior noise levels in the end unit of Building 4 would be at or below 52 dBA L_{dn}.

While most of the townhome units located in Buildings 1 and 2 would be shielded by Buildings 3 and 4, the end unit of Building 1, with a setback of 300 feet from the centerline of the nearest through lane of Highway 101 southbound, would have direct line-of-sight to the highway. At this distance, the corner unit located at the south end of Building 1 would be exposed to future exterior noise levels up to 68 dBA L_{dn}. Assuming windows to be partially open, future interior noise levels would be up to 53 dBA L_{dn}.

To meet the interior noise requirements of 45 dBA L_{dn}, implementation of noise insulation features would be required.

Noise Insulation Features to Reduce Future Interior Noise Levels

The following noise insulation features shall be incorporated into the proposed project to reduce interior noise levels to 45 dBA L_{dn} or less at residential interiors:

- Provide a suitable form of forced-air mechanical ventilation, as determined by the local building official, for all residential dwellings on the project site where 60 dBA L_{dn} would be exceeded (located within approximately 700 feet of Highway 101), so that windows can be kept closed at the occupant's discretion to control interior noise and achieve the interior noise standards.

- Preliminary calculations indicate that single-family dwellings located on Valley Oaks North would meet the 45 dBA L_{dn} threshold with standard construction materials with the incorporation of adequate forced-air mechanical ventilation.

- For townhome units in Building 3, windows and doors with a minimum rating of 30 to 31 STC with adequate forced-air mechanical ventilation would be required to meet the interior noise threshold of 45 dBA L_{dn}.

- The remaining townhome units on Valley Oaks South would require windows and doors with a minimum rating of 28 to 30 STC with adequate forced-air mechanical ventilation to meet the interior noise threshold of 45 dBA L_{dn}.

The implementation of these noise insulation features would reduce interior noise levels to 45 dBA L_{dn} or less at residential uses. A project-specific acoustical analysis shall be prepared during final design to ensure that the design incorporates controls to reduce interior noise levels to 45 dBA L_{dn} or lower within the residential units. The project applicant shall conform with any special building construction techniques requested by the City's Building Department, which may include sound-rated windows and doors, sound-rated wall constructions, and acoustical caulking.

NOISE IMPACTS AND MITIGATION MEASURES

Significance Criteria

The following criteria were used to evaluate the significance of environmental noise resulting from the project:

(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; or

(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, if the project would expose people residing or working in the project area to excessive noise levels.

Impact 1a: **Temporary Construction Noise.** Existing and future noise-sensitive land uses would be exposed to a temporary increase in ambient noise levels due to project construction activities that would potentially exceed 80 dBA L_{eq}. This would be a **potentially significant** impact.

As shown in Figure 3, the project would be constructed in two phases: Phase 1 includes Valley Oaks South and Valley Oaks North Areas 1 and 2; and Phase 2 includes Valley Oaks North Area 3. The earliest possible start date for Phase 1 construction would be the beginning of April 2025, and Phase 1 is expected to be completed in 15 months. The earliest possible start date for Phase 2 would be the beginning of April 2026, and Phase 2 is expected to be completed in 18 months. Each phase would include demolition, site preparation, grading, trenching, building construction, architectural coating, and paving stages. During each stage of construction, there would be a different mix of equipment operating, and noise levels would vary by phase and vary within phases, based on the amount of equipment in operation and the location at which the equipment is operating.

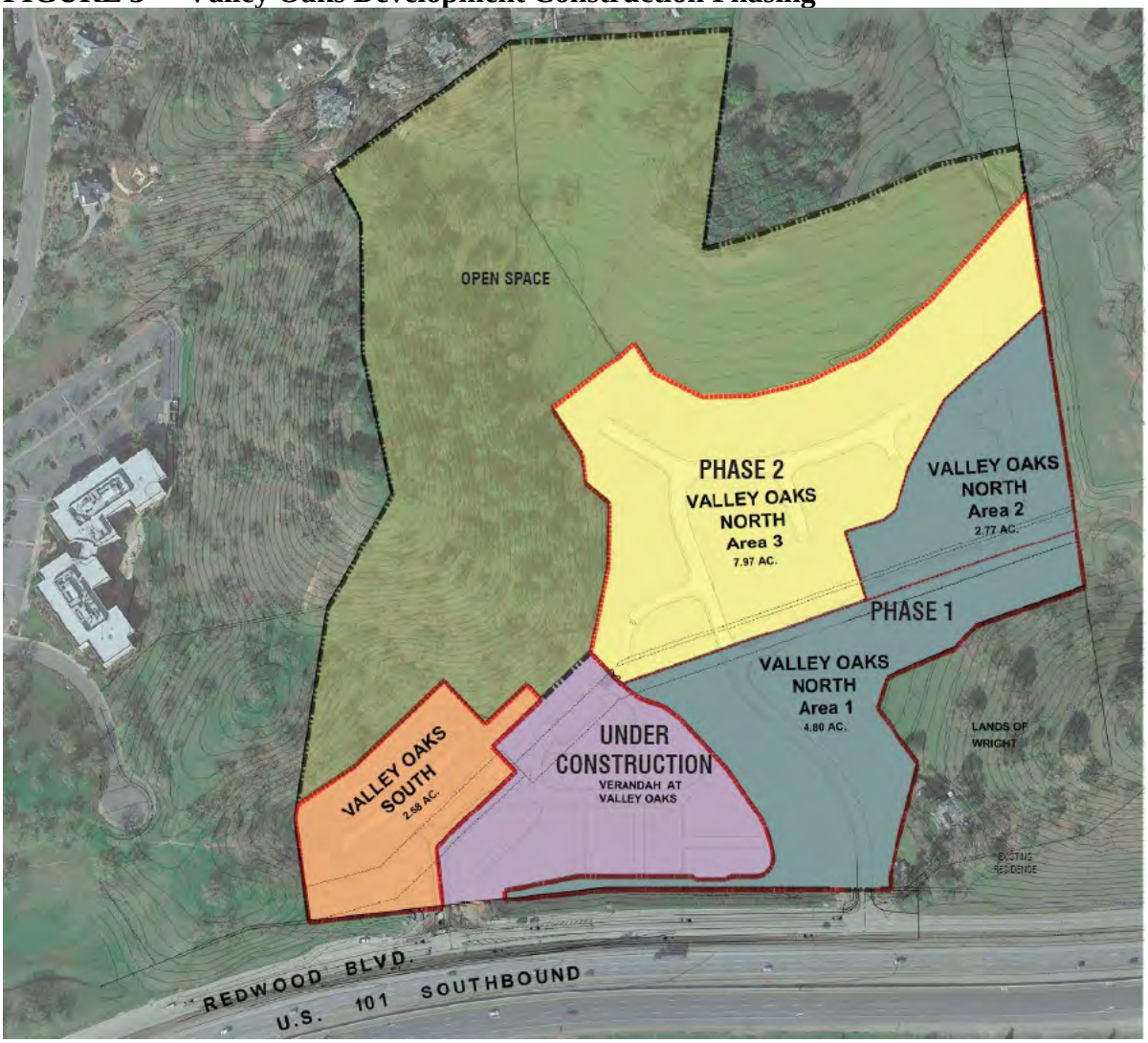
Noise impacts resulting from construction depend upon the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise-sensitive areas. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (e.g., early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction lasts over extended periods of time.

The City's Municipal Code limits grading activities and equipment operations to the hours of 7:00 a.m. to 6:00 p.m. on weekdays only. Construction activities, including warming up or servicing equipment and any preparation for construction are limited to the hours of 7:00 a.m. to 6:00 p.m. on weekdays and to the hours of 10:00 a.m. to 5:00 p.m. on Saturdays. No construction is allowed

on Sundays or official federal national holidays, except as otherwise authorized by the community development director.

While noise thresholds for temporary construction are not provided in the City's General Plan or Municipal Code, this analysis uses the noise limits established by the Federal Transit Administration (FTA) to identify the potential for impacts due to substantial temporary construction noise. The FTA identifies construction noise limits in the *Transit Noise and Vibration Impact Assessment Manual*.[1] During daytime hours, an exterior threshold of 80 dBA L_{eq} shall be applied at residential land uses and 90 dBA L_{eq} shall be applied at commercial and industrial land uses.

FIGURE 3 Valley Oaks Development Construction Phasing



Construction activities generate considerable amounts of noise, especially during earth-moving activities when heavy equipment is used. The typical range of maximum instantaneous noise levels for the proposed project would be 70 to 90 dBA L_{max} at a distance of 50 feet (see Table 5). Table 6 shows typical hourly average construction-generated noise levels measured at a distance of 50

feet from the center of the site during busy construction periods (e.g., earth moving equipment, impact tools, etc.). As shown in Table 6, typical residential buildings generate construction noise levels ranging from 72 to 88 dBA L_{eq} at a distance of 50 feet from the center of the active site. Construction-generated noise levels drop off at a rate of about 6 dBA per doubling of the distance between the source and receptor. Shielding by buildings or terrain often result in lower construction noise levels at distant receptors; however, for purposes of assessing a worst-case scenario, construction noise levels in this report are estimated assuming no attenuation due to intervening buildings or structures.

Equipment expected to be used in each construction stage for the Valley Oaks South, the Valley Oaks North Areas 1 and 2, and Valley Oaks North Area 3 are summarized in Tables 7, 8, and 9, respectively, along with the quantity of each type of equipment and the reference noise level at 50 feet, assuming the operation of the two loudest pieces of construction equipment for each construction phase.

Federal Highway Administration's (FHWA's) Roadway Construction Noise Model (RCNM) was used to calculate the hourly average noise levels for each phase of construction, assuming the two loudest pieces of equipment would operate simultaneously, as recommended by the FTA for construction noise evaluations. This construction noise model includes representative sound levels for the most common types of construction equipment and the approximate usage factors of such equipment that were developed based on an extensive database of information gathered during the construction of the Central Artery/Tunnel Project in Boston, Massachusetts (CA/T Project or "Big Dig"). The usage factors represent the percentage of time that the equipment would be operating at full power. Tables 7, 8, and 9 also summarize the construction noise levels for the two loudest pieces of equipment propagated to the surrounding receiving land uses.

To assess construction noise impacts at the receiving property lines of existing noise-sensitive receptors, the worst-case hourly average noise level, which would result in the noise levels calculated from all equipment per stage operating simultaneously, was propagated from the geometrical center of the nearest project site to the nearest property lines or building façades of the surrounding land uses. Since each of the Phase 1 developments would occur simultaneously and are so spread out with terrain implications, which would provide some shielding, construction noise during Phase 1 construction activities was propagated from the center of the nearest construction site to the property lines of the surrounding land uses. Tables 10 and 11 summarize worst-case construction noise levels during Phase 1 and Phase 2 at the property lines of the surrounding receptors. Note, for the future Verandah at Valley Oaks site, the future residences along the southern boundary would be exposed to Valley Oaks South construction activities but would be shielded from Valley Oaks North Area 1 construction activities by intervening on-site residences. No one receptor would be exposed to excessive construction noise from both sites simultaneously. For assessing worst-case scenario, the nearest distance from the center of the project construction site is summarized in Table 10.

As shown in Tables 7 through 9, construction noise levels would intermittently range from 74 to 85 dBA L_{eq} when construction activities occur 50 feet from the surrounding receptors. When activities are located near the center the nearest project sites, Phase 1 construction activities would range from 48 to 77 dBA L_{eq} at existing and future residences surrounding the site and would range

from 54 to 66 dBA L_{eq} at existing offices, commercial uses, and storage facilities surrounding the site; Phase 2 would generate construction noise levels ranging from 49 to 67 dBA L_{eq} at existing and future residences surrounding the site and from 46 to 59 dBA L_{eq} at existing offices, commercial uses, and storage facilities surrounding the site when activities are located near the center of the site.

Construction noise levels would potentially exceed the exterior threshold of 80 dBA L_{eq} at residential land uses when activities area located 50 feet from the construction sites. This would be a significant impact.

TABLE 5 Construction Equipment, 50-foot Noise Emission Limits

Equipment Category	L_{max} Level (dBA)[1,2]	Impact/Continuous
Arc Welder	73	Continuous
Auger Drill Rig	85	Continuous
Backhoe	80	Continuous
Bar Bender	80	Continuous
Boring Jack Power Unit	80	Continuous
Chain Saw	85	Continuous
Compressor[3]	70	Continuous
Compressor (other)	80	Continuous
Concrete Mixer	85	Continuous
Concrete Pump	82	Continuous
Concrete Saw	90	Continuous
Concrete Vibrator	80	Continuous
Crane	85	Continuous
Dozer	85	Continuous
Excavator	85	Continuous
Front End Loader	80	Continuous
Generator	82	Continuous
Generator (25 KVA or less)	70	Continuous
Gradall	85	Continuous
Grader	85	Continuous
Grinder Saw	85	Continuous
Horizontal Boring Hydro Jack	80	Continuous
Hydra Break Ram	90	Impact
Impact Pile Driver	105	Impact
Insitu Soil Sampling Rig	84	Continuous
Jackhammer	85	Impact
Mounted Impact Hammer (hoe ram)	90	Impact
Paver	85	Continuous
Pneumatic Tools	85	Continuous
Pumps	77	Continuous
Rock Drill	85	Continuous
Scraper	85	Continuous
Slurry Trenching Machine	82	Continuous
Soil Mix Drill Rig	80	Continuous
Street Sweeper	80	Continuous
Tractor	84	Continuous
Truck (dump, delivery)	84	Continuous
Vacuum Excavator Truck (vac-truck)	85	Continuous
Vibratory Compactor	80	Continuous
Vibratory Pile Driver	95	Continuous
All other equipment with engines larger than 5 HP	85	Continuous

Notes: [1] Measured at 50 feet from the construction equipment, with a "slow" (1 sec.) time constant.

