COUNTY OF TULARE
RESOURCE MANAGEMENT AGENCY

5961 South Mooney Boulevard
Visalia, CA 93277

Initial Study and Mitigated Negative Declaration

Treehouse California Almonds Expansion Project
(PSP 23-064)

July 2024

Prepared by
County of Tulare Resource Management Agency
Economic Development and Planning Branch
Environmental Planning Division

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Attachment E: Project Application and Operational Statement

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ACRONYMS AND ABBREVIATION

AAQA	Ambient Air Quality Analysis
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
AB 32	Assembly Bill 32, Global Warming Solutions Act of 2006
ACHP	Advisory Council on Historic Preservation (NHPA)
ADT	Average Daily Traffic
ALUP	Airport Land Use Plan
AQGGP	Air Quality Guidelines for General Plans
AQI	Air Quality Index
ATP	Active Transportation Program (or Plan)
ARB, CARB	California Air Resources Board
BIOS	Biogeographical Information and Observation System
BMP	Best Management Practices
CAA	Federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal/EPA	California Environmental Protection Agency
CalEEMod	California Emissions Estimator Model
CalFire	California Department of Forestry and Fire Protection
CalGEM	California Geologic Energy Management Division, previously Division of Oil, Gas and Geothermal Resources (DOGGR)
CALGreen	California Green Building Standards
Caltrans	California Department of Transportation
CalNAGPRA	California Native American Graves Protection and Repatriation Act
CALUP	Comprehensive Airport Land Use Plan
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDC	Centers for Disease Control and Prevention (CDC)
CDTSC	California Department of Toxic Substances Control
CDF	California Department of Forestry (and Fire)
CDFW	California Department of Fish and Wildlife, previously Department of Fish and Game
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act, California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387.
CEC	California Energy Commission
CGS	California Geological Survey
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System (CHRIS)
CH_4	Methane
CLG	Certified Local Government
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level (db Ldn)
CNRA	California Natural Resources Agency
CO	Carbon Monoxide

Cortese List	Hazardous Waste and Substances Sites List
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
DLRP	Division of Land Resource Protection
DMR	Division of Mine Reclamation
DPM	Diesel Particulate Matter
DOC	California Department of Conservation
DOJ	California. Department of Justice
DOT	United States Department of Transportation
DTSC	California Department of Toxic Substances
DWR	California Department of Water Resources
EO	Executive Order
EPA, US EPA	United State Environmental Protection Agency
FCSSE	Five County Seismic Safety Element
FESA	Federal Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIP	Federal Implementation Plan
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping & Monitoring Program
FRA	Federal Railway Administration
FTA	Federal Transit Administration
GAMAQI	Guidance for Assessing and Mitigating Air Quality Impacts.
General Plan	Tulare County General Plan 2030 Update
GHG	Greenhouse Gas
GSA	Groundwater Sustainability Agency
GWh	Gigawatt hour
HATC	Housing Authority Tulare County
HCD	Housing and Community Development
HCFs	Hydrofluorocarbons
HCP	Habitat Conservation Plan
HDB	Hamlet Development Boundary
HDPE	High-Density Polyethylene
HHSA	Tulare County Health and Human Services Agency
HSC	Health and Safety Code
IFM	Important Farmland Map
IPCC	Intergovernmental Panel on Climate Change
ISR	Indirect Source Review, Air District Rule 9510
kBTU	1,000 British Thermal Unit
kWhr	Kilowatt hour
LAA	Land Application Area
LAFCo	Local Agency Formation Commission
LEA	Local Enforcement Agencies
LOS	Level of Service
LRA	Local Responsibility Area
LUST	Leaking Underground Storage Tank
MBTA	Migratory Bird Treaty Act
MJLHMP	Multi-Jurisdictional Local Hazard Mitigation Plan

MLD	Most Likely Descendant
MMRB	Mitigation Monitoring and Reporting Program
MND	Mitigated Negative Declaration (IS/MND – Initial Study)
MW	Megawatt
MWh	Megawatt Hour
$MTCO_2e$	Metric Tons of Carbon Dioxide Equivalent
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Communities Conservation Plan
NCPTT	National Center for Preservation Technology and Training (NPS)
NFPA	National Fire Protection Association
NEPA	National Environmental Protection Agency
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NO_2	Nitrogen Dioxide
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
NWIS	National Water Information System
N_2O	Nitrous Oxide
O_3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
OHP	California Office of Historic Preservation
ONC	Office of Noise Control
OPR	Office of Planning and Research
OWTS	On-Site Wastewater Treatment System
Pb	Lead
PCFs	Paid Called Firefighters
PG&E	Pacific Gas & Electric
PM	Particulate Matter
PM_{10}	Particulate Matter, 10 microns or less
$PM_{2.5}$	Particulate Matter, 2.5 microns or less
PRC	Public Resource Code
PUC	Public Utilities Commission (California)
RCRA	Resource Conservation and Recovery Act
RDEIR	Recirculated Draft Environmental Impact Report
RHNP	Regional Housing Needs Plan
RMA	Tulare County Resource Management Agency
RPS	Renewable Portfolio Standard
RVLP	Rural Valley Lands Plan
RWD	Report of Waste Discharge
RWQCB	Regional Water Quality Control Board (Regional Board)
SB	Senate Bill
SCE	Candidate-Endangered Species
SCE	Southern California Edison
SCH	State Clearinghouse
SCG	Southern California Gas Company
SCS	Species of Special Concern
SCT	Candidate-Threatened Species

SDWA	Safe Drinking Water Act
SEKI	Sequoia Kings Canyon National Parks
SF_6	Sulfur Hexafluoride
SGC	Strategic Growth Council
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SLCP	Short-lived Climate Pollutants
SJVAPCD, Air District	San Joaquin Valley Air Pollution Control District
SMARA	Surface Mining and Reclamation Act
SO_2	Sulfur Dioxide
SPAL	Small Project Analysis Level
SRA	State Responsibility Area
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAZ	Traffic Analysis Zone
TCAG	Tulare County Association of Governments
TCEHD	Tulare County Environmental Health Division
TCFD	Tulare County Fire Department
TCM	Transportation Control Measure
TCR	Transportation Concept Report (Caltrans)
TCRTA	Tulare County Regional Transit Agency
TCSO	Tulare County Sheriff's Office
TIS	Traffic Impact Study
UAB	Urban Area Boundary
UDB	Urban Development Boundary
UNFCCC	United Nations Framework Convention on Climate Change
USACOE	United State Army Corps of Engineers
US DOE	United States Department of Energy
US DOT	United States Department of Transportation
US EPA	United States Environmental Protection Agency
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
VMT	Vehicle Miles Travelled
WDR	Waste Discharge Requirements

ENVIRONMENTAL CHECKLIST

1. **Project Title:** Treehouse California Almonds Expansion (PSP 23-064)

2. **Lead Agency:** County of Tulare
Resource Management Agency
5961 S. Mooney Blvd.
Visalia, CA 93277

3. **Contact Persons:** Sandy Roper, Chief Planner, Special Projects Division – 559-624-7101
Gary Mills, Chief Planner, Environmental Planning Division – 559-624-7199

4. **Project Location:** The Project is located at 6914 Road 160, Earlimart, CA, 93219. The proposed Project is located on Tulare County APNs 318-290-005 & -006, and 319-060-019, -022 & -037, and is located within Sections 19 & 24, Township 23 S, Ranges 25 & 26 E of the USGS 7.5-minute Sausalito School quadrangle.

5. **Applicant:** Treehouse California Almonds, LLC
6914 Road 160
Earlimart, CA 93219

6. **Owner(s)** Treehouse California Almonds, LLC
6914 Road 160
Earlimart, CA 93219

7. **General Plan Designation:** Valley Agriculture

8. **Zoning:** AE-40 (Exclusive Agriculture – 40 Acre Minimum) and AE-20 (Exclusive Agriculture – 20 Acre Minimum)

9. **Description of Project (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)** Treehouse California Almonds sells a full range of roasted and manufactured almonds, including blanched whole, sliced, and diced almonds, almond meal, almond butter, and natural whole almonds. The almonds are hulled and shelled in the Treehouse Almonds plant near Delano in Kern County. This shelled raw product is then trucked to the Earlimart site for processing. The proposed Project is located at 6914 Road 160, Earlimart, CA 93219 and is located on five (5) parcels (APNs 319-060-019, -022, -037, and 318-290-005& -006) totaling approximately 140 acres. The Project is split into two (2) development areas with the existing Earlimart processing facility located within the ±61.2-acre northern project area and the proposed new wastewater treatment facility (WWTF) proposed within the ±77.8-acre southern project area. The proposed Project consists of an expansion of the existing processing plant into four (4) phases, including construction of additional processing, warehouse, and canopy space, solar canopies, and a new WWTF to treat process wastewater for irrigation.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88' x 88' x 19') will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280' x 87' x 13') where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

  The clarifier (24' diameter x 12') will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466' x 280' x 27') for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

  A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the High Density Polyethylene (HDPE) double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

- **Phase 2:** Construction of a 5,176 sq. ft. canopy, a 6,263 sq. ft. fumigation room building with a 1,127 sq. ft. canopy for a total of 7,390 sq. ft., and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The Project would allow the applicant to diversify the packaging of materials on-site and use additional property for wastewater treatment and irrigation of crops. The Project will not increase operational hours. The Project will not increase the volume of raw almond product coming into the facility from Delano, nor will it increase the amount of processed or finished product shipped out of the facility.

The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add an additional eight (8) employees.

10. Surrounding land uses and setting (Brief description): The Project site is surrounded in all directions by agricultural operations.

- North: Agricultural field crops, solar arrays, and agricultural ponding basins. Deer Creek is located approximately 1 mile north of the Project site

- South: Agricultural field crops, agricultural ponding basins, and agricultural residences. The Wilbur Ellis chemical and sulfur manufacturing and storage facility is located approximately 1.36 miles south of the Project site
- East: Agricultural field crops, agricultural ponding basins, and agricultural residences
- West: Agricultural field crops, agricultural ponding basins, and agricultural residences

11. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement): State Water Resources Control Board, Central Valley Regional Water Quality Control Board, San Joaquin Valley Air Pollution Control District, Tulare County Environmental Health Division.

12. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.? Pursuant to AB 52, a Sacred Land File request was submitted to the Native American Heritage Commission on February 1, 2024, and was returned with negative results on February 8, 2024. On February 1, 2024, tribal consultation notices were sent to seventeen (17) tribal contacts representing eight (8) Native American tribes. The County received no responses from the tribes within the 30-day response time. Mitigation measures have been included in the project to reduce potential impacts on tribal cultural resources in the event that any potential resources are unearthed during construction-related activities.

Figure 1. Vicinity Map

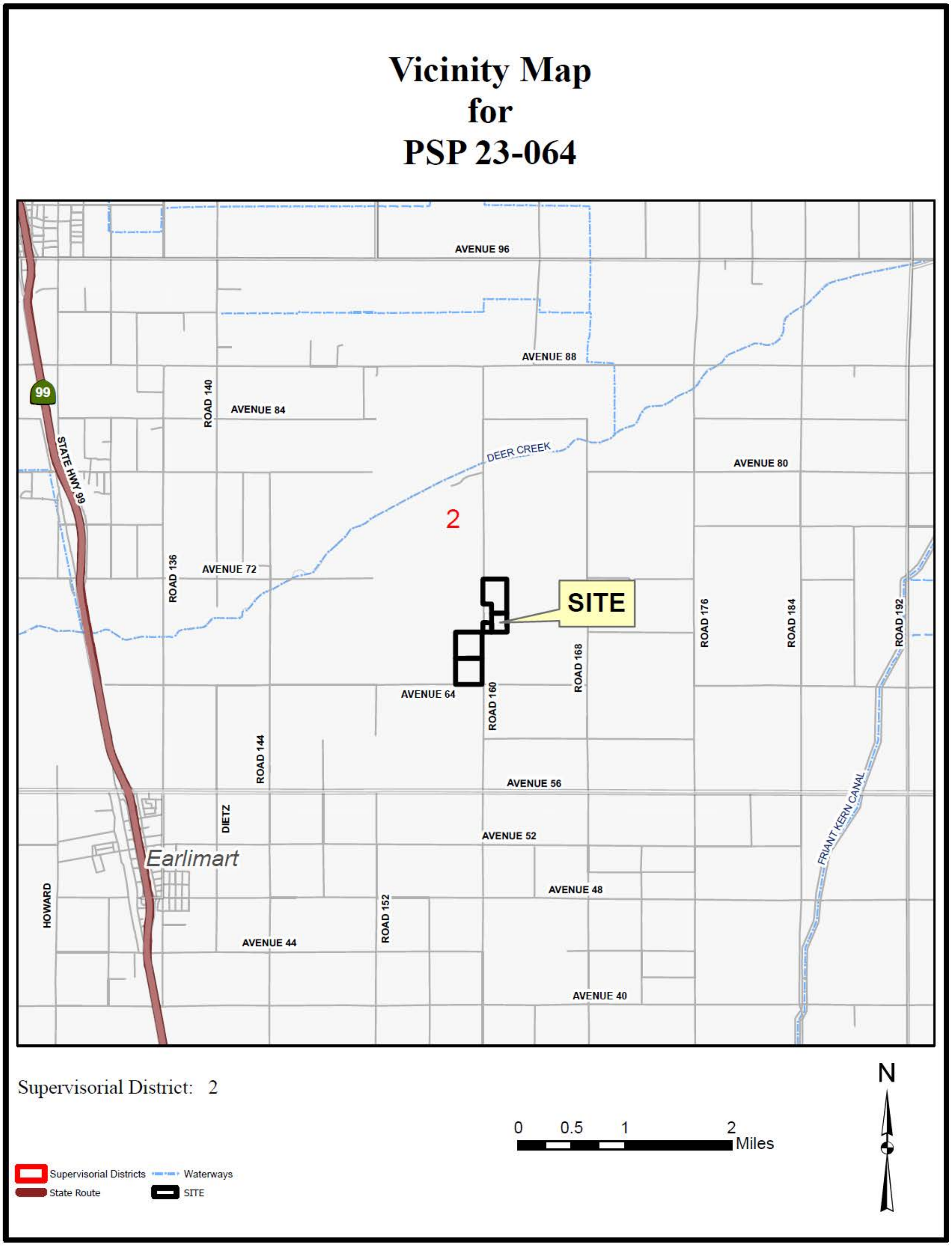


Figure 2 Aerial of Existing Site

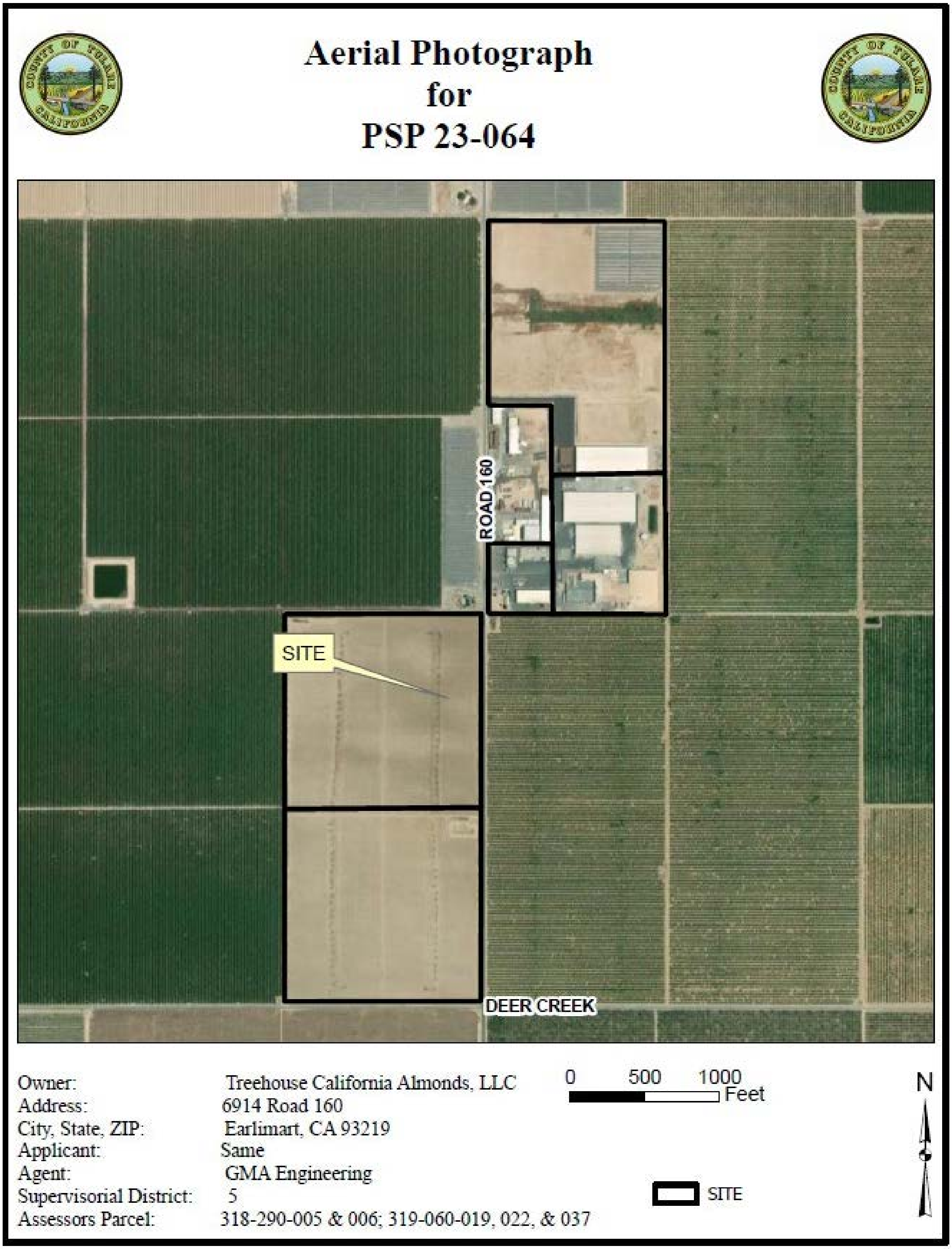


Figure 3a. Site Plan

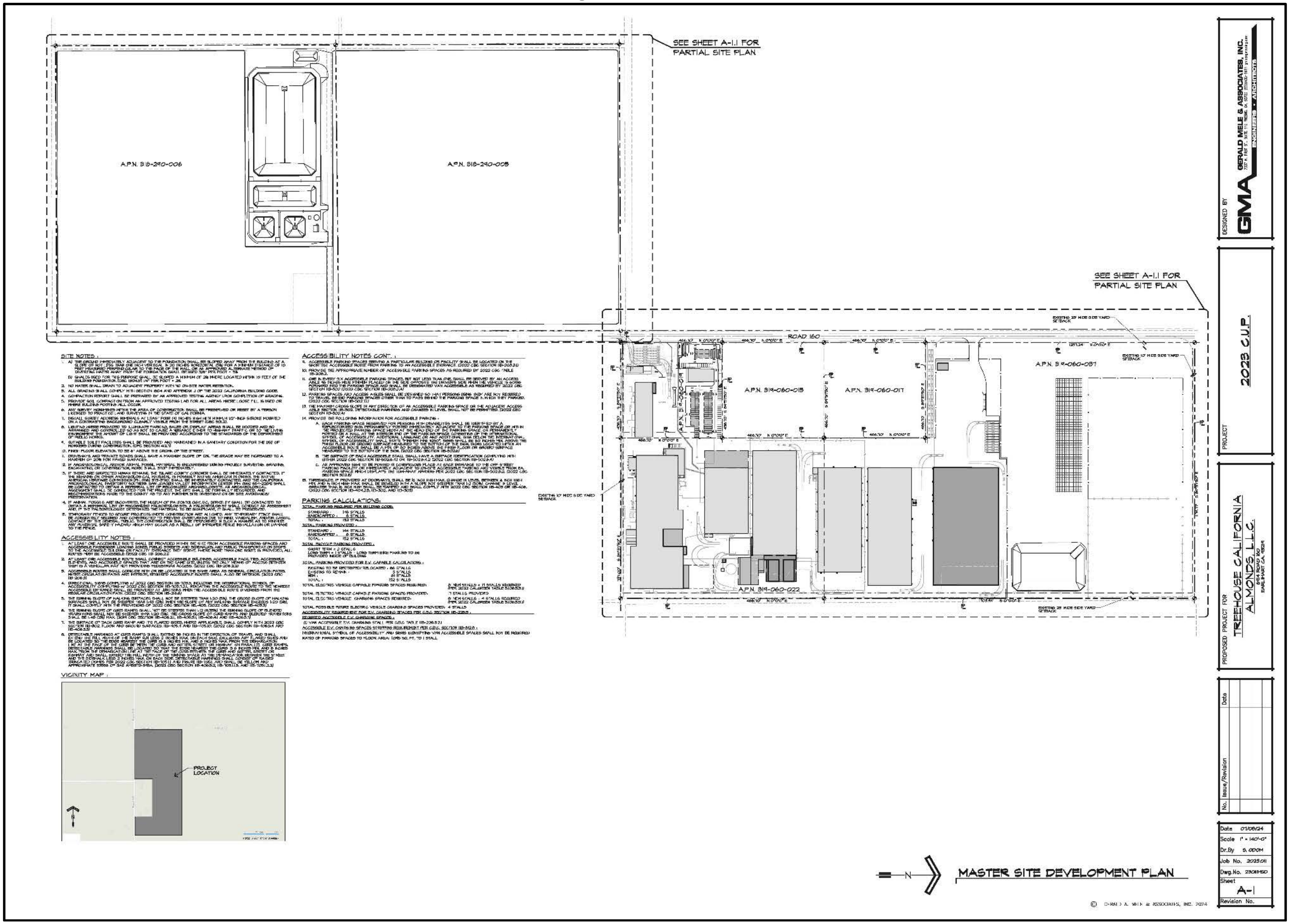


Figure 3b. Site Plan

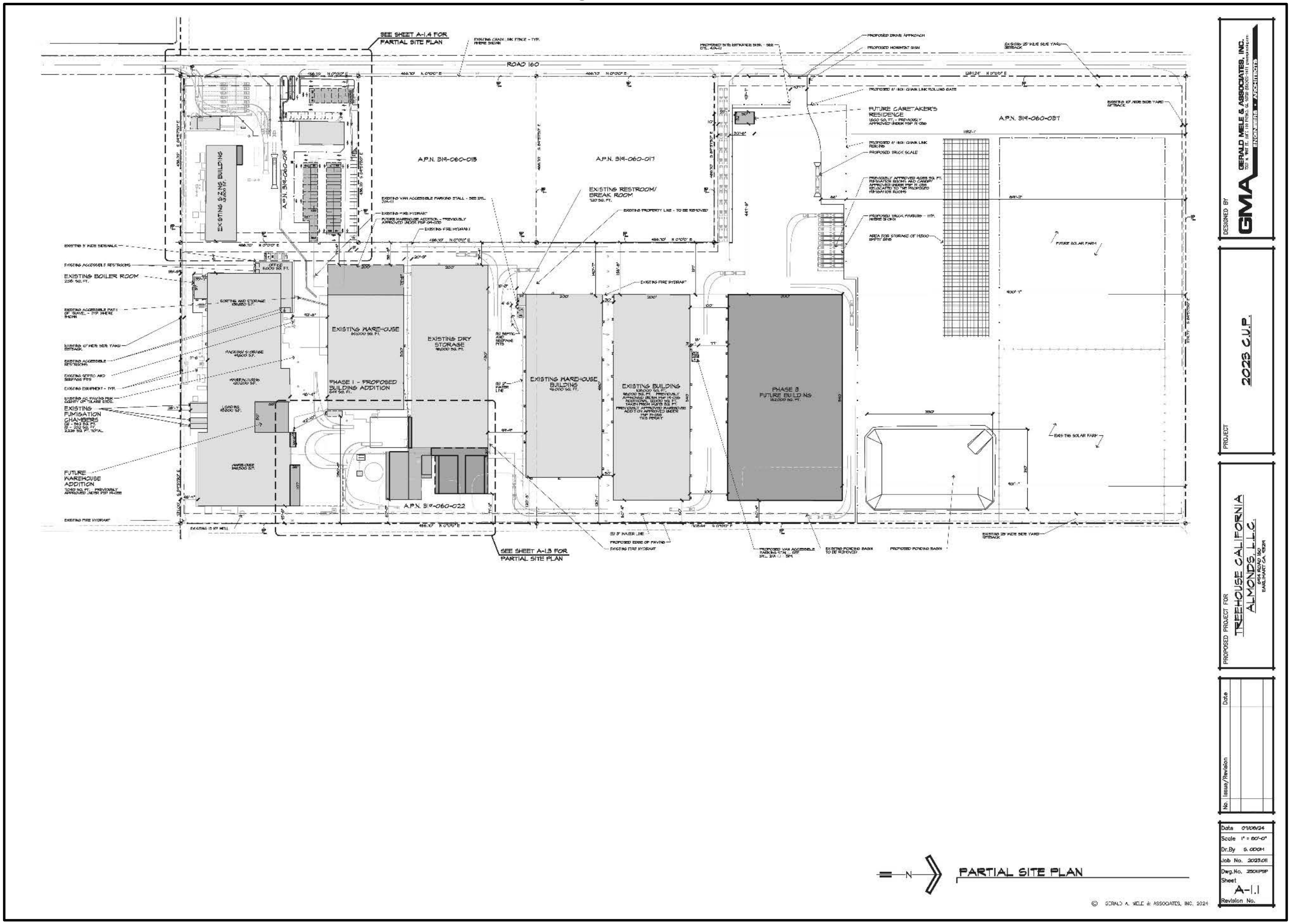


Figure 3c. Site Plan

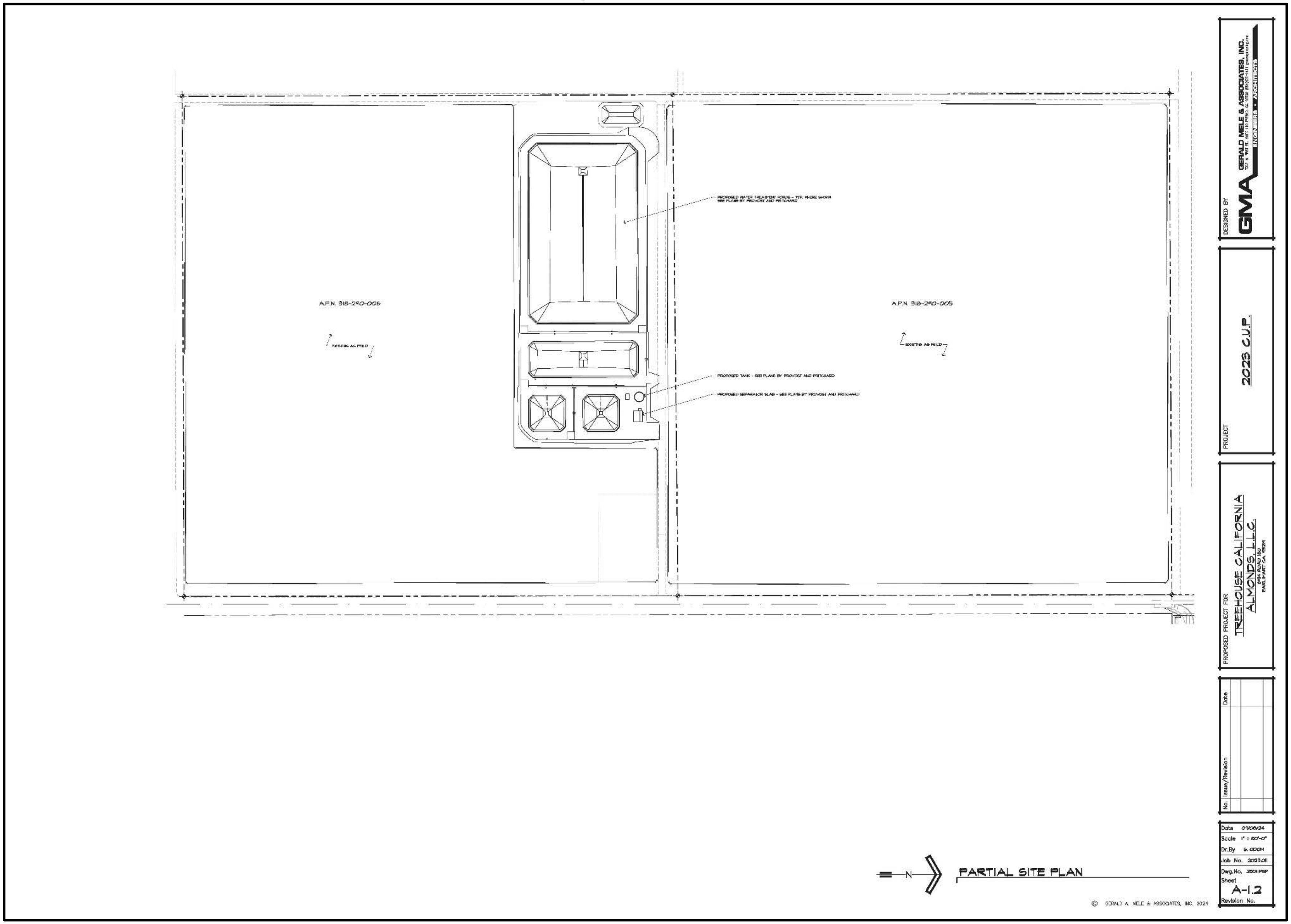


Figure 3d. Site Plan

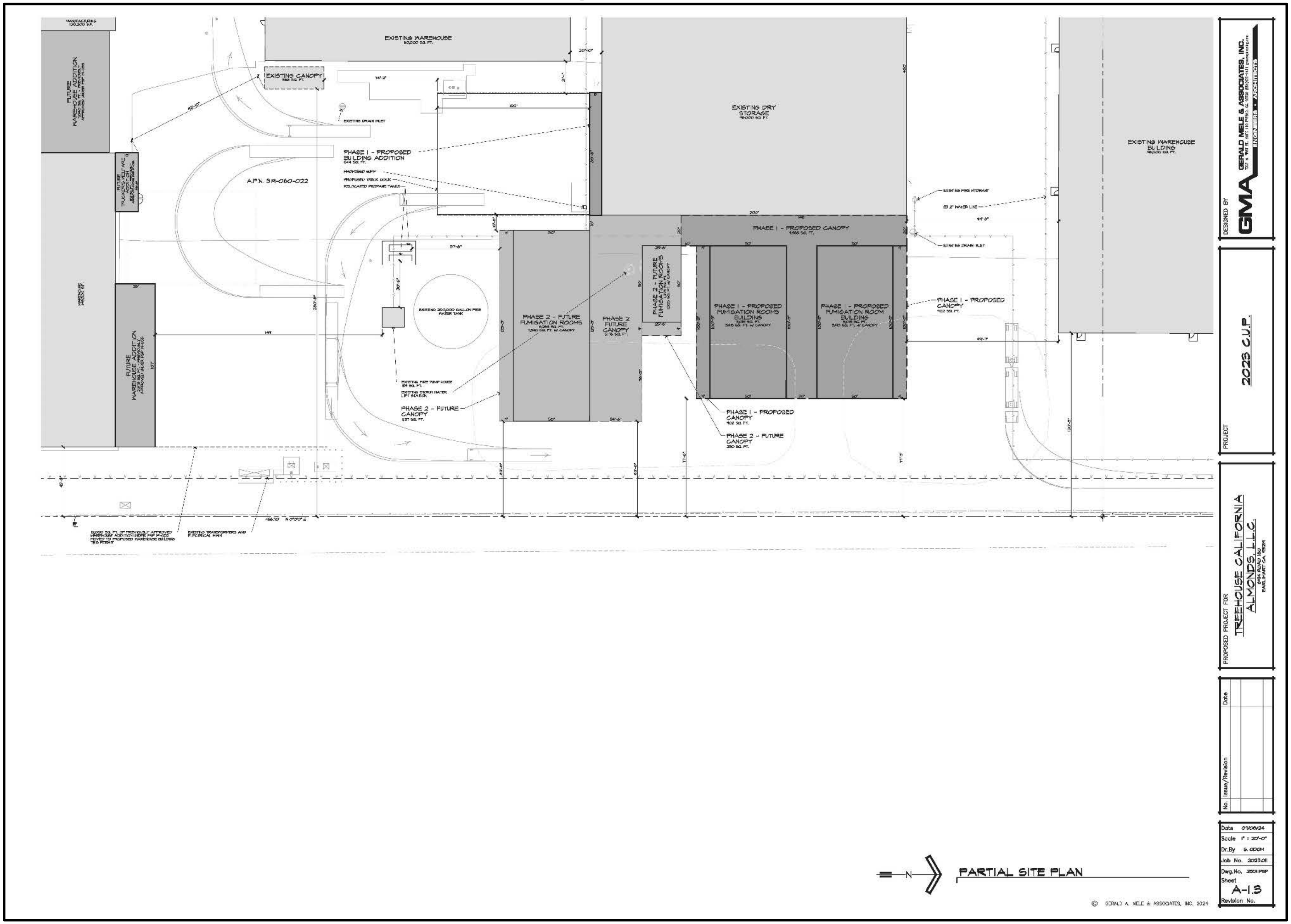
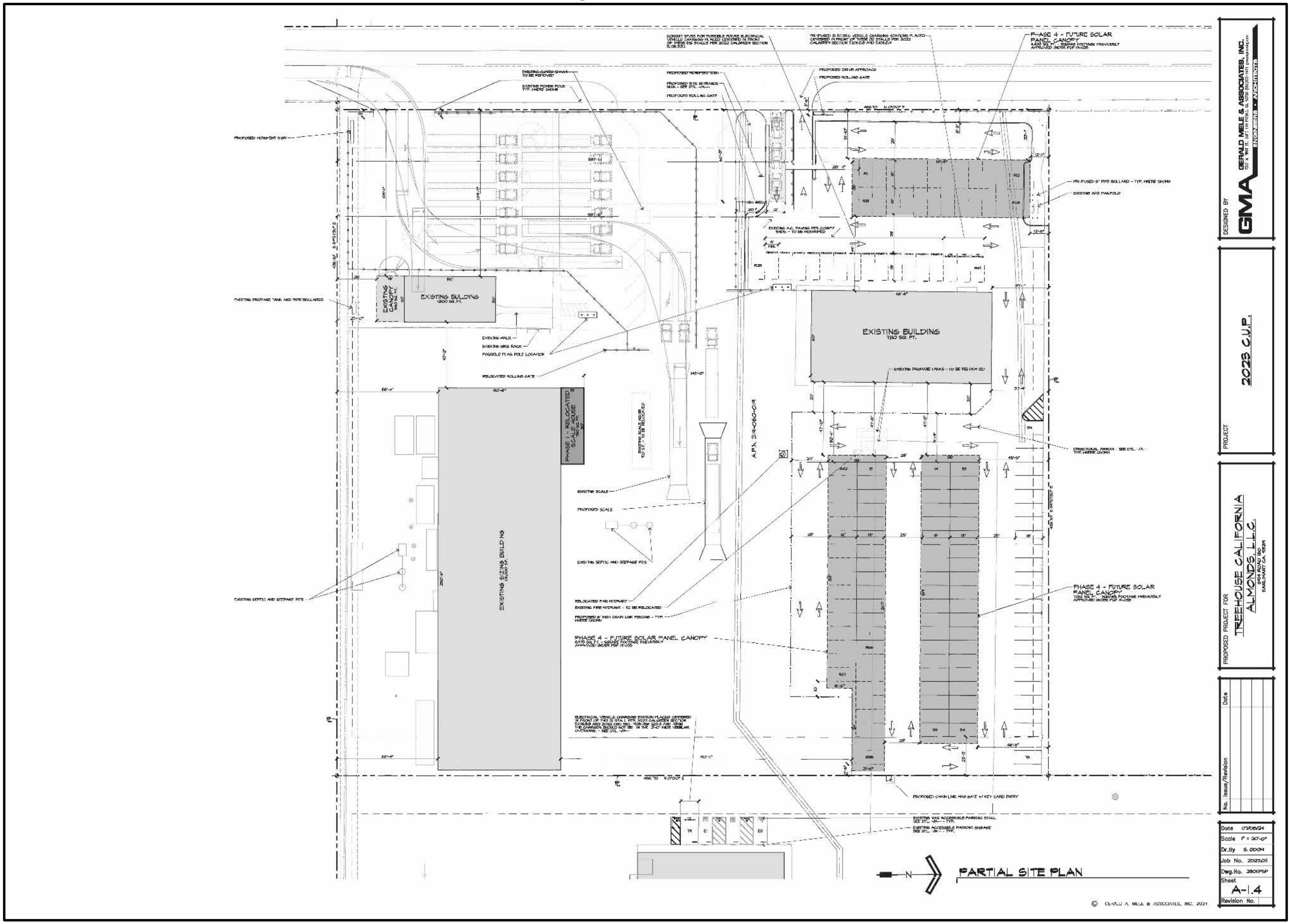


Figure 3e. Site Plan



A. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐	Aesthetics	☐	Agriculture / Forestry Resources	☒	Air Quality
☒	Biological Resources	☒	Cultural Resources	☐	Energy
☐	Geology / Soils	☐	Greenhouse Gas Emissions	☐	Hazards and Hazardous Materials
☐	Hydrology / Water Quality	☐	Land Use / Planning	☐	Mineral Resources
☐	Noise	☐	Population / Housing	☐	Public Services
☐	Recreation	☐	Transportation	☒	Tribal Cultural Resources
☐	Utilities / Service Systems	☐	Wildfire	☒	Mandatory Findings of Significance

B. DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there **WILL NOT** be a significant effect in this case because revisions in the project have been made or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.

☐ I find that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.

☐ I find that the proposed project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier **EIR** or **NEGATIVE DECLARATION** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier **EIR** or **NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature: Gary A. Mills   Date: 7/24/2024

Gary A. Mills   Chief Environmental Planner
Printed Name   Title

Signature: RL   Date: 7/24/24

Reed Schenke, P.E.   Environmental Assessment Officer
Printed Name   Title

C. EVALUATION OF ENVIRONMENTAL IMPACTS

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

    a) Earlier Analysis Used. Identify and state where they are available for review.

    b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

    c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

    a) the significance criteria or threshold, if any, used to evaluate each question; and

    b) the mitigation measure identified, if any, to reduce the impact to less than significance.

I. AESTHETICS

Would the project:	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

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- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Aesthetics, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Federal

Aesthetic resources are protected by several federal regulations, none of which are relevant to this Project because it is not located on lands administered by a federal agency nor is the Project applicant requesting federal funding or any federal permits.