[2] Noise limits apply to total noise emitted from equipment and associated components operating at full power while engaged in its intended operation.

[3]Portable Air Compressor rated at 75 cfm or greater and that operates at greater than 50 psi.

TABLE 6 Typical Ranges of Construction Noise Levels at 50 Feet, L_{eq} (dBA)

	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	**II**	**I**	**II**	**I**	**II**	**I**	**II**
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

I – All pertinent equipment present at site.
II – Minimum required equipment present at site.

Source: U.S.E.P.A., Legal Compilation on Noise, Vol. 1, p. 2-104, 1973.

TABLE 7 Estimated Construction Noise Levels for the Proposed Valley Oaks South Development at a Distance of 50 feet

Phase of Construction	Total Workdays	Construction Equipment (Quantity)	Estimated Construction Noise Level at 50 feet
Demolition	1 day	Excavator (1)[a] Tractor/Loader/Backhoe (1)[a]	82 dBA L_{eq}
Site Preparation	1 day	Grader (1)[a] Rubber-Tired Dozer (1) Tractor/Loader/Backhoe (1)[a]	84 dBA L_{eq}
Grading/Excavation	10 days	Excavator (1) Grader (1)[a] Rubber-Tired Dozer (1) Tractor/Loader/Backhoe (1)[a] Scraper (1)	84 dBA L_{eq}
Trenching/Foundations	1 day	Tractor/Loader/Backhoe (1)[a] Excavator (1)[a]	82 dBA L_{eq}
Building – Exterior	325 days	Crane (1) Forklift (3) Generator Set (1)[a] Tractor/Loader/Backhoe (3)[a] Welder (1)	82 dBA L_{eq}
Building – Interior/ Architectural Coating	60 days	Air Compressor (2)[a]	74 dBA L_{eq}
Paving	5 days	Cement and Mortar Mixer (1) Paver (1) Paving Equipment (1)[a] Roller (2) Tractor/Loader/Backhoe (1)[a]	84 dBA L_{eq}

[a] Denotes two loudest pieces of construction equipment per phase.

TABLE 8 Estimated Construction Noise Levels for the Proposed Valley Oaks North Areas 1 and 2 Development at a Distance of 50 feet

Phase of Construction	Total Workdays	Construction Equipment (Quantity)	Estimated Construction Noise Level at 50 feet
Demolition	3 days	Concrete/Industrial Saw (1)[a] Excavator (1) Rubber-Tired Dozer (1) Tractor/Loader/Backhoe (1)[a]	85 dBA L_{eq}
Site Preparation	5 days	Grader (1)[a] Rubber-Tired Dozer (1) Tractor/Loader/Backhoe (1)[a]	84 dBA L_{eq}
Grading/Excavation	40 days	Excavator (1) Grader (1)[a] Rubber-Tired Dozer (1) Tractor/Loader/Backhoe (1)[a] Scraper (1)	84 dBA L_{eq}
Trenching/Foundations	10 days	Tractor/Loader/Backhoe (1)[a] Excavator (1)[a]	82 dBA L_{eq}
Building – Exterior	325 days	Crane (1) Forklift (3) Generator Set (1)[a] Tractor/Loader/Backhoe (3)[a] Welder (1)	82 dBA L_{eq}
Building – Interior/ Architectural Coating	73 days	Air Compressor (2)[a]	74 dBA L_{eq}
Paving	10 days	Cement and Mortar Mixer (1) Paver (1) Paving Equipment (1)[a] Roller (2) Tractor/Loader/Backhoe (1)[a]	84 dBA L_{eq}

[a] Denotes two loudest pieces of construction equipment per phase.

TABLE 9 Estimated Construction Noise Levels for the Proposed Valley Oaks North Area 3 Development at a Distance of 50 feet

Phase of Construction	Total Workdays	Construction Equipment (Quantity)	Estimated Construction Noise Level at 50 feet
Demolition	2 days	Excavator (1)[a] Tractor/Loader/Backhoe (1)[a]	82 dBA L_{eq}
Site Preparation	5 days	Grader (1)[a] Rubber-Tired Dozer (2) Tractor/Loader/Backhoe (1)[a]	84 dBA L_{eq}
Grading/Excavation	50 days	Excavator (1) Grader (1)[a] Rubber-Tired Dozer (1) Tractor/Loader/Backhoe (1)[a] Scraper (1)	84 dBA L_{eq}
Trenching/Foundations	10 days	Tractor/Loader/Backhoe (1)[a] Excavator (1)[a]	82 dBA L_{eq}
Building – Exterior	389 days	Crane (1) Forklift (3) Generator Set (1)[a] Tractor/Loader/Backhoe (3)[a] Welder (1)	82 dBA L_{eq}
Building – Interior/ Architectural Coating	73 days	Air Compressor (2)[a]	74 dBA L_{eq}
Paving	10 days	Cement and Mortar Mixer (1) Paver (1) Paving Equipment (1)[a] Roller (2) Tractor/Loader/Backhoe (1)[a]	84 dBA L_{eq}

[a] Denotes two loudest pieces of construction equipment per phase.

TABLE 10 Estimated Construction Noise Levels from Phase 1 Propagated to the Property Lines of Surrounding Land Uses

Phase of Construction	Calculated Hourly Average Noise Levels, L_{eq} (dBA)				
	West Residences (1,015ft[a])	South Office Building (490ft[b])	East Office, Storage & Commercial (510ft[b])	North Residence (150ft[c])	Future Verandah at Valley Oaks (140ft[b])
Demolition	60[d]	62[d]	62[d]	76[d]	73[d]
Site Preparation	58[d]	65[d]	64[d]	75[d]	76[d]
Grading/Excavation	60[d]	66[d]	66[d]	77[d]	77[d]
Trenching/Foundations	56[d]	62[d]	62[d]	72[d]	73[d]
Building – Exterior	60[d]	66[d]	66[d]	77[d]	77[d]
Building – Interior/ Architectural Coating	48[d]	54[d]	54[d]	64[d]	65[d]
Paving	60[d]	66[d]	66[d]	76[d]	77[d]

[a] These distances in the table were measured from the center of the proposed Valley Oaks North Area 2 site.
[b] These distances in the table were measured from the center of the proposed Valley Oaks South site.
[c] These distances in the table were measured from the center of the proposed Valley Oaks North Area 1 site.
[d] These levels represent construction noise levels calculated from all equipment per phase operating simultaneously.

TABLE 11 Estimated Construction Noise Levels from Phase 2 Propagated to the Property Lines of Surrounding Land Uses

Phase of Construction	Calculated Hourly Average Noise Levels, L_{eq} (dBA)				
	West Residences (890ft[a])	South Office Building (1,175ft[a])	East Office, Storage & Commercial (1,100ft[a])	North Residence (440ft[a])	Future Verandah at Valley Oaks (495ft[a])
Demolition	57[b]	54[b]	55[b]	63[b]	62[b]
Site Preparation	60[b]	58[b]	59[b]	67[b]	65[b]
Grading/Excavation	61[b]	59[b]	59[b]	67[b]	66[b]
Trenching/Foundations	57[b]	54[b]	55[b]	63[b]	62[b]
Building – Exterior	61[b]	59[b]	59[b]	67[b]	66[b]
Building – Interior/ Architectural Coating	49[b]	46[b]	47[b]	55[b]	54[b]
Paving	61[b]	58[b]	59[b]	67[b]	66[b]

[a] These distances in the table were measured from the center of the proposed Valley Oaks North Area 3 site.
[b] These levels represent construction noise levels calculated from all equipment per phase operating simultaneously.

Mitigation Measure 1a:

Reasonable regulation of the hours of construction, as well as regulation of the arrival and operation of heavy equipment and the delivery of construction material, are necessary to protect the health and safety of persons, promote the general welfare of the community, and maintain the quality of life. The construction crew shall adhere to the following construction best management practices to reduce construction noise levels emanating from the site and minimize disruption and annoyance at existing noise-sensitive receptors in the project vicinity.

The construction contractor shall develop a construction noise control plan, including, but not limited to, the following available controls:

- Ensure that grading and equipment operations are limited to the hours of 7:00 a.m. to 6:00 p.m. on weekdays only. Construction activities, including warming up or servicing equipment and any preparation for construction shall be limited to the hours of 7:00 a.m. to 6:00 p.m. on weekdays and to the hours of 10:00 a.m. to 5:00 p.m. on Saturdays. No construction is allowed on Sundays or official federal national holidays, except as otherwise authorized by the community development director.

- Construct temporary noise barriers along the perimeter of the project site where activities would occur within 50 feet of adjoining noise-sensitive receptors. Temporary noise barrier fences would provide a 5 dBA noise reduction if the noise barrier interrupts the line-of-sight between the noise source and receptor and if the barrier is constructed in a manner that eliminates any cracks or gaps.

- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.

- Unnecessary idling of internal combustion engines should be strictly prohibited.

- Locate stationary noise-generating equipment, such as air compressors or portable power generators, as far as possible from sensitive receptors as feasible. If they must be located near receptors, adequate muffling (with enclosures where feasible and appropriate) shall be used to reduce noise levels at the adjacent sensitive receptors. Any enclosure openings or venting shall face away from sensitive receptors.

- Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

- Locate material stockpiles, as well as maintenance/equipment staging and parking areas, as far as feasible from residential receptors.

- Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the project site.

- The contractor shall prepare a detailed construction schedule for major noise-generating construction activities. The construction plan shall identify a procedure for coordination with adjacent residential land uses so that construction activities can be scheduled to minimize noise disturbance.

- Designate a "disturbance coordinator" who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler, etc.) and will require that reasonable measures be implemented to correct the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include in it the notice sent to neighbors regarding the construction schedule.

Implementation of the above measures would reduce construction noise levels emanating from the site, limit construction hours, and minimize disruption and annoyance. With the implementation of these measures and recognizing that noise generated by construction activities would occur over a temporary period, the temporary increase in ambient noise levels would reduce to a less-than-significant level.

Impact 1b: **Permanent Noise Level Increase/Exceed Applicable Standards.** The proposed project would not result in a substantial permanent noise level increase or in permanent noise levels exceeding 60 dBA L_{dn} at residential receptors in the project vicinity. Operational noise levels due to mechanical equipment could potentially exceed applicable City Municipal Code standards at the property line of the project site. This is a **potentially significant** impact.

Under the City of Novato Municipal Code, noise sources shall not exceed standards provided in Table 3-5, which are 60 dBA during daytime hours and 45 dBA during nighttime hours at residential uses, beyond the property line of the parcel on which the sources are located or ambient noise levels, whichever is higher. Table 12 summarizes the ambient noise levels and operational noise thresholds applied at the property lines of each proposed development. Additionally, maximum instantaneous noise levels shall not exceed noise levels 20 dBA greater than the thresholds in Table 12.

TABLE 12 Measured Ambient Noise Levels and Applicable Thresholds at the Property Lines of the Proposed Residential Developments

Proposed Development	Ambient Noise Levels, dBA L_{eq}		Thresholds, dBA L_{eq}	
	Daytime (6am to 10pm)	Nighttime (10pm to 6am)	Daytime (6am to 10pm)	Nighttime (10pm to 6am)
Valley Oaks South[a]	61 to 68 (average of 64)	56 to 68 (average of 61)	64	61
Valley Oaks North Area 1[a]	61 to 68 (average of 64)	61 to 68 (average of 61)	64	61
Valley Oaks North Area 2[b]	45 to 57 (average of 51)	41 to 55 (average of 46)	60	46
Valley Oaks North Area 3[b]	45 to 57 (average of 51)	41 to 55 (average of 46)	60	46

[a] Located near Highway 101, ambient noise environment represented by LT-1.

[b] Located more than 500 feet from Highway 101, ambient noise environment represented by LT-2.

According to Policy NS 2b of the City's General Plan, a significant impact would occur if the proposed project would cause a permanent noise level increase above 60 dBA L_{dn} where existing ambient noise levels are below 60 dBA L_{dn} or if the proposed project would cause a permanent noise level increase of 5 dBA L_{dn} or more at residential receptors. Table 13 summarizes the ambient day-night average noise levels for the surrounding noise-sensitive receptors and the permanent noise thresholds applied to these receptors.

TABLE 13 Measured Ambient Noise Levels and Applicable Thresholds at the Property Lines of the Surrounding Residential Receptors

Proposed Development	Ambient Noise Levels, dBA L_{dn}	Significance Threshold
West Residences[a]	48 to 51	Exceeds 60 dBA L_{dn}
North Residence[b]	67 to 71	Increase of 5 dBA L_{dn}
Verandah at Valley Oaks[b]	67 to 71	N/A[c]

[a] Located more than 1,600 feet from Highway 101, ambient noise environment represented by LT-3.

[b] Located near Highway 101, ambient noise environment represented by LT-1.

[c] Future residential receptors would be subject to future ambient noise levels above 60 dBA L_{dn}. Since these future receptors would not be exposed to existing ambient noise levels, there would not be a permanent noise level increase.

Project Traffic Increase

The traffic study included peak hour turning movements for existing and existing plus project traffic volumes at five intersections in the vicinity of the project site. By comparing the existing plus project volumes to the existing volumes, the project's contribution to the overall noise increase is calculated. Table 14 summarizes the estimated noise level increase along each roadway segment included in the traffic report. As shown in Table 14, the project's contribution would be at or below 1 dBA L_{dn} along all segments in the project vicinity. The project would not result in a permanent noise increase of 3 dBA L_{dn} or more at noise-sensitive receptors in the project vicinity.

TABLE 14 Estimated Noise Level Increases of Existing Plus Project Traffic Volumes Over Existing Volumes at Receptors in the Project Vicinity

Roadway	Segment	Estimated Noise Level Increase Over Existing Volumes, dBA L_{dn}
Redwood Boulevard	South of San Marin Drive	0
	San Marin Drive to South Valley Oaks driveway	0 to 1
	South Valley Oaks driveway to Pinkston Road	0
	North of Pinkston Road	0
San Marin Drive/ Atherton Avenue	West of Redwood Boulevard	0
	Redwood Boulevard to U.S. Highway 101 southbound ramps	0
	U.S. Highway 101 southbound ramps to U.S. Highway 101 northbound ramps	0
	East of U.S. Highway 101 northbound ramps	0
U.S. Highway 101 southbound off-ramp	At San Marin Drive/Atherton Avenue	0
U.S. Highway 101 southbound on-ramp	At San Marin Drive/Atherton Avenue	0
U.S. Highway 101 northbound off-ramp	At San Marin Drive/Atherton Avenue	0
U.S. Highway 101 northbound on-ramp	At San Marin Drive/Atherton Avenue	0

Mechanical Equipment

The available site plan for the proposed project does not show mechanical equipment surrounding the buildings. Additionally, detailed roof plans showing mechanical equipment were not available at the time of this study. Typically, however, heating, ventilation, and air conditioning (HVAC) units are included in residential projects such as this. For the single-family residences and duet attached homes in Valley Oaks North Areas 1, 2, and 3, HVAC units would be located on the ground level in the backyards or side yards of each residence. For the multi-family units located in the Valley Oaks South development, HVAC units would be located either in clusters at the ends of the buildings or on the rooftops. Worst-case conditions are assumed for this project, which would locate the HVAC units on the ground-level in clusters of two to three units at the ends of the buildings.

Noise levels produced by residential HVAC units typically range from 53 to 63 dBA at 3 feet during operation. These types of units typically cycle on and off continuously during daytime and nighttime hours. Up to three units operating simultaneously would generate noise levels ranging from 58 to 68 dBA L_{eq}. Table 15 summarizes the worst-case noise levels at the property lines of each development.

TABLE 15 Operational Noise Levels Estimated at the Project Site Property Lines

Receptor	Distance from Nearest HVAC Equipment to Property Line, feet	Hourly L_{eq}, dBA	L_{dn}, dBA	Exceed Municipal Code Limits?
Valley Oaks South	35 feet	36 to 46	53	No
Valley Oaks North Area 1	15 feet	39 to 49	55	No
Valley Oaks North Area 2	20 feet	37 to 47	53	No (daytime) Yes (nighttime)
Valley Oaks North Area 3	290 feet	< 20 to 23	30	No

Valley Oaks North Area 2 residences along the northern boundary could have HVAC units as close to the property line as 20 feet, which would result in operational noise levels up to 47 dBA L_{eq}. This would exceed the nighttime ambient noise levels, resulting in a significant impact.

The operational noise levels were also propagated to the property lines of the surrounding receptors. Table 16 summarizes the estimated mechanical equipment noise from the receiving property lines.

TABLE 16 Operational Noise Levels Estimated at the Property Lines of the Surrounding Receptors

Receptor	Distance from Nearest HVAC Equipment to Property Line, feet	Hourly L_{eq}, dBA	L_{dn}, dBA	Noise Level Increase, dBA L_{dn}
West Residences	700	< 20	22	0
South Office Building	355	< 20 to 26	33	0
East Office, Storage & Commercial	420	< 20 to 24	31	0
North Residence	50	29 to 39	45	0
Verandah at Valley Oaks	35	36 to 46	53	N/A[a]

[a] Future residential receptors are not exposed to existing ambient noise levels, and therefore, would not be exposed to the permanent noise level increase.

Based on the estimated noise levels in Table 16, mechanical equipment noise levels would not result in permanent noise levels exceeding 60 dBA L_{dn} at the west residences. For all existing residential receptors in the project vicinity, the noise level increase due to mechanical equipment noise would not be measurable or detectable (0 dBA L_{dn} increase). This would be a less-than-significant impact.

Noise from Amenity Areas

The amenity area located in the open space portion of the site west of Valley Oaks North Area 3 (Parcel N) would include a child's play area, walking trails, and picnic areas. While walking trails and picnic areas would not generate audible noise levels at the project site boundaries, playground

noise from games, loud voices, etc. would be considered a noise-generating source. Parcel O, which is located between Valley Oaks North Area 2 and Valley Oaks North Area 3, would also include noise-generating sources. However, the location on the interior of the Valley Oaks North site positions the outdoor use area more than 200 feet from any property line with residences providing shielding for the outdoor use area.

Noise levels from playgrounds typically range from 59 to 67 dBA L_{eq} at a distance of 50 feet from the center of the playground. Maximum noise levels resulting from shouting could reach noise levels up to 75 dBA L_{max} at 50 feet. Playgrounds are typically only used during daylight hours. Assuming maximum usage each hour between 8:00 a.m. and 10:00 p.m., day-night hourly average noise levels would be 65 dBA L_{dn} at 50 feet from the center of the playground.

The nearest property line would be approximately 230 feet from the center of the playground at Parcel N. At this distance, hourly average noise levels would range from 46 to 54 dBA L_{eq}, which would not exceed the daytime Municipal Code threshold of 60 dBA L_{eq}.

The nearest property line would be 225 feet from the center of the playground at Parcel O. With a conservative 10 dBA attenuation due to intervening project residences, hourly average noise levels would be 36 to 44 dBA L_{eq}, which would not exceed the daytime threshold. This would not result in a significant impact.

The only receptors that would have direct line-of-sight to the playground would be the west residences, which would be 660 feet from the center of the playground. At this distance, the nearest noise-sensitive receptors would be exposed to hourly average noise levels ranging from 47 to 45 dBA L_{eq}, and the day-night average noise level would be 42 dBA L_{dn}, assuming maximum hourly average noise levels each hour from 8:00 a.m. to 10:00 p.m. This would result in a permanent noise level increase of 1 dBA L_{dn}. Therefore, playground noise would not result in permanent noise levels exceeding 60 dBA L_{dn} or an increase of 5 dBA L_{dn}. This would be a less-than-significant impact.

Total Combined Project-Generated Noise

The operational noise levels produced by the proposed project combined (i.e., traffic, mechanical equipment, and playground activities) would not result in permanent noise levels exceeding 60 dBA L_{dn} or a permanent noise level increase of 5 dBA L_{dn} or more. While playground noise would not generate hourly average noise levels exceeding Municipal Code thresholds, operational noise levels due to mechanical equipment would potentially exceed the City's nighttime threshold at the project site boundary of Valley Oaks North Area 2. This would be a potentially significant impact.

Mitigation Measure 1b:

A detailed acoustical study shall be prepared during final building design to evaluate the potential noise generated by building mechanical equipment and demonstrate the necessary noise control to meet the City's nighttime threshold of 46 dBA L_{eq} at the property lines of each Valley Oaks North Area 2 residence. Noise control features such as sound attenuators, baffles, and barriers shall be identified and evaluated to demonstrate that mechanical equipment noise would not exceed 46 dBA

L_{eq} at the property line of each residence located on the project site. The noise control features identified by the study shall be incorporated into the project prior to issuance of a building permit.

Implementation of this mitigation measure would reduce noise levels originating from the project site to a less-than-significant level.

Impact 2: **Exposure to Excessive Groundborne Vibration due to Construction.** Construction-related vibration levels resulting from activities at the project site would not exceed 0.3 in/sec PPV at the existing structures surrounding the project site. This is a **less-than-significant** impact.

The construction of the project may generate vibration when heavy equipment or impact tools (e.g., jackhammers, hoe rams) are used. Construction activities would include grading, foundation work, paving, and new building framing and finishing. According to the equipment list provided at the time of this study, impact or vibratory pile driving activities, which can cause excessive vibration, are not expected for the proposed project.

For structural damage, the California Department of Transportation recommends a vibration limit of 0.5 in/sec PPV for buildings structurally sound and designed to modern engineering standards, 0.3 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a conservative limit of 0.25 in/sec PPV for historical structures. No known historical structures adjoin the project area. Therefore, conservatively, groundborne vibration levels exceeding 0.3 in/sec PPV would have the potential to result in a significant vibration impact.

Table 17 presents typical vibration levels that could be expected from construction equipment, as measured at a distance of 25 feet. Project construction activities, such as drilling, the use of jackhammers, rock drills and other high-power or vibratory tools, and rolling stock equipment (tracked vehicles, compactors, etc.), may generate substantial vibration in the immediate vicinity. Jackhammers typically generate vibration levels of 0.035 in/sec PPV, and drilling typically generates vibration levels of 0.09 in/sec PPV at a distance of 25 feet. Vibration levels would vary depending on soil conditions, construction methods, and equipment used.

Table 17 also summarizes the estimated vibration levels from the nearest construction activity, which includes equipment used along the walking trails in the open space, propagated to the nearest existing buildings surrounding the project site. Construction vibration levels would depend on the specific location of individual pieces of equipment. That is, equipment scattered throughout the site would not generate a collective vibration level, but a vibratory roller, for instance, operating near the project site boundary would generate the worst-case vibration levels for the receptor sharing that property line. Further, construction vibration impacts are assessed based on the potential for damage to buildings on receiving land uses, not at receptors at the nearest property lines. Therefore, the distances used to propagate construction vibration levels (as shown in Table 17), which are different than the distances used to propagate construction noise levels (as shown in Tables 10 and 11), were estimated under the assumption that each piece of equipment was operating along the nearest boundary of the project site, which would represent the worst-case scenario.

As shown in Table 17, vibration levels would be at or below 0.058 in/sec PPV at the nearest buildings surrounding the project site, which would be well below the conservative 0.3 in/sec PPV threshold.

Neither cosmetic, minor, or major damage would occur at conventional buildings located 20 feet or more from the project site. At these locations, and in other surrounding areas where vibration would not be expected to cause cosmetic damage, vibration levels may still be perceptible. However, as with any type of construction, this would be anticipated and would not be considered significant, given the intermittent and short duration of the phases that have the highest potential of producing vibration (use of jackhammers and other high-power tools). By use of administrative controls, such as notifying neighbors of scheduled construction activities and scheduling construction activities with the highest potential to produce perceptible vibration during hours with the least potential to affect nearby businesses, perceptible vibration can be kept to a minimum.

In summary, the construction of the project would not exceed the State's threshold of 0.3 in/sec PPV at buildings adjoining the site. This would be a less-than-significant impact.

Mitigation Measure 2: **None required.**

TABLE 17 Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 ft. (in/sec)	Estimated Vibration Levels at Structures Surrounding the Project Site, in/sec PPV				
			West Residences (125 feet)	South Office Building (475 feet)	East Office, Storage & Commercial (400 feet)	North Residence (135 feet)	Verandah Valley Oaks (80 feet)
Clam shovel drop		0.202	0.034	0.008	0.010	0.032	0.056
Hydromill (slurry wall)	in soil	0.008	0.001	0.0003	0.0004	0.001	0.002
	in rock	0.017	0.003	0.001	0.001	0.003	0.005
Vibratory Roller		0.210	0.036	0.008	0.010	0.033	0.058
Hoe Ram		0.089	0.015	0.003	0.004	0.014	0.025
Large bulldozer		0.089	0.015	0.003	0.004	0.014	0.025
Caisson drilling		0.089	0.015	0.003	0.004	0.014	0.025
Loaded trucks		0.076	0.013	0.003	0.004	0.012	0.021
Jackhammer		0.035	0.006	0.001	0.002	0.002	0.010
Small bulldozer		0.003	0.001	0.0001	0.0001	0.0001	0.001

Source: Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration, Office of Planning and Environment, U.S. Department of Transportation, September 2018, as modified by Illingworth & Rodkin, Inc., April 2023.