State

Building Energy Efficiency Standards

The California Energy Commission (CEC) first adopted the Building Energy Efficiency Standards in 1976 and are updated every three (3) years.

Title 24 Outdoor Lighting Standards

The CEC updates the Building Efficiency Standards every three (3) years. Title 24 Outdoor Lighting Standards (Title 24, Parts 1 and 6, Building Energy Efficiency Standards) were adopted by the (CEC) on November 5, 2003, and went into effect on October 1, 2005. The basic premise of the Lighting Standards is to base allowable outdoor lighting power on the brightness of the surrounding conditions. These standards contain lighting power allowances for new lighting installations and specific alterations that are dependent on the “lighting zone” in which the Project is located. Five categories of outdoor lighting zones are defined (LZ0, LZ1, LZ2, LZ3 and LZ4). Lighting zones with lower numbers are darker from LZ0 which is in national parks and other areas intended to be very dark at night to LZ4 for high intensity nighttime use, such as entertainment or commercial districts or areas with special security considerations requiring very high light levels. The CEC defines rural areas as Lighting Zone 2. Existing outdoor lighting systems are not required to meet these lighting allowances.

California Scenic Highway Program

The California Scenic Highway Program was established by the state Legislature in 1963 for the purpose of protecting and enhancing the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been officially designated. The state laws governing the scenic highways program are found in The Streets and Highways Code Sections 260-263. In Tulare County, portions of State Routes 180, 190, and 198 are designated to apply for state scenic highway status.

Local

Tulare County General Plan 2030 Update

The following Tulare County General Plan 2030 Update policies for this resource apply to this Project:

- *LU-4.5 Commercial Building Design;*
- *LU-5.3 Storage Screening* which shall require adequate landscaping and screening of industrial storage areas to minimize visual impacts and enhance the quality of the environment;
- *LU-7.6 Screening* wherein the County shall require landscaping to adequately screen new industrial uses to minimize visual impacts;
- *LU-7.9 Visual Access;*
- *LU-7.14 Contextual and Compatible Design;*
- *LU-7.19 Minimize Lighting Impacts;*
- *SL-1.1 Natural Landscapes* which requires new development to not significantly impact or block views of Tulare County's natural landscapes;
- *SL-1.2 Working Landscapes* which requires that new non-agricultural structures and infrastructure located in or adjacent to croplands, orchards, vineyards, and open rangelands be sited so as to not obstruct important viewsheds and to be designed to reflect unique relationships with the landscape;
- *SL-2.1 Designated Scenic Routes and Highways* which is intended to protect views of natural and working landscapes along the County's highways and roads by maintaining a designated system of County scenic routes and State scenic highways;
- *ERM-1.7 Planting of Native Vegetation,*
- *ERM-1.15 Minimize Lighting Impacts* where in the County shall ensure that lighting associated with new development or facilities (including street lighting, recreational facilities, and parking) shall be designed to prevent artificial lighting from illuminating adjacent natural areas at a level greater than one foot candle above ambient conditions; and,

- *ERM-5.18 Night Sky Protection.*

Project Impact Analysis

a) Would the project have a substantial adverse effect on a scenic vista?

The proposed Project site [Treehouse California Almond Expansion (PSP 23-064)] is located on the San Joaquin Valley floor in the unincorporated area of Tulare County. The proposed Project's site is approximately 3 -miles northeast of the unincorporated community of Earlimart, and approximately 3.6 miles northeast of State Route 99. The Project is split into two (2) development areas with the existing Earlimart processing facility located within the ±61.2-acre northern project area (on the east side of Road 160) and the proposed new wastewater treatment facility (WWTF) proposed within the ±77.8-acre southern project area (on the west side of Road 160).

The northern project area includes 3 parcels: APN 319-060-019 is 4.68 acres; APN 319-060-022 is 15.81 acres; and APN 319-060-37 is 40.71 acres. These APNs include a total of 61.2 acres and are occupied by the existing almond processing facility along the northern project area. The proposed new wastewater treatment facility (WWTF) on the southern project area was used to grow grapes (vineyard) south of the existing facility on the west side of Road 160. Two APNs that total 77.8 acres will be developed as part of the Project. APN 318-290-005 is 39.32 acres and is home to newly planted almond trees. APN 318-260-006 is 38.55 acres and will be the site of the two anaerobic ponds. South of the ponds, the remainder of the property is currently vacant and will be used for farming in the future.

The proposed Project site is surrounded by agricultural lands and agricultural buildings on all sides of the Project area and will not result in a use that is visually incompatible with the surrounding area. Based on a search for County and Caltrans designated Scenic Highways in May of 2024, the proposed Project is not located along a scenic highway or within a scenic corridor, and thus, would not affect scenic resources such as rock outcroppings, or other natural features, pursuant to CEQA Guidelines Section 15300.2 (d).[1] Also, the Project site is not located on a designated state, federal, or County scenic road, or a County designated scenic corridor.[2] The nearest County Scenic Roads are Avenue 56 and Road 192, located approximately 1.5 miles south of the Project site and approximately 3.75 miles east of the Project site, respectively. Due to the site's elevation above mean sea level of approximately 320 feet and distance from resources, the Project would not substantially affect a scenic vista. Therefore, the Project would have No Impact related to this Checklist Item.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

There are no rock outcroppings, historic buildings, or other designated scenic resources within or near the proposed expansion. Additionally, the Tulare County 2030 General Plan lists a series of Scenic County Routes, several of which are in agricultural areas. Road 160, the roadway dividing the expansion and water basin would occur, is not designated as a Scenic County Route.

During construction-related activities, the visual character of the Project would be impacted as a result of excavation and other construction-related activities. However, these impacts would be short-term, temporary, and are typical of these types of construction projects. The long-term operation of the additions to the existing warehouse would not present the potential to impact the visual character of Road 160. Although the additional buildings will be constructed above ground, these structures are visually consistent with the existing agricultural infrastructure along Road 160 thereby minimizing any substantial impact on scenic resources such trees, rock outcroppings, and historic

[1] Caltrans. Accessed May 2024 at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways

[2] Tulare County General Plan 2030 Update. Part II. Figure 2-1. Accessed May 2024 at: http://generalplan.co.tulare.ca.us/.

buildings within a state scenic highway. Because the Project would not be visible from any designated or eligible state scenic highways or County scenic roads, the Project would result in No Impact to an eligible or designated state scenic highway or other scenic resources.

c) Would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings?

As noted earlier, the proposed Project is in a predominantly agricultural area with existing agricultural uses to the north, west, south, and east. On clear days, the Sierra Nevada Mountains' highest peaks are visible despite being located more than 45 miles east of the proposed Project site. During construction-related activities, the visual character of the Project area would be impacted because of excavation and other construction-related activities. The long-term operations of the Project would not impact the visual character of the site or area. While there is more than one addition, and other appurtenant structures may be constructed above ground, these structures are visually consistent with the existing agricultural infrastructure in the area and would not substantially degrade the existing visual character or quality of the site and its surroundings. The post-development views will be similar to the existing Treehouse California Almonds facility with additional structures and parking. Therefore, the proposed Project would not conflict with applicable zoning and other regulations regarding scenic quality resulting in a Less Than Significant Impact aesthetics.

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Lighting effects primarily occur due to artificial light during the evening and night hours. These effects may involve light emissions from indoor spaces (see through windows) and outdoor sources such as security lights and streetlights. Glare results from light reflecting off polished surfaces such as windows or metallic finishes. Construction will occur during the day between the hours of 7am to 7pm. Such lighting would be subject to the requirements of the Tulare County General Plan. Therefore, the Project would have a Less Than Significant Impact to this resource.

II. AGRICULTURAL AND FOREST RESOURCES

Would the project:	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agriculture use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources code 12220(g), timberland (as defined in Public Resource Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88' x 88' x 19') will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280' x 87' x 13') where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

  The clarifier (24' diameter x 12') will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466' x 280' x 27') for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the High-Density Polyethylene (HDPE) double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

- **Phase 2:** Construction of a 5,176 sq. ft. canopy, a 6,263 sq. ft. fumigation room building with a 1,127 sq. ft. canopy for a total of 7,390 sq. ft., and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Agricultural and Forest Resources, etc., contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Federal

Federal regulations for agriculture and forest resources are not relevant to this project because it is not a federal undertaking (the Project site is not located on lands administered by a federal agency, and the Project applicant is not requesting federal funding or any federal permits).

State

<u>California Environmental Quality Act (CEQA) Definition of Agricultural Lands</u>

Public Resources Code Section 21060.1 defines "agricultural land" for the purposes of assessing environmental impacts using the FMMP. The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. The FMMP serves as a tool to analyze agricultural land use and land use changes throughout California. As such, this Project is being evaluated using the FMMP pursuant to CEQA.

<u>California Department of Conservation, Division of Land Resource Protection Farmland Mapping and Monitoring Program</u>

The California Department of Conservation (DOC) applies the Natural Resources Conservation Service (NRCS) soil classifications to identify agricultural lands. These agricultural designations are used in planning for the present and future of California's agricultural land resources. Pursuant to the DOC's FMMP, these designated agricultural lands are included in the Important Farmland Maps (IFM). As noted earlier the FMMP was established in 1982 to assess the location, quality and quantity of agricultural lands, and the conversion of these lands. The FMMP serves as tool to analyze agricultural land use and land use changes throughout California. The DOC has a minimum mapping unit of 10 acres, with parcels that are smaller than 10 acres being absorbed into the surrounding classifications.

The following list provides a comprehensive description of all the categories mapped by the DOC. Collectively, lands classified as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are referred to as Farmland.[1]

- *Prime Farmland*. Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

- *Farmland of Statewide Importance*. Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- *Unique Farmland*. Farmland of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated but may include non-irrigated groves or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

- *Farmland of Local Importance*. Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

- *Grazing Land*. Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.

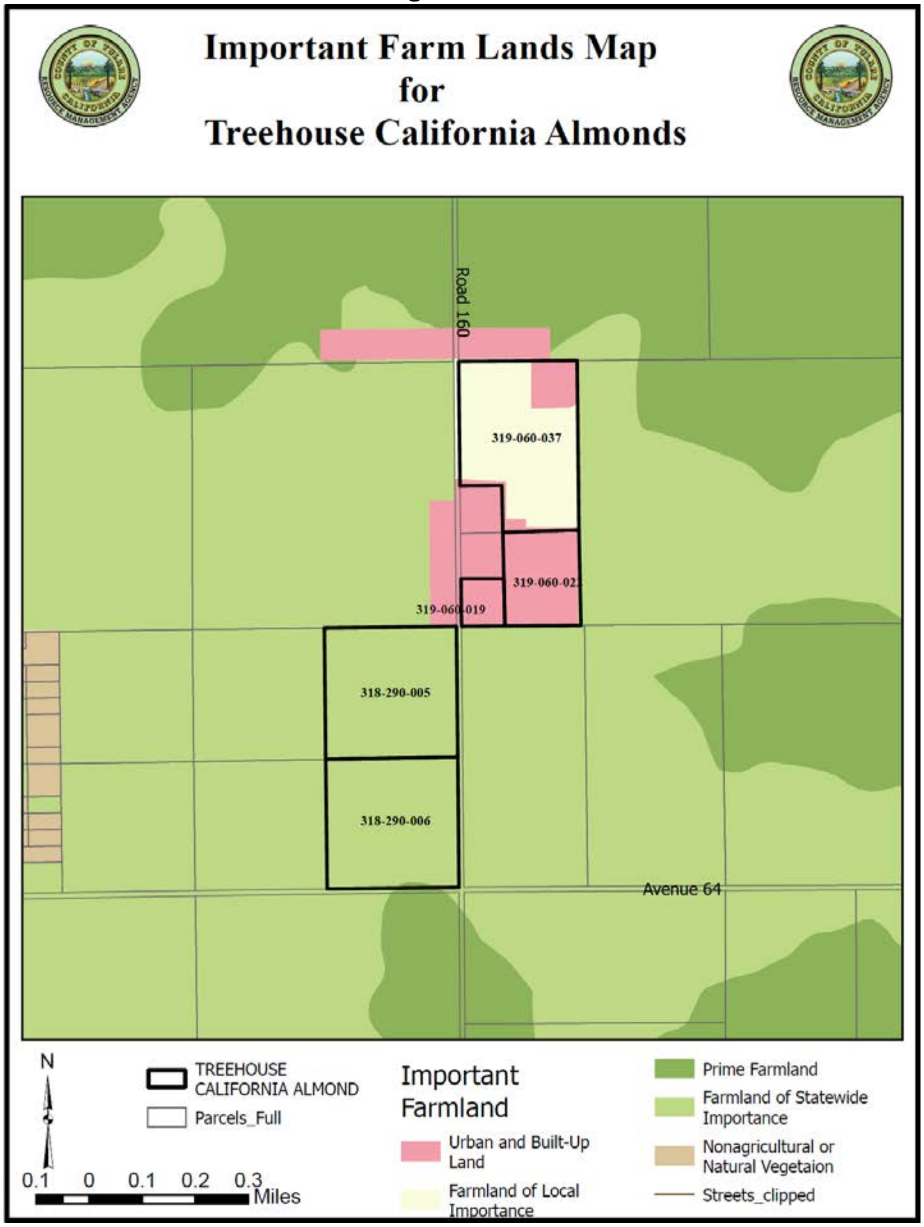
- *Urban and Built-up Land*. Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

- *Other Land*. Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

[1] California Department of Conservation. FMMP – Important Farmland Map Categories. Accessed March 2024 at: https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx

Figure 2.2-1 shows the FMMP classifications of the proposed Project area.[2]

Figure 2.2-1



As shown in Figure 2.2-1, the Project site is located in urban or built up land. The new wastewater treatment facility, which is south and west of the project site, is located in Farmland of Statewide Importance. However, it will stay in agricultural production and will not be transformed to urban development.

California Land Conservation Act (Williamson Act)

The Williamson Act, also known as the California Land Conservation Act of 1965, enables local governments to enter contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market value. The Department of Conservation

[2] California Department of Conservation. DOC Maps: Agriculture. Accessed March 2024 at: https://maps.conservation.ca.gov/agriculture/

assists all levels of government and landowners in the interpretation of the Williamson Act related government code. The Department also researches, publishes and disseminates information regarding the policies, purposes, procedures, and administration of the Williamson Act according to government code. Participating counties and cities are required to establish their own rules and regulations regarding implementation of the Act within their jurisdiction. These rules include but are not limited to: enrollment guidelines, acreage minimums, enforcement procedures, allowable uses, and compatible uses.[3]

Williamson Act Contracts are formed between a county or city and a landowner for the purpose of restricting specific parcels of land to agricultural or related open space use. Private land within locally designated agricultural preserve areas is eligible for enrollment under a contract. The minimum term for contracts is ten years. However, since the contract term automatically renews on each anniversary date of the contract, the actual term is essentially indefinite. Landowners receive substantially reduced property tax assessments in return for enrollment under a Williamson Act contract. Property tax assessments of Williamson Act contracted land are based upon generated income as opposed to potential market value of the property.[4]

Forestry Resources

State regulations regarding forestry resources are not relevant to the proposed project because no forestry resources exist at or near the Project site.

Local

Tulare County General Plan 2030 Update

The Tulare County General Plan has a number of policies that apply to projects within the County of Tulare.[5] The following General Plan policies apply to the proposed Project: Policies designed to promote future development patterns that focus growth within established community areas and to mitigate loss of agricultural lands include the following:

- *AG-1.4 Primary Land Use* wherein the County shall support non-renewal or cancellation processes that meet State law for lands within UDBs and HDBs;
- *AG-1.6 Conservation Easements* wherein the County shall consider developing an Agricultural Conservation Easement Program (ACEP) to help protect and preserve agricultural lands (including "Important Farmlands"), as defined in this Element;
- *LU-1.8 Encourage Infill Development* wherein the County shall encourage and provide incentives for infill development to occur in communities and hamlets within or adjacent to existing development in order to maximize the use of land within existing urban areas, minimize the conversion of existing agricultural land, and minimize environmental concerns associated with new development;
- *LU-2. Agricultural Lands* the County shall maintain agriculturally designated areas for agriculture use and by directing urban development away from valuable agricultural lands to cities, unincorporated

[3] California Department of Conservation. Williamson Act Program. Accessed March 2024 at: https://www.conservation.ca.gov/dlrp/wa.

[4] California Department of Conservation. Williamson Act Contracts. Accessed March 2024 at: https://www.conservation.ca.gov/dlrp/wa/Pages/contracts.aspx.

[5] Tulare County General Plan 2030 Update, Part 1 – Goals and Policies Report. Accessed March 2024 at: Microsoft PowerPoint - 1 - GPR Cover 2012 (tulare.ca.us)

communities, hamlets, and planned community areas where public facilities and infrastructure are available;

- *LU-2.2 Agricultural Parcel Splits* wherein the County shall deny requests to create parcels less than the minimum allowed size in agricultural designated areas, unless specifically provided by Division of Land Exceptions in the Tulare County Zoning Ordinance, as may be adopted by the Board of Supervisors, based on concerns that these parcels are less viable economic farming units and that the resultant increase in residential density increases the potential for conflict with normal agricultural practices on adjacent parcels. Evidence that the affected parcel may be an uneconomic farming unit due to its current size, soil conditions, or other factors shall not alone be considered a sufficient basis to grant an exception. The RVLP shall be the tool to determine the viability of a given agricultural parcel in the valley and its ability to be subdivided, unless specifically provided by Division of Land Exceptions in the Tulare County Zoning Ordinance;

- *LU-2.5 Agricultural Support Facilities* wherein the County shall encourage beneficial reuse of existing or vacant agricultural support facilities for new businesses (including non-agricultural uses);

- *PF-1.1 Maintain Urban Edges* wherein the County shall strive to maintain distinct urban edges for all unincorporated communities within the valley region or foothill region, while creating a transition between urban uses and agriculture and open space;

- *PF-1.2 Location of Urban Development* wherein the County shall ensure that urban development only takes place in the following areas:

  1. Within incorporated cities and CACUDBs;
  2. Within the UDBs of adjacent cities in other counties, unincorporated communities, planned community areas, and HDBs of hamlets;
  3. Within foothill development corridors as determined by procedures set forth in Foothill Growth Management Plan;
  4. Within areas set aside for urban use in the Mountain Framework Plan and the mountain sub-area plans; and,
  5. Within other areas suited for non-agricultural development, as determined by the procedures set forth in the Rural Valley Lands Plan.

- *PF-1.3 Land Uses in UDBs/HDBs* wherein the County shall encourage those types of urban land uses that benefit from urban services to develop within UDBs and HDBs. Permanent uses which do not benefit from urban services shall be discouraged within these areas. This shall not apply to agricultural or agricultural support uses, including the cultivation of land or other uses accessory to the cultivation of land provided that such accessory uses are time-limited through Special Use Permit procedures;

- *PF-1.4 Available Infrastructure* wherein the County shall encourage urban development to locate in existing UDBs and HDBs where infrastructure is available or may be established in conjunction with development. The County shall ensure that development does not occur unless adequate infrastructure is available, that sufficient water supplies are available or can be made available, and that there are adequate provisions for long term management and maintenance of infrastructure and identified water supplies;

- *PF-1.5 Planning Areas* wherein County policies reflect the unique attributes of the various locations and geographic areas in the County. As such, there are policies applicable to one area of the County that are not applicable to others based on natural setting, topography, habitat, existing development, or other attributes which are unique within the planning context of the County;

- *PF-1.6 Appropriate Land Uses by Location* wherein the County shall utilize the Land Use Element and adopted CAC General Plans, Community Plans, Hamlet Plans, Planned Communities, Corridor Areas, or Area Plans to designate land uses and intensities that reflect and maintain the appropriate level of urbanized development in each CAC General Plan, Community Plan, Hamlet Plan, Planned Community, Corridor Area, or Area Plan;

- *PF-2.3 UDB and Other Boundaries* wherein the County shall provide notice and opportunity for special districts, school districts, and other service providers when evaluating the expansion of a Community's UDB; and,

- *PF-2.4 Community Plans* wherein the County shall ensure that community plans are prepared, updated, and maintained for each of the communities. These plans shall include the entire area within the community's UDB and shall address the community's short- and long-term ability to provide necessary urban services.

<u>Rural Valley Land Plans</u>

For the unincorporated valley portions of Tulare County, growth is guided by the land use policies in the Rural Valley Lands Plan (RVLP) and Planning Framework Element of the Tulare County General Plan 2030 Update.

"Tulare County has identified land for urbanization according to four categories: 1) lands in and around incorporated cities, 2) lands in and around unincorporated communities, 3) lands in foothill development corridors, and 4) lands that qualify under the RVLP. The county is legally responsible for the planning and regulation of all lands that fall outside incorporated city limits, even though cities adopt their own general plans for the incorporated area and a portion of surrounding unincorporated area."

"The RVLP applies to about 773,500 acres of the valley portion of the County, outside the planned Urban Development Boundaries (UDB) and generally below the 600-foot elevation contour line along the foothills of the Sierra Nevada Mountain Range. … The purpose of the RVLP is to protect and maintain the agricultural viability of rural valley areas by establishing requirements for exclusive agricultural zoning (containing minimum parcel sizes) appropriate to sustain agriculture and implementing a policy that utilizes resource information to determine the suitability of rural lands for nonagricultural uses. The goal of the RVLP is to "sustain the viability of Tulare County agriculture by restraining division and use of land which is harmful to continued agricultural use." The RVLP utilizes five exclusive agriculture (AE) zones, each requiring a different minimum parcel size (ranging from five to eighty acres). These zones are as follows: AE, AE-10, AE-20, AE-40, and AE-80. The number designation on each zone generally reflects the minimum acres of land needed to productively farm a certain crop at a commercial level."

This project is not within a UAB or a UDB. The application of the RVLP Checklist is used to control development in both a UDB (Policy PF-4.20) and UAB (Policy PF-4.21). A RVLP analysis was not done because this project would be expanding an existing agricultural use. The project isn't proposing to change the AE-20 or AE-40 Zones that the project is located on to a non-agricultural zone. In addition, the project isn't dividing the project site into small parcels.

Tulare County Agricultural Conservation Easement Program

The Tulare County Agricultural Conservation Easement Program was established to allow the use of agricultural easements to reduce or mitigate any significant impacts resulting from the conversion of certain agricultural land to non-agricultural uses. This Project does not convert agricultural land to non-agricultural uses, so a conservation easement is not required.

Project Impact Analysis

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? No Impact.

The proposed Project would expand an existing almond processing plant, which is for commercial agricultural use (see the substantiation for subparagraph b) of Section II below). The proposed Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. Therefore, No Impact will occur.

b) Would the project conflict with existing zoning for agriculture use, or a Williamson Act contract? No Impact.

Portions of the Project site (APNs 318-290-005 & 006 and 319-060-019) are not restricted by California Land Conservation Act ("Williamson Act") Contracts. However, APNs 319-060-022 and 037 are restricted by Williamson Act Contracts. The existing almond processing plant is a commercial agricultural use that is allowed on property that is restricted by a Williamson Act Contract. On September 26, 1989, the Tulare County Board of Supervisors adopted Resolution No. 89-1275, which adopted Uniform Rules for Agricultural Preserves for Tulare County. Section 1.a. of Resolution No. 89-1275 lists the growing and harvesting of field crops, fruit and nut trees, vines, vegetables, horticulture specialties, and timber as being allowed under the Williamson Act. In addition, Section 1.q. of Resolution No. 89-1275 lists the curing, processing, packaging, packing, storage and shipping of agricultural products as being allowed under the Williamson Act.

Section 4. of Resolution No. 89-1275 states that "If the property is zoned AE, AE-10, AE-20, AE-40, AE-80, A-1 or AF, all the uses which are permitted in the particular zone upon securing a Special Use Permit un the provisions of Ordinance No. 352 as presently in effect and as said provisions may be amended from time to time, are deemed to be compatible uses and may be carried on when such Special Use Permit has been secured." Sections 9.6.E.22 and 9.7.E.34 of Ordinance No. 352 ("Tulare County Zoning Ordinance") allows the following use in the AE-20 and AE-40 Zones subject to the approval of a Special Use Permit: "Establishments for the curing, processing, packaging, packing, storage and shipping of agricultural products." Therefore, the proposed Project would not conflict with existing zoning for agriculture use, or a Williamson Act contract and there is No Impact.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production? No Impact.

The proposed Project will not occur on land zoned as forest land or timberland or result in a loss of forest land. As such, the Project would not conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources code 12220(g), timberland (as defined in Public Resource Code section 4526), or timberland zoned Timberland Production [as defined by Government Code section 51104(g)]. There is No Impact.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use? No Impact.

As noted above, the proposed Project will not occur on land zoned as forest land or timberland or result in a loss of forest land. As such, the proposed Project would not conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources code 12220(g), timberland (as defined in Public Resource Code section 4526), or timberland zoned Timberland Production [as defined by Government Code section 51104(g)]. There is No Impact.

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use? No Impact.

See the substantiation above for subparagraphs a), b), c), and d) of Section II. Based on this information, the proposed Project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. There would be No Impact.

III. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result is other emissions (such as those leading to odors adversely affecting a substantial number of people?	☐	☒	☐	☐

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88' x 88' x 19') will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280' x 87' x 13') where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

  The clarifier (24' diameter x 12') will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466' x 280' x 27') for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

  A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the High-Density Polyethylene (HDPE) double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

- **Phase 2:** Construction of a 5,176 sq. ft. canopy, a 6,263 sq. ft. fumigation room building with a 1,127 sq. ft. canopy for a total of 7,390 sq. ft., and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Air Quality, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Both the federal government (through the United States EPA) and the State of California (through the California ARB) have established health-based ambient air quality standards (AAQS) for six (6) air pollutants, commonly referred to as "criteria pollutants." The six criteria pollutants are: carbon monoxide (CO), ozone (O_3), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb).

Federal

Federal Clean Air Act

"The Federal Clean Air Act (CAA), adopted in 1970 and amended twice thereafter (including the 1990 amendments), establishes the framework for modern air pollution control. The act directs the Environmental Protection Agency (EPA) to establish ambient air standards, the National Ambient Air Quality Standards (NAAQS)… for six pollutants: ozone, carbon monoxide, lead, nitrogen dioxide, particulate matter (less than 10 microns in diameter [PM_{10}] and less than 2.5 microns in diameter [$PM_{2.5}$]), and sulfur dioxide. The standards are divided into primary and secondary standards; the former are set to protect human health with an adequate margin of safety and the latter to protect environmental values, such as plant and animal life.

Areas that do not meet the ambient air quality standards are called "non-attainment areas". The Federal CAA requires each state to submit a State Implementation Plan (SIP) for non-attainment areas. The SIP, which is reviewed and approved by the EPA, must demonstrate how the federal standards will be achieved. Failing to submit a plan or secure approval could lead to the denial of federal funding and permits for such improvements as highway construction and sewage treatment plants. For cases in which the SIP is submitted by the State but fails to demonstrate achievement of the standards, the EPA is directed to prepare a federal implementation plan or EPA can "bump up" the air basin in question to a classification with a later attainment date that allows time for additional reductions needed to demonstrate attainment, as is the case for the San Joaquin Valley.

SIPs are not single documents. They are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations and federal controls. The California SIP relies on the same core set of control strategies, including emission standards for cars and heavy trucks, fuel regulations and limits on emissions from consumer products. California State law makes CARB the lead agency for all purposes related to the SIP. Local Air Districts and other agencies, such as the Bureau of Automotive Repair and the Department of Pesticide Regulation, prepare SIP elements and submit them to CARB for review and approval. The CARB forwards SIP revisions to the EPA for approval and publication in the Federal Register."[1]

The Federal CAA classifies nonattainment areas based on the severity of the nonattainment problem, with marginal, moderate, serious, severe, and extreme nonattainment classifications for ozone. Nonattainment classifications for PM range from marginal to serious. The Federal CAA requires areas with air quality violating the NAAQS to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The SIP contains the strategies and control measures that states will use to attain the NAAQS. The Federal CAA amendments of 1990 require states containing areas that violate the NAAQS to revise their SIP to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, rules, and regulations of Air Basins as reported by the agencies with jurisdiction over them. The EPA reviews SIPs to determine if they conform to the mandates of the Federal CAA amendments and will achieve air quality goals when implemented. If the EPA determines a SIP to be inadequate, it may prepare a Federal Implementation Plan (FIP) for the nonattainment area and impose additional control measures.

State

The California Clean Air Act

"The California CAA of 1988 establishes an air quality management process that generally parallels the federal process. The California CAA, however, focuses on attainment of the State ambient air quality standards (see Table 3.3-1 [of the General Plan RDEIR]), which, for certain pollutants and averaging periods, are more stringent than the comparable federal standards. Responsibility for meeting California's standards is addressed by the CARB and local air pollution control districts (such as the eight county SJVAPCD, which administers air quality regulations for Tulare County). Compliance strategies are presented in district-level air quality attainment plans.

The California CAA requires that Air Districts prepare an air quality attainment plan if the district violates State air quality standards for criteria pollutants including carbon monoxide, sulfur dioxide, nitrogen dioxide, PM2.5, or ozone. Locally prepared attainment plans are not required for areas that violate the State PM10 standards. The California CAA requires that the State air quality standards be met as expeditiously as practicable but does not set precise attainment deadlines. Instead, the act established increasingly stringent requirements for areas that will require more time to achieve the standards."[2]

"The air quality attainment plan requirements established by the California CAA are based on the severity of air pollution caused by locally generated emissions. Upwind air pollution control districts are required to establish and implement emission control programs commensurate with the extent of pollutant transport to downwind districts."[3]

The California Air Resources Board

The ARB is the state agency responsible for implementing the federal and state Clean Air Acts. ARB established CAAQS, which includes all criteria pollutants established by the NAAQS, but with additional regulations for visibility reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride.

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[1] Tulare County General Plan 2030 Update REIR. Pages 3.3-1 to 3.3-2.
[2] Ibid. 3.3-2 to 3.3-3.
[3] Op. Cit. 3.3-5.

"The CARB is responsible for establishing and reviewing the State ambient air quality standards, compiling the California SIP and securing approval of that plan from the U.S. EPA. As noted previously, federal clean air laws require areas with unhealthy levels of ozone, inhalable particulate matter, carbon monoxide, nitrogen dioxide, and sulfur dioxide to develop SIPs. SIPs are comprehensive plans that describe how an area will attain NAAQS. The 1990 amendments to the Federal CAA set deadlines for attainment based on the severity of an area's air pollution problem. State law makes CARB the lead agency for all purposes related to the SIP. The California SIP is periodically modified by the CARB to reflect the latest emission inventories, planning documents, and rules and regulations of various air basins. The CARB produces a major part of the SIP for pollution sources that are statewide in scope; however, it relies on the local Air Districts to provide emissions inventory data and additional strategies for sources under their jurisdiction. The SIP consists of the emission standards for vehicular sources and consumer products set by the CARB, and attainment plans adopted by the local air agencies as approved by CARB. The EPA reviews the air quality SIPs to verify conformity with CAA mandates and to ensure that they will achieve air quality goals when implemented. If EPA determines that a SIP is inadequate, it may prepare a FIP for the nonattainment area and may impose additional control measures.

In addition to preparation of the SIP, the CARB also regulates mobile emission sources in California, such as construction equipment, trucks, automobiles, and oversees the activities of air quality management districts and air pollution control districts, that are organized at the county or regional level. The local or regional Air Districts are primarily responsible for regulating stationary emission sources at industrial and commercial facilities within their jurisdiction and for preparing the air quality plans that are required under the Federal CAA and California CAA."[4]

Local

<u>San Joaquin Valley Air Pollution Control District</u>

The San Joaquin Valley Air Pollution Control District (SJVAPCD or Air District) is the local agency charged with preparing, adopting, and implementing mobile, stationary, and area air emission control measures and standards. The Air District has several rules and regulations that may apply to the Project, following is an example of those rules/regulations which likely apply to this Project:

- Rule 3135 (Dust Control Plan Fees) – This rule requires the project applicant to submit a fee in addition to a Dust Control Plan. The purpose of this rule is to recover the Air District's cost for reviewing these plans and conducting compliance inspections.
- Rule 4002 (National Emission Standards for Hazardous Air Pollutants) – Also known as NESHAPs, this rule applies to all sources of hazardous air pollution and requires developers to comply with federal requirements for handling and usage of hazardous air pollutants (HAPs) to protect the health and safety of the public from HAPs such as asbestos.
- Rule 4101 (Visible Emissions) – This rule applies to any source of air contaminants and prohibits the visible emissions of air contaminants.
- Rule 4102 (Nuisance) – This rule applies to any source of air contaminants and prohibits any activity which creates a public nuisance.
- Rule 4601 (Architectural Coatings) – This rule specifies requirements for the storage, cleanup, and labeling of architectural coatings. The rule applies to any person who supplies, sells, offers for sale, applies, or solicits the application of any architectural coating, or who manufactures, blends or repackages any architectural coating for use within the Air District.

[4] Op. Cit. 3.3-6 to 3.3-7.

- Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations) – This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.
- Regulation VIII (Fugitive PM10 Prohibitions) – This regulation is a series of eight rules designed to reduce PM_{10} emissions by reducing fugitive dust emissions. Regulation VIII requires implementation of control measures to ensure that visible dust emissions are substantially reduced.
- Rule 9510 (Indirect Source Review) – Also known as ISR, this rule requires developers to mitigate project emissions through 1) on-site design features that reduce trips and vehicle miles traveled, 2) controls on other emission sources, and 3) with reductions obtained through the payment of a mitigation fee used to fund off-site air quality mitigation projects. Rule 9510 requires construction-related NOx emission reductions of 20 percent and PM10 exhaust reductions of 45 percent and operation-related NOx reductions of 33 percent and PM10 exhaust reductions of 50 percent.

Tulare County General Plan 2030 Update

The following Tulare County General Plan 2030 Update policies for this resource apply to this Project:

- *AQ-1.1 Cooperation with Other Agencies* requiring the County to cooperate with other local, regional, Federal, and State agencies (e.g., Air District) in developing and implementing air quality plans to achieve State and federal Ambient Air Quality Standards to achieve better air quality conditions locally and regionally;

- *AQ-1.2 Cooperation with Local Jurisdictions* requiring the County to coordinate with regional agencies, such as the Air District, to address cross-jurisdictional air quality issues;

- *AQ-1.3 Cumulative Air Quality Impacts* requiring development to be located, designed, and construction in a manner that minimizes cumulative air quality impacts;

- *AQ-1.4 Air Quality Land Use Compatibility* requiring the County to evaluate compatibility of proposed land uses;

- *AQ-1.5 California Environmental Quality Act (CEQA) Compliance* where the County will ensure that air quality impacts identified during the CEQA review process are consistently and reasonable mitigated when feasible*;*

- *AQ-2.2 Indirect Source Review* regarding mitigating major development projects, as defined by the SJVAPCD, to reasonably mitigate air quality impacts associated with the project. The County shall notify developers of SJVAPCD Rule 9510 – Indirect Source Review requirements and work with SJVAPCD to determine mitigations, as feasible, that may include, but are not limited to the following:
    1. Providing bicycle access and parking facilities,
    2. Increasing density,
    3. Encouraging mixed use developments,
    4. Providing walkable and pedestrian-oriented neighborhoods,
    5. Providing increased access to public transportation,
    6. Providing preferential parking for high-occupancy vehicles, carpools, or alternative fuels vehicles, and
    7. Establishing telecommuting programs or satellite work centers.

- *AQ-1.5 California Environmental Quality Act (CEQA) Compliance* where the County will ensure that air quality impacts identified during the CEQA review process are consistently and reasonable mitigated when feasible*;*

- *AQ-1.1 Cooperation with Other Agencies* requiring the County to cooperate with other local, regional, Federal, and State agencies (e.g., Air District) in developing and implementing air quality plans to achieve State and federal Ambient Air Quality Standards to achieve better air quality conditions locally and regionally;

- *AQ-1.2 Cooperation with Local Jurisdictions* requiring the County to coordinate with regional agencies, such as the Air District, to address cross-jurisdictional air quality issues;

- *AQ-1.3 Cumulative Air Quality Impacts* requiring development to be located, designed, and construction in a manner that minimizes cumulative air quality impacts;

- *AQ-1.4 Air Quality Land Use Compatibility* requiring the County to evaluate compatibility of proposed land uses;

- *AQ-1.5 California Environmental Quality Act (CEQA) Compliance* where the County will ensure that air quality impacts identified during the CEQA review process are consistently and reasonable mitigated when feasible*;*

- *AQ-2.2 Indirect Source Review* regarding mitigating major development projects, as defined by the SJVAPCD, to reasonably mitigate air quality impacts associated with the project. The County shall notify developers of SJVAPCD Rule 9510 – Indirect Source Review requirements and work with SJVAPCD to determine mitigations, as feasible, that may include, but are not limited to the following:
    1. Providing bicycle access and parking facilities,
    2. Increasing density,
    3. Encouraging mixed use developments,
    4. Providing walkable and pedestrian-oriented neighborhoods,
    5. Providing increased access to public transportation,
    6. Providing preferential parking for high-occupancy vehicles, carpools, or alternative fuels vehicles, and
    7. Establishing telecommuting programs or satellite work centers.

- *AQ-3.2 Infill near Employment* requiring the County of identify opportunities for infill development near employment areas;

- *AQ-3.4 Landscape* regarding the use of ecologically based landscape design principles that can improve local air quality by absorbing CO_2, producing oxygen, providing shade that reduces energy required for cooling, and filtering particulates*;*

- *AQ-3.6 Mixed Land Uses* where the County shall encourage the clustering of land uses that generate high trip volumes, especially when such uses can be mixed with support services and where they can be served by public transportation;

- *AQ-4.1 Air Pollution Control Technology* where the County shall utilize the BACM and RACM as adopted by the County to support SJVAPCD air quality attainment plans to achieve and maintain healthful air quality and high visibility standards. These measures shall be applied to new development approvals and permit modifications as appropriate; and

- *AQ-4.2 Dust Suppression Measures* regarding implementation of dust suppression measures during excavation, grading, and site preparation activities consistent with Air District Regulation VIII – Fugitive Dust Prohibitions. Techniques may include, but are not limited to, the following:
    1. Site watering or application of dust suppressants,
    2. Phasing or extension of grading operations,
    3. Covering of stockpiles,
    4. Suspension of grading activities during high wind periods (typically winds greater than 25 miles per hour), and
    5. Re-vegetation of graded areas.

Emissions Modeling

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from on-site and off-site activities. On-site emissions principally consist of exhaust emissions from the activity levels of heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil. Additionally, paving operations and application of coatings would release VOC emissions. Off-site emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM_{10} and $PM_{2.5}$).