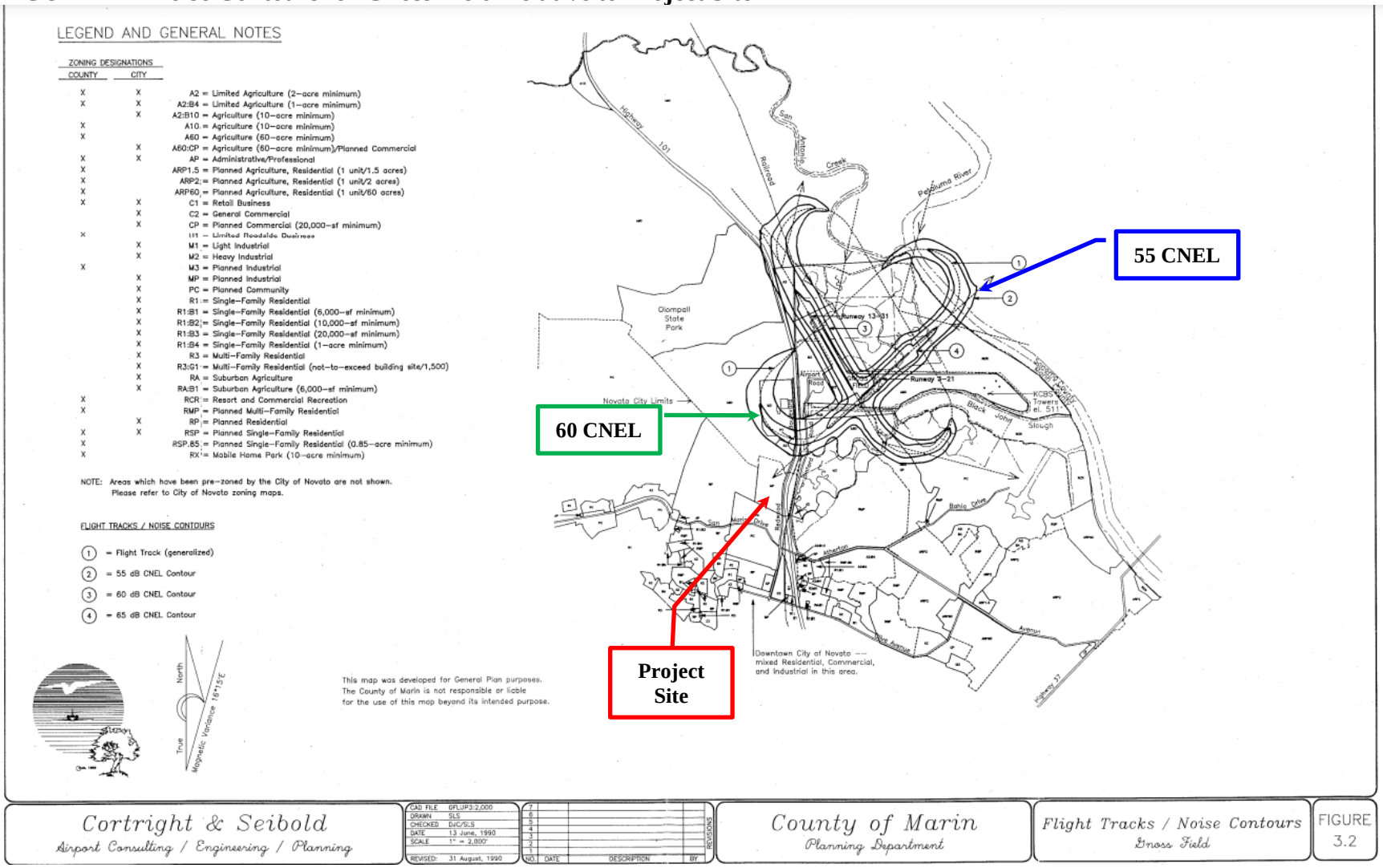
Impact 3: **Excessive Aircraft Noise.** The project site is located approximately one mile from Gnoss Field, and the proposed project would not expose people residing or working in the area to excessive aircraft noise levels. **This is a less-than-significant impact.**

Gnoss Field is a public airport located approximately one mile northeast of the project site. According to the Airport Land Use Plan Marin County Airport Gnoss Field,[4] the project site lies well outside the 60 and 55 dBA CNEL contour lines (see Figure 4). Aircraft noise would result in exterior noise levels below the City's requirements for residential land uses. Therefore, the proposed project would be compatible with the City's exterior noise standards for aircraft noise.

Mitigation Measure 3: **None required.**

[4] Cortright & Seibold in association with Brown-Buntin Associates, Inc., Airport Land Use Plan Marin County Airport Gnoss Field, adopted by Marin County Airport Land Use Commission June 10, 1991.

FIGURE 4 Noise Contours for Gnoss Field Relative to Project Site



Cumulative Impacts

Cumulative noise impacts would include either cumulative traffic noise increases under future conditions or temporary construction noise from cumulative construction projects.

A significant cumulative traffic noise increase would occur if two criteria are met: 1) if the cumulative traffic noise level increase was 3 dBA L_{dn} or greater for future levels exceeding 60 dBA L_{dn} or was 5 dBA L_{dn} or greater for future levels at or below 60 dBA L_{dn}; and 2) if the project would make a "cumulatively considerable" contribution to the overall traffic noise increase. A "cumulatively considerable" contribution would be defined as an increase of 1 dBA L_{dn} or more attributable solely to the proposed project.

For a substantial permanent cumulative noise increase to occur, two qualifications must be met: 1) if the cumulative plus project traffic volumes result in a noise level increase at sensitive receptors of 5 dBA L_{dn} or greater, with a future noise level of less than 60 dBA L_{dn}, or of 3 dBA L_{dn} or greater, with a future noise level of 60 dBA L_{dn} or greater, compared to existing traffic volumes; and 2) if the cumulative plus project traffic volumes result in a 1 dBA L_{dn} or more noise level increase compared to cumulative (no project) conditions, which would be considered a cumulatively considerable contribution to the overall traffic noise increase.

The traffic study included peak hour turning movements for cumulative and cumulative plus project at five intersections in the vicinity of the project site. Table 18 summarizes the noise level difference calculated by comparing both the cumulative (no project) and cumulative plus project traffic scenarios to the existing scenario. As shown in Table 18, all roadway segments would result in a noise level increase of less than 3 dBA L_{dn}, which would not meet the first criteria. Therefore, the project would not result in cumulative traffic noise increase of 1 dBA L_{dn} or more. There would not be a cumulative noise level increase.

From the City's website,[5] the following planned or approved projects are located within 1,000 feet of the proposed project:

- **Wood Hollow Hotel** – this project is located approximately 500 feet south of the project site and is currently in the planning review phase. This project would provide 87 rooms and 87 off-site parking spaces. The only receptor that would be shared between these two project sites would be the south office building. The Wood Hollow Hotel would be closer to the south office building and would have a greater impact on this receptor. Therefore, with the implementation of Mitigation Measure 1a above, this would not be considered a significant cumulative construction impact.

- **Habitat Redwood Blvd** – this project is located more than 800 feet north of the project site. While this project has been approved, construction has not begun. This project would include 80 residential units and a 2,154-squre-foot commercial building on a 13.5-acre site. This site would not share any receptors with the Valley Oaks project site. This would not be considered a significant cumulative construction impact.

[5] https://www.novato.org/government/community-development/planning-division/planning-projects

No other planned or approved construction projects have been identified within 1,000 feet of the Valley Oaks Project site. Therefore, the noise-sensitive receptors surrounding the project site would not be subject to cumulative construction impacts.

TABLE 18 Estimated Noise Level Increases of Cumulative and Cumulative Plus Project Traffic Volumes Over Existing Volumes at Receptors in the Project Vicinity

Roadway	Segment	Estimated Noise Level Increase Over Existing Volumes, dBA L_{dn}		Project's Contribution, dBA L_{dn}
		Cumulative	Cumulative Plus Project	
Redwood Boulevard	South of San Marin Drive	1	1	0
	San Marin Drive to South Valley Oaks driveway	1	1	0
	South Valley Oaks driveway to Pinkston Road	0 to 1	0 to 1	0
	North of Pinkston Road	0 to 1	0 to 1	0
San Marin Drive/ Atherton Avenue	West of Redwood Boulevard	1	1	0
	Redwood Boulevard to U.S. Highway 101 southbound ramps	1	1	0
	U.S. Highway 101 southbound ramps to U.S. Highway 101 northbound ramps	1	1	0
	East of U.S. Highway 101 northbound ramps	1	1	0
U.S. Highway 101 southbound off-ramp	At San Marin Drive/Atherton Avenue	1	1	0
U.S. Highway 101 southbound on-ramp	At San Marin Drive/Atherton Avenue	1	1	0
U.S. Highway 101 northbound off-ramp	At San Marin Drive/Atherton Avenue	1	1	0
U.S. Highway 101 northbound on-ramp	At San Marin Drive/Atherton Avenue	1	1	0