Operational emissions are those emissions that would occur during long-term operations of the Project. Operational emissions result from on-site and off-site activities. On-site emissions primarily consist of stationary (permitted) sources related to the processing of raw almonds. These permitted processes include sorting, blanching, slicing, dicing, slivering, blending, and roasting almonds. On-site operational emissions also include non-permitted sources such as heating and cooling and equipment such as forklifts. Off-site emissions are primarily comprised of vehicle emissions generated by almond hauling trucks and employee travel.

Construction and operational modeling assumptions are discussed and analyzed in detail in the Air Quality and Greenhouse Gas Emissions Technical Memorandum (AQ Memo) prepared by RMA staff, Jessica Willis, Planner IV (see Attachment "A"). Criteria pollutant emissions calculations are provided in Attachment "A" of the Memo, found in Attachment "A" of this document.

Project Impact Analysis

a) Would the project conflict with or obstruct implementation of the applicable air quality plan? Less Than Significant Impact.

Air Quality Plans (AQPs) are plans for reaching attainment of air quality standards. The assumptions, inputs, and control measures are analyzed to determine if the Air Basin can reach attainment for the ambient air quality standards. The proposed project site is located within the jurisdictional boundaries of the San Joaquin Valley Air Pollution Control District (Air District). To show attainment of the standards, the Air District analyzes the growth projections in the Valley, contributing factors in air pollutant emissions and formations, and existing and adopted emissions controls. The Air District then formulates a control strategy to reach attainment that includes both State and Air District regulations and other local programs and measures. For projects that include stationary sources of emissions, the Air District relies on project compliance with Rule 2201—New and Modified Stationary Source Review to ensure that growth in stationary source emissions would not interfere with the applicable AQP. Projects exceeding the offset thresholds included in the rule are required to purchase offsets in the form of Emission Reduction Credits (ERCs).

The CEQA Guidelines indicate that a significant impact would occur if the project would conflict with or obstruct implementation of the applicable air quality plan. The Air District's Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) indicates that projects that do not exceed Air District regional criteria pollutant emissions quantitative thresholds would not conflict with or obstruct the applicable AQP. An additional criterion regarding the project's implementation of control measures was assessed to provide further evidence of the project's consistency with current AQPs. This document proposes the following criteria for determining project consistency with the current AQPs:

1. Will the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQPs? This measure is determined by comparison to the regional and localized thresholds identified by the District for Regional and Local Air Pollutants.
2. Will the project conform to the assumptions in the AQPs?
3. Will the project comply with applicable control measures in the AQPs?

The use of the criteria listed above is a standard approach for CEQA analysis of projects in the Air District's jurisdiction, as well as within other air districts, for the following reasons:

- Significant contribution to existing or new exceedances of the air quality standards would be inconsistent with the goal of attaining the air quality standards.
- AQP emissions inventories and attainment modeling are based on growth assumptions for the area within the air district's jurisdiction.
- AQPs rely on a set of air district-initiated control measures as well as implementation of federal and state measures to reduce emissions within their jurisdictions, with the goal of attaining the air quality standards.

Contribution to Air Quality Violations

As discussed in more detail in Impact 3 b) below, emissions of ROG, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ associated with the proposed Project would not exceed the Air District's significance thresholds. Therefore, the proposed Project would not be considered to obstruct implementation of the applicable air quality plan or be in conflict with the applicable air quality plan.

Air Quality Plan Growth Assumptions

The Project is intended to allow diversity in the facility's processing operations within the existing facility boundaries. The Project is anticipated to increase employment by eight (8) new workers. These employees are anticipated to reside in the local area (Earlimart, Tipton, Tulare, Visalia, and surrounding areas). The Project will not require large numbers of highly specialized employees to relocate from outside the area. As such, the proposed Project is consistent with the growth projections in the Tulare County General Plan and conforms to the assumptions in the applicable AQPs. Therefore, the proposed Project will have a less than significant impact related to this Checklist Item.

Air Quality Plan Control Measures.

The AQP contains several control measures that are enforceable requirements through the adoption of rules and regulations. As previously noted, the following Air District rules and regulations are or may be relevant to the Project: Rule 2010 (Permits Required); Rule 2201 (New and Modified Stationary Source Review); Rule 4002 (National Emission Standards for Hazardous Air Pollutants); Rule 4101 (Visible Emissions); Rule 4102 (Nuisance); Rule 4201

(Particulate Matter Concentration); Rules 4305, 4306, and 4307 (Boilers, Steam Generators, and Process Heaters): Rule 4309 (Dryers, Dehydrators, and Ovens); Rule 4601 (Architectural Coatings); Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations); Rule 4702 (Internal Combustion Engines); and Regulation VIII (Fugitive PM_{10} Prohibitions).

The proposed Project would be required to comply with all applicable CARB and Air District rules and regulations. Therefore, the proposed Project complies would not conflict with or obstruct implementation of the applicable air quality attainment plans.

Conclusion

Project-related emissions would not exceed the Air District's significance thresholds and would not result in any inconsistency with the applicable AQPs. The Project would comply with all applicable rules and regulations from the applicable air quality plans. Considering the proposed Project's less-than-significant contribution to air quality violations and the project's adherence to applicable rules and regulations, the proposed Project would not be considered inconsistent with the AQP; the impact would be Less Than Significant.

b) Would the project 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? Less Than Significant Impact.

The contribution of a project's individual air emissions to regional air quality impacts is, by its nature, a cumulative effect. Emissions from past, present, and future projects in the region also have or will contribute to adverse regional air quality impacts on a cumulative basis. No single project by itself would be sufficient in size to result in non-attainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality conditions. The project-level thresholds for criteria air pollutants are based on levels by which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants.

Since the SJVAB is nonattainment for ozone, PM_{10}, and $PM_{2.5}$, it is considered to have an existing significant cumulative health impact without the proposed Project. When this occurs, the analysis considers whether the proposed Project's contribution to the existing violation of air quality standards is cumulatively considerable. The Air District's regional thresholds for ROG/VOC, NOx, PM10, or PM2.5 are applied as cumulative contribution thresholds. Projects that exceed the regional thresholds would have a cumulatively considerable health impact. **Table 2.3-1** identifies the Air District's significance thresholds.

Table 2.3-1. Air District Criteria Pollutant Significance Thresholds

Pollutant/ Precursor	Construction Emissions	Operational Emissions	
		Permitted Equipment and Activities	Non- Permitted Equipment and Activities
	Emissions (tpy)	Emissions (tpy)	Emissions (tpy)
CO	100	100	100
NOx	10	10	10
ROG	10	10	10
SOx	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

Note: tpy = tons per year
Source: Air District, https://ww2.valleyair.org/media/m2ecyxiw/1-cms-format-ceqa-air-quality-thresholds-of-significance-criteria-pollutants.pdf, accessed June 2024.

Construction Emissions (Regional)

Construction-related emissions associated with the Project are provided in **Table 2.3-2**. As shown in **Table 2.3-2**, Project-related construction emissions are below the Air District's significance thresholds and, therefore, are Less Than Significant.

Table 2.3-2. Project Construction Emissions (tons per year)						
	ROG	**NOx**	**CO**	**SO_2**	**PM_{10} Total**	**$PM_{2.5}$ Total**
Phase 1 – 2024	0.03	0.31	0.39	<0.005	0.03	0.02
Phase 1 – 2025	0.05	0.03	0.04	<0.005	<0.005	<0.005
Phase 2 – 2028	0.06	0.23	0.37	<0.005	0.02	0.01
Phase 3 – 2032	0.14	1.08	1.78	<0.005	0.17	0.08
Phase 3 – 2033	0.38	0.07	0.13	<0.005	<0.005	<0.005
Phase 4 – 2035	0.03	0.26	0.49	<0.005	0.01	0.01
Total Construction	0.69	1.98	3.2	0.00	0.23	0.12
Source: CalEEMod (See Attachment A)						

Operational Emissions (Regional) – Non-Permitted

Operational-related emissions occur over the lifetime of a project. The Air District considers permitted and non-permitted emission sources separately when making significance determinations. In addition, the annual operational-related emissions are also considered separately from construction-related emissions. Operational-related emissions are shown in **Table 2.3-3.** As shown in **Table 2.3-3**, the operational-related emissions would be less than the thresholds of significance for all criteria air pollutants and, therefore, are Less Than Significant.

Table 2.3-3. Project Non-Permitted Operational Emissions (tons per year)						
	ROG	**NOx**	**CO**	**SO_2**	**PM_{10} Total**	**$PM_{2.5}$ Total**
Phase 1 – 2025	0.16	0.17	0.90	<0.005	0.18	0.05
Phase 2 – 2029	0.11	0.10	0.57	<0.005	0.14	0.04
Phase 3 – 2033	1.23	0.99	5.66	0.02	1.61	0.44
Phase 4 – 2036	<0.005	0.00	0.00	0.00	0.00	0.00
Total Operations	**1.5**	**1.26**	**7.13**	**0.02**	**1.93**	**0.53**
Source: CalEEMod (See Attachment A)						

Operational Emissions (Regional)—Permitted

Specific processes that may occur within the proposed expansion may include stationary sources that could require Air District permits (sorters, blanchers, slicers, dicers, slivers, blenders, and roasters). Prior to installation of stationary sources within the expansion area, an Authority to Construct (ATC) must be submitted and approved by the Air District, at which time the Air District will prepare an engineering evaluation of all proposed permitted equipment. This evaluation is necessary to determine the controls required to achieve best available control technology (BACT) requirements. The permitted emissions are dependent on the control technology selected and any process limits included in the permit conditions. Permitted sources will be required to comply with Air District BACT requirements. Compliance with applicable Air District regulations would ensure that the Project's stationary source emissions would not exceed Air District thresholds of significance. Therefore, the proposed Project's estimated permitted emissions would be Less Than Significant.

Conclusion

As shown in **Table 2.3-2** and **Table 2.3-3**, the proposed Project's regional emissions would not exceed the applicable regional criteria pollutant emissions quantitative thresholds. In addition, any permitted sources will be required to comply with Air District BACT requirements. Therefore, the proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant.

c) Would the project expose sensitive receptors to substantial pollutant concentrations? Less Than Significant Impact.

The SJVAB is in nonattainment for ozone, PM_{10} (State only), and $PM_{2.5}$. Ozone is a secondary pollutant that can be formed miles from the source of emissions, through reactions of ROG and NOx emissions in the presence of sunlight. Therefore, ROG and NOx are termed "ozone precursors." As such, the primary pollutants of concern during project construction- and operation-related activities are ROG, NOx, PM_{10}, and $PM_{2.5}$. The air quality standards were set to protect public health, including the health of sensitive individuals (such as children, the elderly, and the infirm). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population could experience adverse health effects. However, the health effects are a factor of the dose-response curve; that is, concentration of the pollutant in the air (dose), the length of time exposed, and the response of the individual are factors involved in the severity and nature of health impacts. If a significant health impact results from a project's emissions, it does not necessarily mean that 100 percent of the population would experience adverse health effects.

The Project is located in a rural area surrounded by agricultural uses. The nearest residential receptors are located approximately 0.65 mile east, 0.5 mile south, and 1.15 miles southeast of the WWTF site, and 1.8 miles northeast and 2.0 miles northwest of the processing facility.

Emissions occurring at or near the proposed Project have the potential to create a localized impact. Localized emissions are considered significant if when combined with background emissions, they would result in exceedance of any health-based air quality standard. In locations that already exceed standards for these pollutants, significance is based on a significant impact level (SIL) that represents the amount that is considered a cumulatively considerable contribution to an existing violation of an air quality standard.

Criteria Pollutants

The Air District has established a 100-pound-per-day (lb/day) screening threshold for each of the criteria pollutants. If a project exceeds the screening threshold, then ambient air quality modeling would be necessary. If the project does not exceed the screening threshold, then it can be assumed that it would not cause a violation of an ambient air quality standard. Based on the emissions present in **Table 2.3-3**, the construction and operational emissions resulting from the proposed Project would not exceed 100 pounds per day for each of the criteria pollutants. Therefore, based on the Air District's guidance, the Project's non-permitted emissions would not cause an ambient air quality standard violation. As such, impacts would be Less Than Significant.

Prior to installation of stationary sources within the expansion area, an Authority to Construct (ATC) must be submitted and approved by the Air District, at which time the Air District will prepare a Risk Management Review of all proposed permitted equipment. This evaluation would ensure that the Project's stationary source emissions would not exceed any AAQS at the facility boundary. Therefore, the proposed Project would not expose nearby sensitive receptors to substantial pollutant concentrations. Impacts are Less Than Significant.

Toxic Air Contaminants

The GAMAQI does not currently include recommendations for analysis of toxic air contaminant (TAC) emissions from project construction activities. The Air District's significance thresholds for TACs have been established for permitted and non-permitted source operation related emissions.

Diesel particulate matter (DPM) represents the primary (TAC) of concern associated with the construction of the proposed Project. Project construction related DPM emissions would be the result of the operation of internal combustion engines in equipment (e.g., loaders, backhoes and resurfacing equipment, as well as haul trucks) commonly associated with construction-related activities. Construction related DPM emissions would occur over a short period of time and would cease upon completion of the Project. As such, Project construction related activities would not expose nearby receptors to substantial DPM emissions and would have a Less Than Significant Impact related to this Checklist Item.

The Project is intended to facilitate diversification of almond processing without increasing the volume of raw materials received. As such, operational related emissions would primarily be vehicle emissions from the daily vehicle trips associated with the eight (8) new employees, vehicle trips associated with maintenance of the WWTF and monitoring of the LAA, and the four (4) new fumigation rooms which will be issued permits from the Air District only after demonstrating they can pass the Air District's risk management review. As such, Project operations would not expose nearby receptors to TAC emissions and would have a Less Than Significant Impact related to this Checklist Item.

d) Would the project result in other emissions (such as those leading to odors adversely affecting a substantial number of people? Less Than Significant Impact With Mitigation.

Construction-related Odors

Construction-related activities would include fuels and other odor sources (such as diesel-fueled equipment and architectural coatings) that could result in the creation of objectionable odors. Since construction-related activities would be short-term, temporary, and spatially dispersed (i.e., intermittent), and will occur in a predominantly rural area, these activities would not affect a substantial number of people. Therefore, odors from Project construction activities would result in a Less Than Significant Impact related to this Checklist Item.

Operation-related Odors

Nuisance odors from operations of development projects within the San Joaquin Valley Air Basin are subject to the Air District's Rule 4102 (Nuisance). Odors from the WWTF are also subject to the requirements of the State Water Resources Control Board (Water Boards). A public records request through the Air District returned with no complaints against this facility; therefore, the processing operations of the existing facility are not generators of substantial odors. Future use proposed in the expansion of the facility is consistent with existing operations and will not result in nuisance odors. However, the Project includes construction and operation of a WWTF to process the facility's wastewater for use as irrigation water. The WWTF is a land use requiring further analysis of potential odor impact to nearby receptors.

The proposed WWTF and use of process water for irrigation are not anticipated to result in nuisance odors due to the utilization of the pretreatment system. The pretreatment system reduces the amount of nutrients and organics in the wastewater thereby reducing odor producing compounds. The WWTF has been designed such that wastewater can also be blended with supplemental freshwater to further dilute any odor producing compounds if needed. To the extent possible, irrigation will be limited to days with dry and slightly breezy conditions. The Land Application Area (LAA) will be graded to promote distribution and drainage of the treated water which will limit standing water and any potential odors. Where possible, irrigation lines will be flushed with freshwater after each irrigation to minimize odor producing solids left in the pipelines. The storage pond will be required to comply with all Water Boards rules, regulations, and requirements as established in WDR R5-2018-0066, including but not limited to maintaining a minimum 1.0 mg/L dissolved oxygen concentration in the storage pond, visual observations of the ponds for algae, vegetation, or scum accumulation on the surface of the ponds, and daily inspection of the LAA for evidence of erosion, field saturation, or the presence of nuisance conditions. If any nuisance conditions are observed, the applicant will work with the Water Boards and Tulare County RMA to prepare and implement a swift action plan to mitigate the issues as appropriate.

The Project is located in a rural area surrounded by agricultural uses. The nearest residential receptors are located approximately 0.65 mile east, 0.5 mile south, and 1.15 miles southeast of the WWTF site, and 1.8 miles northeast and 2.0 miles northwest of the processing facility. The processing facility is not a generator of nuisance odors. The WWTF and LAA will be monitored to reduce the potential for odor producing conditions. Therefore, odors from Project operational activities would not affect a substantial number of people and the Project would result in a Less Than Significant Impact With Mitigation related to this Checklist Item.

Mitigation Measure(s): See **Mitigation Measure 3-1** in Attachment "F" (in its entirety)

The Mitigation Measures contained in the Bio Memo have been sequenced differently and numbered rather than using the format contained in the Bio Memo. Following is a summarized version of the mitigation measures; the full text is available in Attachment "F" Mitigation Monitoring and Reporting Program (MMRP).

3-1 Interagency Coordination.

Therefore, implementation of **Mitigation Measure 3-1** would reduce impacts to Less Than Significant.

IV. BIOLOGICAL RESOURCES

Would the project:	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

The two anaerobic ponds (88’ x 88’ x 19’) will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280’ x 87’ x 13’) where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

The clarifier (24’ diameter x 12’) will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466’ x 280’ x 27’) for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the High-Density Polyethylene (HDPE) double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

- **Phase 2:** Construction of a 5,176 sq. ft. canopy, a 6,263 sq. ft. fumigation room building with a 1,127 sq. ft. canopy for a total of 7,390 sq. ft., and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Biological Resources, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Federal

Federal Endangered Species Act

“The U.S. Fish and Wildlife Service (USFWS) administers the Federal Endangered Species Act (16 USC Section 153 et seq.) and thereby has jurisdiction over federally listed threatened, endangered, and proposed species. Projects that may result in a “take” of a listed species or critical habitat must consult with the USFWS. “Take” is broadly defined as harassment, harm, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collection; any attempt to engage in such conduct; or destruction of habitat that prevents an endangered species from recovering (16 USC 1532, 50 CFR 17.3). Federal agencies that propose, fund, or must issue a permit for a project that may affect a listed species or critical habitat are required to consult with the USFWS under Section 7 of the Federal Endangered Species

Act. If it is determined that a federally listed species or critical habitat may be adversely affected by the federal action, the USFWS will issue a "Biological Opinion" to the federal agency that describes minimization and avoidance measures that must be implemented as part of the federal action. Projects that do not have a federal nexus must apply for a take permit under Section 10 of the Act. Section 10 of the Act requires that the project applicant prepare a habitat conservation plan as part of the permit application (16 USC 1539)."[1]

"Under Section 4 of the Federal Endangered Species Act, a species can be removed, or delisted, from the list of threatened and endangered species. Delisting is a formal action made by the USFWS and is the result of a determined successful recovery of a species. This action requires posts in the federal registry and a public comment period before a final determination is made by the USFWS."[2]

<u>Habitat Conservation Plans</u>

"Habitat Conservation Plans (HCPs) are required for a non-federal entity that has requested a take permit of a federal listed species or critical habitat under Section 10 of the Endangered Species Act. HCPs are designed to offset harmful effects of a proposed project on federally listed species. These plans are utilized to achieve long-term biological and regulatory goals. Implementation of HCPs allows development and projects to occur while providing conservation measures that protect federally listed species or their critical habitat and offset the incidental take of a proposed project. HCPs substantially reduce the burden of the Endangered Species Act on small landowners by providing efficient mechanisms for compliance with the ESA, thereby distributing the economic and logistic effects of compliance. A broad range of landowner activities can be legally protected under these plans (County of Tulare, 2010 Background Report, pages 9-6 and 9-7, 2010a). There are generally two types of HCPs, project-specific HCPs which typically protect a few species and have a short duration and multi-species HCPs which typically cover the development of a larger area and have a longer duration."[3]

As noted earlier, there are two HCPs that apply in Tulare County: The Kern Water Habitat Conservation Plan, which applies to an area in Allensworth; and the U.S. Fish and Wildlife's *The Recovery Plan for Upland Species in the San Joaquin Valley*, which includes sensitive species in the San Joaquin Valley, several of which may be found in Tulare County. Also as noted earlier, the proposed Project is approximately 40 miles north of Allensworth, thus the Kern Water Habitat Conservation Plan would not apply to this Project.

[1] Tulare County 2030 General Plan RDEIR. Page 3.11-1. Accessed May 2024 at: https://generalplan.co.tulare.ca.us/documents/generalplan2010/RecirculatedDraftEIR.pdf
[2] Ibid.
[3] Op. Cit. 3.11-2.

Migratory Bird Treaty Act

"The Migratory Bird Treaty Act (MBTA, 16 USC Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668) protect certain species of birds from direct "take". The MBTA protects migrant bird species from take by setting hunting limits and seasons and protecting occupied nests and eggs. The Bald and Golden Eagle Protection Act (16 USC Sections 668-668d) prohibits the take or commerce of any part of Bald and Golden Eagles. The USFWS administers both acts, and reviews federal agency actions that may affect species protected by the acts."[4] The MBTA implements international treaties devised to protect migratory birds and any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits are in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the CDFG Code.

Federal Clean Water Act (CWA)

"Wetlands and other waters of the U.S. are subject to the jurisdiction of the U.S. Army Corp of Engineers (USACE) and U.S. Environmental Protection Agency (U.S. EPA) under Section 404 of the Clean Water Act (33 U.S.C. 1251 et seq., 1972). Together, the EPA and the USACE determine whether they have jurisdiction over the non-navigable tributaries that are not relatively permanent based on a fact-specific analysis to determine if there is a significant nexus. These non-navigable tributaries include wetlands adjacent to non-navigable tributaries that are not relatively permanent and wetlands adjacent to but that does not directly abut a relatively permanent non-navigable tributary."[5] The definition of waters of the United States includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3 7b)." The U.S. EPA also has authority over wetlands and may override an USACE permit. Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or Waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the Regional Water Quality Control Board.

State of California

California Department of Fish and Wildlife (formerly Dept. of Fish and Game)

The California Department of Fish and Wildlife (DFW) regulates the modification of the bed, bank, or channel of a waterway under Sections 1601-1607 of the California Fish and Game Code. Also included are modifications that divert, obstruct, or change the natural flow of a waterway. Any party who proposes an activity that may modify a feature regulated by the Fish and Game Code must notify DFW before project construction. DFW will then decide whether to enter into a Streambed Alteration Agreement with the project applicant either under Section 1601 (for public entities) or Section 1603 (for private entities) of the Fish and Game Code.

[4] Tulare County 2030 General Plan RDEIR. Page 3.11-2. Accessed May 2024 at: https://generalplan.co.tulare.ca.us/documents/generalplan2010/RecirculatedDraftEIR.pdf
[5] Ibid. 3.11-1 and -2.

California Endangered Species Act

The California Department of Fish and Wildlife (CDFE or DFW) administers the California Endangered Species Act 9 (CESA OR ESA) of 1984 (Fish and Game Code Section 2080), which regulates the listing and "take" of endangered and threatened State-listed species. A "take" may be permitted by the California Department of Fish and Game [Wildlife] through implementing a management agreement. "Take" is defined by the California Endangered Species Act as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" a State-listed species (Fish and Game Code Sec. 86). Under State laws, DFW is empowered to review projects for their potential impacts to State-listed species and their habitats.

The DFW maintains lists for Candidate-Endangered Species (SCE) and Candidate-Threatened Species (SCT). California candidate species are afforded the same level of protection as State-listed species. California also designates Species of Special Concern (CSC) that are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species do not have the same legal protection as listed species, but may be added to official lists in the future. The CSC list is intended by DFW as a management tool for consideration in future land use decisions (Fish and Game Code Section 2080).[6]

All State lead agencies must consult with DFW under the California Endangered Species Act when a proposed project may affect State-listed species. DFW would determine if a project under review would jeopardize or result in taking of a State-listed species, or destroy or adversely modify its essential habitat, also known as a "jeopardy finding" (Fish and Game Code Sec. 2090). For projects where DFW has made a jeopardy finding, DFW must specify reasonable and prudent alternatives to the proposed project to the State lead agency (Fish and Game Code Sec. 2090 et seq.).[7]

Fully Protected Species

The State of California first began to designate species as fully protected prior to the creation of the CESA and FESA. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, amphibians, reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered pursuant to the CESA and/or FESA. The regulations that implement the Fully Protected Species Statute (CDFG Code Section 4700) provide that fully protected species may not be taken or possessed at any time. Furthermore, the CDFG prohibits any state agency from issuing incidental take permits for fully protected species, except for necessary scientific research.

Native Plant Protection Act

Regarding listed rare and endangered plant species, the CESA defers to the California Native Plant Protection Act (NPPA) of 1977 (CDFG Code Sections 1900 to 1913), which prohibits importing of rare and endangered plants into California, and the taking and selling of rare and endangered plants. The CESA includes an additional listing category for threatened plants that are not protected pursuant to NPPA. In this case, plants listed as rare or endangered pursuant to the NPPA are not protected pursuant to CESA, but can be protected pursuant to the CEQA. In addition, plants that are not state listed, but that meet the standards for listing, are also protected pursuant to CEQA (Guidelines, Section 15380). In practice, this is generally interpreted to mean that all species on lists 1B and 2 of the CNPS Inventory potentially qualify for protection pursuant to CEQA, and some species on lists 3 and 4 of the CNPS Inventory may qualify for protection pursuant to CEQA. List 3 includes plants for which more information is needed on taxonomy or distribution. Some of these are rare and endangered enough to qualify for protection pursuant to

[6] General Plan Background Report. Pages 9-7 and 9-8. Accessed May 2024 at: Tulare County General Plan Recirculated Draft EIR
[7] Ibid. 9-8.

CEQA. List 4 includes plants of limited distribution that may qualify for protection if their abundance and distribution characteristics are found to meet the standards for listing.

Natural Communities Conservation Planning Act

The Natural Communities Conservation Planning Act allows a process for developing natural community conservation plans (NCCPs) under DFW direction. NCCPs allow for regional protection of wildlife diversity, while allowing compatible development. DFW may permit takings of State-listed species whose conservation and management are provided in a NCCP, once a NCCP is prepared (Fish and Game Code Secs. 2800 et seq.).[8]

Federally and State-Protected Lands

Ownership of California's wildlands is divided primarily between federal, state, and private entities. State-owned land is managed under the leadership of the Departments of Fish and Game (DFW), Parks and Recreation, and Forestry and Fire Protection (CDF). Tulare County has protected lands in the form of wildlife refuges, national parks, and other lands that have large limitations on appropriate land uses. Some areas are created to protect special status species and their ecosystems.[9]

California Wetlands Conservation Policy

The California Wetlands Conservation Policy's goal is to establish a policy framework and strategy that will ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California. Additionally, the policy aims to reduce procedural complexity in the administration of State and federal wetlands conservation programs and to encourage partnerships with a primary focus on landowner incentive programs and cooperative planning efforts. These objectives are achieved through three policy means: statewide policy initiatives, three geographically based regional strategies in which wetland programs can be implemented, and creation of interagency wetlands task force to direct and coordinate administration and implementation of the policy. Leading agencies include the Resources Agency and the California Environmental Protection Agency (Cal/EPA) in cooperation with Business, Transportation and Housing Agency, Department of Food and Agriculture, Trade and Commerce Agency, Governor's Office of Planning and Research, Department of Fish and Game, Department of Water Resources, and the State Water Resources Control Board.[10]

Birds of Prey

Birds of Prey are protected under the California Fish and Game Code Section 3503.5, which states:

"It is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."

This includes any construction disturbance which could lead to nest abandonment, which is considered a "taking" by the DFW.

[8] Op. Cit.
[9] Op. Cit. 9-9.
[10] Op. Cit.

CEQA and Oak Woodland Protection

CEQA Statute Section 21083.4, "Counties; Conversion of Oak Woodlands; Mitigation Alternatives," requires that counties determine whether a development will have potential impacts on oak woodlands:

21083.4(a): "For purposes of this section, "oak" means a native tree species in the genus Quercus, not designated as Group A or Group B commercial species pursuant to regulations adopted by the State Board of Forestry and Fire Protection pursuant to Section 4526, and that is 5 inches or more in diameter at breast height."

21083.4(b): "…a county shall determine whether a project within its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment. If a county determines that there may be a significant effect to oak woodlands, the county shall require one or more [of the following] oak woodlands mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands."

Local

The following Tulare County General Plan 2030 Update policies for this resource apply to this Project such as:

- *ERM-1.1 Protection of Rare and Endangered Specie*s which protects environmentally sensitive wildlife and plant life, including those species designated as rare, threatened, and/or endangered by State and/or Federal government, through compatible land use development;

- *ERM-1.4 Protect Riparian Areas* where the County shall protect riparian areas through habitat preservation, designation as open space or recreational land uses, bank stabilization, and development controls;

- *ERM-1.6 Management of Wetlands* where the County shall support the preservation and management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitats;

- *ERM-1.7 Planting of Native Vegetation* where the County shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native vegetation and wildlife, and ensure that a maximum number and variety of well-adapted plants are maintained;

- *ERM-1.16 Cooperate with Wildlife Agencies* which states that the County shall cooperate with State and federal wildlife agencies to address linkages between habitat areas; and,

Project Impact Analysis

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

The proposed project site has been developed for at least 30 years and is an approved county project with building permits, land divisions, minor modifications, and special use permits. The project site had encompassed three special status plant species at some point; however, due to the most recent siting year was in 1975 and recent developments, no adverse effects are identifiable to affect any candidate, sensitive or special status species in the local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

According to the CNDDB search and as described in the Bio Memo in Attachment “B” of this MND, three (3) Special Status plant species are known to occur in the Project site but there are no Special Status animal species, or special habitats that occur on the site. Also as noted in the Bio Memo, there are 3 special status plant recordings and two (2) Special Status animal species in a 0.5-mile vicinity of the Project site. However, because the Project site has been and continues to be actively farmed, it is unlikely that any special status plant would be present due to the constantly disturbed soils that accompany agricultural-related activities which results in constant disturbance of habitat suitable for special status plant species. Also, no trees are present within the Project site which could be used as nesting or roosting for special status birds. However, as the Project lies within the historical range of special status plants, nesting raptors/migratory birds, and Blunt-nose Leopard Lizard; Mitigation Measures 4-1 through 4-9 are included as an abundance of caution.

Therefore, the Project will not significantly impact any biological plant or animal species. The Project will not have a significant direct or cumulative impact or create an unusual circumstance that will cause the Project to have a significant effect on the biological resources of the area and environment. See Mitigation Measures 4-1 through 4-9.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? Less Than Significant Impact.

The California Natural Diversity Database (CNDDB) reported in the project quad, Sausalito school, one natural community; however, this was not within the project site or vicinity. The location of the natural community is approximately four miles directly north of the project site. Both the Federal and State did not classify the status of the Northern Claypan Vernal Pool, however, both have assigned the natural community as critically imperiled due to the rarity of the element. Due to the distance, the project will not have adverse effects on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

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

The project contains two freshwater pond habitats classified as PUBFx according to the National Wetlands Inventory. These wetlands are located on the northwest corners of the project site. The “P” code classification denotes Palustrine system, which encompasses nontidal wetlands occurring in areas where salinity due to ocean-derived salts is below 0.5ppt. These wetlands have specific characteristics, including an area less than 20 acres; absence of active wave-formed or bedrock shoreline features; water depth in the deepest part of basin less than 2.5 m at low water; and salinity below 0.5 ppt. The “UB” refers to wetlands and deepwater habitats with at least 25% cover of particles smaller than stones and vegetative cover less than 30%. The “F” symbolizes a semi-permanently flooded water regime, indicating the surface water persists throughout most of the growing season. The “x” identifies wetland basins or channels excavated by humans. From an aerial view these wetlands don’t appear to hold any water after the year 2009. The reference image can be found in the biological resource evaluation as attachment I “USFW National Wetland Inventory (NWI) Map”.

d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? Less Than Significant Impact.

Out of the 44 elements recorded within the nine-quad report, only one was classified as fish, specifically the Kern brook lamprey. However, the species was not found within the project site, vicinity or quad. Therefore, the project is expected to have less than significant impact on the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? Less Than Significant Impact.

The project will not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. As the project site surrounding areas have been developed for agricultural activities and currently host a processing plant for almonds.

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? Less Than Significant Impact.

The almond facility expansion will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Mitigation Measure(s): See **Mitigation Measure 4-1** through **4-9** in Attachment "F" (in their entirety)

The Mitigation Measures contained in the Bio Memo have been sequenced differently and numbered rather than using the format contained in the Bio Memo. Following is a summarized version of the mitigation measures; the full text is available in Attachment "F" Mitigation Monitoring and Reporting Program (MMRP).

Surveys/Education

4-1 Pre-construction plant surveys.
4-2 Pre-construction animal surveys (San Joaquin kit fox, nesting raptors/birds, burrowing owl).
4-3 Employee education program.

Nesting Raptors and Migratory Birds, including loggerhead shrike and tricolor blackbird

4-4 Pre-Construction Survey
4-5 Avoidance.
4-6 Buffers.
4-7 Compensatory Mitigation
4-8 Mortality Reporting

Blunt Nosed-Leopard Lizard

4-9 Pre-Construction Survey
4-10 Avoidance and Minimization.
4-11 Mortality Reporting.

Therefore, implementation of **Mitigation Measure 4-1** through **4-11**, as applicable, would reduce impacts to Less Than Significant.

V. CULTURAL RESOURCES

Would the project:	SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88' x 88' x 19') will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280' x 87' x 13') where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

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- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

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The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Cultural Resources, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Federal

Cultural resources are protected by several federal regulations, none of which are relevant to this project because it will not be located on lands administered by a federal agency and the proposed Project applicant is not requesting federal funding and does not require any permits from any federal agencies.

State

California State Office of Historic Preservation (OHP)

"The **California State Office of Historic Preservation (OHP)** is responsible for administering federally and state mandated historic preservation programs to further the identification, evaluation, registration and protection of California's irreplaceable archaeological and historical resources under the direction of the **State Historic Preservation Officer (SHPO)**, a gubernatorial appointee, and the **State Historical Resources Commission**.

OHP's responsibilities include:

- Identifying, evaluating, and registering historic properties;
- Ensuring compliance with federal and state regulatory obligations;
- Encouraging the adoption of economic incentives programs designed to benefit property owners;
- Encouraging economic revitalization by promoting a historic preservation ethic through preservation education and public awareness and, most significantly, by demonstrating leadership and stewardship for historic preservation in California.

Architectural Review and Incentives

OHP administers the **Federal Historic Preservation Tax Incentives Program** and provides architectural review and technical assistance to other government agencies and the general public in the following areas:

- Interpretation and application of the Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties;
- General assistance with and interpretation of the California Historical Building Code and provisions for qualified historic properties under the Americans with Disabilities Act;
- Developing and implementing design guidelines;
- Preservation incentives available for historic properties;

- Sustainability and adaptive reuse of historic properties."[1]

Information Management

The **California Historical Resources Information System (CHRIS**) consists of the California Office of Historic Preservation (OHP), nine Information Centers (ICs), and the State Historical Resources Commission (SHRC). The OHP administers and coordinates the CHRIS and presents proposed CHRIS policies to the SHRC, which approves these polices in public meetings. The CHRIS Inventory includes the State Historic Resources Inventory maintained by the OHP as defined in California Public Resources Code § 5020.1(p), and the larger number of resource records and research reports managed under contract by the nine ICs."[2] "The CHRIS **Information Centers (ICs)** are located on California State University and University of California campuses in regions throughout the state. The nine ICs provide historical resources information, generally on a fee-for-service basis, to local governments, state and federal agencies, Native American tribes, and individuals with responsibilities under the National Environmental Policy Act, the National Historic Preservation Act, and the California Environmental Quality Act (CEQA), as well as to the general public."[3] Tulare, Fresno, Kern, Kings and Madera counties are served by the Southern San Joaquin Valley Historical Resources Information Center (Center), located at California State University, Bakersfield in Bakersfield, CA. The Center provides information on known historic and cultural resources to governments, institutions, and individuals.

"Local Government Assistance

OHP works with California's city and county governments to aid them in integrating historic preservation into the broader context of overall community planning and development activities by adopting a comprehensive approach to preservation planning which combines identification, evaluation, and registration of historical resources with strong local planning powers, economic incentives, and informed public participation.

OHP provides guidance and technical assistance to city and county governments in the following areas:

- Drafting or updating preservation plans and ordinances;
- Planning for and conducting architectural, historical, and archeological surveys;
- Developing criteria for local designation programs, historic districts, historic preservation overlay zones (HPOZs), and conservation districts;
- Developing design guidelines using the Secretary of the Interior's Standards;
- Developing economic incentives for historic preservation;
- Training local commissions and review boards;
- Meeting CEQA responsibilities with regard to historical resources.

OHP also administers the **Certified Local Government (CLG) Program** and distributes at least 10% of its annual federal Historic Preservation Fund allocation to CLGs through a competitive grant program to them in achieving their historic preservation goals.

Environmental Compliance: Section 106, PRC 5024, and CEQA

OHP reviews and comments on thousands of federally sponsored projects annually pursuant to **Section 106** of the National Historic Preservation Act and state programs and projects pursuant to **Sections 5024 and 5024.5** of the

[1] California State Parks. Office of Historic Preservation. Mission and Responsibilities. Accessed April 2024 at: Mission and Responsibilities (ca.gov) or https://ohp.parks.ca.gov/?page_id=1066.

[2] California State Parks. Office of Historic Preservation April 2024 at: http://ohp.parks.ca.gov/?page_id=1068.

[3] California State Parks. Office of Historic Preservation. About the CHRIS Information Centers. Accessed April 2024 at: http://ohp.parks.ca.gov/?page_id=28730.

Public Resources Code. OHP also reviews and comments on local government and state projects pursuant to the **California Environmental Quality Act (CEQA)**.

The purpose of OHP's project review program is to promote the preservation of California's heritage resources by ensuring that projects and programs carried out or sponsored by federal and state agencies comply with federal and state historic preservation laws and that projects are planned in ways that avoid any adverse effects to heritage resources. If adverse effects cannot be avoided, the OHP assists project sponsors in developing measures to minimize or mitigate such effects.

State and Federal Registration Programs

OHP administers the **National Register of Historic Places**, the **California Register of Historical Resources**, the **California Historical Landmarks**, and the California **Points of Historical Interest** programs. Each program has different eligibility criteria and procedural requirements; all register nominations must be submitted to the Commission for review and approval.

Eligible and listed resources may be eligible for tax benefits and are recognized as part of the environment under the **California Environmental Quality Act (CEQA)**.[4]

A historical resource may be eligible for inclusion in the California Register of Historical Resources (CRHR) if it meets the following Criteria for Designation:

- Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States (Criterion 1).
- Associated with the lives of persons important to local, California or national history (Criterion 2).
- Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values (Criterion 3).
- Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation (Criterion 4).[5]

Native American Heritage Commission (NAHC)

"In 1976, the California State Government passed AB 4239, establishing the Native American Heritage Commission (NAHC) as the primary government agency responsible for identifying and cataloging Native American cultural resources. Up until this point, there had been little government participation in the protection of California's cultural resources. As such, one of the NAHC's primary duties, as stated in AB 4239, was to prevent irreparable damage to designated sacred sites, as well as to prevent interference with the expression of Native American religion in California. Furthermore, the bill authorized the Commission to act in order to prevent damage to and insure Native American access to sacred sites.

Moreover, the Commission could request that the court issue an injunction for the site, unless it found evidence that public interest and necessity required otherwise. In addition, the bill authorized the commission to prepare an inventory of Native American sacred sites located on public lands and required the commission to review current administrative and statutory protections accorded to such sites. In 1982, legislation was passed authorizing the Commission to identify a Most Likely Descendant (MLD) when Native American human remains were discovered any place other than a dedicated cemetery. MLDs were granted the legal authority to make recommendations regarding the treatment and disposition of the discovered remains. These recommendations, although they cannot halt work on the project site, give MLDs a means by which to ensure that the Native American human remains are

[4] Ibid.
[5] California Register: Criteria for Designation. April 2024 at: https://ohp.parks.ca.gov/?page_id=21238

treated in the appropriate manner. Today, the NAHC provides protection to Native American human burials and skeletal remains from vandalism and inadvertent destruction. It also provides a legal means by which Native American descendants can make known their concerns regarding the need for sensitive treatment and disposition of Native American burials, skeletal remains, and items associated with Native American burials."[6]

As noted in their website, "The California Native American Heritage Commission (NAHC or Commission), created in statute in 1976 (Chapter 1332, Statutes of 1976), is a nine-member body whose members are appointed by the Governor. The NAHC identifies, catalogs, and protects Native American cultural resources -- ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California. The NAHC is also charged with ensuring California Native American tribes' accessibility to ancient Native American cultural resources on public lands, overseeing the treatment and disposition of inadvertently discovered Native American human remains and burial items, and administering the California Native American Graves Protection and Repatriation Act (CalNAGPRA), among many other powers and duties."[7]

Additional State regulatory requirements regarding tribal cultural resources (such as AB 52 and SB 18 Tribal Consultation Guidelines) can be found at Item 18 Tribal Cultural Resources.

<u>CEQA Guidelines: Historical Resources Definition</u>

CEQA Guidelines Section 15064.5(a) defines a historical resource as:

"(1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code §5024.1, Title 14 CCR, Section 4850 et seq.).

(2) A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

(3) 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 may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code §5024.1, Title 14 CCR, Section 4852) including the following:
    (A) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
    (B) Is associated with the lives of persons important in our past;
    (C) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
    (D) Has yielded, or may be likely to yield, information important in prehistory or history.

(4) The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section

[6] California Native American Heritage Commission. About The Native American Heritage Commission. Accessed April 2024 at: http://nahc.ca.gov/about/.
[7] Ibid. Welcome. Accessed April 2024 at: http://nahc.ca.gov/.

5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1(j) or 5024.1."[8]

CEQA Guidelines: Archaeological Resources

Section 15064.5(c) of CEQA Guidelines provides specific guidance on the treatment of archaeological resources as noted below.

"(1) When a Project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subdivision (a).

(2) If a lead agency determines that the archaeological site is an historical resource, it shall refer to the provisions of Section 21084.1 of the Public Resources Code, and this section, Section 15126.4 of the Guidelines, and the limits contained in Section 21083.2 of the Public Resources Code do not apply.

(3) If an archaeological site does not meet the criteria defined in subdivision (a), but does meet the definition of a unique archeological resource in Section 21083.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c–f) do not apply to surveys and site evaluation activities intended to determine whether the Project location contains unique archaeological resources.

(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."[9]

CEQA Guidelines: Human Remains

Public Resources Code Sections 5097.94 and 5097.98 provide guidance on the disposition of Native American burials (human remains), and fall within the jurisdiction of the Native American Heritage Commission:

"(d) When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the Project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code Section 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any Items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission. Action implementing such an agreement is exempt from:

  (1) The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5).
  (2) The requirements of CEQA and the Coastal Act.[10]

"(e) In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:
  (1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
    (A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and
    (B) If the coroner determines the remains to be Native American:

[8] California Natural Resources Agency. California Environmental Quality Act (CEQA) Guidelines. Section 15064.5(a). Statute and Guidelines - California Association of Environmental Professionals. Accessed April 2024 at: https://www.califaep.org/statute_and_guidelines.php
[9] Ibid. Section 15064.5(c).
[10] Op. Cit. Section 15064.5(d).

1. The coroner shall contact the Native American Heritage Commission within 24 hours.
2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.
3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or

(2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.

(A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.

(B) The descendant identified fails to make a recommendation; or

(C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.[11]

"(f) As part of the objectives, criteria, and procedures required by Section 21082 of the Public Resources Code, a lead agency should make provisions for historical or unique archaeological resources accidentally discovered during construction. These provisions should include an immediate evaluation of the find by a qualified archaeologist. If the find is determined to be an historical or unique archaeological resource, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation should be available. Work could continue on other parts of the building site while historical or unique archaeological resource mitigation takes place."[12]

<u>CEQA Guidelines: Paleontological Resources</u>

Public Resources Code Section 5097.5 prohibits excavation or removal of any "vertebrate paleontological site… or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands."

<u>CEQA Guidelines Section 15126.4(b)</u>

"(b) Mitigation Measures Related to Impacts on Historical Resources.

(1) Where maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction of the historical resource will be conducted in a manner consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (1995), Weeks and Grimmer, the project's impact on the historical resource shall generally be considered mitigated below a level of significance and thus is not significant.

(2) In some circumstances, documentation of an historical resource, by way of historic narrative, photographs or architectural drawings, as mitigation for the effects of demolition of the resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur.

(3) Public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. The following factors shall be considered and discussed in an EIR for a project involving such an archaeological site:

[11] Op. Cit. Section 15064.5 (e).
[12] Op. Cit. Section 15064.5(f).

(A) Preservation in place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.

(B) Preservation in place may be accomplished by, but is not limited to, the following:
1. Planning construction to avoid archaeological sites;
2. Incorporation of sites within parks, greenspace, or other open space;
3. Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site.
4. Deeding the site into a permanent conservation easement.

(C) When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code. If an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation.

(D) Data recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource, provided that the determination is documented in the EIR and that the studies are deposited with the California Historical Resources Regional Information Center."[13]

Public Resources Code §5097.5

California Public Resources Code §5097.5 prohibits excavation or removal of any "vertebrate paleontological site…or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands." Public lands are defined to include lands owned by or under the jurisdiction of the state or any city, county, district, authority or public corporation, or any agency thereof. Section 5097.5 states that any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor.

Human Remains

Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

Local

Tulare County General Plan 2030 Update

The following Tulare County General Plan 2030 Update policies for this resource apply to this Project:

[13] Op. Cit. Section 15126.4(b).

- *ERM-6.1 Evaluation of Cultural and Archaeological Resources* which states that the County shall participate in and support efforts to identify its significant cultural and archaeological resources using appropriate State and Federal standards;

- *ERM-6.2 Protection of Resources with Potential State or Federal Designations* wherein the County shall protect cultural and archaeological sites with demonstrated potential for placement on the National Register of Historic Places and/or inclusion in the California State Office of Historic Preservation's California Points of Interest and California Inventory of Historic Resources. Such sites may be of Statewide or local significance and have anthropological, cultural, military, political, architectural, economic, scientific, religious, or other values as determined by a qualified archaeological professional*;*

- *ERM-6.3 Alteration of Sites with Identified Cultural Resources* which states that when planning any development or alteration of a site with identified cultural or archaeological resources, consideration should be given to ways of protecting the resources. Development can be permitted in these areas only after a site specific investigation has been conducted pursuant to CEQA to define the extent and value of resource, and mitigation measures proposed for any impacts the development may have on the resource;

- *ERM-6.4 Mitigation* – which states that if preservation of cultural resources is not feasible, every effort shall be made to mitigate impacts, including relocation of structures, adaptive reuse, preservation of facades, and thorough documentation and archival of records;

- *ERM-6.7 Cooperation of Property Owners* where the County should encourage the cooperation of property owners to treat cultural resources as assets rather than liabilities, and encourage public support for the preservation of these resources;

- *ERM-6.8 Solicit Input from Local Native Americans* (which is consistent with AB 52 in regards to Tribal Consultation) wherein the County shall continue to solicit input from the local Native American communities in cases where development may result in disturbance to sites containing evidence of Native American activity and/or to sites of cultural importance;

- *ERM-6.9 Confidentiality of Archaeological Sites* which is also consistent with AB 52) where the County shall, within its power, maintain confidentiality regarding the locations of archaeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts;
- *ERM-6.10 Grading Cultural Resources Sites* wherein the County shall ensure all grading activities conform to the County's Grading Ordinance and California Code of Regulations, Title 20, § 2501 et. Seq.

Project Impact Analysis

a) – b) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5? Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? Less Than Significant Impact With Mitigation:

As noted previously, information provided by the Southern San Valley Historical Resources Information Center, at California State University, Bakersfield (Center) and the California Native American Heritage Commission (NHAC) Sacred Lands File (SLF) search (included in Attachment "C" of this document) were used as the basis for determining that the proposed Project would result in a less than significant impact with mitigation. Although no cultural resources were identified within the proposed Project area in the records search, there is a possibility that subsurface resources could be uncovered during proposed Project construction-related activities. In such an unlikely event, potentially significant impacts to previously unknown subsurface resources may occur. However, implementation of the **Mitigation Measures 5-1** through **5-3** will reduce potential impacts in the unlikely event of encountering an historical or archaeological resource to a Less Than Significant Impact with mitigation.

c) **Would the project disturb any human remains, including those interred outside of formal cemeteries? Less Than Significant Impact With Mitigation:**

As noted in Items a) and b), CHRIS, NAHC, SLF searches, and consultation with Native American tribes did not identify any known remains or formal cemeteries. However unlikely, there is a possibility that subsurface resources could be uncovered during construction-related activities. In such an unlikely event, potentially significant impacts to previously unknown subsurface resources may occur. With the implementation of **Mitigation Measure 5-3**, inadvertent disturbance of any human remains (including those interred outside of formal cemeteries) resulting in the discovery of human remains would require work to halt in the vicinity of a find until the County coroner determines whether the remains are Native American in origin and, if they are, contacting the Native American Heritage Commission.

Mitigation Measure(s) See **Mitigation Measures 5-1** through **5-3** in Attachment "F" (in their entirety**)**

5-1 Discovery

5-2 Cessation of Work/Preservation/Treatment Plan/PRC 21074

5-3 Implementation of Health and Safety Code section 7050.5, CEQA Guidelines Section 15064.5, PRC 5097.98

Therefore, implementation of **Mitigation Measure 5-1** through **5-3**, as applicable, would reduce impacts to Less Than Significant Impact With Mitigation.

VI. ENERGY

Would the project:	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88' x 88' x 19') will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280' x 87' x 13') where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

  The clarifier (24' diameter x 12') will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466' x 280' x 27') for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

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The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Energy, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Federal

<u>Energy Policy Act of 2005</u>

The Energy Policy Act of 2005 seeks to reduce reliance on non-renewable energy resources and provide incentives to reduce current demand on these resources. For example, under the Act, consumers and businesses can obtain federal tax credits for purchasing fuel-efficient appliances and products, including buying hybrid vehicles, building energy-efficient buildings, and improving the energy efficiency of commercial buildings. Additionally, tax credits are available for the installation of qualified fuel cells, stationary microturbine power plants, and solar power equipment.

State

<u>California Energy Commission</u>

The California Energy Commission (CEC) was created in 1974 to serve as the state's primary energy policy and planning agency. The CEC is tasked with reducing energy costs and environmental impacts of energy use - such as greenhouse gas (GHG) emissions - while ensuring a safe, resilient, and reliable supply of energy.

<u>State of California Integrated Energy Policy (SB 1389)</u>

In 2002, the Legislature passed Senate Bill 1389, which required the CEC to develop an integrated energy plan every two years for electricity, natural gas, and transportation fuels, for the California Energy Policy Report. The plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for Zero Emission Vehicles and their infrastructure needs, and encouragement of urban designs that reduce vehicles miles traveled (VMT) and accommodate pedestrian and bicycle access. The CEC adopted the *2022 Integrated Energy Policy Report* in February 2023.

The *2022 Integrated Energy Policy Report Update* (*Update*) provides the results of the CEC's assessment of a variety of issues. The *Update* provides updates on a variety of energy issues facing California. These issues will require action if the state is to meet its climate, energy, air quality, and other environmental goals while maintaining reliability and controlling costs.

Renewable Portfolio Standard (SB 1078 and SB 107)

Established in 2002 under SB 1078, the State's Renewables Portfolio Standard (RPS) was amended under SB 107 to require accelerated energy reduction goals by requiring that by the year 2010, 20 percent of electricity sales in the state be served by renewable energy resources. In years following its adoption, Executive Order S-14-08 was signed, requiring electricity retail sellers to provide 33 percent of their service loads with renewable energy by the year 2020. In 2011, SB X1-2 was signed, aligning the RPS target with the 33 percent requirement by the year 2020. This new RPS applied to all state electricity retailers, including publicly owned utilities, investor-owned utilities, electrical service providers, and community choice aggregators. All entities included under the RPS were required to adopt the RPS 20 percent by year 2020 reduction goal by the end of 2013, adopt a reduction goal of 25 percent by the end of 2016, and meet the 33 percent reduction goal by the end of 2020. In addition, the Air Resources Board (ARB), under Executive Order S-21-09, was required to adopt regulations consistent with these 33 percent renewable energy targets.

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

California Code of Regulations Title 24, Part 6 comprises the California Energy Code, which was adopted to ensure that building construction, system design and installation achieve energy efficiency. The California Energy Code was first established in 1978 by the CEC in response to a legislative mandate to reduce California's energy consumption, and apply to energy consumed for heating, cooling, ventilation, water heating, and lighting in new residential and non-residential buildings. The standards are updated periodically to increase the baseline energy efficiency requirements. The 2013 Building Energy Efficiency Standards focus on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings and include requirements to enable both demand reductions during critical peak periods and future solar electric and thermal system installations. Although it was not originally intended to reduce greenhouse gas (GHG) emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

California Green Building Standards Code (Title 24, Part II, CALGreen)

The California Building Standards Commission adopted the California Green Buildings Standards Code (CALGreen in Part 11 of the Title 24 Building Standards Code) for all new construction statewide on July 17, 2008. Originally, a volunteer measure, the code became mandatory in 2010 and the most recent update (2019) went into effect on January 1, 2019. CALGreen sets targets for energy efficiency, water consumption, dual plumbing systems for potable and recyclable water, diversion of construction waste from landfills, and use of environmentally sensitive materials in construction and design, including eco-friendly flooring, carpeting, paint, coatings, thermal insulation, and acoustical wall and ceiling panels. The 2019 CALGreen Code includes mandatory measures for non-residential development related to site development; water use; weather resistance and moisture management; construction waste reduction, disposal, and recycling; building maintenance and operation; pollutant control; indoor air quality; environmental comfort; and outdoor air quality. Mandatory measures for residential development pertain to green building; planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; environmental quality; and installer and special inspector qualifications.

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

Assembly Bill 32 (Health and Safety Code Sections 38500–38599; AB 32), also known as the California Global Warming Solutions Act of 2006, commits the state to achieving year 2000 GHG emission levels by 2010 and year 1990 levels by 2020. To achieve these goals, AB 32 tasked the CPUC and CEC with providing information, analysis, and recommendations to the ARB regarding ways to reduce GHG emissions in the electricity and natural gas utility sectors.

"In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 [Assembly Bill 32 (AB 32)], which created a comprehensive, multi-year program to reduce greenhouse gas (GHG) emissions in California. AB 32 required the California Air Resources Board (ARB or Board) to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by the Board in 2008 and must be updated every five years. The First Update to the Climate Change Scoping Plan was approved by the Board on May 22, 2014. In 2016, the Legislature passed SB 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With SB 32, the Legislature passed companion legislation AB 197, which provides additional direction for developing the Scoping Plan."[1] California's 2017 Climate Change Scoping Plan was adopted in December 2018. The plan identifies the State's strategy for achieving the 2030 emission reduction targets.

Clean Energy and Pollution Reduction Act (SB 350)

The Clean Energy and Pollution Reduction Act (SB 350) was passed by California Governor Brown on October 7, 2015, and establishes new clean energy, clean air, and GHG reduction goals for the year 2030 and beyond. SB 350 establishes a GHG target of 40 percent below 1990 levels for the State of California, further enhancing the ability for the state to meet the goal of reducing GHG emissions by 80 percent below 1990 levels by the year 2050.

Environmental Quality Act (CEQA) Requirements

"In 1974, the Legislature adopted the Warren-Alquist State Energy Resources Conservation and Development Act. (Pub. Resources Code, § 25000 et seq.) That act created what is now known as the California Energy Commission and enabled it to adopt building energy standards. (See, e.g., id. at § 25402.) At that time, the Legislature found the "rapid rate of growth in demand for electric energy is in part due to wasteful, uneconomic, inefficient, and unnecessary uses of power and a continuation of this trend will result in serious depletion or irreversible commitment of energy, land and water resources, and potential threats to the state's environmental quality." [Id. at § 25002; see also § 25007 ("It is further the policy of the state and the intent of the Legislature to employ a range of measures to reduce wasteful, uneconomical, and unnecessary uses of energy, thereby reducing the rate of growth of energy consumption, prudently conserve energy resources, and assure statewide environmental, public safety, and land use goals")].

The same year that the Legislature adopted Warren-Alquist, it also added section 21100(b)(3) to CEQA, requiring environmental impact reports to include "measures to reduce the wasteful, inefficient, and unnecessary consumption of energy." As explained by a court shortly after it was enacted, the "energy mitigation amendment is substantive and not procedural in nature and was enacted for the purpose of requiring the lead agencies to focus upon the energy problem in the preparation of the final EIR." [People v. County of Kern (1976) 62 Cal.App.3d 761, 774 (emphasis added)]. It compels an affirmative investigation of the project's potential energy use and feasible ways to reduce that use.

Though Appendix F of the CEQA Guidelines has contained guidance on energy analysis for decades, implementation among lead agencies has not been consistent. (See, e.g., California Clean Energy Committee v. City of Woodland, supra, 225 Cal.App.4th 173, 209.) While California is a leader in energy conservation, the importance of addressing energy impacts has not diminished since 1974. On the contrary, given the need to avoid the effects of climate change, energy use is an issue that we cannot afford to ignore. As the California Energy Commission's *Integrated Energy Policy Report* (2016) explains:

> Energy fuels the economy, but it is also the biggest source of greenhouse gas emissions that lead to climate change. Despite California's leadership, Californians are experiencing the impacts of climate change including higher temperatures, prolonged drought, and more wildfires. There is an urgent need to reduce

[1] Air Resources Board. AB 32 Scoping Plan. Accessed May 2024 at: https://ww3.arb.ca.gov/cc/scopingplan/scopingplan.htm.

greenhouse gas emissions and increase the state's resiliency to climate change. With transportation accounting for about 37 percent of California's greenhouse gas emissions in 2014, transforming California's transportation system away from gasoline to zero emission and near-zero-emission vehicles is a fundamental part of the state's efforts to meet its climate goals. Energy efficiency and demand response are also key components of the state's strategy to reduce greenhouse gas emissions. (Id. at pp. 5, 8, 10.) Appendix F was revised in 2009 to clarify that analysis of energy impacts is mandatory. OPR today proposes to add a subdivision in section 15126.2 on energy impacts to further elevate the issue and remove any question about whether such an analysis is required."[2]

Further, an "Explanation of Proposed Amendments" contained in the Proposed Update (and now adopted amendments) to the CEQA Guidelines documents stated that OPR proposed to add a new subdivision (b) to section 15126.2 which discusses the required contents of an environmental impact report. The new subdivision would specifically address the analysis of a project's potential energy impacts. This addition is necessary for several reasons explained as follows. [3]

> "The first sentence clarifies that an EIR must analyze whether a project will result in significant environmental effects due to "wasteful, inefficient, or unnecessary consumption of energy." This clarification is necessary to implement Public Resources Code section 21100(b)(3). Since the duty to impose mitigation measures arises when a lead agency determines that the project may have a significant effect, section 21100(b)(3) necessarily requires both analysis and a determination of significance in addition to energy efficiency measures. (Pub. Resources Code, § 21002).
>
> The second sentence further clarifies that all aspects of the project must be considered in the analysis. This clarification is consistent with the rule that lead agencies must consider the "whole of the project" in considering impacts. It is also necessary to ensure that lead agencies consider issues beyond just building design. (See, e.g., California Clean Energy Com. v. City of Woodland, supra, 225 Cal.App.4th at pp. 210-212.) The analysis of vehicle miles traveled provided in proposed section 15064.3 [implementing Public Resources Code section 21099 (SB 743)] on transportation impacts may be relevant to this analysis.
>
> The third sentence signals that the analysis of energy impacts may need to extend beyond building code compliance. (Ibid.) The requirement to determine whether a project's use of energy is "wasteful, inefficient, and unnecessary" compels consideration of the project in its context. (Pub. Resources Code, § 21100(b)(3).) While building code compliance is a relevant factor, the generalized rules in the building code will not necessarily indicate whether a particular project's energy use could be improved. (Tracy First v. City of Tracy (2009) 177 Cal.App.4th 912, 933 [after analysis, lead agency concludes that project proposed to be at least 25% more energy efficient than the building code requires would have a less than significant impact); see also CEQA Guidelines, Appendix F, § II.C.4 (describing building code compliance as one of several different considerations in determining the significance of a project's energy impacts)]. That the Legislature added the energy analysis requirement in CEQA at the same time that it created an Energy Commission authorized to impose building energy standards indicates that compliance with the building code is a necessary but not exclusive means of satisfying CEQA's independent requirement to analyze energy impacts broadly.

The new proposed [now adopted] subdivision (b) also provides a cross-reference to Appendix F. This cross-reference is necessary to direct lead agencies to the more detailed provisions contained in that appendix. Finally, new proposed subdivision (b) cautions that the analysis of energy impacts is subject to the rule of reason and must focus

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[2] State of California. Office of Planning and Research. Proposed Update to the CEQA Guidelines. November 2017. Pages 65-66. Accessed May 2024 at: http://opr.ca.gov/docs/20171127_Comprehensive_CEQA_Guidelines_Package_Nov_2017.pdf

[3] Ibid. 66.

on energy demand actually caused by the project. This sentence is necessary to place reasonable limits on the analysis.

> Specifically, it signals that a full "lifecycle" analysis that would account for energy used in building materials and consumer products will generally not be required. (See also Cal. Natural Resources Agency, Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97 (Dec. 2009) at pp. 71-72)."[4]
>
> Specifically, Section 15121.6 added new sub-section (b), to wit: "(b) Energy Impacts. If the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary consumption of energy, the EIR shall analyze and mitigate that energy use. This analysis should include the project's energy use for all project phases and components, including transportation-related energy, during construction and operation. In addition to building code compliance, other relevant considerations may include, among others, the project's size, location, orientation, equipment use and any renewable energy features that could be incorporated into the project. (Guidance on information that may be included in such an analysis is presented in Appendix F.) This analysis is subject to the rule of reason and shall focus on energy demand that is caused by the project. This analysis may be included in related analyses of air quality, greenhouse gas emissions or utilities in the discretion of the lead agency."[5]

<u>CEQA Thresholds of Significance</u>

- ➢ Results in significant environmental effects due to wasteful, inefficient, or unnecessary consumption of energy.
- ➢ The project's energy use for all project phases and components, including transportation-related energy, during construction and operation.
- ➢ The project's size, location, orientation, equipment use and any renewable energy features that could be incorporated into the project.
- ➢ Analysis is subject to the rule of reason and shall focus on energy demand that is caused by the project.

Local

<u>Tulare County General Plan 2030 Update</u>

The following Tulare County General Plan 2030 Update policies for this resource apply to this proposed Project:

- *ERM-4.1 Energy Conservation and Efficiency Measures* wherein the County encourages the use of solar energy, solar hot water panels, and other energy conservation and efficiency features.
- *ERM-4.2 Streetscape and Parking Area Improvements for Energy Conservation* – wherein the County shall promote the planting and maintenance of shade trees along streets and within parking areas of new urban development to reduce radiation heating.
- *ERM-4.3 Local and State Programs* wherein the County shall participate, to the extent feasible, in local and State programs that strive to reduce the consumption of natural or man-made energy sources.

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[4] Op. Cit. 66-67.
[5] Op. Cit. 67-68.

- ERM-4.6 Renewable Energy wherein the County shall support efforts, when appropriately sited, for the development and use of alternative energy resources, including renewable energy such as wind and solar, biofuels and co-generation

Project Impact Analysis

a) Would the project Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? Less Than Significant Impact

The energy requirements for the proposed project were determined using the construction- and operational-related estimates provided in the Air Quality and Greenhouse Gas Analysis Technical Memorandum (Tech Memo, refer to Attachment B of Attachment "A" for related CalEEMod output files). The calculation worksheets for diesel fuel consumption rates for off-road construction equipment and on-road vehicles are provided in Attachment A of Attachment "A" of this MND.

Short Term Construction

<u>Off-Road Equipment</u>

Project construction would require the use of diesel and/or gasoline fueled equipment. Typical construction fleets, as provided by CalEEMod, include equipment such as excavators, dozers, tractors, loaders, backhoes, scrapers, pavers, and various other off-road equipment. The Project will be constructed in four (4) phases; however, the construction timeline and construction fleet will vary with each phase. Project construction would also require the use of on-road vehicles for construction workers, vendors, and haulers would require fuel for travel to and from the Project site.

Table 2.6-1
Construction Off-Road Diesel Fuel Consumption

Construction Phase	Fuel Consumption (gallons)
Phase 1 WWTF	11,236
Phase 1	5,980
Phase 2	5,980
Phase 3	26,626
Phase 4	7,626
Total	**57,448**

Source: Energy Consumption Calculations (Attachment A).

<u>On-Road Vehicles</u>

On-road vehicles will comply with all applicable State and federal emissions and fuel efficiency regulations. There are no unusual Project characteristics that would necessitate the use of construction equipment or vehicles that would be less energy efficient than at comparable construction sites in Tulare County, the San Joaquin Valley, or other parts of the state. Therefore, it is expected that construction fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.

Table 2.6-2 Construction On-Road Fuel Consumption		
Construction Phase	**Diesel Fuel Consumption (gallons)**	**Gasoline Fuel Consumption (gallons)**
Phase 1 WWTF	19,129	2,477
Phase 1	693	2,022
Phase 2	464	1,623
Phase 3	12,281	37,909
Phase 4	0	124
Total	**32,567**	**44,155**
Source: Energy Consumption Calculations (Attachment A).		

Other Construction Energy Consumption

Other equipment could include construction lighting, field services (office trailers), and electrically driven equipment such as pumps and other tools. As the on-site construction activities would be restricted to the permissible hours allowed in Tulare County, it is anticipated that the use of construction lighting would be minimal. Singlewide mobile office trailers, which are commonly used in construction staging areas, generally range in size from 160 square feet to 720 square feet. A typical The mobile office would be used only during construction of the WWTF, which would last approximately four (4) months. Therefore, energy consumption for other construction-related sources would not result in inefficient, wasteful, or unnecessary use of energy.

Construction Energy Demand

There are no unusual project characteristics that would necessitate the use of construction-related equipment that would be less energy efficient than at comparable construction sites in the region or other parts of the state. In addition, the overall construction-related schedules and processes for the specific development projects within the site will be designed to be efficient to avoid excess monetary costs. For example, equipment and fuel are not typically used wastefully due to the added expense associated with renting the equipment, maintaining it, and fueling it. Therefore, it is anticipated that construction-related fuel consumption and energy demands associated with the proposed Project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region, and as such, impacts would be less than significant.

Long-Term Operations

Transportation Energy Demand

Table 2.6-3 provides an estimate of the daily and annual fuel consumed by vehicles traveling to and from the proposed Project. These estimates were derived using the same assumptions used in the operational air quality analysis for the proposed project.

Table 2.6-3 Long-Term Operational Vehicle Fuel Consumption					
	Total VMT	**Diesel VMT**	**Gasoline VMT**	**Diesel Consumed (gallons)**	**Gasoline Consumed (gallons)**
Phase 1 WWTF	0	0	0	0	0
Phase 1	505,875	53,253	452,621	7,860	67,721
Phase 2	391,323	41,195	350,128	6,080	52,386
Phase 3	4,505,319	474,276	4,031,041	70,003	603,124
Phase 4	0	0	0	0	0
Total	**5,402,517**	**568,724**	**4,833,791**	**83,944**	**723,232**
Source: Energy Consumption Calculations and CalEEMod Reports Attachment A and B, respectively.					

As shown in **Table 2.6-3** annual consumption is estimated at 807,175 gallons (723,232 gallons from passenger vehicles, and 83,944 gallons from delivery and haul vehicles). In addition, the proposed project would constitute development within near proximity of an established community and would not be opening a new geographical area for development. As such, the proposed project would not result in unusually long trip lengths for future employees, vendors, or visitors. The property is located within five (5) miles of a major highway (State Route 99), within four (4) miles of the community of Earlimart and has scattered residences in the surrounding properties. The Project is intended to provide flexibility in the types of processing that the facility can accommodate and will not result in increased volume of product received and shipped from the site. For these reasons, it would be expected that vehicular fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than for any other similar land use activities in the region, and impacts would be less than significant.

Building Energy Demand

As shown in **Table 2.6-4**, the proposed Project is estimated to demand 2,418,652 kilowatt-hours (kWhr) of electricity and 72,275,6721,000-British Thermal Units (kBTU) of natural gas, respectively, on an annual basis.

Table 2.6-4 Long-Term Operational Electricity Usage		
Land Use	**Total Electricity Demand (kWhr/year)**	**Total Natural Gas Demand (kBTU/year)**
Phase 1 WWTF	401,141	-
Phase 1	185,344	817,700
Phase 2	143,374	632,538
Phase 3	1,650,673	72,825,434
Phase 4	38,120	0
Total	**2,418,652**	**74,275,672**
Source: Energy Consumption Calculations and CalEEMod Reports Attachment A and B, respectively.		

Buildings and infrastructure constructed pursuant to the proposed Project would comply with the versions of CCR Titles 20 and 24, including California Green Building Standards (CALGreen), that are applicable at the time that building permits are issued. The proposed Project's estimated energy demands would represent an increase in demand for electricity and natural gas.

It would be expected that building energy consumption associated with the proposed Project would not be any more inefficient, wasteful, or unnecessary than for any other similar buildings in the region. Current state regulatory requirements for new building construction contained in the 2019 CALGreen and Title 24 standards would increase energy efficiency and reduce energy demand in comparison to existing commercial structures, and therefore would reduce actual environmental effects associated with energy use from the proposed Project. Additionally, the CALGreen and Title 24 standards have increased efficiency standards through each update. Therefore, while the proposed Project would result in increased electricity and natural gas demand, electricity and natural gas would be consumed more efficiently and would be typical of existing commercial development.

Based on the above information, the proposed Project would not result in the inefficient or wasteful consumption of electricity or natural gas, and impacts would be less than significant. As such, Project-specific impacts related to this Checklist Item to a level considered Less Than Significant.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency? Less Than Significant Impact

The Tulare County General Plan contains policies that aim to reduce GHG emissions. The Tulare County CAP (the 2018 CAP Update) references the General Plan policies as tools for reducing GHG emissions. These policies are divided into the categories of Transportation Strategies, Building Energy Efficiency, Water Conservation Energy Savings, Solid Waste Reduction and Recycling, and Agricultural Programs and Incentives. Polices identified in the CAP under the Building Energy Efficiency section are provided below.

- *AQ-3.5 Alternative Energy Design.* The County shall encourage all new development, including rehabilitation, renovation, and redevelopment, to incorporate energy conservation and green building practices to maximum extent feasible. Such practices include, but are not limited to: building orientation and shading, landscaping, and the use of active and passive solar heating and water systems.

- *LU-7.15 Energy Conservation.* The County shall encourage the use of solar power and energy conservation building techniques in all new development.

- *ERM-4.1 Energy Conservation and Efficiency Measures.* The County shall encourage the use of solar energy, solar hot water panels, and other energy conservation and efficiency features in new construction and renovation of existing structures in accordance with State law.

- *ERM-4.2 Streetscape and Parking Area Improvements for Energy Conservation.* The County shall promote the planting and maintenance of shade trees along streets and within parking areas of new urban development to reduce radiation heating.

- *ERM-4.3 Local and State Programs.* The County shall participate, to the extent feasible, in local and State programs that strive to reduce the consumption of natural or man-made energy sources.

- *ERM-4.4 Promote Energy Conservation Awareness.* The County should coordinate with local utility providers to provide public education on energy conservation programs.

- *HS-1.4 Building and Codes.* Except as otherwise allowed by State law, the County shall ensure that all new buildings intended for human habitation are designed in compliance with the latest edition of the California Building Code, California Fire Code, and other adopted standards based on risk (e.g., seismic hazards, flooding), type of occupancy, and location (e.g., floodplain, fault).

- *ERM-4.6 Renewable Energy.* The County shall support efforts, when appropriately sited, for the development and use of alternative energy resources, including renewable energy such as wind and solar, biofuels and co-generation.

- *ERM-4.7 Reduce Energy Use in County Facilities.* Continue to integrate energy efficiency and conservation into all County functions.

- *ERM-4.8 Energy Efficiency Standards.* The County shall encourage renovations and new development to incorporate energy efficiency and conservation measures that exceed State Title 24 standards. When feasible, the County shall offer incentives for use of energy reduction measures such as expedited permit processing, reduced fees, and technical assistance.

The policies are aimed at County action and do not specifically mandate action at the project level. Therefore, compliance with established and applicable regulations would ensure consistency with GHG reduction measures contained in the Tulare County 2030 General Plan. Moreover, compliance with Title 24 standards would ensure that the proposed Project would not conflict with any of the General Plan energy conservation policies related to the proposed Project's building envelope, mechanical systems, and indoor and outdoor lighting. In addition, the facility, which has been in operation since the 1970's, is located along Road 160 south of Avenue 72, less than one (1) mile from sparse residential development and less than four (4) miles northeast of the community of Earlimart and State Route 99 (SR 99). As such, the project would not be opening a new geographical area for development such that it would result in unusually long trip lengths for future employees or vendors.

For the above reasons, the proposed Treehouse California Almonds Expansion Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and impacts would be Less Than Significant.

VII. GEOLOGY/SOILS

Would the project:	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication No. 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☒	☐
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

The two anaerobic ponds (88’ x 88’ x 19’) will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280’ x 87’ x 13’) where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

The clarifier (24’ diameter x 12’) will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466’ x 280’ x 27’) for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the High-Density Polyethylene (HDPE) double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

- **Phase 2:** Construction of a 5,176 sq. ft. canopy, a 6,263 sq. ft. fumigation room building with a 1,127 sq. ft. canopy for a total of 7,390 sq. ft., and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

The discussions regarding Environmental Setting, Regulatory Setting, and CEQA requirements, Geology/Soils, etc., contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Federal

None that apply to Project.

State

<u>Seismic Hazards Mapping Act</u>

“Under the Seismic Hazards Mapping Act, the State Geologist is responsible for identifying and mapping seismic hazards zones as part of the California Geologic Survey (CGS). The CGS provides zoning maps of non-surface rupture earthquake hazards (including liquefaction and seismically induced landslides) to local governments for planning purposes. These maps are intended to protect the public from the risks associated with strong ground shaking, liquefaction, landslides or other ground failure, and other hazards caused by earthquakes. For projects within seismic hazard zones, the Seismic Hazards Mapping Act requires developers to conduct geological investigations and incorporate appropriate mitigation measures into project designs before building permits are issued."

California Building Code

"The California Building Code is another name for the body of regulations known as the California Code of Regulations (C.C.R.), Title 24, Part 2, which is a portion of the California Building Standards Code. Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards."

State Water Resources Control Board and Regional Water Quality Control Board

National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity- Water Quality Order 99-08 DWQ.

Typically, General Construction Storm Water NPDES permits are issued by the RWQCB for grading and earth-moving activities. The General Permit is required for construction activities that disturb one or more acres. The General Permit requires development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which specifies practices that include prevention of all construction pollutants from contacting stormwater with the intent of keeping all products of erosion form moving off site into receiving waters. The NPDES permits are issued for a five-year term. NPDES general permits require adherence to the Best Management Practices (BMPs) including:

- Good Housekeeping
- Preventative Maintenance
- Spill/Leak Prevention and Response Plan
- Materials Handling and Waste Management
- Erosion and Sediment Control
- Employee Training Program
- Quality Assurance and Record Keeping

Local

Tulare County General Plan

The General Plan has a number of policies that apply to projects within Tulare County. General Plan policies that relate to the Project include:

- *HS-1.11 Site Investigations* wherein the County shall conduct site investigations in areas planned for new development to determine susceptibility to landslides, subsidence/settlement, contamination, and/or flooding;

- *HS-2.1 Continued Evaluation of Earthquake Risks* wherein the County shall continue to evaluate areas to determine levels of earthquake risk;

- *HS-2.4 Structure Siting* wherein the County shall permit development on soils sensitive to seismic activity permitted only after adequate site analysis, including appropriate siting, design of structure, and foundation integrity;

- *HS-2.7 Subsidence* wherein the County shall confirm that development is not located in any known areas of active subsidence;

- *HS-2.8 Alquist-Priolo Act Compliance* wherein the County shall not permit any structure for human occupancy to be placed within designated Earthquake Fault Zones;

- *WR-2.2 NPDES Enforcement* wherein the County shall continue to support the State in monitoring and enforcing provisions to control non-point source water pollution contained in the U.S. EPA NPDES program as implemented by the Water Quality Control Board;

- *WR-2.3 Best Management Practices* wherein the County shall continue to require the use of feasible BMPs and other mitigation measures designed to protect surface water and groundwater from the adverse effects of construction activities, agricultural operations requiring a County Permit and urban runoff in coordination with the Water Quality Control Board; and,

- *WR-2.4 Construction Site Sediment Control* wherein the County shall continue to enforce provisions to control erosion and sediment from construction sites.