APPENDIX

FIGURE A1 Daily Trend in Noise Levels at LT-1, Thursday, March 30, 2023

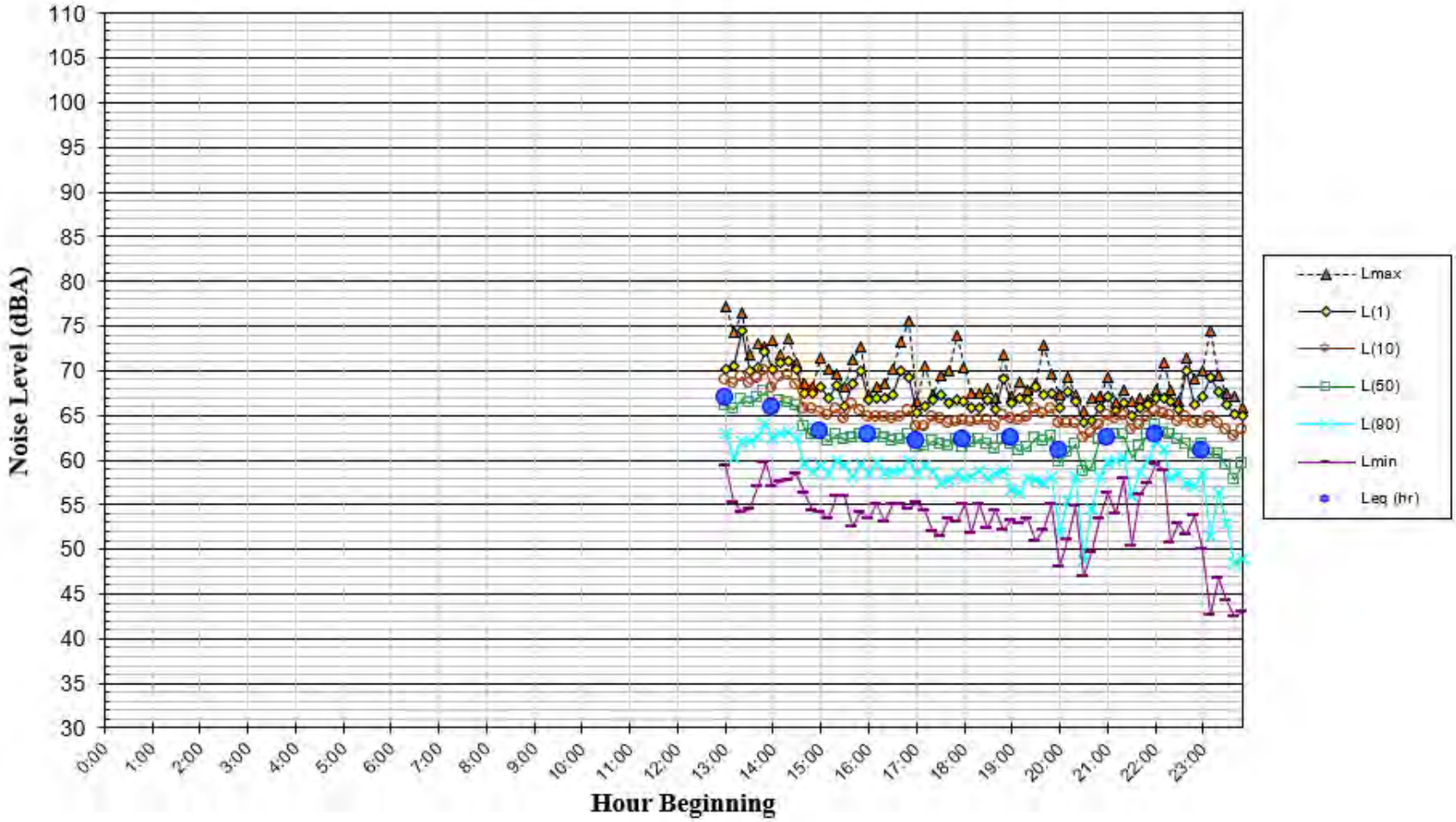


FIGURE A2 Daily Trend in Noise Levels at LT-1, Friday, March 31, 2023

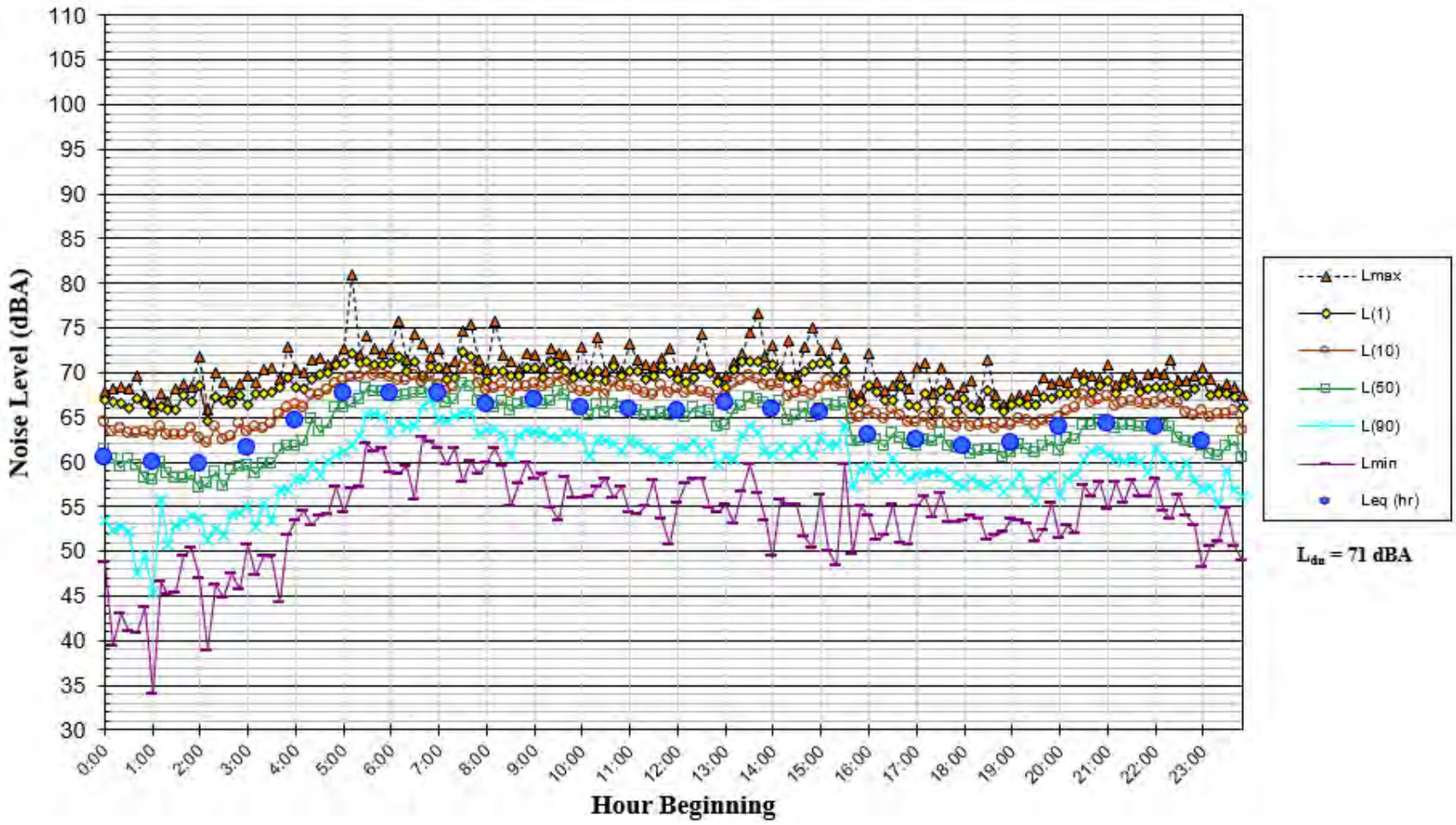


FIGURE A3 Daily Trend in Noise Levels at LT-1, Saturday, April 1, 2023

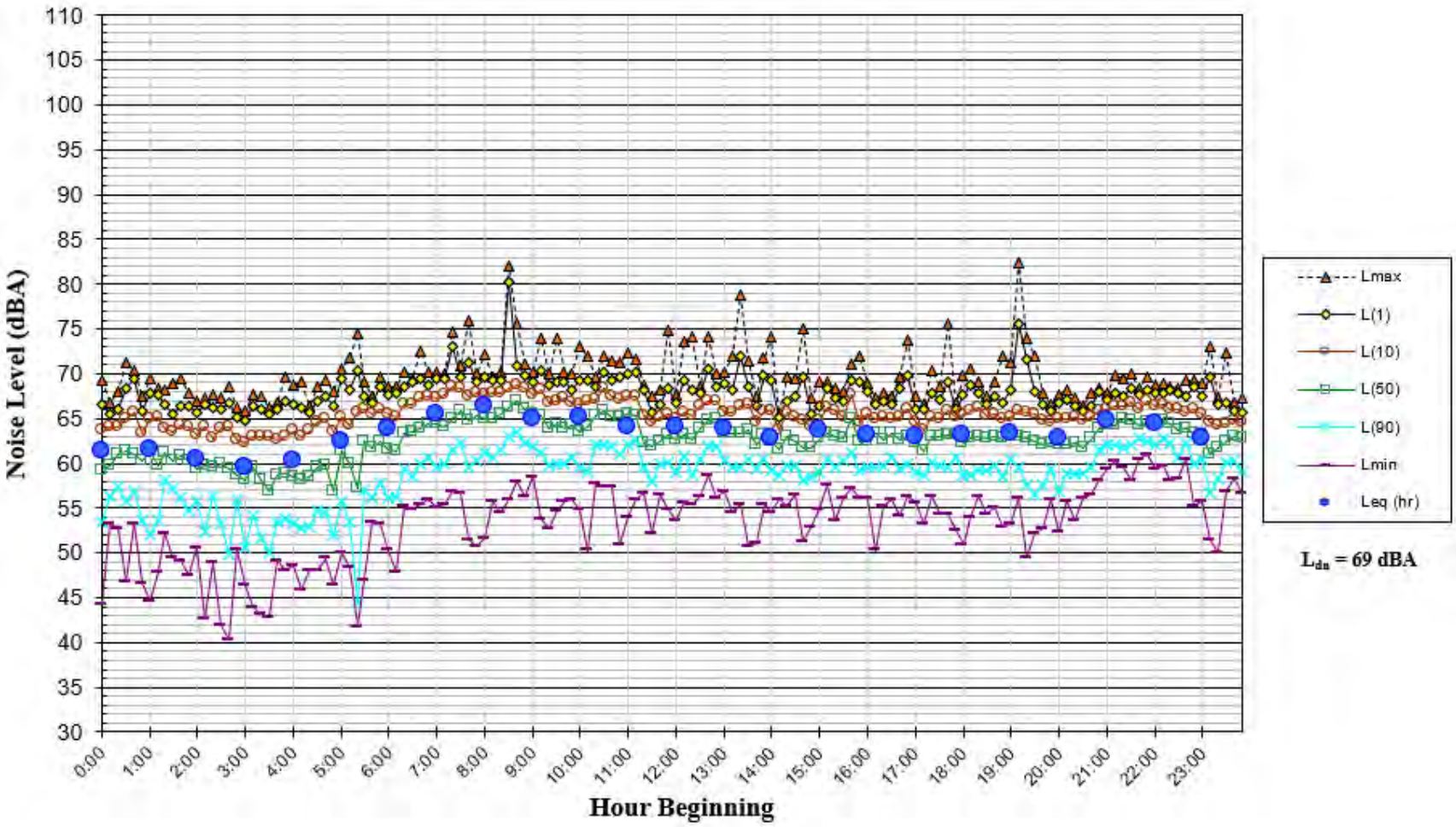


FIGURE A4 Daily Trend in Noise Levels at LT-1, Sunday, April 2, 2023