Subdivision of Land

The County subdivision regulations, contained in Chapter 1 of Part VII of the Ordinance Code, require that preliminary and final geological and hydrological reports be prepared by a registered civil engineer or registered professional geologist for all subdivisions. Section 7-01-1610 requires the preparation of a preliminary report to provide an analysis of potential geological hazards, stability of soils, seismicity, potential erosion and sedimentation. Section 7-01-1725 requires the preparation of a final report which is to include more definitive evaluation of these factors and to recommend solutions for all identified hazards and problems. Section 7-01-1740 provides that if the final geological hydrological report indicates the presence of critically expansive or loosely deposited soils or other soil problems that could lead to structural defects, a soil investigation shall be prepared to recommend corrective action.

Tulare County Building and Grading Regulations

Tulare County Code, Section 7-15-1066, adopts and incorporates by reference the 2019 Edition of the California Building Code (CBC) as the Tulare County Building Regulations. The CBC is described earlier in this section. Appendix J of the CBC requires the issuance of grading permits prior to commencement of site grading and provides for the submittal of a soils report and engineering geology report, as required by the Building Official, in support of grading plans. The recommendations contained in the reports and approved by the Building Official are required to be incorporated into the grading plans or specifications.

Ordinance Code Article 7 – Excavation and Grading, sets forth additional requirements including provisions for sediment control and revegetation details. Ordinance Code Article 27 – Storm Water Quality and Regulation, addresses the control of storm water discharges and compliance with the provisions of the County's National Pollutant Discharge Elimination System (NPDES) permit, including preparation of Storm Water Pollution Prevention Plans (SWPPPs) and implementation of Best Management Practices (BMPs). (See Item 10 Hydrology and Water Quality for discussion and analysis related to storm water runoff and water quality).

Five County Seismic Safety Element (FCSSE)

The FCSSE report represents a cooperative effort between the governmental entities within Fresno, Kings, Madera, Mariposa and Tulare Counties to develop an adoptable Seismic Safety Element as required by State law. Part I, the Technical Report, is designed to be used when necessary to provide background for the Summary document. Part II, the Summary Report, establishes the framework and rationale for evaluation of seismic risks and hazards in the region. Part II of the Seismic Safety Element, the Policy Report, has been prepared as a "model" report designed to address seismic hazards as delineated in the Technical Report. The intent has been to develop a planning tool for use by county and city governments in implementing their seismic safety elements. The planning process utilized to develop the Element was developed through the efforts of Technical and Policy Committees, composed of both staff and elected representatives from Cities, Counties, and Special Districts or Areawide Planning Organizations in cooperation with the consulting firms of Envicom Corporation and Quinton-Redgate.

Project Impact Analysis

a) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death? Less Than Significant Impact.

i) *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication No. 42.*

Faults

"Faults are the indications of past seismic activity. It is assumed that those that have been active most recently are the most likely to be active in the future. Recent seismic activity is measured in a geologic timescale. Geologically recent is defined as having occurred within the last two million years (the Quaternary Period). All faults believed to have been active during Quaternary time are considered "potentially active." [1]. "In 1973, five counties within the Southern San Joaquin Valley undertook the preparation of the Five County Seismic Safety Element to assess seismic hazards… In general, zones C1, S1, and V1 are safer than zones C2, S2, and V2. Hazards due to groundshaking are considered to be "minimal" in the S1 Zone and "minimal" to "moderate" in the S2 and S2S Zones. Development occurring within the S1 Seismic Zone must conform to the Uniform Building Code-Zone II; while development within the S2 Zone must conform to Uniform Building Code-Zone III. There are three faults within the region that have been, and will be, principal sources of potential seismic activity within Tulare County. These faults are described below:

- San Andreas Fault is located approximately 40 miles west of the Tulare County boundary and [approximately] 60 miles west of the project area. This fault has a long history of activity and is thus the primary focus in determining seismic activity within the County. Seismic activity along the fault varies along its span from the Gulf of California to Cape Mendocino. Just west of Tulare County lays the "Central California Active Area," section of the San Andreas Fault where many earthquakes have originated.

- Owens Valley Fault Group is a complex system containing both active and potentially active faults, located on the eastern base of the Sierra Nevada Mountains approximately [approximately] 60 miles east

[1] Tulare County General Plan 2030 Update. General Plan Background Report. Page 8-5. Accessed February 2024 at: https://generalplan.co.tulare.ca.us/documents/GP/002Board%20of%20Supervisors%20Materials/001BOS%20Agenda%20Items%20-%20Public%20Hearing%20August,%2028%202012/002Attachment%20A.%20FEIR/001Exhibit%201.%20FEIR%20Exec%20Summary%20&%20Chap%201-6/Appendix%20B%20-%20Background%20Report.pdf

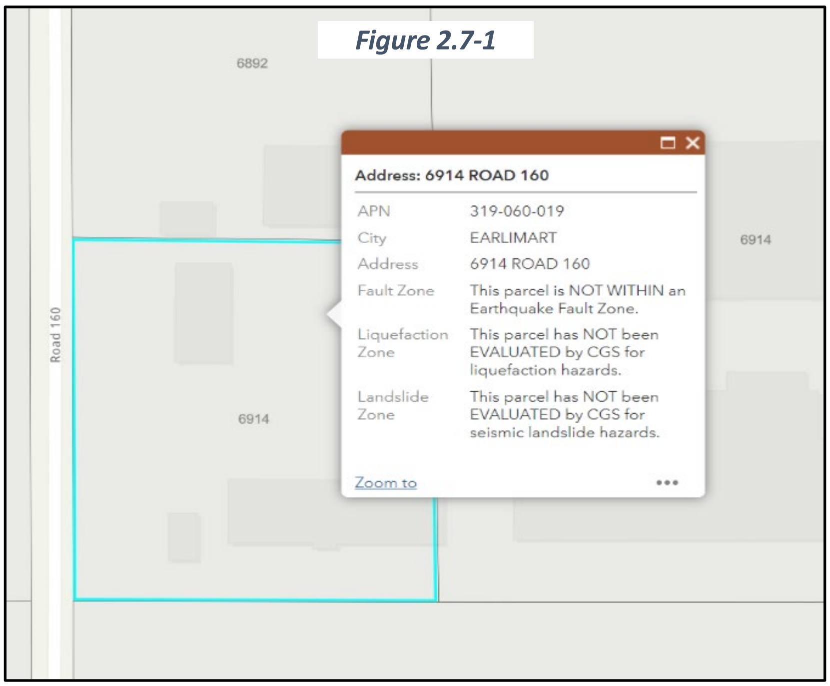
of the project area. The Group is located within Tulare and Inyo Counties and has historically been the source of seismic activity within Tulare County.

• Clovis Fault is considered to be active within the Quaternary Period, although there is no historic evidence of its activity, and is therefore classified as "potentially active." This fault lies approximately six miles south of the Madera County boundary in Fresno County and [approximately] 70 miles north of the project area. Activity along this fault could potentially generate more seismic activity in Tulare County than the San Andreas or Owens Valley fault systems. In particular, a strong earthquake on the Fault could affect northern Tulare County. However, because of the lack of historic activity along the Clovis Fault, inadequate evidence exists for assessing maximum earthquake impacts." [2]

There are other unnamed faults north of Bakersfield and near Tulare Buttes (about 30 miles north of Porterville). These faults are small and have exhibited activity in the last 1.6 million years, but not in the last 200 years. It is also possible, but unlikely, that previously unknown faults could become active in the area. As shown in Figure 2.7-1, the proposed Project parcel site is not within an earthquake fault zone. Although not shown on this map, the Earthquake Hazard Zone map notes the same information for 6914 Road 160 where the existing farm is located.

There are other unnamed faults north of Bakersfield and near Tulare Buttes (about 30 miles north of Porterville). These faults are small and have exhibited activity in the last 1.6 million years, but not in the last 200 years. It is also possible, but unlikely, that previously unknown faults could become active in the area. [3] As shown in Figure 7-1, the proposed Project parcel site is not within an earthquake fault zone. [4] Although not shown on this map, the Earthquake Hazard Zone map notes the same information for 6914 Road 160.

Figure 2.7-1



ii) *Ground Shaking:*

<u>Groundshaking</u>

"Ground-shaking is the primary seismic hazard in Tulare County because of the county's seismic setting and its record of historical activity. Thus, emphasis focuses on the analysis of expected levels of ground-shaking, which is directly related to the magnitude of a quake and the distance from a quake's epicenter. Magnitude is a measure of the amount of energy released in an earthquake, with higher magnitudes causing increased ground-shaking over longer periods of time, thereby affecting a larger area. Ground-

[2] Ibid. Cit. 8-5 through 8-7.
[3] California Geological Survey. Fault Activity Map. Accessed February 2024 at: https://maps.conservation.ca.gov/cgs/fam/
[4] California Department of Conservation. EQ Zapp: California Earthquake Hazards Zone Application. Earthquake Zones of Required Investigation. Accessed February 2024. See: https://maps.conservation.ca.gov/cgs/EQZApp/app/

shaking intensity, which is often a more useful measure of earthquake effects than magnitude, is a qualitative measure of the effects felt by population."[5] "The San Joaquin Valley portion of Tulare County is located on alluvial deposits, which tend to experience greater ground-shaking intensities than areas located on hard rock. Therefore, structures located in the valley will tend to suffer greater damage from ground-shaking than those located in the foothill and mountain areas. However, existing alluvium valleys and weathered or decomposed zones are scattered throughout the mountainous portions of the county which could also experience stronger intensities than the surrounding solid rock areas. The geologic characteristics of an area can therefore be a greater hazard than its distance to the epicenter of the quake."[6] "Older buildings constructed before current building codes were in effect, and even newer buildings constructed before earthquake resistance provisions were included in the current building codes, are most likely to suffer damage in an earthquake. Most of Tulare County's buildings are no more than one or two stories in height and are of wood frame construction, which is considered the most structurally resistant to earthquake damage. Older masonry buildings (without earthquake resistance reinforcement) are the most susceptible to structural failure, which causes the greatest loss of life. The State of California has identified unreinforced masonry buildings (URMs) as a safety issue during earthquakes. In high-risk areas (Bay Area), inventories and programs to mitigate this issue are required. Because Tulare County is not a high-risk area, state law only recommends that programs to retrofit URMs are adopted by jurisdictions."[7]

iii) *Ground Failure and Liquefaction:*

<u>Liquefaction</u>

"Liquefaction is a process whereby soil is temporarily transformed to a fluid form during intense and prolonged groundshaking. Areas most prone to liquefaction are those that are water saturated (e.g., where the water table is less than 30 feet below the surface) and consist of relatively uniform sands that are low to medium density. In addition to necessary soil conditions, the ground acceleration and duration of the earthquake must be of sufficient energy to induce liquefaction. Scientific studies have shown that the ground acceleration must approach 0.3g before liquefaction occurs in a sandy soil with relative densities typical of the San Joaquin alluvial deposits."[8]

"Liquefaction during major earthquakes has caused severe damage to structures on level ground as a result of settling, tilting, or floating. Such damage occurred in San Francisco on bay-filled areas during the 1989 Loma Prieta earthquake, even though the epicenter was several miles away. If liquefaction occurs in or under a sloping soil mass, the entire mass may flow toward a lower elevation, such as that which occurred along the coastline near Seward, Alaska during the 1964 earthquake. Also, of particular concern in terms of developed and newly developing areas are fill areas that have been poorly compacted. No specific countywide assessments to identify liquefaction hazards have been performed in Tulare County. Areas where groundwater is less than 30 feet below the surface occur primarily in the valley. However, soil types in the area are not conducive to liquefaction because they are either too coarse or too high in clay content. Areas subject to 0.3g acceleration or greater are located in a small section of the Sierra Nevada Mountains along the Tulare-Inyo County boundary. However, the depth to groundwater in such areas is greater than in the valley, which would minimize liquefaction potential as well. Detailed

[5] Tulare County General Plan 2030 Update. General Plan Background Report. Page 8-7. Accessed February 2024 at: https://generalplan.co.tulare.ca.us/documents/GP/002Board%20of%20Supervisors%20Materials/001BOS%20Agenda%20Items%20-%20Public%20Hearing%20August,%2028%202012/002Attachment%20A.%20FEIR/001Exhibit%201.%20FEIR%20Exec%20Summary%20&%20Chap%201-6/Appendix%20B%20-%20Background%20Report.pdf
[6] Ibid.
[7] Op. Cit.8-8.
[8] Op. Cit. 8-10.

geotechnical engineering investigations would be necessary to more accurately evaluate liquefaction potential in specific areas and to identify and map the areal extent of locations subject to liquefaction." [9]

iv) *Landslides*:

<u>Landslides</u>

"Landslides are a primary geologic hazard and are influenced by four factors:

- Strength of rock and resistance to failure, which is a function of rock type (or geologic formation);
- Geologic structure or orientation of a surface along which slippage could occur;
- Water (can add weight to a potentially unstable mass or influence strength of a potential failure surface); and,
- Topography (amount of slope in combination with gravitation forces).

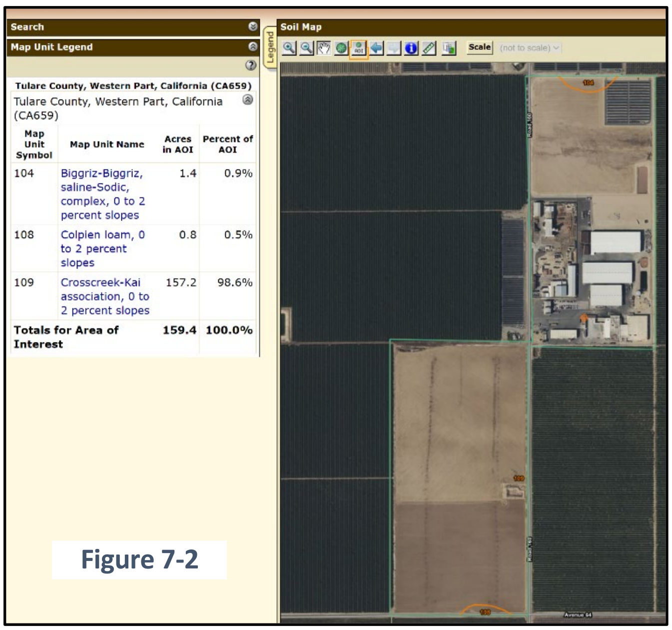


Figure 7-2

"As of June 2009, the California Geological Survey had not developed landslide hazard identification maps for Tulare County. However, it is reasonable to assume that certain areas in Tulare County are more prone to landslides than other areas… [As such,] There is no risk of large landslides in the valley area of the county due to its relatively flat topography." [10]

b) Would the project result in substantial soil erosion or the loss of topsoil? No Impact. The proposed Project area is primarily flat and as such, soil erosion is not anticipated. As required by the Clean Water Act (CWA) and the Central Valley Regional Water Quality Control Board (CVRWQCB), a Stormwater Pollution Prevention Plan (SWPPP) will be developed by a qualified engineer or erosion control specialist and implemented before construction begins.

Construction of a future business park, parking stalls, buildings, landscaping, etc., will ultimately serve to anchor native soils in place through the laying of foundations, parking surfaces, lawns, etc. Prior to initiation of construction-related activities, a Stormwater Pollution Prevention Plan (SWPPP) will be developed and kept on site during construction-related activities and will be made available upon request to representatives of the CVRWQCB. The objectives of the SWPPP will be to identify pollutant sources that may affect the quality of stormwater associated with construction activity and to identify, construct, and implement stormwater pollution prevention measures to reduce pollutants in stormwater discharges during and after construction. To meet these objectives, the SWPPP will include a description of potential pollutants, a description of methods of management for dredged sediments, and hazardous materials present on site during construction (including vehicle and equipment fuels).

The SWPPP will also include details for best management practices (BMPs) for the implementation of sediment and erosion control practices. Implementation of the SWPPP will comply with state and federal water quality regulations and will reduce this impact to less-than-significant. Compliance with local grading and erosion control ordinances will also help minimize adverse effects associated with erosion and sedimentation.

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[9] Op. Cit. 8-10.
[10] Op. Cit. 8-10.

Any stockpiled soil will be watered and/or covered to prevent loss due to wind erosion as part of the SWPPP during construction-related activities and reclamation. As a result of these efforts, loss of topsoil and substantial soil erosion during the construction-related activities and reclamation periods are not anticipated.

In addition, depending upon activity, the Project would be subject to the San Joaquin Valley Unified Air Pollution Control District's (Air District) Regulation VIII (Fugitive PM_{10} Prohibitions) [11] to prevent, minimize, avoid, and clean up dust generated during construction-related activities. Likely applicable Regulation VIII rules include Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities) for construction and earthmoving activities; Rule 8031 (Bulk Materials) which limits fugitive dust emissions from the outdoor handling, storage, and transport of bulk materials (such a topsoil); Rule 8041 (Carryout and Trackout) which requires prevention and/or cleanup of soil that is tracked out by vehicle tires exiting the site or carried out by vehicles exiting the site; Rule 8051 (Open Areas) requiring stabilization of areas cleared of vegetation in anticipation of construction-related activities; Rule 8061 (Paved and Unpaved Roads) such as unpaved access/haul roads, that is, any road or path that is not covered by one of the materials described in the Air District's paved road definition that is associated with any construction, demolition, excavation, extraction, and other earthmoving activity and used by vehicles, equipment, haul trucks, or any conveyances to travel within a site, to move materials from one part of a site to another part within the same site, or to provide temporary access to a site; and 8071 (Unpaved Vehicle/Equipment Traffic Areas) to limit fugitive dust emissions from unpaved vehicle and equipment traffic areas within the Project's construction-related areas. As a result of these efforts, loss of topsoil and substantial soil erosion during construction-related activities are not anticipated.

c) **Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? No Impact.** The proposed Project site is not located on a geologic unit or soil that is unstable, or that would become unstable because of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. According to the USDA, NRCS, Soil Survey of Tulare County, the Crosscreek-Kai association, which makes up 98.6% of the soil type on the property, consists of deep, moderately well drained soils that formed from alluvium derived from granitic rock. Crosscreek-Kai association soils are fan remnants and have a medium runoff class. It has a slope gradient ranging from 0 to 2 percent and elevations are 230 to 400 feet. Therefore, the native soils identified on the site do not contain the characteristics of an expansive soil. As such, the proposed Treehouse California Almond Expansion would have no impact and would not create substantial direct or indirect risks to life or property.

d) **Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? Less Than Significant Impact.** As described in Impact 7 c), most of the site is Crosscreek-Kai association, which is not considered expansive soil. As such, the proposed Project would result in a Less Than Significant Impact.

e) **Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? Less Than Significant.** The proposed Project includes the installation of an On-Site Wastewater Treatment System (OWTS) sufficient to meet the wastewater demands of future uses. The OWTS would be installed in accordance with appropriate regulations (e.g., Tulare County Environmental Health Services requirements) and as such, would be designed to ensure proper function. Therefore, the proposed Project would result in a Less Than Significant Impact.

[11] San Joaquin Valley Unified Air Pollution Control District. Current Rules and Regulations. Regulation VIII-FUGITIVE PM10 PROHIBITIONS. Rules 8011 through 8071. Accessed March 2024 at: https://www.valleyair.org/rules/1ruleslist.htm#reg8

f) **Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? Less Than Significant Impact**. There are no known paleontological resources within the Project area, nor are there any known geologic features in the proposed Project area. The CHRIS and NAHC/SLF searches did not identify any paleontological (or cultural) resources. Additionally, no paleontological resources or sites, or unique geologic features have previously been encountered in the proposed Project area. Project construction will not be anticipated to disturb any paleontological resources not previously disturbed; however unlikely, there is a possibility that subsurface resources could be uncovered during construction-related activities. In such an event, potentially significant impacts to previously unknown subsurface resources may occur. With implementation of Mitigation Measures 5-1 through 5-3, as specified in Item 5 Cultural Resources (as applicable), will ensure that any impact from the proposed Treehouse California Almond expansion will be Less Than Significant.

Mitigation Measure(s): See Mitigation Measures 5-1 through 5-3 (which can be found in their entirety in Attachment "F" of this IS/MND).

VIII. GREENHOUSE GAS EMISSIONS

Would the project:		Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b)	Conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88' x 88' x 19') will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280' x 87' x 13') where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

  The clarifier (24' diameter x 12') will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466' x 280' x 27') for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

  A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the High Density Polyethylene (HDPE) double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

- **Phase 2:** Construction of a 5,176 sq. ft. canopy, a 6,263 sq. ft. fumigation room building with a 1,127 sq. ft. canopy for a total of 7,390 sq. ft., and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Greenhouse Gases, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Federal

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years.

The USEPA Mandatory Reporting Rule (40 CFR Part 98), which became effective December 29, 2009, requires that all facilities that emit more than 25,000 metric tons CO2-equivalent per year beginning in 2010, report their emissions on an annual basis. On May 13, 2010, the USEPA issued a final rule that established an approach to addressing GHG emissions from stationary sources under the CAA permitting programs. The final rule set thresholds for GHG emissions that define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities.

In addition, the Supreme Court decision in Massachusetts v. EPA (Supreme Court Case 05-1120) found that the USEPA has the authority to list GHGs as pollutants and to regulate emissions of GHGs under the CAA. On April 17, 2009, the USEPA found that CO2, CH4, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride may contribute to air pollution and may endanger public health and welfare. This finding may result in the USEPA regulating GHG emissions; however, to date the USEPA has not proposed regulations based on this finding.

State

In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires the Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions; these regulations applied to automobiles and light trucks beginning with the 2009 model year.

California has taken action to reduce GHG emissions. In June 2005, Governor Schwarzenegger signed Executive Order S-3-05 to address climate change and GHG emissions in California. This Order sets the following goals for statewide GHG emissions:

- Reduce to 2000 levels by 2010
- Reduce to 1990 levels by 2020
- Reduce to 80 percent below 1990 levels by 2050

"In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 [Assembly Bill 32 (AB 32 Opens in New Window)], which created a comprehensive, multi-year program to reduce greenhouse gas (GHG) emissions in California. AB 32 required the California Air Resources Board (ARB or Board) to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by the Board in 2008 and must be updated every five years. Since 2008, there have been two updates to the Scoping Plan. Each of the Scoping Plans have included a suite of policies to help the State achieve its GHG targets, in large part leveraging existing programs whose primary goal is to reduce harmful air pollution."[1]

"The First Update to the Scoping Plan was approved by the Board on May 22, 2014, and builds upon the initial Scoping Plan with new strategies and recommendations. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update defines ARB's climate change priorities for the next five years, and also sets the groundwork to reach long-term goals set forth in Executive Orders S-3-05 and B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use."[2]

"On April 29, 2015, the Governor issued Executive Order B-30-15 establishing a mid-term GHG reduction target for California of 40 percent below 1990 levels by 2030. All state agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. ARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target, and therefore, is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue driving down emissions."[3]

"This Scoping Plan for Achieving California's 2030 Greenhouse Gas Target (Scoping Plan or 2017 Scoping Plan) identifies how the State can reach our 2030 climate target to reduce greenhouse gas (GHG) emissions by 40 percent from 1990 levels, and substantially advance toward our 2050 climate goal to reduce GHG emissions by 80 percent below 1990 levels. By selecting and pursuing a sustainable and clean economy path for 2030, the State will continue to successfully execute existing programs, demonstrate the coupling of economic growth and environmental progress, and enhance new opportunities for engagement within the State to address and prepare for climate change."[4]

"This Scoping Plan builds on and integrates efforts already underway to reduce the State's GHG, criteria pollutant, and toxic air contaminant emissions. Successful implementation of existing programs has put California on track to achieve the 2020 target. Programs such as the Low Carbon Fuel Standard and Renewables Portfolio Standard are delivering cleaner fuels and energy, the Advanced Clean Cars Program has put more than a quarter million clean vehicles on the road, and the Sustainable Freight Action Plan will result in efficient and cleaner systems to move goods throughout the State. Enhancing and implementing these ongoing efforts puts California on the path to achieving the 2030 target. This Scoping Plan relies on these, and other, foundational programs paired with an extended, more stringent Cap-and-Trade Program, to deliver climate, air quality, and other benefits."[5]

<u>California Environmental Quality Act (CEQA) Requirements</u>

Section 15064.4 Determining the Significance of Impacts from Greenhouse Gas Emissions

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[1] ARB.AB 32 Scoping Plan. Accessed August 2022 at: https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm.

[2] ARB. First Update to the AB 32 Scoping Plan. Accessed August 2022 at: https://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm.

[3] ARB. Scoping Plan Update to Reflect 2030 Target. Accessed August 2022 at: https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm.

[4] ARB. California's 2017 Climate Change Scoping Plan. Page 1. Accessed August 2022 at: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

[5] Ibid.

(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or

(2) Rely on a qualitative analysis or performance based standards.

(b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.[6]

Regional

California Air Pollution Control Officers Association (CAPCOA)

"In January 2008, the California Air Pollution Control Officers Association (CAPCOA) issued a "white paper" on evaluating GHG emissions under CEQA (CAPCOA, 2008). The CAPCOA white paper strategies are not guidelines and have not been adopted by any regulatory agency; rather, the paper is offered as a resource to assist lead agencies in considering climate change in environmental documents."[7]

The California Association of Air Pollution Control Officers (CAPCOA) represents all thirty-five local air quality agencies throughout California. CAPCOA, which has been in existence since 1975, is dedicated to protecting the public health and providing clean air for all our residents and visitors to breathe and initiated the Greenhouse Gas Reduction Exchange.[8]

[6] California Environmental Quality Act (CEQA). Section 15064.4 Determining the Significance of Impacts from Greenhouse Gas Emissions. Accessed August 2022 at: https://www.califaep.org/statute_and_guidelines.php

[7] Op. Cit. Page 6-28. Background Report citation: CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. January 2008.

[8] California Air Pollution Control Officers Association (CAPCOA). Accessed August 2022 at: http://www.capcoa.org/.

"The Greenhouse Gas Reduction Exchange (GHG Rx) is a registry and information exchange for greenhouse gas emissions reduction credits designed specifically to benefit the state of California. The GHG Rx is a trusted source of locally generated credits from projects within California, and facilitates communication between those who create the credits, potential buyers, and funding organizations."[9] Four public workshops were held throughout the state including in the SJVAPCD. The mission is to provide a trusted source of high-quality California-based greenhouse gas credits to keep investments, jobs, and benefits in-state, through an Exchange with integrity, transparency, low transaction costs and exceptional customer service.[10]

San Joaquin Valley Unified Air Pollution Control District (Air District)

The Air District is made up of eight counties in California's Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare and the San Joaquin Valley Air Basin portion of Kern. "The San Joaquin Valley Air District is a public health agency whose mission is to improve the health and quality of life for all Valley residents through efficient, effective and entrepreneurial air quality-management strategies."[11]

The Air District adopted the *Climate Change Action Plan* (CCAP) in August 2008. "The CCAP directed the District Air Pollution Control Officer to develop guidance to assist Lead Agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project specific greenhouse gas (GHG) emissions on global climate change.

On December 17, 2009, the San Joaquin Valley Air Pollution Control District (District) adopted the guidance: Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA, and the policy: District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency. The guidance and policy rely on the use of performance-based standards, otherwise known as Best Performance Standards (BPS), to assess significance of project specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA.

Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual, is required to determine that a project would have a less than cumulatively significant impact. The guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project related impacts on global climate change."[12]

The Air District's *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Project under CEQA* document provides guidance to lead agencies for evaluating the significance of project-specific and cumulative impacts related to GHG emissions.[13] This guidance established the following process for evaluating the significance of project-specific GHG emissions on global climate change:

- "Projects determined to be exempt from the requirements of CEQA would be determined to have a less than significant individual and cumulative impact for GHG emissions and would not require further environmental review, including analysis of project specific GHG emissions. Projects exempt under CEQA

[9] Ibid. See "CAPCOA GHG RX" tab

[10] CAPCOA. CAPCOA Greenhouse Gas Reduction Exchange. Accessed August 2022 at: http://www.ghgrx.org/.

[11] Air District. About the District. Accessed August 2022 at: Website: http://www.valleyair.org/General_info/aboutdist.htm#Mission.

[12] Air District. Climate Change Action Plan. Accessed August 2022 at: http://www.valleyair.org/Programs/CCAP/CCAP_menu.htm

[13] Air District. Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Project under CEQA. Accessed August 2022 at: http://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf.

would be evaluated consistent with established rules and regulations governing project approval and would not be required to implement [Best Performance Practices] BPS.

- Projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the lead agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the lead agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement BPS.
- Projects implementing Best Performance Standards would not require quantification of project specific GHG emissions. Consistent with CEQA Guideline, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.
- Projects not implementing Best Performance Standards would require quantification of project specific GHG emissions and demonstration that project specific GHG emissions would be reduced or mitigated by at least 29%, compared to Business-As-Usual (BAU), including GHG emission reductions achieved since the 2002-2004 baseline period. Projects achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.
- Notwithstanding any of the above provisions, projects requiring preparation of an Environmental Impact Report for any other reason would require quantification of project specific GHG emissions. Projects implementing BPS or achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG."[14]

Local

Tulare County General Plan 2030 Update

The Tulare County General Plan 2030 Update: Chapter 9 – Air Quality contains a number of policies that apply to projects within Tulare County that support GHG reduction efforts and which have potential relevance to the Project's CEQA review.

- *AQ-1.3 Cumulative Air Quality Impacts* wherein the County shall require development to be located, designed, and constructed in a manner that would minimize cumulative air quality impacts;
- *AQ-1.5 California Environmental Quality Act (CEQA) Compliance* wherein the County shall ensure that air quality impacts identified during the CEQA review process are consistently and reasonably mitigated when feasible;
- *AQ-1.7 Support Statewide Climate Change Solutions* wherein the County shall monitor and support the efforts of Cal/EPA, CARB, and the SJVAPCD, under AB 32 (Health and Safety Code §38501 et seq.), to develop a recommended list of emission reduction strategies, as appropriate, the County will evaluate each new project under the updated General Plan to determine its consistency with the emission reduction strategies;

[14] Ibid. 4 and 5.

- *AQ-1.8 Greenhouse Gas Emissions Reduction Plan/Climate Action Plan* wherein the County will develop a Greenhouse Gas Emissions Reduction Plan (Plan) that identifies greenhouse gas emissions within the County as well as ways to reduce those emissions. The Plan will incorporate the requirements adopted by the California Air Resources Board specific to this issue. In addition, the County will work with the Tulare County Association of Governments and other applicable agencies to include the following key items in the regional planning efforts.
    1. Inventory all known, or reasonably discoverable, sources of greenhouse gases in the County,
    2. Inventory the greenhouse gas emissions in the most current year available, and those projected for year 2020, and
    3. Set a target for the reduction of emissions attributable to the County's discretionary land use decisions and its own internal government operations.;

- *AQ-3.2 Infill near Employment* requiring the County of identify opportunities for infill development near employment areas;

- *AQ-3.3 Street Design* regarding street designed to encourage transit use, biking, and pedestrian movement;

- *AQ-3.4 Landscape* regarding the use of ecologically based landscape design principles that can improve local air quality by absorbing CO_2, producing oxygen, providing shade that reduces energy required for cooling, and filtering particulates*;*

- *AQ-3.5 Alternative Energy Design* wherein the County shall encourage all new development to incorporate energy conservation and green building practices to maximum extent feasible;

- *ERM-4.1 Energy Conservation and Efficiency Measures* wherein the County shall encourage energy conservation and efficiency features in new construction in accordance with State law; and,

- *ERM-4.8 Energy Efficiency Standards* wherein the County shall encourage new developments to incorporate energy efficiency and conservation measures that exceed State Title 24 standards.

Tulare County Climate Action Plan

The Tulare County Climate Action Plan (CAP) serves as a guiding document for County of Tulare (County) actions to reduce greenhouse gas emissions and adapt to the potential effects of climate change. The CAP is an implementation measure of the 2030 General Plan Update. The General Plan provides the supporting framework for development in the County to produce fewer greenhouse gas emissions during Plan buildout. The CAP builds on the General Plan's framework with more specific actions that will be applied to achieve emission reduction targets consistent with California legislation.[15]

"The County of Tulare (County) adopted the Tulare County Climate Action Plan (CAP) in August 2012. The CAP includes provisions for an update when the State of California Air Resources Board (CARB) adopts a Scoping Plan Update that provides post-2020 targets for the State and an updated strategy for achieving a 2030 target. Governor Brown signed Senate Bill (SB) 32 on September 8, 2016, which contains the new 2030 target. The CARB 2017 Scoping Plan Update for the Senate Bill (SB) 32 2030 targets was adopted by the CARB on December 14, 2017 which provided new emission inventories and a comprehensive strategy for achieving the 2030 target (CARB 2017a). With the

[15] Tulare County Climate Action Plan. February 2010. Page 1. Accessed July 2024 at: https://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/220Climate%20Action%20Plan/CLIMATE%20ACTION%20PLAN%202018%20UPDATE.pdf

adoption of the 2017 Scoping Plan, the County proceeded with the 2018 CAP Update that is provided in this document.

The 2018 CAP Update incorporates new baseline and future year inventories to reflect the latest information and updates the County's strategy to address the SB 32 2030 target. The 2030 target requires the State to reduce emissions by 40 percent below 1990 levels from the 2017 Scoping Plan and County data. The CAP identifies the County's fair share of reductions required to maintain consistency with the State target."[16]

GHG's Assessed

This analysis was restricted to GHGs identified by AB 32, which include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3). The proposed project would generate a variety of GHGs, including several defined by AB 32 such as CO_2, CH_4, and N_2O.

Water vapor could be emitted from evaporated water used for landscaping and other uses, but this is not a significant impact because water vapor concentrations in the upper atmosphere are primarily due to climate feedbacks rather than emissions from project-related activities.

Ozone is a GHG; however, unlike the other GHGs, ozone in the troposphere is relatively short-lived and can be reduced in the troposphere on a daily basis. Stratospheric ozone can be reduced through reactions with other pollutants.

Certain GHGs defined by AB 32 would not be emitted by the project. HFCs, PFCs, SF_6, and NF_3 are typically used in certain industrial applications, none of which would be used for almond hulling operations. Therefore, it is not anticipated that the proposed project would emit those GHGs.

GHG emissions associated with the proposed project construction as well as future operations were estimated using CO_2 equivalent (CO_2e) emissions as a proxy for all GHG emissions. In order to obtain the CO_2e, an individual GHG is multiplied by its Global Warming Potential (GWP). The GWP designates on a pound for pound basis the potency of the GHG compared to CO_2.

Thresholds of Significance

Air District (SJVAPCD)

The SJVAPCD's Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA presents a tiered approach to analyzing project significance with respect to GHG emissions. Project GHG emissions are considered less than significant if they can meet any of the following conditions, evaluated in the order presented:

- Project is exempt from CEQA requirements;
- Project complies with an approved GHG emission reduction plan or GHG mitigation program;
- Project implements Best Performance Standards (BPS); or

[16] Ibid.

- Project demonstrates that specific GHG emissions would be reduced or mitigated by at least 29 percent compared to Business-as-Usual (BAU), including GHG emission reductions achieved since the 2002-2004 baseline period.

The SJVAPCD's Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA includes thresholds based on whether the project will reduce or mitigate GHG levels by 29 percent from BAU levels compared with 2005 levels by 2020. This level of GHG reduction is based on the target established by CARB's AB 32 Scoping Plan, approved in 2008. First occupancy at the project site is expected to occur in 2023. This date is past the AB 32 2020 milestone year. Given recent legislative and legal scrutiny on post-2020 compliance, additional discussion is provided to show progress towards GHG reduction goals identified in CARB's 2017 Scoping Plan for the year 2030. Additionally, although not included in a formal GHG reduction plan, Executive Order S-3-05 also includes a goal of reducing GHG emissions 80 percent below 1990 levels by 2050 and Executive Order B-55-18 set the goal to achieve carbon neutrality statewide by 2045.

<u>Newhall Ranch</u>

The California Supreme Court decision in the *Center for Biological Diversity et al. vs. California Department of Fish and Wildlife, the Newhall Land and Farming Company* (62 Cal.4th 204 [2015], and known as the Newhall Ranch decision), confirmed that the use of BAU analysis (e.g., 29 percent below BAU), a performance-based approach, would be satisfactory. However, for a project-level analysis that uses CARB's statewide BAU targets, substantial evidence must be presented to support the use of those targets for a particular project at a specific location. The court noted that this may require examination of the data behind the statewide model and adjustment to the levels of reduction from BAU used for project evaluation. To date, neither CARB nor any lead agencies have provided any guidance on how to adjust AB 32's statewide BAU target for use at the project level.
The regulations in the State's 2008 Scoping Plan have been adopted and the State is on track to meet the 2020 target and achieve continued progress towards meeting the 2017 Scoping Plan target for 2030.
In the Newhall case, the Supreme Court was concerned that new development may need to reduce GHG emissions more than existing development to demonstrate it is meeting its fair share of reductions. New development does do more than its fair share through compliance with enhanced regulations, particularly with respect to motor vehicles, energy efficiency, and electricity generation. If no additional reductions are required from an individual project beyond that achieved by regulations, then the amount needed to reach the 2020 target is the amount of GHG emissions a project must reduce to comply with Statewide goals.

<u>Project-level Thresholds</u>

Section 15064.4(b) of the CEQA Guidelines' amendments for GHG emissions states that a lead agency may take into account the following three considerations in assessing the significance of impacts from GHG emissions.

- Consideration #1: The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting.
- Consideration #2: Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- Consideration #3: The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an Environmental Impact Report (EIR) must be prepared for the project.

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines § 15130(f)).

Per CEQA Guidelines § 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." Put another way, CEQA Guidelines § 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

The significance of the project's GHG emissions is evaluated consistent with CEQA Guidelines §15064.4(b)(2) by considering whether the project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

The Tulare County CAP aims to reduce GHG emissions from development projects in Tulare County. The CAP builds on state and regional policies aimed at reducing GHG emissions consistent with the SB 32 2030 GHG reduction target. The CAP relies on policies of the Tulare County General Plan to guide development projects. In addition, the CAP provides specific guidelines for determining if new development projects are consistent with the CAP. The CAP includes a progress report with metrics and benchmarks for tracking progress toward meeting the GHG reduction targets. The County's progress is on track for all metrics.

Project Impact Analysis

a) Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? Less Than Significant Impact.

The Air District's "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Project under CEQA" states that projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions would be determined to have a less than significant individual and cumulative impact for GHG emissions and would not require quantification unless an Environmental Impact Report is being prepared. The County has an adopted Climate Action Plan (CAP), which is discussed further in item b). The proposed Project is consistent with the Tulare County General Plan and as discussed below, the proposed Project is consistent with Tulare County CAP.