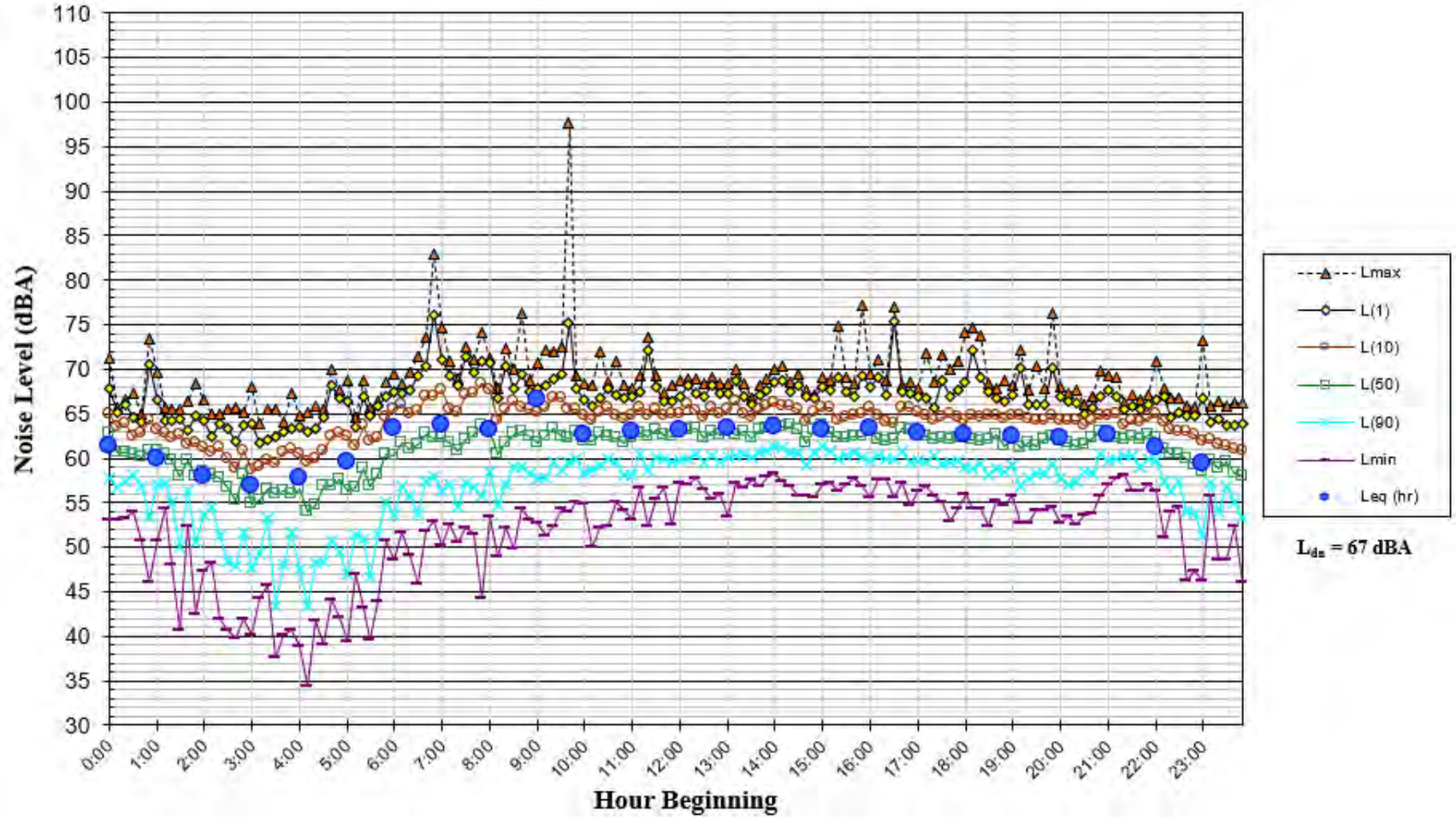


FIGURE A5 Daily Trend in Noise Levels at LT-1, Monday, April 3, 2023

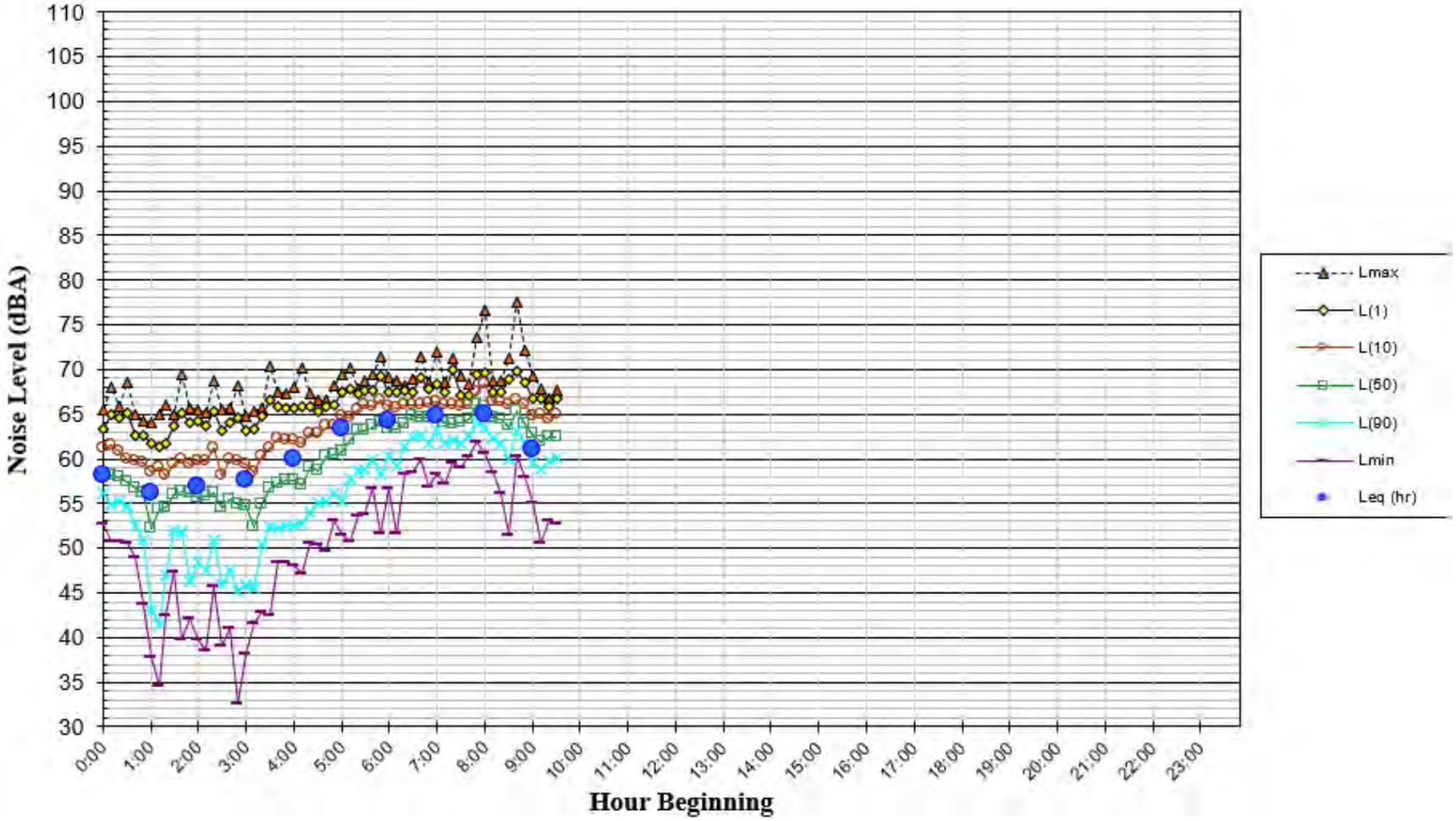


FIGURE A6 Daily Trend in Noise Levels at LT-2, Thursday, March 30, 2023

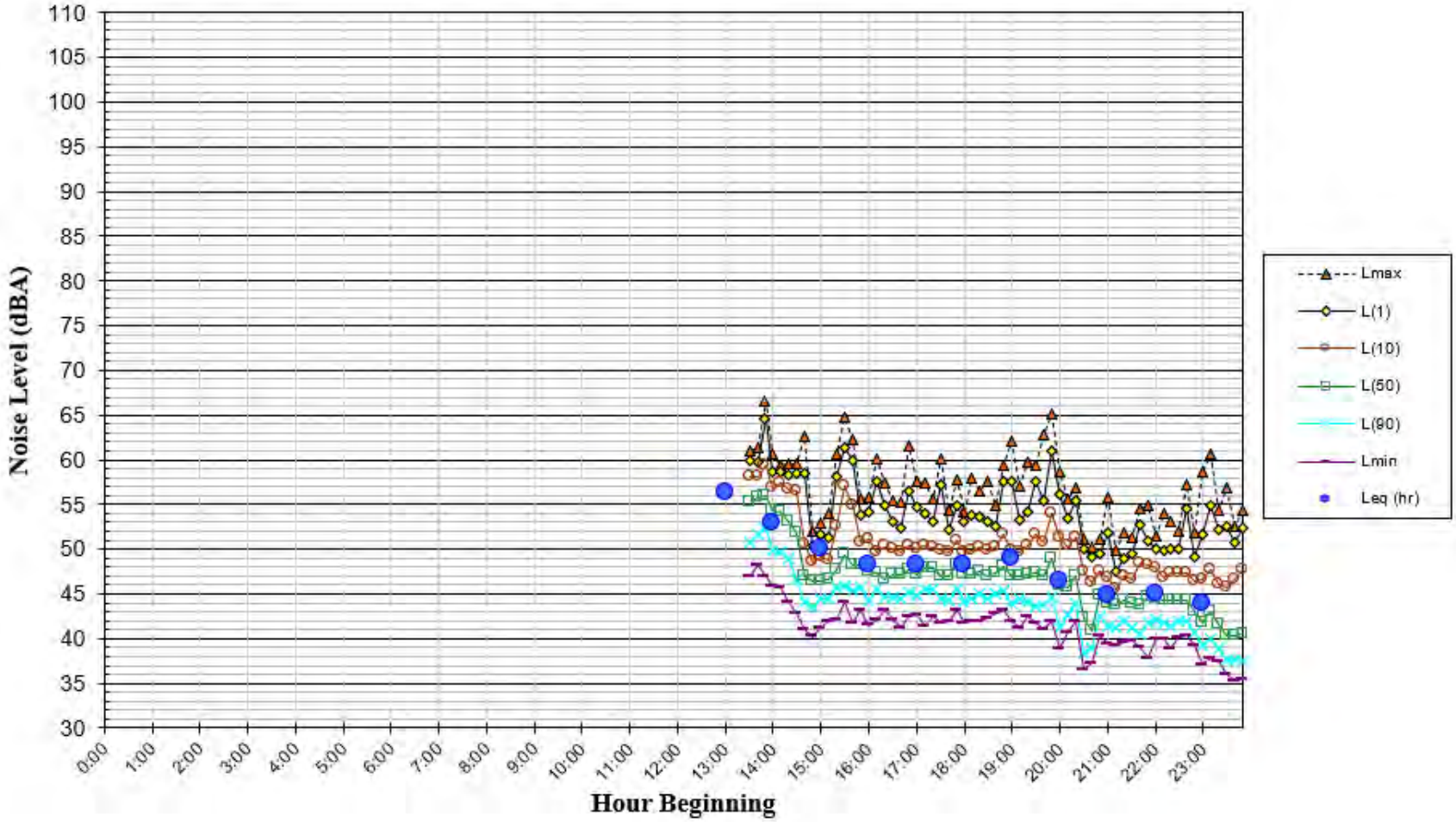


FIGURE A7 Daily Trend in Noise Levels at LT-2, Friday, March 31, 2023

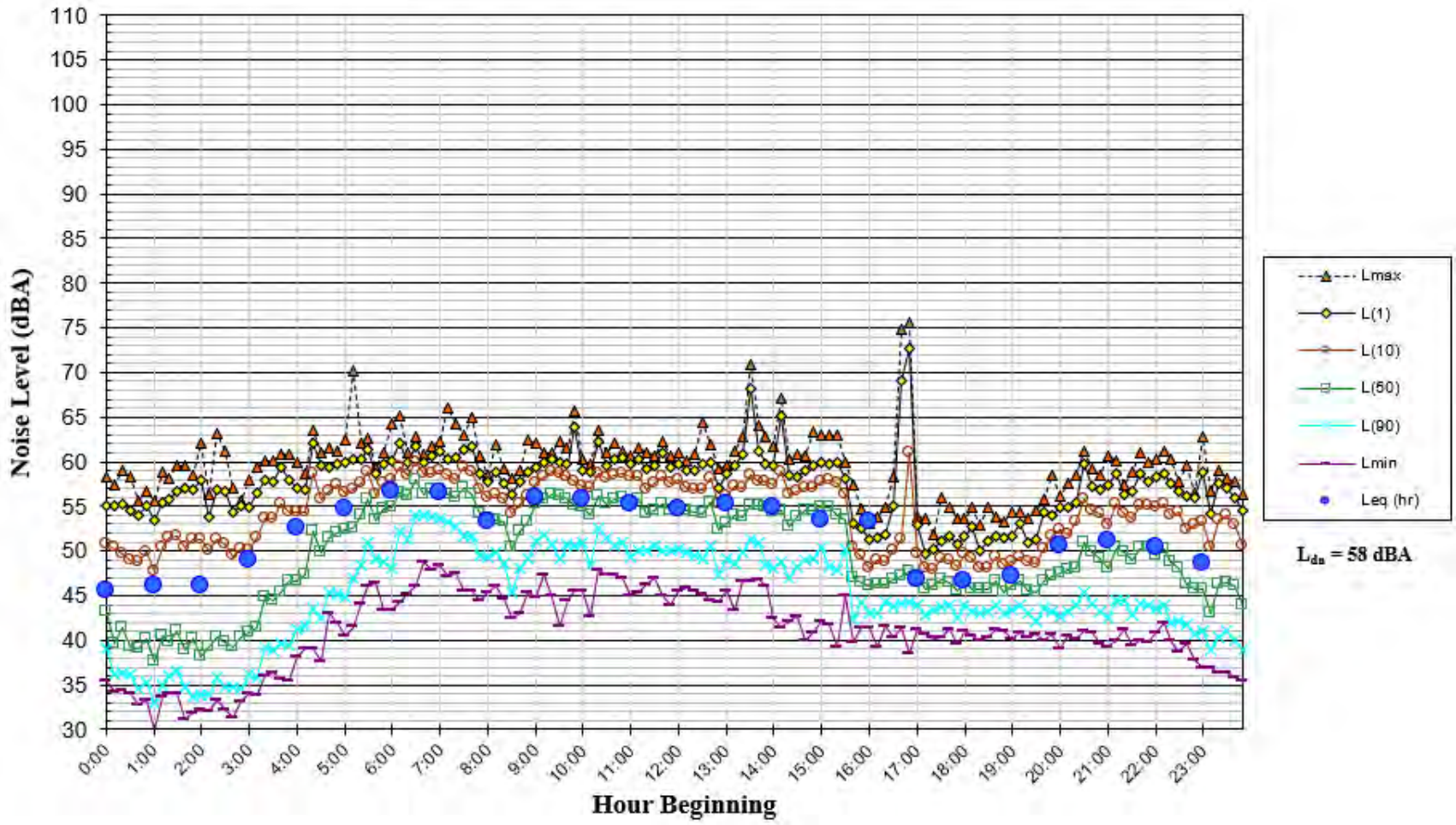


FIGURE A8 Daily Trend in Noise Levels at LT-2, Saturday, April 1, 2023

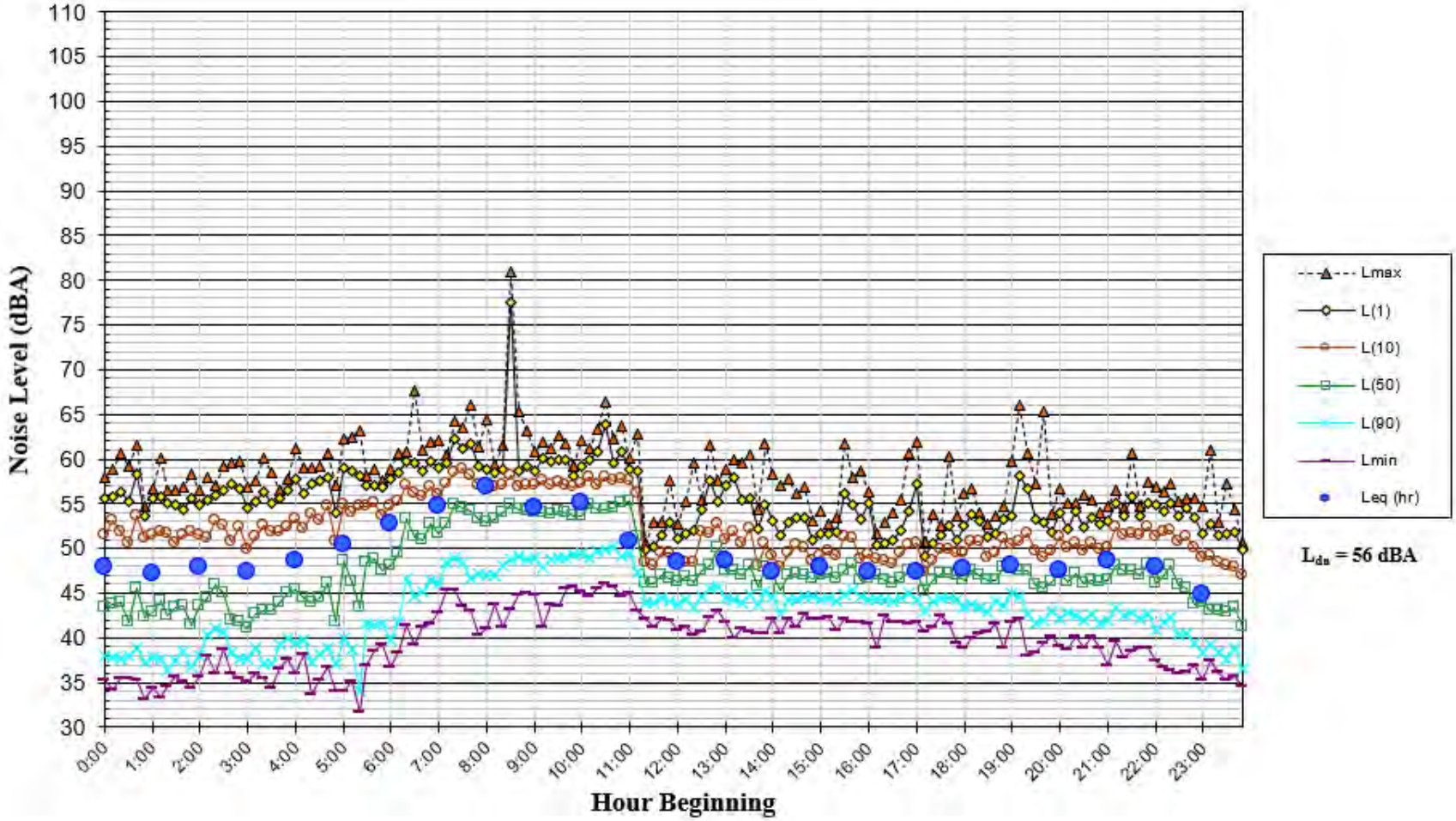


FIGURE A9 Daily Trend in Noise Levels at LT-2, Sunday, April 2, 2023

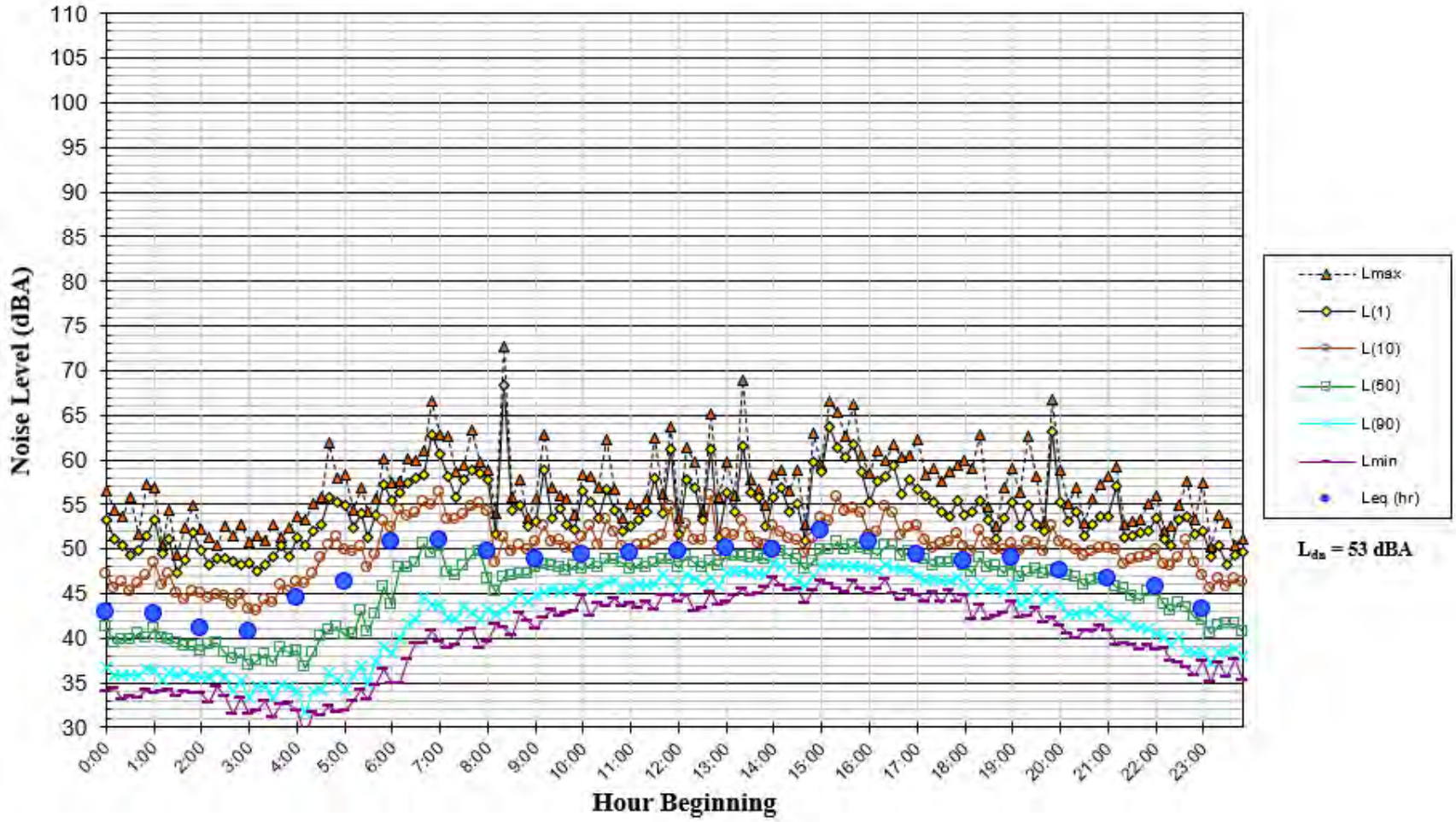


FIGURE A10 Daily Trend in Noise Levels at LT-2, Monday, April 3, 2023

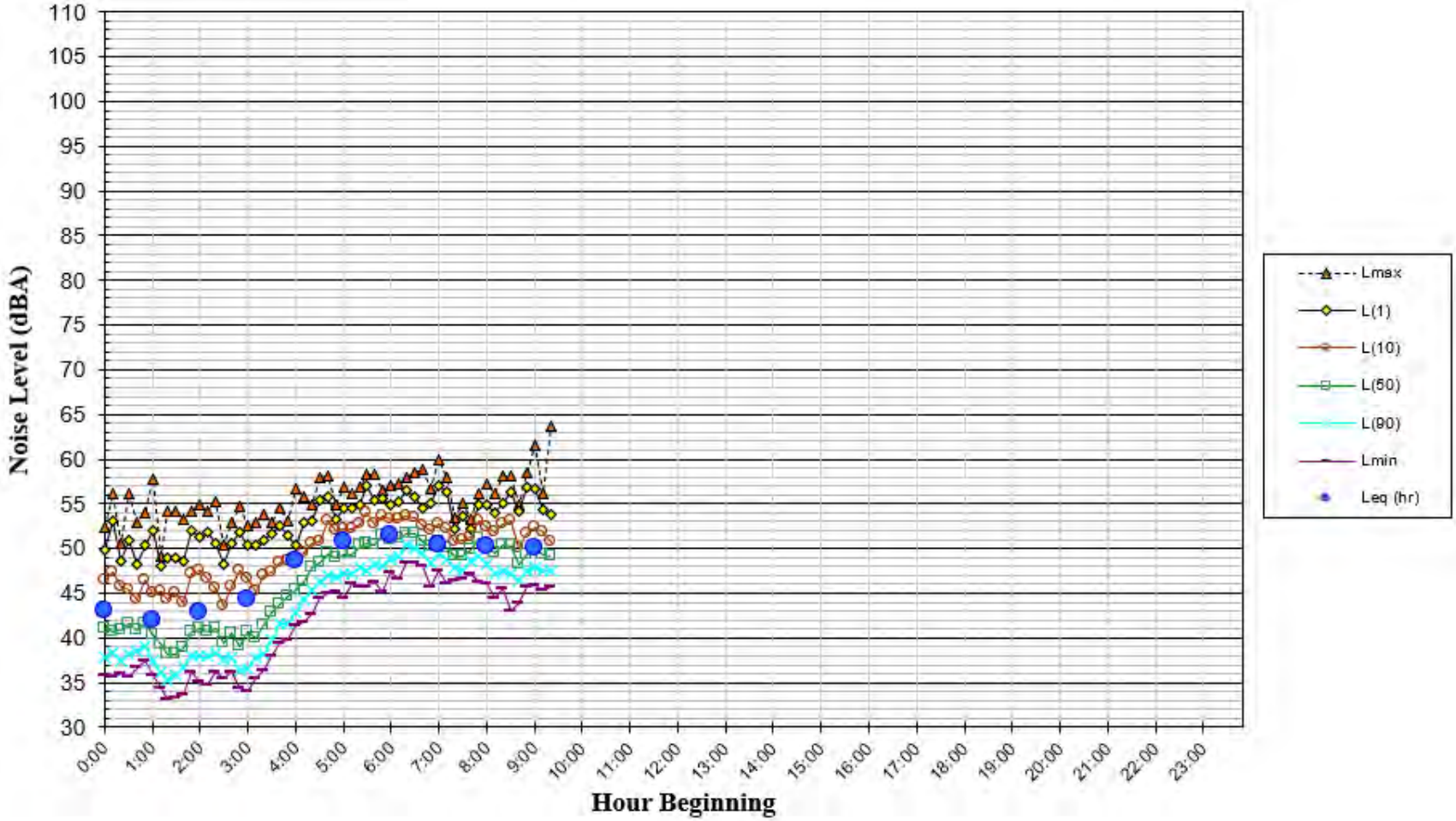


FIGURE A11 Daily Trend in Noise Levels at LT-3, Thursday, March 30, 2023

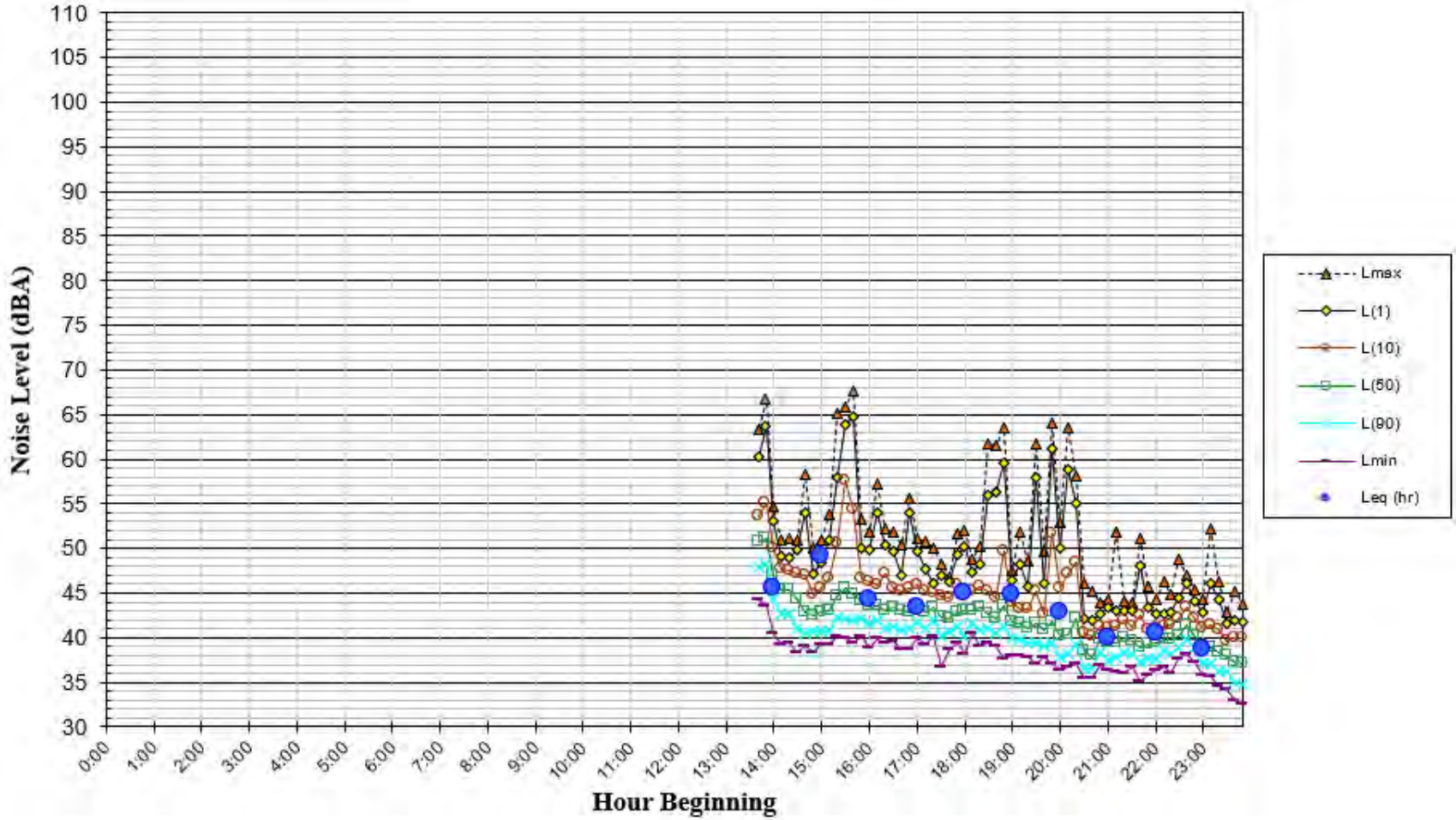