New development projects implementing the General Plan are subject to CEQA and are required to demonstrate consistency with the CAP and achieve emission reductions that enable the County to meet its GHG reduction target. According to the CAP, proposed development projects that are consistent with the emission reduction and adaptation measures included in the CAP and the programs that are developed as a result of the CAP, would be considered to have a less than significant cumulative impact on climate change. However, the CAP does not require quantification of emissions for projects whose land use activities are less intense than a 500-unit subdivision or

100,000 square feet of retail or equivalent intensity for other uses. The proposed Project at full buildout would increase the facility's footprint and processing area by 212,851 square feet, of which 18,590 square feet are dedicated to solar canopy covered parking. The Project will also replace multiple on-site basins with a new stormwater basin and off-site wastewater treatment facility (WWTF). The WWTF will have enough capacity to capture all processed water and stormwater in one facility. Although the facility's overall footprint will increase, the Project will not increase the volume of almonds currently processed at the facility, nor will it significantly increase vehicle trips as the only anticipated increase in vehicle use arises from the eight (8) new workers who will be employed as a result of this project. Although the proposed Project is less intense than the threshold requiring GHG emissions quantification, Project-related GHG emissions have been quantified and are discussed below. The CalEEMod outputs and the combined emissions calculations summary are provided in Attachment "A".

Construction

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Project site, and off-road construction equipment (e.g., dozers, loaders, excavators). **Table 2.8-1** presents the specific construction generated GHG emissions that would result from Project construction.

Table 2.8-1. Construction-Related GHG Emissions

Emissions Source	CO_2e (Metric Tons/Year)
Phase 1 WWTF– 2024	241.5
Phase 1 – 2025	68.9
Phase 2 – 2028	67.4
Phase 3 – 2032	375.7
Phase 4 – 2035	78.90
Total Emissions	**832.30**

Source: CalEEMod (See Attachment A)

As shown in **Table 2.8-1**, Project construction would result in the generation of approximately 597 metric tons of CO_2e over the course of construction. Once construction is complete, the generation of these GHG emissions would cease. However, to account for the long-term impacts these emissions have on climate, the amortized construction emissions are added to the annual average operational emissions.

Operations

Operation of the Project would result in GHG emissions predominantly associated with motor vehicle use and building operations such as heating and cooling, lighting, utilities, cleaning supplies, landscaping activities, etc. Long-term operational GHG emissions attributable to the Project are identified in **Table 2.8-2**.

As shown in **Table 2.8-2**, Project operations would result in the generation of approximately 2,892 metric tons of CO_2e annually.

The proposed Project is consistent with the Tulare County General Plan and the Tulare County CAP. Therefore, the proposed Project would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment. As such, the proposed Project would result in a less than significant impact to this resource.

Table 2.8-2. Operational-Related GHG Emissions						
Emissions Source	**CO_2e (Metric Tons/Year)**					
	Phase 1 WWTF	**Phase 1**	**Phase 2**	**Phase 3**	**Phase 4**	**Total**
Mobile	0	240	156	1662	0.00	**2,058**
Area	0	0.27	0.21	2.37	0.00	**2.85**
Energy	0	72.8	56.6	584	4.54	**717.64**
Water	109	8.34	6.45	68.6	0.00	**192.4**
Waste	0	7.04	5.45	62.7	0.00	**75.19**
Refrigeration	0	0.78	0.61	6.98	---	**8.37**
Subtotal		**303**	**221**	**2,346**	**1.94**	**2,871.94**
Amortized Construction						27.74
Total Construction						**3,082**
Source: CalEEMod (See Attachment A)						

b) Would the Project conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? Less Than Significant Impact.

As the Project is located within unincorporated Tulare County, the most applicable GHG plan is the Tulare County CAP. The CAP is a strategic planning document that identifies sources of GHG emissions within the County, presents current and future emissions estimates, identifies a GHG reduction target for future years, and presents strategic policies and actions to reduce emissions from the development project subject to CEQA. The GHG-reduction strategies in the Plan build key opportunities prioritized by County staff and members of the public.

As previously noted, the Tulare County CAP does not require quantification of emissions for projects less intense than a 500-unit subdivision or 100,000 square feet of retail or equivalent intensity for other uses. The Project proposes an expansion to an existing almond processing facility including: 194,261 square feet of almond processing facilities; 18,590 square feet of solar canopy covered parking (111 spaces), a new ±7-acre wastewater treatment facility (WWTF), and an expanded land application area for irrigation with treated process water. Although the Project will result in physical expansion of the facility, there is no increase in the volume of raw products hauled into the site or processed products shipped out of the site. The new WWTF will provide enhanced treatment of the wastewater stream expended by current processing operations. The only change to the existing vehicles trips and VMT will arise from the eight (8) new workers that will be employed on-site. As such, the Project is considered less intense than the threshold requiring GHG emissions quantification. Furthermore, the Project has incorporated many design features that further reduce it's impacts resulting from GHG emissions.

To further demonstrate that the Project is consistent with the County's goals of reducing GHG emissions, the CAP consistency checklist was used to determine the project is consistent with the CAP. **Table 2.8-3** provides the Project's consistency assessment. Therefore, the Project will not conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Impacts are Less Than Significant.

Table 2.8-3 CAP Consistency Checklist		
Non-Residential Project		
1. Is the project consistent with applicable General Plan goals and policies listed in CAP?	Review CAP General Plan policies to identify applicable policies. If not consistent, provide additional justification for approving the project in light of the inconsistency or revise the project or perform quantitative analysis.	**Consistent. AQ.3-5** Alternative Energy Design; **ERM-4.1** Energy Conservation and Efficiency Measures; **ERM-4.6** Renewable Energy; **ERM-4.8** Energy Efficiency Standards; **HS-1.4** Building and Codes, Chapter 11: Water Resource; **WR-1.5** Expand Use of Reclaimed Wastewater; **WR-1.6** Expand Use of Reclaimed Water
2. Is the project within a rural community plan or hamlet plan? If yes, is the project consistent with the plan?	If the project requires a plan amendment make findings on why the project is appropriate for the site and will be consistent with plan goals and policies after approval of the amendment. Amendments for large non-residential projects (100 square feet of retail or projects generating 4,200 ADT or higher) in community plan or hamlets should perform a GHG analysis to identify best management practices including site design for walking and bicycling, energy efficiency and self-generation measures, and water conservation as part of the environmental review.	**Not Applicable.** No, the project is in a rural area but is located outside of the Earlimart Urban Development Boundary.
3. Is the project an agriculture oriented commercial or industrial project in a rural area of the County?	If yes and the project is consistent with the General Plan, the project will comply with applicable State and local regulations. No further GHG review is required.	**Consistent.** The project is an agriculture oriented industrial project. The site is in a rural area outside of the Earlimart Urban Development Boundary. **No further GHG review is required.**
4. Is the project a general commercial or industrial project in a rural area of the County? If yes, is the project consistent with the General Plan?	If a plan amendment is required, perform a GHG analysis to identify best management practices including site design to encourage walking and bicycling, energy efficiency and self-generation measures, and water conservation as part of the environmental review. Sites in rural areas with no other development nearby would need to assess pedestrian measures; however, carpool and vanpool parking may be appropriate.	Consistent/Inconsistent/Not Applicable. Discussion:
5. Is the project required to construct a portion of a bicycle or pedestrian path that is part of an approved bicycle or mobility plan?	If yes, ensure that funding for construction of the project's fair share is included as a condition of approval.	Consistent/Inconsistent/Not Applicable. Discussion:

6. Is the development site appropriate for locating an improved TCAT transit stop?	Review TCAT transit maps to determine if project is on an existing line. For large projects consult with TCAG and TCAT to determine if project is on a planned route and is suitable for a future transit stop. Work with TCAG to identify a fair share contribution for the transit stop construction and reserve right of way if needed	Consistent/Inconsistent/Not Applicable. Discussion:
7. Does the site plan have space set aside for recycling bins or compost collection? Review site plan to determine if refuse collection area dimensions and location is consistent with County s	Review site plan to determine if refuse collection area dimensions and location is consistent with County standards.	Consistent/Inconsistent/Not Applicable. Discussion:
9. Does the site include shared EV charging stations per CalGreen requirements?	Review site plan and/or project description to determine if charger installations meet CalGreen requirements. Currently only conduits to future charger locations are required.	Consistent/Inconsistent/Not Applicable. Discussion:
10. Does the project comply with Tulare County Solar Roof Ordinance and/or Title 24 solar installation whichever is more stringent?	The project description should include the solar installation plans for the project. Compare installation plans to Solar Ordinance and Title 24 to determine if the project is in compliance.	Consistent/Inconsistent/Not Applicable. Discussion:
11. Does the project include drought tolerant landscaping and Irrigation systems meeting County standards and the MWELO.	Ensure developers are aware of drought tolerant landscaping and Irrigation requirements from County standards and the MWELO. Include the requirement as a standard condition of approval or similar mechanism.	Consistent/Inconsistent/Not Applicable. Discussion:
12. Does the project comply with Title 24 building energy efficiency, lighting, and interior water efficiency requirements?	Prior to issuing building permits, the County will review building plans to ensure Title 24 compliance.	Consistent/Inconsistent/Not Applicable. Discussion:
13. Is the project required to comply with SJVAPCD Rule 9510 Indirect Source Review	Review project description to determine if the project meets Rule 9510 applicability criteria. For example, 50 single family residential units or 2,000 square feet of retail development. Include Rule 9510 compliance as a condition of approval if applicable.	Consistent/Inconsistent/Not Applicable. Discussion:
14. Does the project employ over 100 employees arriving for work during peak traffic hours?	Determine if the project has the potential to be a large employer. Include a standard condition of approval to inform the applicant that the project may be subject to Rule 9410 Employer Trip Reduction Plans.	Consistent/Inconsistent/Not Applicable. Discussion:
Source: Tulare County CAP 2018 Update, Appendix C. CAP Consistency Checklist		

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working the project area?	☐	☐	☐	☒
f) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

The two anaerobic ponds (88' x 88' x 19') will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280' x 87' x 13') where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

The clarifier (24' diameter x 12') will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466' x 280' x 27') for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the High Density Polyethylene (HDPE) double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

- **Phase 2:** Construction of a 5,176 sq. ft. canopy, a 6,263 sq. ft. fumigation room building with a 1,127 sq. ft. canopy for a total of 7,390 sq. ft., and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Hazards and Materials, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Federal

The NFPA 70®: National Electrical Code® is adopted in all 50 states. It includes requirements for electrical wiring and equipment. Article 705 covers interconnecting generators, windmills, and solar and fuel cells with other power supplies.[1] The federal Resource Conservation and Recovery Act (RCRA) and California Hazardous Waste Control Law regulate the disposal of solar PV cells. The local hazardous waste regulatory authority is the County of Tulare.

[1] National Fire Protection Association. 2010. NFPA 70: National Fire Code. Accessed October 2023 at: NFPA 70®: National Electrical Code®

State

The California Department of Industrial Relations, Division of Occupational Safety and Health, is the administering agency designed to protect worker health and general facility safety. The California Department of Forestry and Fire Protection (CalFire) has designated the area that includes the project site as a Local Responsibility Area which is defined as an area where the local fire jurisdiction is responsible for emergency fire response. The project area is also defined as "Unzoned," which means that the fire hazard severity of the site has not been determined.[2]

Local

The Tulare County General Plan 2030 Update (at Chapter 10 – Health and Safety) contains the following goals and policies that relate to hazards and hazardous materials, and which have potential relevance to the proposed Project's CEQA review:

- *HS-4.1 Hazardous Materials* wherein the County shall strive to ensure hazardous materials are used, stored, transported, and disposed of in a safe manner, in compliance with local, State, and Federal safety standards, including the Hazardous Waste Management Plan, Emergency Operations Plan, and Area Plan;

- *HS-4.2 Establishment of Procedures to Transport Hazardous Wastes* wherein the County shall continue to cooperate with the California Highway Patrol (CHP) to establish procedures for the movement of hazardous wastes and explosives within the County;

- *HS-4.3 Incompatible Land Uses* wherein the County shall prevent incompatible land uses near properties that produce or store hazardous waste; and

- *HS-4.4 Contamination Prevention* wherein the County shall review new development proposals to protect soil, air quality, surface water, and groundwater from hazardous materials contamination.

Project Impact Analysis

a) and b) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? Less Than Significant Impact.

The proposed Project may require the transport and use of small quantities of hazardous materials in the form of gasoline, diesel, and oil. Additionally, the proposed Project construction-related activities will require the transport and use of small quantities of hazardous materials in the form of, for example, gasoline, diesel, and oil during construction-related activities. Construction-related activities will be intermittent, temporary, and short-term as they occur. If refueling occurs on site, there is the potential for small leaks due to refueling of the construction-related equipment; however, standard construction Best Management Practices (BMPs) included in the SWPPP will reduce the potential for accidental release of construction-related fuels and other hazardous materials. Therefore, the proposed Project will result in a less than significant impact regarding hazards/hazardous materials.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? No Impact.

[2] California Department of Forestry and Fire Protection. 2007. Draft Fire Severity Zones in LRA Map. Accessed June 2024 at: Fire Hazard Severity Map

As noted earlier, the nearest school, Earlimart Elementary School is located approximately four (4) miles northeast of the Project site. As such, construction-related activities will be intermittent, temporary, and short-term as they occur. As such, it is not anticipated that the Treehouse California Almonds project would result in the release of hazardous emissions, involve hazardous materials, or create a hazard to the school. There will be no impact.

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? No Impact.

According to the State of California Department of Toxic Substances Control (DTSC) – Envirostor Search, there is one hazardous materials site within an approximate two-mile radius of the Project site.3 The inactive site (CAM Chemicals) is located at 21636 Road 152 which contains an "unspecified" cause of contamination resulting in contaminated soils from pesticide rinse waters and wastes from production. The Envirostor description also indicates that the site "needs evaluation"; however, it does not specify a timeframe.4 The Project site is not listed as hazardous materials sites pursuant to Government Code Section 65962.5 and is not included on a list compiled by the Department of Toxic Substances Control per a review of "Identified Hazardous Waste Sites" (conducted on April 2, 2024 by RMA staff). Therefore, as the Project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, it would not create a significant hazard to the public or the environment.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working the project area? No Impact.

The nearest airport (Porterville Municipal Airport in Porterville), is approximately 11 miles southwest of the proposed Project site; there are no private airports within the Project vicinity. The proposed Project would not result in the placement of any structures sufficiently tall enough to interfere with the flight path of either airport. The proposed Project will not conflict with Tulare County Comprehensive Airport Land Use Plan (CALUP) policy and it is not within any airport's safety zone. The proposed Project will not result in a safety hazard for people working in the area. As such, the proposed Project would result in no impact to this resource.

f) Would the project impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan? No Impact.

The proposed Project will not impair the implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. Per standard conditions of approval, the proposed Project contains sufficient access for emergency access. There would be no impact as a result of the proposed Treehouse California Almond Expansion project.

g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? No Impact.

The proposed Project site is surrounded by agricultural production. As such, it is not subject or vulnerable to wildland fires. As the proposed Project is not within a wildland area, it is not susceptible to wildland fire. As

[3] California Department of Toxic Substances Control (DTSC). EnviroStor. Accessed March 2024 at: https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=Tulare+County%2C+CA

[4] Ibid.

such, the proposed Treehouse California Almond Expansion project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires and would result in No Impact to this resource. See also Item 20 Wildfire.

X. HYDROLOGY AND WATER QUALITY

Would the project:		Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a)	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐
b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
i)	Result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
ii)	Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?	☐	☐	☒	☐
iii)	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
iv)	Impede or redirect flood flows?	☐	☐	☒	☐
d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e)	Conflict with or obstruct implementation of water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

The two anaerobic ponds (88' x 88' x 19') will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280' x 87' x 13') where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

The clarifier (24' diameter x 12') will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466' x 280' x 27') for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the High Density Polyethylene (HDPE) double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

- **Phase 2:** Construction of a 5,176 sq. ft. canopy, a 6,263 sq. ft. fumigation room building with a 1,127 sq. ft. canopy for a total of 7,390 sq. ft., and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Hydrology and Water Quality, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

<u>Regulatory Setting</u>

Federal

<u>Clean Water Act</u>

The Clean Water Act (CWA) is intended to restore and maintain the chemical, physical, and biological integrity of the nation's waters (33 CFR 1251). The regulations implementing the CWA protect waters of the U.S. including streams and wetlands (33 CFR 328.3). The CWA requires states to set standards to protect, maintain, and restore water quality by regulating point source and some non-point source discharges. Under Section 402 of the CWA, the National Pollutant Discharge Elimination System (NPDES) permit process was established to regulate these discharges.

Safe Drinking Water Act

"The Safe Drinking Water Act (SDWA) is the main federal law that ensures the quality of Americans' drinking water. Under SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards… SDWA was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and ground water wells. (SDWA does not regulate private wells which serve fewer than 25 individuals.)"[1]

The National Flood Insurance Act (1968) makes available federally subsidized flood insurance to owners of flood-prone properties. To facilitate identifying areas with flood potential, Federal Emergency Management Agency (FEMA) has developed Flood Insurance Rate Maps (FIRM) that can be used for planning purposes.

Environmental Protection Agency

The mission of EPA is to protect human health and the environment.
EPA's purpose is to ensure that:

- all Americans are protected from significant risks to human health and the environment where they live, learn and work;
- national efforts to reduce environmental risk are based on the best available scientific information;
- federal laws protecting human health and the environment are enforced fairly and effectively;
- environmental protection is an integral consideration in U.S. policies concerning natural resources, human health, economic growth, energy, transportation, agriculture, industry, and international trade, and these factors are similarly considered in establishing environmental policy;
- all parts of society -- communities, individuals, businesses, and state, local and tribal governments -- have access to accurate information sufficient to effectively participate in managing human health and environmental risks;
- environmental protection contributes to making our communities and ecosystems diverse, sustainable and economically productive; and
- the United States plays a leadership role in working with other nations to protect the global environment."[2]

United States Army Corps of Engineers

"The Department of the Army Regulatory Program is one of the oldest in the Federal Government. Initially it served a fairly simple, straightforward purpose: to protect and maintain the navigable capacity of the nation's waters. Time, changing public needs, evolving policy, case law, and new statutory mandates have changed the complexion of the program, adding to its breadth, complexity, and authority.

The Regulatory Program is committed to protecting the Nation's aquatic resources, while allowing reasonable development through fair, flexible and balanced permit decisions. The Corps evaluates permit applications for essentially all construction activities that occur in the Nation's waters, including wetlands."[3]

[1] United States Environmental Protection Agency (US EPA or EPA). EPA Drinking Water Requirements for States and Public Water System Drinking Water Regulations. Accessed April 2024 at: http://water.epa.gov/lawsregs/rulesregs/sdwa/index.cfm.
[2] US EPA Website. Our Mission and What We Do. Accessed August 2024 at: https://www.epa.gov/aboutepa/our-mission-and-what-we-do
[3] U.S. Army Corps of Engineers. Accessed April 2024 at: http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx.

State

The Porter-Cologne Water Quality Control Act

"The Porter-Cologne Act is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act (California Water Code section 13000 et seq.), the policy of the State is as follows:

- That the quality of all the waters of the State shall be protected,
- That all activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason, and
- That the State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation.

The Porter-Cologne Act established nine Regional Water Boards (based on hydrogeologic barriers) and the State Water Board, which are charged with implementing its provisions and which have primary responsibility for protecting water quality in California. The State Water Board provides program guidance and oversight, allocates funds, and reviews Regional Water Boards decisions. In addition, the State Water Board allocates rights to the use of surface water. The Regional Water Boards have primary responsibility for individual permitting, inspection, and enforcement actions within each of nine hydrologic regions."[4]

State Water Resources Control Board

The State Water Resources Control Board (the State Water Board) was created by the Legislature in 1967. The mission of the Water Board is to ensure the highest reasonable quality for waters of the State, while allocating those waters to achieve the optimum balance of beneficial uses. The joint authority of water allocation and water quality protection enables the Water Board to provide comprehensive protection for California's waters.

The Water Board consists of five full-time salaried Members, each filling a different specialty position. Each board member is appointed to a four-year term by the Governor and confirmed by the Senate.

There are nine Regional Water Quality Control Boards (Regional Boards). The mission of the Regional Boards is to develop and enforce water quality objectives and implementation plans that will best protect the beneficial uses of the State's waters, recognizing local differences in climate, topography, geology and hydrology.

Each Regional Board has seven part-time Members also appointed by the Governor and confirmed by the Senate. Regional Boards develop "basin plans" for their hydrologic areas, govern requirements/issue waste discharge permits, take enforcement action against violators, and monitor water quality. The task of protecting and enforcing the many uses of water, including the needs of industry, agriculture, municipal districts, and the environment is an ongoing challenge for the Water Board and Regional Boards.[5]

California Department of Water Resources

The State Vision for California's Water Resources Update 2023: "All Californians benefit from water resources that are sustainable, resilient to climate change, and managed to achieve shared values and connections to our

[4] California Water Boards. State Laws Porter-Cologne Act. Accessed April 2024 at: https://www.waterboards.ca.gov/water_issues/programs/nps/encyclopedia/0a_laws_policy.html.

[5] State of California Water Boards. Water Boards' Structure. Accessed April 2024 at: https://www.waterboards.ca.gov/about_us/water_boards_structure/mission.html

communities and the environment." Other goals contained in the Update 2023 California Water Plan Update include:

- Support watershed resilience planning and implementation
- Improve resilience of State, federal, and regional built "backbone" water infrastructure
- Improve resilience of natural "backbone" infrastructure
- Advance equitable outcomes in water management
- Support and learn from Tribal water and resource management practices
- Increase flexibility of regulatory systems
- Provide guidance and support continued resources for implementing actions toward water resilience [6]

California Department of Water Resources and State Water Resources Control Board – Sustainable Groundwater Management Act (SGMA)

"On September 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package, composed of AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley), collectively known as the Sustainable Groundwater Management Act (SGMA). For the first time in its history, California has a framework for sustainable, groundwater management - "management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results."

SGMA requires governments and water agencies of high and medium priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. For critically over-drafted basins, that will be 2040. For the remaining high and medium priority basins, 2042 is the deadline."[7]

Regional Water Quality Board

"There are nine Regional Water Quality Control Boards (Regional Boards). The mission of the Regional Boards is to develop and enforce water quality objectives and implementation plans that will best protect the State's waters, recognizing local differences in climate, topography, geology and hydrology. Each Regional Board has seven part-time members appointed by the Governor and confirmed by the Senate. Regional Boards develop "basin plans" for their hydrologic areas, issue waste discharge requirements, take enforcement action against violators, and monitor water quality."[8]

"The primary duty of the Regional Board is to protect the quality of the waters within the Region for all beneficial uses. This duty is implemented by formulating and adopting water quality plans for specific ground or surface water basins and by prescribing and enforcing requirements on all agricultural, domestic and industrial waste discharges. Specific responsibilities and procedures of the Regional Boards and the State Water Resources Control Board are contained in the Porter-Cologne Water Quality Control Act."[9]

California Water Boards Central Valley - R5

The California Water Boards Central Valley – R5 (Region 5) defines their missions as, "To preserve, enhance, and restore the quality of California's water resources and drinking water for the protection of the environment, public

[6] California Department of Water Resources: California Water Plan Update 2023. State Vision for California's Water Resources. September 2023. Pages 1-2 through 1.3. Accessed April 2024 at: California Water Plan Update 2023 Public Review Draft.
[7] State of California Department of Water Resources. SGMA Groundwater Management. Accessed April 2024 at: https://water.ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management
[8] Ibid.
[9] Central Valley Water Quality Control Board. Accessed April 2024 at: https://www.waterboards.ca.gov/

health, and all beneficial uses, and to ensure proper water resource allocation and efficient use, for the benefit of present and future generations."[10] In addition, the CA Water Boards Central Valley – R5 indicates their Duty as, "The primary duty of the Regional Board is to protect the quality of the waters within the Region for all beneficial uses. This duty is implemented by formulating and adopting water quality plans for specific ground or surface water basins and by prescribing and enforcing requirements on all agricultural, domestic and industrial waste discharges. Specific responsibilities and procedures of the Regional Boards and the State Water Resources Control Board are contained in the Porter-Cologne Water Quality Control Act."[11]

The Central Valley Regional Water Quality Control Board (RWQCB) administers the NPDES storm water-permitting program in the Central Valley region. Construction activities on one acre or more are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). The General Construction Permit requires preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The plan will include specifications for Best Management Practices (BMPs) that will be implemented during proposed Project construction to control degradation of surface water by preventing the potential erosion of sediments or discharge of pollutants from the construction area. The General Construction Permit program was established by the RWQCB for the specific purpose of reducing impacts to surface waters that may occur due to construction activities. BMPs have been established by the RWQCB in the California Storm Water Best Management Practice Handbook (2003) and are recognized as effectively reducing degradation of surface waters to an acceptable level. Additionally, the SWPPP describes measures to prevent or control runoff degradation after construction is complete and identifies a plan to inspect and maintain these facilities or project elements.

SB 610 (Costa) & SB 221 (Kuehl) 2001

"Senate Bills 610 (Chapter 643, Statutes of 2001) and Senate Bill 221 (Chapter 642, Statutes of 2001) amended state law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221 are companion measures which seek to promote more collaborative planning between local water suppliers, cities, and counties. Both statutes require detailed information regarding water availability to be provided to the city and county decision-makers prior to approval of specified large development projects. Both statutes also require this detailed information to be included in the administrative record that serves as the evidentiary basis for an approval action by the city or county on such projects. Both measures recognize local control and decision making regarding the availability of water for projects and the approval of projects.

Under SB 610, water assessments must be furnished to local governments for inclusion in any environmental documentation for certain projects (as defined in Water Code 10912 [a]) subject to the California Environmental Quality Act. Under SB 221, approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply."[12]

Local

Tulare County Environmental Health Division

"The mission of the Division of Environmental Health is to enhance the quality of life in Tulare County through implementation of environmental health programs that protect public health and safety as well as the environment. We accomplish this goal by overseeing and enforcing numerous different programs, from food facility inspections

[10] The California Water Boards. Central Valley – R5. Accessed April 2024 at: https://www.waterboards.ca.gov/centralvalley/about_us/
[11] Ibid.
[12] California Department of Water Resources. Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001 to assist water suppliers, cities, and counties in integrating water and land use planning. Page iii. Accessed April 2024 at: https://cawaterlibrary.net/wp-content/uploads/2017/06/guidebook.pdf

to hazardous waste. All of our inspectors are licensed and/or certified in the field that they practice in and participate in continuing education to maintain licensure."[13] "Tulare County Environmental Health permits and regulates State Small Water Systems, which serve drinking water to between 5 and 14 service connections, and no more than an average of 25 persons no more than 60 days out of the year. There are currently 42 of these systems, throughout Tulare County, which serve about 314 connections and approximately 640 people. These systems are inspected by Tulare County Environmental Health and are required to routinely monitor their water quality."[14] This division requires water quality testing of public water systems. Any project that involves septic tanks and water wells within Tulare County is subject to approval by this agency. All recommendations provided by this division will be added as mitigation measures to ensure reduction of environmental impacts.

Tulare County Land Development Regulations

The Tulare County Resource Management Agency (RMA) is responsible for review, approval, and enforcement of planning and land development throughout the unincorporated portions of Tulare County. County of Tulare regulations that direct planning and land development (and related water and wastewater utilities) include the Tulare County General Plan, Zoning Ordinance, Subdivision Ordinance, and CEQA procedures. These responsibilities are divided between Planning Branch, Public Works Branch, and other divisions or departments of RMA, and in coordination with the Environmental Health Division of the Tulare County Health and Human Services Agency, and the Tulare County Fire Department.

The County's flood damage prevention code is intended to promote public health, safety, and general welfare in addition to minimizing public and private losses due to flood conditions. The County code provisions to protect against flooding include requiring uses vulnerable to floods be protected against flood damage at the time of initial construction; controlling the alteration of natural flood plains; and preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas. The County flood damage prevention code, most recently amended by Ord. No. 3212 and effective October 29, 1998, is modeled based upon FEMA guidance.

The Tulare County Flood Control District

The Tulare County Flood Control District, a countywide district governed by the County Board of Supervisors, is the local flood management agency. Tulare County participates in the National Flood Insurance Program Community Rating System, uses FEMA insurance rate maps, and enforces Ordinance Code of Tulare County, Part VII, Chapter 27, Flood Damage Prevention. The County Zoning Ordinance also provides regulations to reduce flood hazards through land use regulations.[15]

Tulare County General Plan 2030 Update

The Tulare County General Plan 2030 Update has a number of policies that apply to projects within Tulare County. General Plan policies that relate to the proposed Project are listed:

- *AG-1.17 Agricultural Water Resources* wherein the County shall seek to protect and enhance surface water and groundwater resources critical to agriculture;

- *HS-4.4 Contamination Prevention* wherein the County shall review new development proposals to protect soils, air quality, surface water, and groundwater from hazardous materials contamination;

[13] Tulare County Environmental Health Division. Who Are We. Accessed April 2024 at: https://tularecountyeh.org/eh/about-us/who-are-we /
[14] Ibid. Water Systems Program. Accessed April 2024 at: https://tularecountyeh.org/eh/our-services/water-systems-program/
[15] Tulare County General Plan 2030 Update. Recirculated Draft Environmental Impact Report. Page 3.6-29. Accessed April 2024 at: http://generalplan.co.tulare.ca.us/documents/generalplan2010/RecirculatedDraftEIR.pdf

- *WR-1.1 Groundwater Withdrawal* wherein the County shall cooperate with water agencies and management agencies during land development processes to help promote an adequate, safe, and economically viable groundwater supply for existing and future development within the County. These actions shall be intended to help the County mitigate the potential impact on ground water resources identified during planning and approval processes*;*

- *WR-1.5 Expand Use of Reclaimed Wastewater* to augment groundwater supplies and to conserve potable water for domestic purposes, the County shall seek opportunities to expand groundwater recharge efforts;

- *WR-1.6 Expand Use of Reclaimed Water* wherein the County shall encourage the use of tertiary treated wastewater and household gray water for irrigation of agricultural lands, recreation and open space areas, and large landscaped areas as a means of reducing demand for groundwater resources*;*

- *WR-2.1 Protect Water Quality* wherein all major land use and development plans shall be evaluated as to their potential to create surface and groundwater contamination hazards from point and non-point sources. The County shall confer with other appropriate agencies, as necessary, to assure adequate water quality review to prevent soil erosion; direct discharge of potentially harmful substances; ground leaching from storage of raw materials, petroleum products, or wastes; floating debris; and runoff from the site*;*

- *WR-2.2 National Pollutant Discharge Elimination System (NPDES) Enforcement* wherein the County shall continue to support the State in monitoring and enforcing provisions to control non-point source water pollution contained in the U.S. EPA NPDES program as implemented by the Water Quality Control Board*;*
- *WR-2.3 Best Management Practices (BMPs);* wherein the County shall continue to require the use of feasible BMPs and other mitigation measures designed to protect surface water and groundwater from the adverse effects of construction activities, agricultural operations requiring a County Permit and urban runoff in coordination with the Water Quality Control Board*;*

Project Impact Analysis

a) Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? Less Than Significant Impact.

The State Water Resources Control Board requires any new construction project greater than one acre to complete a Stormwater Pollution Prevention Plan (SWPPP). A SWPPP would be prepared for the proposed Treehouse California Almond expansion Project by a qualified engineer or erosion control specialist as a condition of approval and would be submitted to the County for review and approval before being implemented during construction. The SWPPP would be designed to reduce potential impacts related to erosion and surface water quality during construction activities and throughout the life of the proposed Project. It would include the proposed Project information and best management practices (BMP). The BMPs would include dewatering procedures, stormwater runoff quality control measures, concrete waste management, watering for dust control, and construction of perimeter silt fences, as needed. Implementation of the SWPPP will minimize the potential for the proposed Project to substantially alter the existing drainage pattern in a manner that will result in substantial erosion or siltation onsite or offsite. There will be no discharge to any surface or groundwater sources which may impact water quality standards.

Treehouse California Almonds, LLC, has requested changes to the waste discharge requirements for the Earlimart facility and proposes additional Land Application Areas (LAAs) to allow an increase in almond harvest processing and an increase in the discharge of almond process wastewater. Expansion of the LAAs allows application of treated effluent over a broader area. The existing process wastewater best management practices would remain in place at the Earlimart facility and are effective in protecting the quality of discharged water. The depth to groundwater, agronomic application rate of the treated wastewater, and the nutrient uptake of the cover crop effectively prevent the potential for adverse impacts on groundwater from process wastewater discharge. The Project would not result in degradation to beneficial uses of water, or otherwise result in degradation to groundwater water quality. Therefore, the Project would not violate water quality standards, waste discharge requirements, or otherwise degrade groundwater quality and this impact would be Less Than Significant.

Treehouse California Almonds LLC has requested changes to the existing Waste Discharge Requirements (WDRs) under which the Earlimart facility is currently authorized to operate, and discharge treated wastewater to land. The discharge specifications identified in the WDRs and Reports of Waste Discharge that have become operational under Water Code Section 13264 control various aspects of the Earlimart wastewater treatment system including effluent characteristics in the ponds and at the point of discharge to the LAAs. The WDRs establish a minimum excess storage capacity, a maximum daily discharge volume, a minimum dissolved oxygen content and pH limits within surface impoundments, and a maximum limit on measured conductivity and TDS in effluent at the point of discharge to LAAs.

Recently Treehouse California Almonds experienced a fire within the production area. The reconstruction design plans include an increase in the number of production lines that will increase the amount of wastewater produced. To offset that, additional farmable ground has been purchased to align with the increase in wastewater produced. The proposed RWD is to revise the existing WDR for the water production of this plant and the inclusion of additional land for farming. The remainder of the issued WDR is intended to remain in effect. Treehouse California Almonds, LLC, has requested the following WDR modifications from the Central Valley RWQCB, which would establish new regulatory limits:

(1) Increase in the maximum annual discharge from 15.6 million gallons per year to 46.8 million gallons per year (a 300 percent increase);
(2) Add 28 acres of LAAs to allow for a total of 66 acres of land (a 73.68 percent increase) for the land discharge of process wastewater; and,
(3) Authorize improvements to the wastewater treatment and distribution system to maintain treatment efficacy while implementing the above three changes.

As such, the proposed Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Therefore, the proposed Treehouse California Almond Expansion Project would result in a Less Than Significant Impact to water quality standards or waste discharge requirements.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? Less Than Significant Impact.

The proposed Project site is located in the Tulare Lake Basin, an area significantly affected by overdraft. The Department of Water Resources (DWR) has estimated the groundwater by hydrologic region and for the Tulare Lake Basin. For the Tulare Lake Basin, the total overdraft is estimated at 820,000 acre-feet per year, the greatest overdraft projected in the State, and 56 percent of the Statewide total overdraft. This overdraft is due to many factors including reductions of surface supplies in recent years by Delta export restrictions, Endangered Species Act requirements, and other factors. The proposed Project site is located within the Tule Subbasin portion of the regional area and is within the Eastern Tule GSA Boundary.

Given the nature of the proposed Project, the proposed Project would not require substantial increased use in water consumption. Water usage and wastewater production are currently at 15,600,000 gallons (47.87-acre feet). Anticipated annual wastewater production for the proposed Project is 46,800,000 gallons (143.62-acre feet). This is an increase of 31,200,000 gallons (95.75-acre feet) at the Project site.

78.19 acres were purchased for proposed water treatment ponds, land application and nutrient uptake of wastewater. Approximately 66 acres will be available for land application. Section 6.1, Page 7 of The Report of Waste Discharge Technical Report to Revise WDR R-5-2018-0066 Treehouse California Almonds, LLC, states that the proposed Land Application Area (LAA) crop rotation is corn silage in the summer and small grain silage such as wheat, triticale, barley, and mixes of each in the winter. Corn planted 5/15 would consume 24.5 inches of water, or 2.04-acre feet per acre per year. Wheat would consume 22.1 inches of water, or 1.84-acre feet per acre per year. This would total 46.6 inches of water, or 3.88-acre feet of water per acre per year. 3.88 X 66 acres = 256.08-acre feet (83,443,668 gallons) of water per year. The Project would increase the amount of water consumption from the existing ag-related use by 208.21-acre feet (67,845,288 gallons) of water per year, which is a 81.31 percent increase. As such, the impact would be less than significant.[16]

The average surface water supply for the Pixley Irrigation District (PID) is 37,645-acre feet (*2023 Municipal Service Review, Tulare County Irrigation Districts*). The increase in water use is 208.21-acre feet. The project-related increase in water use would represent 0.55 percent of the water allocated to PID from the Central Valley Project; groundwater is only used as a supplement to surface water rarely during infrastructure maintenance. Therefore, the Project would not result in excessive pumping of groundwater since the increase in water use would be less than one percent of the water supply for the Pixley Irrigation District. In addition, the Project would not result in insufficient recharge from irrigation, but rather would increase LAAs and increased discharge of process wastewater. Sustainable water management practices, including irrigation at agronomic rates, water conservation measures, and monitoring water levels, would be carried out. Therefore, the Project would have a Less Than Significant Impact on groundwater supply and recharge.

c) Would the Project Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would cause:

i) *Erosion and Siltation:* **Less Than Significant Impact**. The extent of potential erosion will vary depending on slope steepness/stability, vegetation/cover, concentration of runoff, and weather conditions. The relatively flat nature of the site reduces the need for substantial grading. Any soils removed from these areas would likely be redistributed around and retained elsewhere on the proposed Project site. The site is, and will continue to have, a relatively flat topography after site construction. Also, as noted earlier, a SWPPP will be in place during construction, as described in Impact 10-a. Therefore, construction-related activities will minimally disturb the ground surface resulting in a Less Than Significant Impact from erosion and siltation.

ii) *Runoff and Flooding:* **Less Than Significant Impact.** Deer Creek is located approximately one (1) mile north of the Project site and the White River is located approximately 3.75 miles south of the Project site. A portion of the Project site (APNs: 318-290-006 and approximately the southern 25 percent of APN: 318-290-005) is within Other Areas Zone X as shown on the National Flood Insurance Program, Flood Insurance Rate Map (FIRM), Map Number 06107C1950E, for Community Number 065066 (Tulare County Unincorporated Areas), dated June 16, 2009. There are no development restrictions associated with Other Areas Zone X since these are areas determined to be outside the 0.2 percent annual chance floodplain. A

[16] Water Management for Grapevines. Accessed April 2024 at: https://cetulare.ucanr.edu/files/82035.pdf.

portion of the Project site (APNs: 319-060-019, 022, & 037 and approximately the northern 75 percent of APN: 318-290-005) is within Zone A (Special Flood Hazard Area) as shown on the National Flood Insurance Program, Flood Insurance Rate Map (FIRM), Map Number 06107C1950E, for Community Number 065066 (Tulare County Unincorporated Areas), dated June 16, 2009. An elevation certificate and associated flood hazard mitigation measures will be required on all proposed buildings within FEMA Zone A. The subject parcel is located in a federally identified Special Flood Hazard Area as depicted on said plat. Individual site plan approval is required for any parcel located within or partially within a special flood hazard area prior to the issuance of any permits. The location of a structure within the special flood hazard area shall require compliance with the National Flood Insurance Program under the Federal Emergency Management Agency (FEMA) and the special provisions of the Tulare County Flood Damage Prevention Ordinance. The applicant will be required to comply with RWQCB and County of Tulare flood control requirements, as applicable. As such, the proposed Treehouse California Almond expansion Project would result in a Less Than Significant Impact to or from runoff and flooding.

iii) *Drainage Systems and Polluted Runoff:* **Less Than Significant Impact.** See Items 10 c) i) and ii). Also, the proposed Project will not connect to any existing or planned stormwater drainage system; as such, it will not provide any additional sources of polluted runoff or create or contribute to runoff water that would exceed the capacity of existing or planned stormwater drainage systems. Therefore, the proposed Treehouse California Almond expansion Project would result in a Less Than Significant Impact to drainage systems and polluted runoff.

iv) *Impede or Redirect Flood Flows:* **Less Than Significant Impact.** See items 10 c ii) and iii). Although Deer Creek is located approximately one (1) mile north of the Project site and the White River is located approximately 3.75 miles south of the Project site, neither would be altered by the improvements associated with the proposed Project. The proposed Treehouse California Almond expansion Project would not substantially alter the surface area of the site as it will be designed to avoid impeding or redirecting flood flows, as such, this would result in a Less Than Significant Impact to this resource.

d) Would the project result in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? Less Than Significant Impact.

A portion of the Project site (APNs: 319-060-019, 022, & 037 and approximately the northern 75 percent of APN: 318-290-005) is within Zone A (Special Flood Hazard Area) as shown on the National Flood Insurance Program, Flood Insurance Rate Map (FIRM), Map Number 06107C1950E, for Community Number 065066 (Tulare County Unincorporated Areas), dated June 16, 2009. An elevation certificate and associated flood hazard mitigation measures will be required on all proposed buildings within FEMA Zone A. The subject parcel is located in a federally identified Special Flood Hazard Area as depicted on said plat. Individual site plan approval is required for any parcel located within or partially within a special flood hazard area prior to the issuance of any permits. The location of a structure within the special flood hazard area shall require compliance with the National Flood Insurance Program under the Federal Emergency Management Agency (FEMA) and the special provisions of the Tulare County Flood Damage Prevention Ordinance. Therefore, the proposed Project is not anticipated to result in the additional exposure of persons or structures to risks associated with inundation. The proposed Project is not located on or near any areas that would result in or be impacted by a tsunami, or seiche zones, that would result in a risk release of pollutants due to Project inundation. Moreover, the proposed Treehouse California Almond Project site is not exposed to or near any river, reservoirs, ponds, or lakes subject to seiches from earthquake activity; and it is approximately 100 miles east of the nearest coastline that would be subject to tsunami. Therefore, the proposed Project would result in a Less Than Significant Impact concerning flood hazard, tsunami, seiche zones, and would not risk release of pollutants due to project inundation.

e) Would the project conflict with or obstruct implementation of water quality control plan or sustainable groundwater management plan? Less Than Significant Impact.

As indicated earlier in Impact 10-a), the proposed Project would not violate any water quality standards or waste discharge requirements; or otherwise substantially degrade surface or groundwater quality; and would not conflict with or obstruct a water quality control plan. As indicated in 10-b) the proposed Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin. Therefore, based on the analysis above, the Treehouse California Almond Expansion Project would result in a Less Than Significant Impact concerning this resource.

XI. LAND USE AND PLANNING

Would the project:		Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88' x 88' x 19') will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280' x 87' x 13') where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

  The clarifier (24' diameter x 12') will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466' x 280' x 27') for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

  A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the High Density Polyethylene (HDPE) double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

- **Phase 2:** Construction of a 5,176 sq. ft. canopy, a 6,263 sq. ft. fumigation room building with a 1,127 sq. ft. canopy for a total of 7,390 sq. ft., and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Land Use and Planning, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Federal

Federal regulations for land use are not relevant to the Project because it is not a federal undertaking (the Project site is not located on lands administered by a federal agency, and the project applicant is not requesting federal funding or a federal permit).

State

The Project is being evaluated pursuant to CEQA; however, there are no state regulations, plans, programs, or guidelines associated with land use and planning that are applicable to the proposed Project.

Local

<u>Tulare County General Plan 2030 Update</u>

The Tulare County General Plan 2030 Update (Chapter 4 – Land Use, Chapter 8 – Environmental Resources Management and Part II Chapter 1 - Rural Valley Lands Plan) contains the following goals and policies that relate to land use and which have potential relevance to the Project's California Environmental Quality Act (CEQA) review:

- *LU-2.1 Agricultural Lands* wherein the County shall maintain agriculturally-designated areas for agriculture use and by directing urban development away from valuable agricultural lands to cities, unincorporated communities, hamlets, and planned community areas where public facilities and infrastructure are available;

- *LU-5.1 Industrial Developments* wherein the County shall encourage a wide range of industrial development activities in appropriate locations to promote economic development, employment opportunities, and provide a sound tax base; and,

- *LU-7.15 Energy Conservation* wherein the County shall encourage the use of solar power and energy conservation building techniques in all new development.

Project Impact Analysis

a) Would the project physically divide an established community? No Impact.

The Project is in an agricultural area in southwestern Tulare County, approximately three miles northeast of the unincorporated community of Earlimart. The Project will not physically divide any established community. Therefore, the Project would result in No Impact on this resource.

b) Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? No Impact.

The subject site is located outside any Urban Boundaries and is subject to the Rural Valley Lands Plan, with a Land Use Designation of Valley Agricultural. The proposed project is consistent with relevant policies of the Tulare County General Plan, including:

- Agriculture Element Goal 1
- Land Use Element Goals 1, 2 and 7
- Environmental Resources Management Element Goals 1, 4 and 6
- Air Quality Element Goals 1, 3 and 4
- Health and Safety Element Goals 1, 4, 6 and 8
- Water Resources Element Goal 2; Transportation & Circulation Element Goal 1
- Public Facilities & Services Element Goals 2, 3, 5 and 7

APNs: 318-290-005 & 006 are in the AE-40 (Exclusive Agricultural – 40 Acre Minimum) Zone. APNs: 319-060-019, 022 & 037 are in the AE-20 (Exclusive Agricultural – 20 Acre Minimum) Zone. The AE-20 and AE-40 Zones allow the expansion of an existing almond processing plant with the amendment of a previously approved Special Use Permit. Sections 9.6 and 9.7 of Ordinance No. 352, as amended, the Zoning Ordinance, regarding the AE-20 and AE-40 Zones, allows an "establishment for the curing, processing, packaging, storage and shipping of agricultural products" with an approved Special Use Permit.

Section 16.II.E. of the Zoning Ordinance allows any person holding a Special Use Permit to file an application for an amendment to the permit. The amendment may include modifications of the terms of the permit itself, or the application, waiver or alterations of conditions. The same provisions shall be followed for an amendment as are applicable to a new permit, including, but not limited to, the public notices, hearings and appeal rights set forth in Section 18.

Building line setback requirements are separate and distinct requirements from yard areas. The Building Line Setback Ordinance (Section 7-19-1010 in the Tulare County Ordinance Code) requires a setback of 50 feet from the centerline of the right of way of Road 160. The subject site complies with the Zone's yard areas and the building line setbacks.

Section 16 of Ordinance No. 352, as amended, the Zoning Ordinance, states the following: "A Special Use Permit shall be granted only if it is found that the establishment, maintenance, and operation of the use of the building or land applied for will not, under the circumstances of the particular case, be detrimental to the health, safety, peace, morals, comfort and general welfare of persons residing or working in the neighborhood or to the general welfare of the County. Special Use Permits may be granted subject to such conditions as will ensure compliance with the aforementioned standards."

The Project will not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, the Project would result in No Impact on this resource.

XII. MINERAL RESOURCES

Would the project:	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88’ x 88’ x 19’) will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280’ x 87’ x 13’) where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

  The clarifier (24’ diameter x 12’) will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466’ x 280’ x 27’) for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

  A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the High-Density Polyethylene (HDPE) double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

- **Phase 2:** Construction of a 5,176 sq. ft. canopy, a 6,263 sq. ft. fumigation room building with a 1,127 sq. ft. canopy for a total of 7,390 sq. ft., and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Mineral Resources, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Federal

There are no federal or local regulations pertaining to mineral resources relevant to the Project.

State

California Surface Mining and Reclamation Act of 1975

Enacted by the State Legislature in 1975, the Surface Mining and Reclamation Act (SMARA), Public Resources Code Section 2710 et seq., insures a continuing supply of mineral resources for the State. The act also creates surface mining and reclamation policy to assure that:

- Production and conservation of minerals is encouraged;
- Environmental effects are prevented or minimized;
- Consideration is given to recreational activities, watersheds, wildlife, range and forage, and aesthetic enjoyment;
- Mined lands are reclaimed to a useable condition once mining is completed; and
- Hazards to public safety both now and in the future are eliminated.

Areas in the State (city or county) that do not have their own regulations for mining and reclamation activities rely on the Department of Conservation, Division of Mines and Geology, Office of Mine Reclamation to enforce this law. SMARA contains provisions for the inventory of mineral lands in the State of California. The State Geologist, in accordance with the State Board's Guidelines for Classification and Designation of Mineral Lands, must classify Mineral Resource Zones (MRZ) as designated below:

- MRZ-1. Areas where available geologic information indicates that there is minimal likelihood of significant resources.
- MRZ-2. Areas underlain by mineral deposits where geologic data indicate that significant mineral deposits are located or likely to be located.
- MRZ-3. Areas where mineral deposits are found but the significance of the deposits cannot be evaluated without further exploration.
- MRZ-4. Areas where there is not enough information to assess the zone. These are areas that have unknown mineral resource significance.

SMARA only covers mining activities that impact or disturb the surface of the land. Deep mining (tunnel) or petroleum and gas production is not covered by SMARA.

Local

<u>Tulare County General Plan 2030 Update</u>

The Tulare County General Plan 2030 Update: Chapter 8 – Environmental Resources Management contains the following goals and policies that relate to mineral resources and that have potential relevance to the Project's California Environmental Quality Act (CEQA) review:

- *ERM-2.1 Conserve Mineral Deposits* wherein the County will encourage the conservation of identified and/or potential mineral deposits, recognizing the need for identifying, permitting, and maintaining a 50-year supply of locally available PCC grade aggregate.

- *ERM 2.7-Minimize Adverse Impacts* wherein the County will minimize the adverse effects on environmental features such as water quality and quantity, air quality, flood plains, geophysical characteristics, biotic, archaeological, and aesthetic factors.

- *ERM 2.8-Minimize Hazards and Nuisances* wherein the County will minimize the hazards and nuisances to persons and properties in the area during extraction, processing, and reclamation operations.

- *ERM 2.10-Incompatible Development* wherein proposed incompatible land uses in the County shall not be on lands containing or adjacent to identified mineral deposits, or along key access roads, unless adequate mitigation measures are adopted or a statement of overriding considerations stating public benefits and overriding reasons for permitting the proposed use are adopted.

- *ERM-4.6 Renewable Energy* wherein the County shall support efforts, when appropriately sited, for the development and use of alternative energy resources, including renewable energy such as wind, solar, biofuels and co-generation.

Project Impact Analysis

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? No Impact.

Mineral resources located within Tulare County are predominately sand and gravel resources primarily provided by four waterways: Kaweah River, Lewis Creek, Deer Creek, and the Tule River. Deer Creek is the nearest of these four streams to the proposed Project site and is located approximately 1.5 miles to the north of the project. At the crossing at Road 160, Deer Creek is below grade and moves via canal. The Project will not result in the loss of an available known mineral resource. The Tulare County General Plan Update (see Figure 8-2 Mineral Resource Zone in the General Plan) indicates the locations of State-designated Mineral Resource Zones. According to the map, the Project site is located within 10 miles of a Mineral Resource Zone (MRZ). The California Department of Conservation indicates that the nearest, active mining operation is located approximately 7 miles northeast of the Project site (Deer Creek Ranch 91-54-0019 – sand and gravel). The Project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. Therefore, there is No Impact in relation to this resource.

b) Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? No Impact.

As described above in subsection **a)**, the proposed Project site is not delineated on a local land use plan as a locally important mineral resource recovery site. Therefore, the proposed Treehouse California Almond Expansion project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Therefore, there is No Impact in relation to this resource.

XIII. NOISE

Would the project result in:	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
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 ground-borne vibration or ground-borne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

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  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88’ x 88’ x 19’) will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280’ x 87’ x 13’) where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

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The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Noise, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Federal

Federal Vibration Policies

The Federal Railway Administration (FRA) and the Federal Transit Administration (FTA) have published guidance relative to vibration impacts. According to the FRA, fragile buildings can be exposed to ground-borne vibration levels of 0.5 PPV without experiencing structural damage. [1] The FTA has identified the human annoyance response to vibration levels as 80 RMS (Root Mean Square = The square root of the arithmetic average of the squared amplitude of the signal).[2]

State

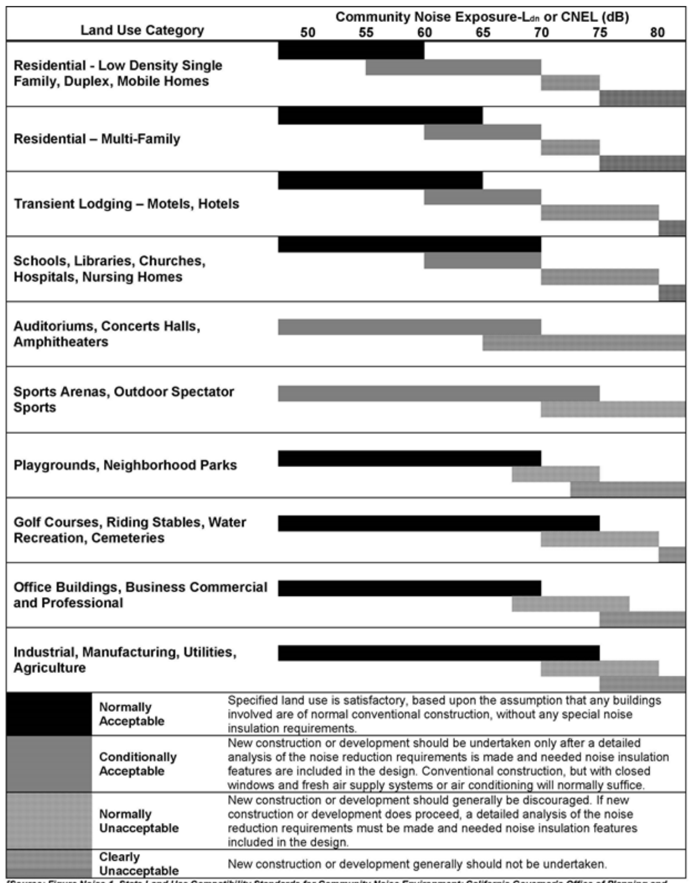
The California Noise Control Act was enacted in 1973 (Health and Safety Code § 46010 et seq.), and states that the Office of Noise Control (ONC) should provide assistance to local communities in developing local noise control programs. It also indicates that ONC staff will work with the OPR to provide guidance for the preparation of the required noise elements in city and county General Plans, pursuant to Government Code § 65302(f). California Government Code § 65302(f) requires city and county general plans to include a noise element. The purpose of a noise element is to guide future development to enhance future land use compatibility.

[1] U.S. Department of Transportation. Federal Transit Administration. "The Noise and Vibration Impact Assessment Manual". September 2018. FTA Report No. 0123 Federal Transit Administration. Figure 5-4 Typical levels of Ground-Borne Vibration. Pages 112 and 113. Accessed April 2024 at: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf.
[2] Ibid. 213.

Local

Analytical noise modeling techniques, in conjunction with actual field noise level measurements, were used to develop generalized Ldn or Community Noise Equivalent Level (CNEL) contours for traffic noise sources within Tulare County for existing conditions. Traffic data representing annual average daily traffic volumes, truck mix, and the day/night distribution of traffic for existing conditions (1986) and future were obtained from the Tulare County Public Works Department and used in the Tulare County Noise Element. The Tulare County General Plan 2030 Update Health & Safety Element (2012) includes noise and land use compatibility standards for various land uses. These are shown in **Table 2.13-1** Land Use Compatibility for Community Noise Environments[3].

Table 2.13-1



[Source: Figure Noise-1. State Land Use Compatibility Standards for Community Noise Environment: California Governor's Office of Planning and Research, October 2003]

Tulare County General Plan 2030 Update

The Tulare County General Plan 2030 Update: Chapter 10 – Health and Safety contains the following goals and policies that relate to noise that have potential relevance to the Project's California Environmental Quality Act (CEQA) review:

- *HS-8.2 Noise Impacted Areas* – wherein the County shall designate areas as noise-impacted if exposed to existing or projected noise levels that exceed 60 dB Ldn (or Community Noise Equivalent Level (CNEL)) at the exterior of buildings; and

[3] Tulare County General Plan 2030 Update. Goals and Policies Report. Page 10-25.

- *HS-8.3 Noise Sensitive Land Uses* – wherein the County shall not approve new noise sensitive uses unless effective mitigation measures are incorporated into the design of such projects to reduce noise levels to 60 dB Ldn (or CNEL) or less within outdoor activity areas and 45 dB Ldn (or CNEL) or less within interior living spaces; and

- *HS-8.6 Noise Level Criteria* wherein the County shall ensure noise level criteria applied to land uses other than residential or other noise-sensitive uses are consistent with the recommendations of the California Office of Noise Control (CONC); and

- *HS-8.8 Adjacent Uses* wherein the County shall not permit development of new industrial, commercial, or other noise-generating land uses if resulting noise levels will exceed 60 dB Ldn (or CNEL) at the boundary of areas designated and zoned for residential or other noise-sensitive uses, unless it is determined to be necessary to promote the public health, safety, and welfare of the County; and

- *HS-8.11 Peak Noise Generators* wherein the County shall limit noise generating activities, such as construction, to hours of normal business operation (7 a.m. to 7 p.m.). No peak noise generating activities shall be allowed to occur outside of normal business hours without County approval; *and*

- *HS-8.18 Construction Noise* wherein the County shall seek to limit the potential noise impacts of construction activities by limiting construction activities to the hours of 7 a.m. to 7 p.m., Monday through Saturday when construction activities are located near sensitive receptors. No construction shall occur on Sundays or national holidays without a permit from the County to minimize noise impacts associated with development near sensitive receptors; and

- *HS-8.19 Construction Noise Control* wherein the County shall ensure that construction contractors implement best practices guidelines (i.e., berms, screens, etc.) as appropriate and feasible to reduce construction-related noise-impacts on surrounding land uses.

Project Impact Analysis

a) Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? Less Than Significant Impact.

The ambient noise environment in the proposed Project vicinity is dominated by agricultural-related uses, including tractor-intensive work. The magnitude and frequency of the existing ambient noise levels may vary considerably over the course of the day and throughout the week. The variation is caused by different reasons, for example, changing weather conditions, the effects of rotation of agricultural crops, and other human-related activities.

Construction Noise

Proposed Project construction related activities will involve temporary noise sources and will be periodic in nature. Typical construction-related equipment includes graders, trenchers, small tractors, and excavators. During the proposed Project construction, noise from construction related activities will contribute to the noise environment in the immediate vicinity. Activities involved in construction will generate maximum noise levels, as indicated in **Table 2.13-2**, ranging from 79 to 91 dBA at a distance of 50 feet, without feasible noise control (e.g., mufflers) and ranging from 75 to 80 dBA at a distance of 50 feet, with feasible noise controls.

The distinction between short-term construction noise impacts and long-term operational noise impacts is a typical one in both CEQA documents and local noise ordinances, which generally recognize the reality that short-term noise from construction is inevitable and cannot be mitigated beyond a certain level. Thus, local agencies frequently tolerate short-term noise at levels that they would not accept for permanent noise sources. A more severe approach would be impractical and might preclude the kind of construction activities that are to be expected from time to time in urban and semi-urban environments. Most residents of these areas recognize this reality and expect to hear construction activities on occasion.

Table 2.13-2
Typical Construction Noise Levels

Type of Equipment	dBA at 50 feet	
	Without Feasible Noise Control	With Feasible Noise Control
Dozer or Tractor	80	75
Excavator	88	80
Scraper	88	80
Front End Loader	79	75
Backhoe	85	75
Grader	85	75
Truck	91	75

Although impacts are considered less than significant, the Project will be required to adhere to the County's noise policies, as noted earlier, to ensure that impacts remain less than significant, including

- *HS-8.11 Peak Noise Generators*; and
- *HS-8.18 Construction Noise*; and,
- *HS-8.19 Construction Noise Control*, as appropriate and feasible to reduce construction-related noise-impacts on surrounding land uses.

Operational Noise

As noted previously, the proposed project in the southern-western part of Tulare County in a predominantly agricultural area of the San Joaquin Valley. The site is currently planted to grapevines. Surrounding areas include agricultural production and existing almond warehousing buildings. The nearest rural residence is located across the street from (west of Road 60) the Project site along the Avenue 68 alignment. It is also noted that the land surrounding the Project site is predominantly zoned agricultural (to the north, south, east, and west), which is an exclusive zone for intensive agricultural uses and for those uses which are necessary and an integral part of agricultural operations.

Tulare County's Land Use Compatibility for Community Noise Environments identified a noise standard of 75 Ldn/CNEL for agricultural land uses, which is the land use that applies to the proposed Treehouse California Almond Expansion project and the residential home located on the northwest corner of Avenue 68/Road 160. Operational noise will be similar in character to existing noise in the area resulting from agricultural operations. At full buildout, the Project will be operational 20 hours a day, 4-5 days per week. Noise generating operational activities include employee and delivery vehicle traffic and equipment such as fork-lifts and small loaders. Operating noise is expected to be below Tulare County General Plan noise standard of 75Ldn/CNEL at the exterior of the nearby residence. As such, the potential impact to ambient noise is a Less Than Significant Impact.

b) Would the project result in the generation of excessive ground-borne vibration or ground-borne noise levels? Less Than Significant Impact.

"Vibration is an oscillatory motion that can be described in terms of displacement, velocity, or acceleration. Because the motion is oscillatory, there is no net movement of the vibration element and the average of any of the motion metrics is zero. Displacement is the most intuitive metric. For a vibrating floor, the displacement is simply the distance that a point on the floor moves away from its static position. The velocity represents the instantaneous speed of the floor movement and acceleration is the rate of change of the speed. Although displacement is easier to understand than velocity or acceleration, it is rarely used for describing ground-borne vibration. Most transducers used for measuring ground-borne vibration use either velocity or acceleration. Furthermore, the response of humans, buildings, and equipment to vibration is more accurately described using velocity or acceleration."[4]

"The effects of ground-borne vibration can include perceptible movement of floors in buildings, rattling of windows, shaking of items on shelves or hanging on walls, and low-frequency noise (ground-borne noise). Building damage is not a factor for typical transportation projects, but in extreme cases, such as during blasting or pile-driving during construction, vibration could cause damage to buildings. Although the perceptibility threshold is approximately 65 VdB, human response to vibration is not usually substantial unless the vibration exceeds 70 VdB. A vibration level that causes annoyance is well below the damage risk threshold for typical buildings (100 VdB)."[5] "Ground-borne vibration is almost never a problem outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of a building, the motion does not provoke the same adverse human reaction."[6]

Table 2.13-3 presents the human response to different levels of ground-borne vibration and noise. "The vibration level (VdB) is presented with the corresponding frequency assuming that the vibration spectrum peaks at 30 Hz or 60 Hz (xi) The groundborne noise levels (dBA) are estimated for the specified vibration velocity with a peak vibration spectrum of 30 Hz (Low Freq) and 60 Hz (Mid Freq). Note that the human response differs for vibration velocity level based on frequency. For example, the noise caused by vibrating structural components may cause annoyance even though the vibration cannot be felt. Alternatively, a low frequency vibration can cause annoyance while the ground-borne noise level it generates does not."[7]

Table 2.13-3
Human Response to Different levels of Ground-Bourne Vibration and Noise[8]

Vibration Velocity Level	Noise Level		Human Response
	Low Freq*	Mid Freq**	
65 VdB	25 dBA	40dBA	Approximate threshold of perception for many humans. Low frequency sound: usually inaudible. Mid-frequency sound: excessive for quiet sleeping areas.

[4] U.S. DOT. FTA. Transit Noise & Vibration Impact Assessment Manual. September 2018. Page 110. Accessed April 2024 at: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf
[5] Ibid. 117-118.
[6] Op. Cit. 118.
[7] Op. Cit. 119.
[8] Op. Cit. 120.

75 VdB	35 dBA	50dBA	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find transit vibration at this level annoying. Low-frequency noise: tolerable for sleeping areas. Mid-frequency noise: excessive in most quiet occupied.
85 VdB	45 dBA	60dBA	Vibration is tolerable only if there are an infrequent number of events per day. Low-frequency noise: excessive for sleeping areas. Mid-frequency noise: excessive even for infrequent events for some activities.
**Approximate noise level when vibration spectrum peak is near 30 Hz. **Approximate noise level when vibration spectrum peak is near 60 Hz.*			

Table 2.13-4 presents average source levels in terms of velocity for various types of construction equipment measured under a wide variety of construction activities.

Typical outdoor sources of perceptible ground borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. Construction vibrations can be transient, random, or continuous. The approximate threshold of vibration perception is 65 VdB, while 85 VdB is the vibration acceptable only if there are an infrequent number of events per day.

<u>Construction Related Vibration Impacts</u>: While construction-related activities will result in minor amounts of groundborne vibration, such groundborne noise or vibration will attenuate rapidly from the source and will not be generally perceptible outside of the construction areas. As such, impacts to the neighboring sensitive receptor will be a Less Than Significant Impact.

<u>Project Operational Vibration Impacts</u>: As described in Impact 13 a), The Project will result in typical agricultural/industrial use-related noise. Typical noise will result from vehicles accessing and egressing the site, on-site forklifts, small loaders, and etc. Other than these sources there will be no vibrational impacts from Project operation. As such, there will be no exposure of persons for generation of excessive groundborne vibration.

Table 2.13-4
Vibration Source Levels for Construction Equipment[9]

Equipment		**PPV at 25 ft. in/sec**	**Approximate Lv * at 25 ft**
Pile Driver (impact)	upper range	1.518	112
	Typical	0.544	104
Pile Driver (sonic)	upper range	0.734	105
	typical	0.17	93
Clam shovel drop (slurry wall)		0.202	94
Hydromill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory Roller		0.21	94

9 Op. Cit. 184.

Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drilling	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58
**RMS velocity in decibels, VDB re 1 micro-in/sec*		

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? No Impact.

The proposed Project is not within an airport land use plan or within two miles of a private airfield. The proposed Treehouse California Almond Expansion project will not conflict with Tulare County Airport Land Use Plan policy and as such, there will be No Impact to people residing or working in the project area because of excessive noise levels.

XIV. POPULATION AND HOUSING

Would the project:	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88’ x 88’ x 19’) will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280’ x 87’ x 13’) where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

  The clarifier (24’ diameter x 12’) will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466’ x 280’ x 27’) for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

  A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the High Density Polyethylene (HDPE) double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

- **Phase 2:** Construction of a 5,176 sq. ft. canopy, a 6,263 sq. ft. fumigation room building with a 1,127 sq. ft. canopy for a total of 7,390 sq. ft., and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Population and Housing, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Federal

"HUD's mission is to create strong, sustainable, inclusive communities and quality affordable homes for all. HUD is working to strengthen the housing market to bolster the economy and protect consumers; meet the need for quality affordable rental homes: utilize housing as a platform for improving quality of life; build inclusive and sustainable communities free from discrimination; and transform the way HUD does business."[1] However, as the Project does not propose any community housing, HUD or other, federal regulations do not apply.

State

California Department of Housing and Community Development (HCD)

HCD's mission is to "Promote safe, affordable homes and strong vibrant communities throughout California." "In 1977, the State Department of Housing and Community Development (HCD) adopted regulations under the California Administrative Code, known as the Housing Element Guidelines, which are to be followed by local governments in the preparation of local housing elements. AB 2853, enacted in 1980, further codified housing element requirements. Since that time, new amendments to the State Housing Law have been enacted. Each of these amendments has been considered during development of this Housing Element."[2]

California Relocation Assistance Act

The State of California adopted the California Relocation Assistance Act (California Government Code §7260 et seq.) in 1970. This State law, which follows the federal Uniform Relocation Assistance and Real Property Acquisition Act, requires public agencies to provide procedural protections and benefits when they displace businesses, homeowners, and tenants in the process of implementing public programs and projects. This State law calls for fair, uniform, and equitable treatment of all affected persons through the provision of relocation benefits and assistance to minimize the hardship of displacement on the affected persons. There are no state regulations that are relevant to this Project.

[1] U.S. Department of Housing and Urban Development. Mission. Accessed May 2024 at: https://www.hud.gov/about/mission.

[2] Tulare County Housing Element 2023-2031 Update. Page 1-3. Accessed May 2024 at: https://tularecounty.ca.gov/rma/planning-building/tulare-county-housing-element/complete-initial-draft-dec-2023-housing-element/

Local

Tulare County Regional Housing Needs Assessment Plan 2014-2023

The Tulare County Association of Governments (TCAG) was responsible for allocating the State's projections to each local jurisdiction within Tulare County including the County unincorporated area, which is reflected in this Housing Element. Tulare County has no control over the countywide population and housing projections provided to TCAG when it prepared the Regional Housing Needs Assessment Plan (RHNP). As the Project does not include (or remove/displace) any housing, the RHNA does not apply.

Tulare County Regional Blueprint 2009

This Blueprint includes the following preferred growth scenario principals:[3]

- Increase densities county-wide by 25% over the status quo densities;
- Establish light rail between cities;
- Extend Highway 65 north to Fresno County;
- Expand transit throughout the county;
- Maintain urban separators around cities; and
- Growth will be directed toward incorporated cities and communities where urban development exists and where comprehensive services and infrastructure are or will be provided.

Tulare County Housing Authority

"The Housing Authority of the County of Tulare (HATC) has been officially designated as the local public housing agency for the County of Tulare by the Board of Supervisors and was created pursuant to federal and state laws. …HATC is a unique hybrid: a public sector agency with private sector business practices. Their major source of income is the rents from residents. The HATC mission is "to provide affordable, well-maintained rental housing to qualified low- and very low-income families. Priority shall be given to working families, seniors and the disabled. Tenant self-sufficiency and responsibility shall be encouraged. Programs shall be self-supporting to the maximum extent feasible." [4]

HATC provides rental assistance to very low and moderate-income families, seniors and the handicapped throughout the county. HATC offers many different programs, including the conventional public housing program, the housing choice voucher program (Section 8), the farm labor program for families with farm labor income, senior housing programs, and other programs. They also own or manage some individual subsidized rental complexes that do not fall under the previous categories and can provide information about other affordable housing that is available in Tulare County. All programs are handicap accessible. Almost all of the complexes have 55-year recorded affordability covenants."[5] As noted earlier, the Project does not include (or remove/displace) any public housing, no impact would occur to HATC's objectives/programs.

Tulare County General Plan/Housing Element Policies

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases. The proposed Project is anticipated to add eight (8) additional employees. There are no policies from the Tulare County General Plan/Housing Element that would apply to this Project.

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[3] TCAG. Tulare County Regional Blueprint. May 2009. Page 18. Accessed May 2024 at: https://tularecog.org/tcag/planning/regional-transportation-plan-rtp/rtp-20181/tulare-county-blue-print/.

[4] Tulare County Housing Element 2023-2031 Update. Page 5-11. Accessed May 2024 at: https://tularecounty.ca.gov/rma/planning-building/tulare-county-housing-element/complete-initial-draft-dec-2023-housing-element/ Accessed May 2024

[5] Ibid.

Project Impact Analysis

a) Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? Less Than Significant Impact.:

The proposed Project will not have a direct or cumulative effect or create an unusual circumstance that will cause a significant effect on the population, or housing of the area. Although the proposed Project is anticipated to add eight (8) additional employees, these increases are not substantial. A portion of the Project site (APNs: 318-290-005 & 006) is Zoned AE-20 and is designed for agricultural uses. A portion of the Project site (APNs: 318-290-005 & 006) is Zoned AE-40 and is designed for agricultural uses. Due to the surrounding uses being predominantly agricultural in nature, it is unlikely that the surrounding properties will be used for the development of a residential subdivision. Therefore, the Project will not induce a significant population growth and will result in a Less Than Significant Impact.

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? Less Than Significant Impact.

The proposed Project will not have a direct or cumulative effect or create an unusual circumstance that will cause a significant effect on the population, or housing of the area. Although the proposed Project is anticipated to add eight (8) additional employees, these increases are not substantial. A portion of the Project site (APNs: 318-290-005 & 006) is Zoned AE-20 and is designed for agricultural uses. A portion of the Project site (APNs: 318-290-005 & 006) is Zoned AE-40 and is designed for agricultural uses. Due to the surrounding uses being predominantly agricultural in nature, it is unlikely that the surrounding properties will be used for the development of a residential subdivision. Therefore, the Project will not displace an existing population and will result in a Less Than Significant Impact.

XV. PUBLIC SERVICES

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a) Fire protection?	☐	☐	☒	☐
b) Police protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☒	☐
d) Parks?	☐	☐	☒	☐
e) Other public facilities?	☐	☐	☒	☐

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88' x 88' x 19') will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280' x 87' x 13') where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

  The clarifier (24' diameter x 12') will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466' x 280' x 27') for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

  A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the High-Density Polyethylene (HDPE) double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

- **Phase 2:** Construction of a 5,176 sq. ft. canopy, a 6,263 sq. ft. fumigation room building with a 1,127 sq. ft. canopy for a total of 7,390 sq. ft., and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Public Services, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Federal

None that are applicable to this Project.

State

California Fire Code and Building Code

The purpose of the California Fire Code (Title 24, Part 9 of the California Code of Regulations) is to establish the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety and general welfare from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises, and to provide safety and assistance to fire fighters and emergency responders during emergency operations.[1]

Local

Tulare County General Plan 2030 Update

The following Tulare County General Plan 2030 Update, Chapter 14 – Public Facilities and Services, contains the following policies that relate to public services and may apply to this Project:

- *PFS-7.2 Fire Protection Standards* wherein the County shall require all new development to be adequately served by water supplies, storage, and conveyance facilities supplying adequate volume, pressure, and capacity for fire protection*;*

[1] 2019 California Fire Code (Title 24, Part 9 of the California Code of Regulations). 1.1.2 Purpose. Page 3. Accessed May 2024 at: Building Department - RMA (ca.gov) then click CHAPTER 24 - FLAMMABLE FINISHES, 2019 California Fire Code, Title 24, Part 9 | ICC Digital Codes (iccsafe.org)

- *PFS-7.5 Fire Staffing and Response Time Standards* wherein the County shall strive to maintain fire department staffing and response time goals consistent with National Fire Protection Association (NFPA) standards, as shown in Table 15-1;

- *PFS-7.6 Provision of Station Facilities and Equipment* wherein the County shall strive to provide sheriff and fire station facilities, equipment (engines and other apparatus), and staffing necessary to maintain the County's service goals. The County shall continue to cooperate with mutual aid providers to provide coverage throughout the County*;*

Table 15-1
Fire Staffing and Response Time Standards

	Demographics	Staffing/Response Time	% of Calls
Urban	> 1,000 people/sq. mi.	15 fire fighters (FF)/9 min.	90
Suburban	500-100 people/sq. mi.	10 FF/10 min.	80
Rural	< 500 people/sq. mi.	6 FF/14 min.	80
Remote*	Travel Dist.>8 min.	4 FF/no specific response time	90

**Upon assembling the necessary resources at the emergency scene, the fire department should have the capacity to safety commence an initial attach within 2 minutes, 90% of the time.*

- *PFS-7.9 Sheriff Response Time* wherein the County shall work with the Sheriff's Department to achieve and maintain a response time of:
  1. Less than 10 minutes for 90 percent of the calls in the valley region; and
  2. 15 minutes for 75 percent of the calls in the foothill and mountain regions; and,

- *PFS-7.12 Design Features for Crime Prevention and Reduction* wherein the County shall promote the use of building and site design features as means for crime prevention and reduction.

Project Impact Analysis

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a) Fire protection? Less Than Significant Impact

The Tulare County Fire Department provides fire suppression and recovery and fire law services for the project area. Tulare County Fire Station 28, located at 800 E. Washington Avenue in Earlimart (approximately four miles southwest of the project site), serves the project area. Response times to the project area range from eight to ten minutes. The fire station is staffed 24 hours a day by a full-time Fire Captain or Fire Apparatus Engineer, and emergency response is augmented with over Paid Call Firefighters (PCFs) volunteers. These PCFs are organized into engine companies by the station's response area with which they reside. The metal agricultural buildings for the proposed project would be constructed in compliance with local and state fire codes and be used to store almond products. On-site fire protection infrastructure includes a water storage tank and an on-site fire hydrant system. As such, an increase in demand for fire services is not expected to result, calls for service would cause only temporary effects, and the proposed Project would not result in a notable increase in fire risk and service demand for the area. Therefore, there would be a Less Than Significant Impact concerning fire protection.

b) Police Protection? Less Than Significant Impact

Law enforcement services for the project area are provided by the Tulare County Sheriff's Department. The nearest Sheriff's Community Sub Station is located at 161 N. D Street in Pixley, approximately six miles northwest of the project site. Although the type of use proposed does not specifically create an environment associated with unlawful activities requiring law enforcement services, the project could have an effect upon local sheriff protection services in the event that such services would be required, e.g., theft. This effect would be minor and temporary in nature due to on-site security and surveillance; therefore, there would be a Less Than Significant Impact concerning law enforcement.

c) Schools? Less Than Significant

The proposed Project is located within the boundaries of the Earlimart Unified School District; however, only eight (8) additional jobs would be provided because of the Project that would be filled with local residents. Therefore, the project would not directly create significant increase in the number of school age children for Earlimart Unified School District. Residential [and commercial] construction would require payment of school fees prior to issuance of a building permit. As such, there would be a Less Than Significant Impact concerning schools due to the low number of school children as part of this Project.

d) Parks? Less Than Significant Impact

The nearest park is in Earlimart, located approximately four miles southwest of the proposed Project. Only eight (8) additional jobs would be provided because of the Project that would be filled with local residents, which would not create an increase in demand for parks. Therefore, there would be a Less Than Significant Impact concerning parks

e) Other Public Facilities? No Impact

Adventist Health, located at 1401 Garces Highway in Delano (Kern County) is the closest medical facility, approximately 11 miles south of the project site. Likewise, the jobs that will be provided because of the project will be filled by local residents. The project does not represent a substantial increase in respect to the currently available health services and this impact is therefore less than significant. The proposed Project will not create the need to construct new electric infrastructure. The Project site is not located in an area where water and sewer service are provided. Instead, the project site relies on individual wells, septic systems, and an on-site wastewater treatment facility. Therefore, it would not create a need for any new or improved public facilities and this would be a Less Than Significant Impact.