FIGURE A12 Daily Trend in Noise Levels at LT-3, Friday, March 31, 2023

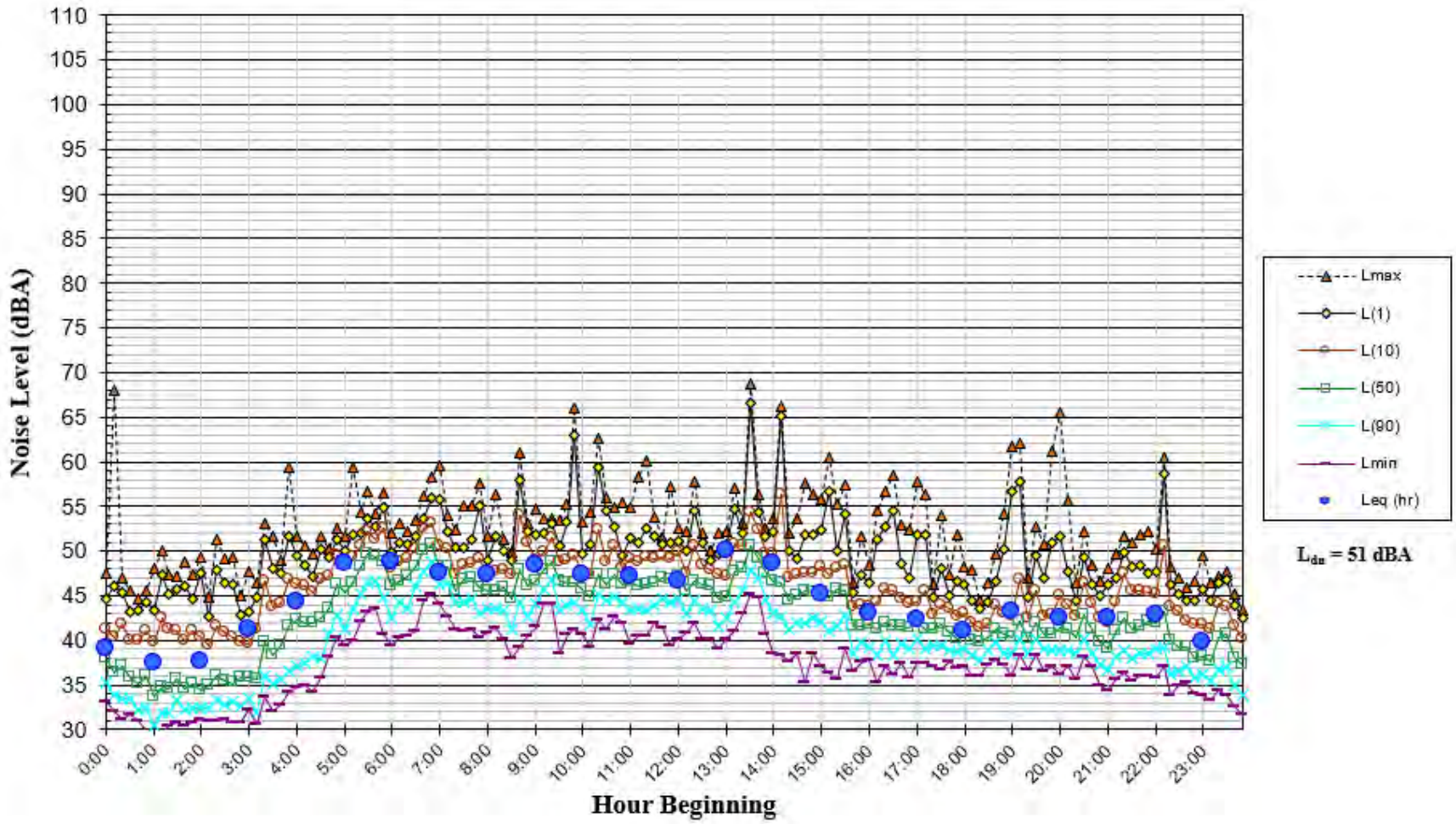


FIGURE A13 Daily Trend in Noise Levels at LT-3, Saturday, April 1, 2023

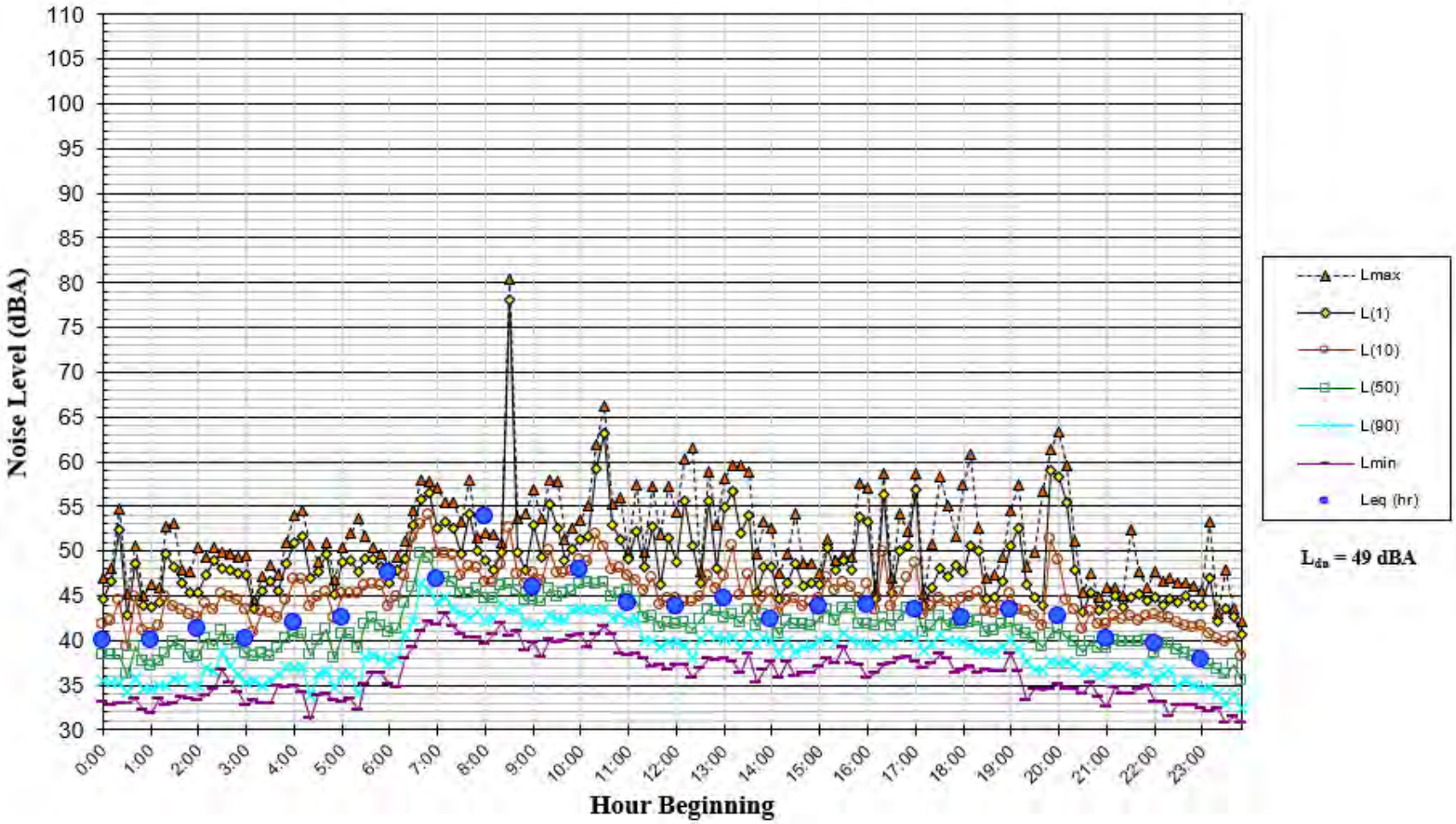


FIGURE A14 Daily Trend in Noise Levels at LT-3, Sunday, April 2, 2023

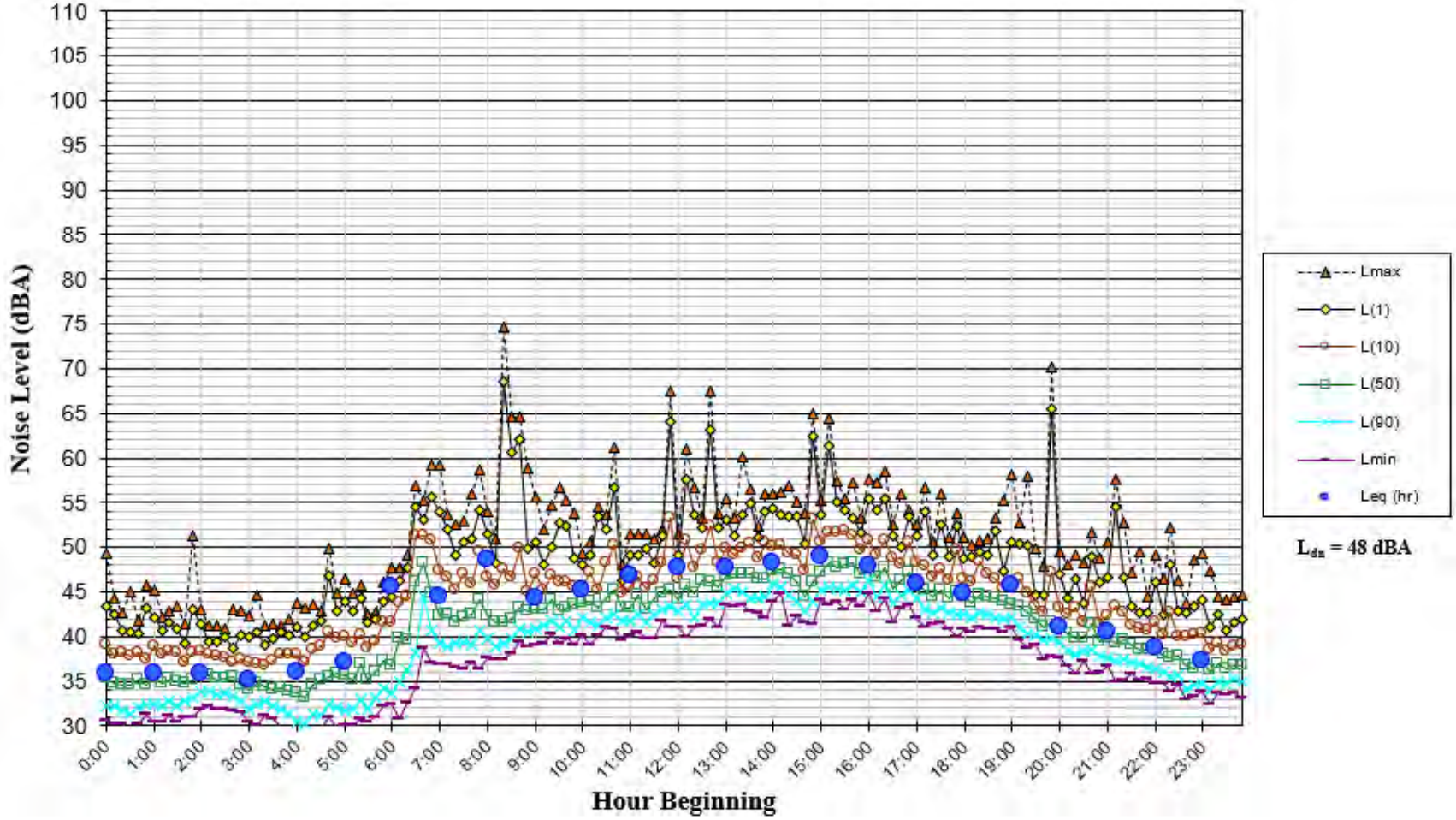


FIGURE A15 Daily Trend in Noise Levels at LT-3, Monday, April 3, 2023