XVI. RECREATION

Would the project:	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88' x 88' x 19') will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280' x 87' x 13') where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

  The clarifier (24' diameter x 12') will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466' x 280' x 27') for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

  A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the High Density Polyethylene (HDPE) double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

- **Phase 2:** Construction of a 5,176 sq. ft. canopy, a 6,263 sq. ft. fumigation room building with a 1,127 sq. ft. canopy for a total of 7,390 sq. ft., and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Recreation, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Federal

<u>Lakes Kaweah and Success</u>

"Lake Kaweah was formed after the construction of the Terminus Dam on the Kaweah River in 1962. The lake offers many recreational opportunities including fishing, camping, and boating. Lake Kaweah is located 20 miles east of Visalia on Highway 198 and was constructed by the U.S. Army Corps of Engineers for flood control and water conservation purposes. The lake has a maximum capacity to store 143,000 acre-feet of water. There are a total of 80 campsites at the lake's Horse Creek Campground, which contains toilets, showers and a playground. Campfire programs are also available. Aside from camping, boat ramps are provided at the Lemon Hill and Kaweah Recreation Areas. Both Kaweah and Horse Creek provide picnic areas, barbecue grills and piped water. Swimming is allowed in designated areas. In addition, there is a one-mile hiking trail between Slick Rock and Cobble Knoll, which is ideal for bird watching.

Lake Success was formed by construction of the Success Dam on the Tule River in 1961. The lake offers many recreational activities including fishing, boating, waterskiing, and picnicking. The U.S. Army Corps of Engineers (USACOE) constructed this reservoir for both flood control and irrigation purposes. The lake has a capacity of 85,000 acre-feet of water. The lake is located eight miles east of Porterville in the Sierra Nevada foothills area. Recreational opportunities include ranger programs, camping at the Tule campground, which provides 104 sites, boating, fishing, picnic sites, playgrounds, and a softball field. Seasonal hunting is also permitted in the 1,400-acre Wildlife Management Area."[1]

<u>National Parks and National Forests</u>

"Most of the recreational opportunities in the county are located in Sequoia National Forest, Giant Sequoia National Monument, and in Sequoia and Kings Canyon National Parks (SEKI). Although these parks span adjacent counties, they make a significant contribution to the recreational opportunities that Tulare County has to offer."[2]

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[1] Tulare County General Plan 2030 Update Background Report. February 2010. Page 4-7. Accessed June 2024 at: http://generalplan.co.tulare.ca.us/documents.html then scroll to and click on *"Appendix B-Background Report"*

[2] Ibid. 4-8.

Sequoia National Forest

"Sequoia National Forest takes its name from the Giant Sequoia, which is the world's largest tree. There are more than 30 groves of sequoias in the lower slopes of the park. The park includes over 1,500 miles of maintained roads, 1,000 miles of abandoned roads and 850 miles of trails for hikers, off-highway vehicle users and horseback riders. The Pacific Crest Trail connecting Canada and Mexico, crosses a portion of the forest, 78 miles of the total 2,600 miles of the entire trail. It is estimated that 10 to 13 million people visit the forest each year. "[3]

Giant Sequoia National Monument

"The Giant Sequoia National Monument was created in 2000 by President Clinton in an effort to preserve 34 groves of ancient sequoias located in the Sequoia National Forest. The Monument includes a total of 327,769 acres of federal land, and provides various recreational opportunities, including camping, picnicking, fishing, and whitewater rafting. According to the Giant Sequoia National Monument Management Plan EIS, the Monument includes a total of 21 family campgrounds with 502 campsites and seven group campgrounds. In addition, there are approximately 160 miles of system trails, including 12 miles of the Summit National Recreation Trail."[4]

Sequoia and Kings Canyon National Parks (SEKI)

"The U.S. Congress created the Kings Canyon National Park in 1940 and Sequoia National Park in 1890. Because they share many miles of common boundaries, they are managed as one park. The extremely large elevation ranges in the parks (from 1,500 to 14,491 feet above sea level), provide for a wide range of vegetative and wildlife habitats. This is witnessed from exploring Mt. Whitney, which rises to an elevation of 14,491 feet, and is the tallest mountain in the contiguous United States. During the summer months, park rangers lead walks through the parks, and tours of Crystal and Boyden Caves. During the winter, visitors explore the higher elevations of the parks via cross country skis or snowshoes or hike the trails in the foothills. The SEKI also contains visitor lodges, the majority of which are open year-round. According to the National Parks Conservation Association, a combined total of approximately 1.5 million people visit the two parks on an annual basis."[5]

State

"The Mountain Home State Forest is a State Forest managed by the California Department of Forestry and Fire Protection (CDF). The Forest consists of 4,807 acres of parkland containing a number of Giant Sequoias and is located east of Porterville. The Forest is a Demonstration Forest, which is considered timberland that is managed for forestry education, research, and recreation. Fishing ponds, hiking trails, and campsites are some of the amenities that can be found in the Forest."[6] Colonel Allensworth State Historic Park (approximately 3,715 acres in area) is located in the unincorporated community of Allensworth in southwestern Tulare County.

Local

Parks

The nearest recreational facility, Earlimart Neighborhood Park, lies about three (3) miles southwest of the southern area of the proposed project. Owned by the Earlimart School District, the park operates under a long-term joint powers agreement with the County, covering its development, operation, and maintenance. The park boasts amenities such as a children's play area, picnic spots, event spaces, gateway features, and resilient landscaping.

[3] Tulare County General Plan 2030 Update Background Report, Op. Cit. 4-9.
[4] Tulare County General Plan 2030 Update Background Report, Op. Cit.
[5] Tulare County General Plan 2030 Update Background Report, Op. Cit.
[6] Tulare County General Plan 2030 Update Background Report, Op. Cit. 4-7.

Schools

"A total of 48 school districts provide education throughout Tulare County. Of the 48 school districts, seven are unified districts providing educational services for kindergarten through 12th grade. The remaining 41 districts consist of 36 elementary school districts and four high school districts. Many districts only have one school."[7] The nearest elementary school (Earlimart Elementary School) is located approximately four (4) miles southwest of the Project site. The next nearest school is Earlimart Middle School, which is also located approximately four (4) miles southwest of the Project site.

Tulare County General Plan 2030 Update

The following Tulare County General Plan 2030 Update policies for this resource apply to this Project
ERM-5.6 Location and Size Criteria for Parks

Project Impact Analysis

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? No Impact.

As described above, the proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases. The proposed Project is anticipated to add eight (8) additional employees. These increases are not substantial and the proposed Project would not increase the use of existing neighborhood or regional parks, or other recreational facilities, such that a physical deterioration would occur or be accelerated. As stated above, the closest park is 3 miles southwest of the Project site and it will not be affected by the proposed Project. A portion of the Project site (APNs: 318-290-005 & 006) is Zoned AE-20 and is designed for agricultural uses. A portion of the Project site (APNs: 318-290-005 & 006) is Zoned AE-40 and is designed for agricultural uses. The surrounding uses are predominantly agricultural in nature. Therefore, there would be No Impact.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? No Impact.

See response XVI a) above. The proposed project would not include the construction or expansion of recreational facilities, which could physically affect the environment. Therefore, there would be No Impact.

[7] Tulare County General Plan 2030 Update Background Report. Pages 7-75 and 7-76. Accessed June 2024 at: http://generalplan.co.tulare.ca.us/documents.html then scroll to Recirculated Draft EIR, the click on "Appendix B-Background Report"

XVII. TRANSPORTATION

Would the project:	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses, (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88' x 88' x 19') will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280' x 87' x 13') where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

  The clarifier (24' diameter x 12') will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466' x 280' x 27') for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

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The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Transportation, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Federal

Several federal regulations govern transportation issues. They include: Title 49, CFR, Sections 171-177 (49 CFR 171-177) that governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles; 49 CFR 350-399, and Appendices A-G, Federal Motor Carrier Safety Regulations that address safety considerations for the transport of goods, materials, and substances over public highways; and 49 CFR 397.9, the Hazardous Materials Transportation Act of 1974, which directs the U.S. Department of Transportation to establish criteria and regulations for the safe transportation of hazardous materials.

State

(1) Land Use Projects. Vehicle miles traveled (VMT) exceeding an applicable threshold of significance may indicate a significant impact. Projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease VMT in the project area compared to existing conditions should be considered to have a less than significant transportation impact.

(2) Transportation Projects. Transportation projects that reduce, or have no impact on, VMT should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, a lead agency may tier from that analysis as provided in Section 15152.

(3) Qualitative Analysis. If existing models or methods are not available to estimate the VMT for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

(4) Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's VMT, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's VMT and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate VMT and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

Caltrans: Transportation Concept Reports

Each District of the State of California Transportation Department (Caltrans) prepares a Transportation Concept Report (TCR) for every state highway or portion thereof in its jurisdiction. The TCR usually represents the first step in Caltrans' long-range corridor planning process. The purpose of the TCR is to determine how a highway will be developed and managed so that it delivers the targeted LOS and quality of operations that are feasible to attain over a 20-year period, otherwise known as the "route concept" or beyond 20 years, for what is known as the "ultimate concept".

Caltrans has prepared a number concept reports for State Routes, Interstate Routes, and U.S. Routes. Tulare County is located in Caltrans District 6. Caltrans has completed a Transportation Concept Report (November 2003, 2016) for State Route 99, which is approximately 3.5 miles west of the proposed Project site.

Vehicle Miles Traveled – Focused Traffic Impact Study Guide

Caltrans prepared the *Transportation Impact Study Guide* (TISG) to provide guidance to Caltrans Districts, lead agencies, tribal governments, developers and consultants regarding Caltrans review of a land use project or plan's transportation analysis using vehicle miles traveled (VMT) metric. [1] The guidance, dated May 20, 2020, is not binding on public agencies, and it is intended to be a reference and informational document. The guidance may be updated based upon need, or in response to updates of the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA. The TISG replaces the *Guide for the Preparation of Traffic Impact Studies* (Caltrans, 2002) and is for use with local land use projects, not for transportation projects on the State Highway System.

SB 743, through a new CEQA metric for transportation impacts, sought to promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses (Public Resources Coad Section 21099 (7)(b)(1)). That is, it sought to modernize CEQA transportation analysis in a way that supports these goals. A new metric, VMT, was selected for land use development based on the expectation that a vehicle miles traveled metric will better support greenhouse gas emission reductions and improve multimodal transportation options for land use development.

Caltrans references OPR's December 2018 Technical Advisory on Evaluating Transportation Impacts in CEQA, which identifies projects and areas presumed to have a less than significant transportation impact.

Those include:

1. *Residential, office, or retail projects within a Transit Priority Area, where a project is within a ½ mile of an existing or planned major transit stop or an existing stop along a high-quality transit corridor.*

[1] Caltrans. Vehicle Miles Traveled – Focused Transportation Impact Study Guide (May 20, 2020). Accessed June 2024 at: https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-05-20-approved-vmt-focused-tisg-a11y.pdf

2. *An area pre-screened by an agency as having low residential or office VMT.*
3. *Residential projects composed of 100 percent or near-100 percent affordable housing located in any infill location. Additionally, per OPR's Technical Advisory, "Lead agencies may develop their own presumption of less than significant impact for residential projects (or residential portions of mixed-use projects) containing a particular amount of affordable housing, based on local circumstances and evidence. Furthermore, a project which includes any affordable residential units may factor the effect of the affordability on VMT into the assessment of VMT generated by those units."*
4. *A locally-serving retail project (such a project typically reduces vehicle travel by providing a more proximate shopping destination, i.e., better accessibility).*
5. *Mixed-use projects composed entirely of the above low-VMT project types.*
6. *In any area of the state, absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than significant transportation impact.*

Caltrans supports CEQA streamlining for these projects and acknowledges the importance of streamlining them in improving access to destinations, livability, and community vibrancy. Further, Caltrans encourages these projects because they will help achieve VMT reduction and mode shift goals.

In very limited situations, analysis or mitigation may be appropriate in low VMT areas to address specific multimodal access management issues directly caused by the project such as issues related to line of sight caused by the placement of a driveway. These situations are to be determined based on the details of specific development proposals and their setting and will be addressed in future guidance.

Caltrans will review projects that are not presumed to have a less than significant transportation impact (using a VMT metric):

For residential and office projects, OPR's Technical Advisory recommends VMT per capita or per employee thresholds 15% below existing city or regional VMT per capita. The recommended thresholds align with the reduction in per capita VMT required to achieve GHG reductions sufficient to achieve targets contained in State law. Caltrans suggests use of OPR's recommended thresholds of significance for land use projects and may request mitigation from projects and plans which do not meet those thresholds.

Caltrans' comments on the transportation impacts portion of a particular CEQA document may note methodological deviations from OPR's Technical Advisory and may strongly recommend significance determinations and project changes or mitigation aligned with state GHG and VMT reduction goals as articulated in that guidance and in the California Air Resources Board's Scoping Plan and related documentation.

Lead Agencies should consider the legal requirements and practical implications of programmatic mitigation strategies. The considerations include "additionality" (generally meaning the improvements would not have occurred without funding from the VMT mitigation bank), equity (with respect to geographical distribution of beneficial mitigation projects), verifiability, and exhaustion of on-site mitigation strategies.

Local Policy and Regulations

Tulare County Association of Governments (TCAG)
"… [W]ith the passage of Assembly Bill (AB) 69 State law has required the preparation of Regional Transportation Plans (RTPs) to address transportation issues and assist local and state decision makers in shaping California's

transportation infrastructure." TCAG has prepared the 2022 RTP. Specific policies that apply to the Proposed Project are listed as follows:

System Performance - Objective: Develop an efficient regional road and circulation system that provides maximum achievable mobility and accessibility for vehicles, bicycles, pedestrians, and public transportation.

Policy 1 – Maintain a Level of Service C or better on rural roads and Level of Service D or better on urban roads.

Air Quality and Greenhouse Gases - Objective: Encourage coordinated development to achieve an improved jobs-housing balance in the region.

Policy 1 – Encourage mixed-use developments in urbanized areas and existing small communities, both incorporated and unincorporated.

Transportation Control Measures (TCMs) are also being utilized to reduce vehicle trips, improve air quality, and relieve congestion. The SJVAPCD, in compliance with the California Clean Air Act (CCAA) to reduce vehicle trips, is enforcing the TCMs. Listed in the appendix under the Air Quality Conformity findings is a thorough analysis and description of the implemented TCMs in Tulare County. There are many sources of funding that can be used to implement TCMs. Some primary sources for TCM implementation are the Congestion Mitigation and Air Quality (CMAQ) Program, Federal Transit Administration (FTA) funding, Active Transportation Program (ATP) funds, and eligible local sales tax funds.[2]

Local

County of Tulare SB 743 Guidelines

County of Tulare SB 743 Guidelines (VMT Guidelines or Guidelines) were prepared for implementation of Senate Bill 743 (SB 743) in the unincorporated area of Tulare County. SB 743 was passed by the legislature and signed into law in the fall of 2013. This legislation led to a change in the way that transportation impacts will be measured under the California Environmental Quality Act (CEQA). Starting on July 1, 2020, automobile delay and level of service (LOS) was no longer be used as the performance measure to determine the transportation impacts of land development projects under CEQA and the new performance measure will be vehicle miles traveled (VMT).

Although statewide guidance for the implementation of SB 743 has been written by the Governor's Office of Planning and Research (OPR)[3], CEQA allows lead agencies (including Tulare County) the latitude to determine their own methodologies and significance thresholds for CEQA technical studies. The SB 743 Guidelines provided in this report are based on the statewide guidance provided by OPR, but they include clarifications and details tailored for and specific to local conditions in Tulare County SB 743 applies to both land development and transportation projects. The VMT analysis methodology for land development projects was developed in order to accomplish the following:

- Meet the requirements of CEQA, including the new SB 743 regulations that were adopted into CEQA in December 2018 and went into effect on July 1, 2020.
- Provide for transportation improvements to be built that benefit Tulare County residents and facilitate travel by walking, bicycling, and transit.

[2] TCAG 2022 Regional Transportation Plan. Action Element. Accessed June 2024 at: tularecog.org/tcag/planning/rtp/rtp-2022/chapter-d-action-element/
[3] https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

- Provide for analysis and mitigation of VMT impacts in a way that is feasible and within the scale of land development projects in Tulare County.

VMT analysis for land development projects is to be conducted by comparing a project's VMT/capita or VMT/employee to the average VMT/capita or VMT/employee for the traffic analysis zone (TAZ) in which the project is located. Projects that have a VMT/capita or VMT/employee equal to or above the average for the TAZ are required to provide mitigation in the form of relatively low-cost improvement projects that would support travel by bicycling or walking or provide justification that improvements at the regional level are sufficient to mitigate their VMT impacts.

Certain projects such as small projects and local-serving retail projects would be presumed to have a less than significant impact and would not be required to do a VMT analysis. It is important to note that goods movement (e.g., the transport of raw or finished products from one location to another, for example, transfer of milk to an ice cream producing plant and then the transfer of ice cream to a distributor or directly to a retailer) is not subject to SB 743 and only passenger trips need to be considered in a VMT analysis.[4]

Transportation projects that are focused on improvements to travel by bicycling, walking, and transit would be presumed to have a less than significant impact (as these modes of travel eliminate or reduce miles travelled by a vehicle) and would not be required to do a VMT analysis. Certain small roadway projects and all roadway projects that are consistent with the General Plan would be presumed to have a less than significant impact (as these projects have been anticipated to accommodate projected growth and/or are planned improvements to the roadway system for safety, to meet current roadway standards, or to improve roads that are functionally obsolete). Larger roadway projects that are inconsistent with the General Plan would need to conduct a VMT analysis and would need to consider providing mitigation if the project is forecasted to cause an increase in VMT.

Although VMT will be the performance measure for CEQA transportation studies, California jurisdictions may still require consideration of roadway operational analysis in the project approval process and may condition projects to provide roadway improvements. Guidelines are provided for the evaluation of the effect of projects on roadways, including the determination of required roadway improvements.

<u>Tulare County General Plan 2030 Update</u>

The following Tulare County General Plan 2030 Update policies for this resource apply to this Project:

- *LU-7.4 Streetscape Continuity* – wherein the County shall ensure that streetscape elements (e.g., street signs, trees, and furniture) maintain visual continuity and follow a common image for each community;

- *TC-1.13 Land Dedication for Roadways and Other Travel Modes* - As required by the adopted County Improvement Standards, the County shall require, where warranted, an irrevocable offer of dedication to the right-of-way for roadways and other travel modes, as part of the development review process;

- *TC-1.14 Roadway Facilities* - As part of the development review process, new development shall be conditioned to fund, through impact fees, tonnage fees, and/or other mechanism, the construction and maintenance of roadway facilities impacted by the project. As projects or locations warrant, construction or payment of pro-rata fees for planned road facilities may also be required as a condition of approval;

[4] California Public Resources Code. Section 21000 et seq. Title 14. Division 6. California Natural Resources Agency. Chapter 3. Section 15064.3, subdivision (a). Accessed June 2024 at: https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/2018_CEQA_FINAL_TEXT_122818.pdf

- *TC-1.15 Traffic Impact Study* - The County shall require an analysis of traffic impacts for land development projects that may generate increased traffic on County roads. Typically, projects generating over 100 peak hour trips per day or where LOS "D" or worse occurs, will be required to prepare and submit this study. The traffic impact study will include impacts from all vehicles, including truck traffic;

- *TC-1.16 County Level Of Service (LOS) Standards* wherein the County shall strive to develop and manage its roadway system (both segments and intersections) to meet a LOS of "D" or better in accordance with the LOS definitions established by the Highway Capacity Manual; and.

- *HS-1.9 Emergency Access* wherein the County shall require, where feasible, road networks (public and private) to provide for safe and ready access for emergency equipment and provide alternate routes for evacuation.

Project Impact Analysis

a) Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? Less Than Significant Impact.

This project would not conflict with any local or regional plan, ordinance or policy related to the transportation systems in Tulare County. Currently, Road 160 does not have bicycle or pedestrian facilities and the nearest existing transit stops to the project site is 5 miles away in northern Earlimart [Tulare County Regional Transit Agency (TCRTA)]. Further, adding 32 trips/day, as identified in subsection **b)** below, would result in a Less Than Significant Impact to existing plans, ordinances or policies to the circulation system.

b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)? Less Than Significant Impact.

According to the operating statement provided by Treehouse California Almond, LLC, the project would add eight (8) employees to their operation. Assuming each employee drives alone, this would result in 16 trips (8 in and 8 out) per day. If each employee left and returned for lunch, it would result in 16 additional trips for a total of 32 net new trips throughout the day. Tulare County SB 743 Guidelines states that projects that generate less than 500 trips per day can be presumed to have a Less Than Significant Impact.

c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses, (e.g., farm equipment)? Less Than Significant Impact.

Construction of the proposed Project may require the delivery of construction-related equipment and facility materials, some that may require transport by oversize vehicles. The use of oversize vehicles during construction can create a hazard to the public by limiting motorist views on roadways and by the obstruction of space. Construction-related oversize vehicle loads must comply with permit-related and other requirements of the California Vehicle Code and the California Streets and Highway Code. CHP escorts may be required at the discretion of Caltrans and the County and would be detailed in respective oversize load permits. Due to the rural nature of the area roads and flat terrain, construction-related vehicles are not anticipated to incur hazards traveling to and from the Project site. Furthermore, the proposed Project would not include a design feature or use vehicles with incompatible uses that would create a hazard on the roadways surrounding the Project site. The proposed Project would result in a Less Than Significant Impact.

d) Would the project result in inadequate emergency access? Less Than Significant Impact.

As the project will utilize existing driveways, access to emergency vehicles will remain the same, i.e., via Road 160. Therefore, there will be a Less Than Significant Impact on emergency access.

XVIII. TRIBAL CULTURAL RESOURCES

Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	☐	☒	☐	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	☒	☐	☐

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88’ x 88’ x 19’) will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280’ x 87’ x 13’) where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

  The clarifier (24’ diameter x 12’) will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466’ x 280’ x 27’) for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

  A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the High-Density Polyethylene (HDPE) double liner pond design on July

21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

- **Phase 2:** Construction of a 5,176 sq. ft. canopy, a 6,263 sq. ft. fumigation room building with a 1,127 sq. ft. canopy for a total of 7,390 sq. ft., and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Tribal Cultural Resources, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Federal

The National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966, which has been amended several times, was passed to acknowledge the importance of protecting our nation's heritage from federal development. The NHPA sets federal historic preservation policy, establishes partnerships between the Federal government and states and the Federal government and tribes, creates the **National Register of Historic Places** and **National Historic Landmarks** programs, mandates the selection of qualified **State Historic Preservation Officers**, establishes the **Advisory Council on Historic Preservation**, charges Federal agencies with stewardship, and establishes the role of **Certified Local Governments** within the states.

Title I of the statute established the National Register of Historic Places to create a national listing of historic properties (districts, sites, buildings, structures, and objects) significant in American history, architecture, archeology, engineering, and culture. Title I also expanded the level of Federal concern to include the preservation of historic properties of local or State significance. It established State Historic Preservation Office as partners in the national historic preservation program and also describes how local governments or Indian tribes may, in certain circumstances, carry out SHPO functions.

Implementation of Section 106 of Title I has been critical to archeology and archeological preservation in the United States. Section 106 requires federal agencies to take into account the effects of their actions on historic properties by identifying historic properties, assessing adverse effects, and resolving those adverse effects. The process is initiated by the federal agency, and includes comment and input from stakeholders at the local and State levels, as well as the Advisory Council on Historic Preservation. After the procedures for implementing Section 106 were established (6 CFR 800), the field of professional archeology expanded throughout governments and the private sector to meet the need for compliance.

Section 110 requires all federal agencies to establish -- in conjunction with the Secretary of the Interior -- their own historic preservation programs for the identification, evaluation, and protection of historic properties, including archeological properties. Determinations of Eligibility for the National Register are established during Phase II archeological surveys.

Title II

Title II of NHPA establishes the Advisory Council on Historic Preservation, an independent Federal agency. The Council and its staff advise Federal agencies on their roles in the national historic preservation program, especially Section 106. The ACHP also develops advice and training to support Federal agencies.

Title IV

Title IV of the statute established the National Center for Preservation Technology and Training, part of the National Park Service. NCPTT contributes research and training to archeological preservation practice.

Statute and regulation texts:

- **National Historic Preservation Act** (16 U.S. Code 470 et seq.), statute text.
- **National Register of Historic Places** (36 CFR 60), regulation text.
- **Procedures for State, Tribal, and Local Government Historic Preservation Programs** (36 CFR 61), regulation text.
- **Determinations of Eligibility for Inclusion in the National Register of Historic Places** (36 CFR 63), regulation text.
- **Protection of Historic Properties** (36 CFR 800), regulation text.[1]

State

California State Office of Historic Preservation (OHP)

"The California State Office of Historic Preservation (OHP) is responsible for administering federally and state mandated historic preservation programs to further the identification, evaluation, registration and protection of California's irreplaceable archaeological and historical resources under the direction of the State Historic Preservation Officer (SHPO), a gubernatorial appointee, and the State Historical Resources Commission"[2]

"OHP's responsibilities include:

- Identifying, evaluating, and registering historic properties;
- Ensuring compliance with federal and state regulatory obligations;
- Encouraging the adoption of economic incentives programs designed to benefit property owners;
- Encouraging economic revitalization by promoting a historic preservation ethic through preservation education and public awareness and, most significantly, by demonstrating leadership and stewardship for historic preservation in California."[3]

[1] U.S. Department of the Interior. National Park Service. Accessed March 2024 at: National Historic Preservation Act of 1966 - Archeology (U.S. National Park Service) (nps.gov)

[2] Office of Historic Preservation. Mission and Responsibilities. Accessed March 2024 at: http://ohp.parks.ca.gov/?page_id=1066.

[3] Ibid.

"**Architectural Review** and **Incentives**

OHP administers the **Federal Historic Preservation Tax Incentives Program** and provides architectural review and technical assistance to other government agencies and the general public in the following areas:

- Interpretation and application of the Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties;
- General assistance with and interpretation of the California Historical Building Code and provisions for qualified historic properties under the Americans with Disabilities Act;
- Developing and implementing design guidelines;
- Preservation incentives available for historic properties;
- Sustainability and adaptive reuse of historic properties."[4]

"**Information Management**

The California Historical Resources Information System (CHRIS) includes the statewide Historical Resources Inventory (HRI) database maintained by OHP and the records maintained and managed, under contract, by twelve independent regional Information Centers (ICs). The ICs provide archeological and historical resources information, on a fee-for-service basis, to local governments and individuals with responsibilities under the National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), and California Environmental Quality Act (CEQA), as well as to the general public. ICs collect and maintain information on historical and archaeological resources which was not reviewed under a program administered by OHP."[5]

Criteria for Designation

- Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States (Criterion 1).
- Associated with the lives of persons important to local, California or national history (Criterion 2).
- Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values (Criterion 3).
- Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation (Criterion 4).[6]

A historical resource may be eligible for inclusion in the California Register of Historical Resources (CRHR) if it:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated with the lives of persons important to our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history."[7]

Native American Heritage Commission

"The Native American Heritage Commission (NAHC), created in statute in 1976, is a nine-member body, appointed by the Governor, to identify and catalog cultural resources -- ancient places of special religious or social significance

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[4] Op. Cit.
[5] Op. Cit. Criteria for Designation. Accessed March 2024 at: California Register of Historical Resources
[6] Op. Cit.
[7] Office of Historic Preservation. Mission and Responsibilities. Accessed March 2024 at: http://ohp.parks.ca.gov/?page_id=1066

to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California. The NAHC is also charged with ensuring California Native American tribes' accessibility to ancient Native American cultural resources on public lands, overseeing the treatment and disposition of inadvertently discovered Native American human remains and burial items, and administering the California Native American Graves Protection and Repatriation Act (CalNAGPRA), among many other powers and duties."[8]

Tribal Consultation Requirements: AB 52 (Gatto, 2014)

"The Public Resources Code has established that "[a] project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment." (Pub. Resources Code, § 21084.2.).

To help determine whether a project may have such an effect, the Public Resources Code requires a lead agency to consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a Project. That consultation must take place prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project. (Pub. Resources Code, § 21080.3.1.)

If a lead agency determines that a project may cause a substantial adverse change to tribal cultural resources, the lead agency must consider measures to mitigate that impact. Pub. Res. Code § 20184.3 (b)(2) provides examples of mitigation measures that lead agencies may consider to avoid or minimize impacts to tribal cultural resources."[9]

CEQA Guidelines: Archaeological Resources

Section 15064.5(c) of CEQA Guidelines provides specific guidance on the treatment of archaeological resources as noted below.[10][11]

(1) When a Project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subdivision (a).
(2) If a lead agency determines that the archaeological site is an historical resource, it shall refer to the provisions of Section 21084.1 of the Public Resources Code, and this section, Section 15126.4 of the Guidelines, and the limits contained in Section 21083.2 of the Public Resources Code do not apply.
(3) If an archaeological site does not meet the criteria defined in subdivision (a), but does meet the definition of a unique archeological resource in Section 21083.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c–f) do not apply to surveys and site evaluation activities intended to determine whether the Project location contains unique archaeological resources.
(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.

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[8] Native American Heritage Commission. Welcome. Accessed March 2024 at: http://nahc.ca.gov/.

Office of Planning and Research. Technical Advisory: AB 52 and Tribal Cultural Resources in CEQA (June 2017). Page 3. Accessed March 2024 at: https://www.opr.ca.gov/docs/20200224-AB_52_Technical_Advisory_Feb_2020.pdf

[10] Office of Historic Preservation. CEQA Basics. Accessed March 2024 at: https://ohp.parks.ca.gov/?page_id=21721.

[11] CEQA Guidelines, Section 15064.5 - Determining the Significance of Impacts to Archaeological and Historical Resources. Accessed March 2024 at: https://casetext.com/regulation/california-code-of-regulations/title-14-natural-resources/division-6-resources-agency/chapter-3-guidelines-for-implementation-of-the-california-environmental-quality-act/article-5-preliminary-review-of-projects-and-conduct-of-initial-study/section-150645-determining-the-significance-of-impacts-to-archaeological-and-historical-resources

CEQA Guidelines: Human Remains

Public Resources Code Sections 5097.94 and 5097.98 provide guidance on the disposition of Native American burials (human remains), and fall within the jurisdiction of the Native American Heritage Commission:[12]

(d) When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the Project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code Section 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any Items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission. Action implementing such an agreement is exempt from:
  (1) The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5).
  (2) The requirements of CEQA and the Coastal Act.

(e) In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:
  (1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
    (A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and
    (B) If the coroner determines the remains to be Native American:
      1. The coroner shall contact the Native American Heritage Commission within 24 hours.
      2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.
      3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or
  (2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.
    (A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.
    (B) The descendant identified fails to make a recommendation; or
    (C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

(f) As part of the objectives, criteria, and procedures required by Section 21082 of the Public Resources Code, a lead agency should make provisions for historical or unique archaeological resources accidentally discovered during construction. These provisions should include an immediate evaluation of the find by a qualified archaeologist. If the find is determined to be an historical or unique archaeological resource, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation should be available. Work could continue on other parts of the building site while historical or unique archaeological resource mitigation takes place.

[12] Op. Cit.

Local

<u>Tulare County General Plan 2030 Update</u>

The General Plan has a number of policies that apply to Projects within Tulare County. General Plan policies that relate to the Project are listed as follows:

- *ERM-6.1 Evaluation of Cultural and Archaeological Resources* wherein the County shall participate in and support efforts to identify its significant cultural and archaeological resources using appropriate State and Federal standards;

- *ERM-6.2 Protection of Resources with Potential State or Federal Designations* wherein the County shall protect cultural and archaeological sites with demonstrated potential for placement on the National Register of Historic Places and/or inclusion in the California State Office of Historic Preservation's California Points of Interest and California Inventory of Historic Resources;

- *ERM-6.3 Alteration of Sites with Identified Cultural Resources* which states that when planning any development or alteration of a site with identified cultural or archaeological resources, consideration should be given to ways of protecting the resources. Development can be permitted in these areas only after a site specific investigation has been conducted pursuant to CEQA to define the extent and value of resource, and Mitigation Measures proposed for any impacts the development may have on the resource;

- *ERM-6.4 Mitigation* which states that if preservation of cultural resources is not feasible, every effort shall be made to mitigate impacts, including relocation of structures, adaptive reuse, preservation of facades, and thorough documentation and archival of records;

- *ERM-6.9 Confidentiality of Archaeological Sites* wherein the County shall, within its power, maintain confidentiality regarding the locations of archaeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts;

- *ERM-6.10 Grading Cultural Resources Sites* wherein the County shall ensure all grading activities conform to the County's Grading Ordinance and California Code of Regulations, Title 20, § 2501 et. seq.

The intensive agricultural use of the Project site has continually been disturbed to the point that there are no evident surface Tribal cultural resources. However, as discussed below, mitigation measures are included in the unlikely event that Tribal cultural resources are encountered.

Project Impact Analysis

a)and b) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe? Less Than Significant Impact With Mitigation:

As noted previously, information provided by the Southern San Valley Historical Resources Information Center, at California State University, Bakersfield (Center) and the California Native American Heritage Commission Sacred Lands File search (included in Attachment "C" of this document) were used as the basis for determining that this proposed Project would result in a less than significant impact with mitigation. Although no cultural resources were identified within the proposed Treehouse California Almonds Expansion project area in the records search, there is a possibility that subsurface resources could be uncovered during proposed Project construction-related activities. In such an unlikely event, potentially significant impacts to previously unknown subsurface resources may occur. Also, to date, RMA one response(s) has/have been received from the tribes that were notified in compliance with AB 52 requirements through a list of potentially affected tribes provided by the NAHC. As such, it is not anticipated that Native American tribal cultural resources or remains will be found within the proposed Project area. However, **Mitigation Measures 5-1** through **5-3** are included in the unlikely event that Native American remains or tribal cultural resources are unearthed during any ground disturbance activities. **Mitigation Measures 5-1** through **5-3** would be implemented to reduce the potential level of impact to this resource as less than significant for resources listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or to a resource consider significant to a California Native American tribe. Therefore, the proposed Treehouse California Almonds Expansion project would result in a Less Than Significant Impact to Tribal Cultural Resources.

Mitigation Measures: See **Mitigation Measures 5-1** through **5-3** (which can be found in their entirety in Attachment "D" of this IS/MND)

Summary of Mitigation Measures:

5-1. Discovery.

5-2. Cessation of Work/Preservation/Treatment Plan/PRC § 21074.

5-3. Implementation of Health and Safety Code § 7050.5, CEQA Guidelines § 15064.5, PRC § 5097.98.

Therefore, implementation of Mitigation Measure 5-1 through 5-3 would result in a Less Than Significant Impact to Tribal cultural resources.

XIX. UTILITIES AND SERVICE SYSTEMS

Would the project:	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88' x 88' x 19') will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280' x 87' x 13') where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

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The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Utilities and Service Systems, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Federal

U.S. Environmental Protection Agency (U.S. EPA) - Federal Regulation Tile 40, Part 503

In 1993, the U.S. Environmental Protection Agency (U.S. EPA) promulgated Standards for the Use or Disposal of Sewage Sludge (Code of Federal Regulations Title 40, Part 503), which establish pollutant limitations, operational standards for pathogen and vector attraction reduction, management practices, and other provisions intended to protect public health and the environment from any reasonably anticipated adverse conditions from potential waste constituents and pathogenic organisms.

This part establishes standards, which consist of general requirements, pollutant limits, management practices, and operational standards, for the final use or disposal of sewage sludge generated during the treatment of domestic sewage in a treatment works. Standards are included in this part for sewage sludge applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator. Also included in this part are pathogen and alternative vector attraction reduction requirements for sewage sludge applied to the land or placed on a surface disposal site.

In addition, the standards in this part include the frequency of monitoring and recordkeeping requirements when sewage sludge is applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator. Also included in this part are reporting requirements for Class I sludge management facilities, publicly owned treatment works (POTWs) with a design flow rate equal to or greater than one million gallons per day, and POTWs that serve 10,000 people or more.[1]

Resource Conservation and Recovery Act (RCRA)[2]

Congress passed RCRA on October 21, 1976, to address the increasing problems the nation faced from our growing volume of municipal and industrial waste. RCRA, which amended the Solid Waste Disposal Act of 1965, set national goals for:

a) Protecting human health and the environment from the potential hazards of waste disposal.
b) Conserving energy and natural resources.
c) Reducing the amount of waste generated.
d) Ensuring that wastes are managed in an environmentally-sound manner
e) To achieve these goals, RCRA established three distinct, yet interrelated, programs:
f) The solid waste program, under RCRA Subtitle D, encourages states to develop comprehensive plans to manage nonhazardous industrial solid waste and municipal solid waste, sets criteria for municipal solid waste landfills and other solid waste disposal facilities, and prohibits the open dumping of solid waste.
g) The hazardous waste program, under RCRA Subtitle C, establishes a system for controlling hazardous waste from the time it is generated until its ultimate disposal — in effect, from “cradle to grave.”
h) The underground storage tank (UST) program, under RCRA Subtitle I, regulates underground storage tanks containing hazardous substances and petroleum products. RCRA banned all open dumping of waste, encouraged source reduction and recycling, and promoted the safe disposal of municipal waste. RCRA also mandated strict controls over the treatment, storage, and disposal of hazardous waste.

State

The Integrated Waste Management Act (Assembly Bill 939)

In 1989 the California legislature passed the Integrated Waste Management Act of 1989, known as AB 939. The bill mandates a reduction of waste being disposed: jurisdictions were required to meet diversion goals of 25% by 1995 and 50% by the year 2000. AB 939 also established an integrated framework for program implementation, solid waste planning, solid waste facility and landfill compliance.

State Water Quality Control Board

“The State Water Resources Control Board (State Water Board) was created by the Legislature in 1967. The joint authority of water allocation and water quality protection enables the State Water Board to provide comprehensive protection for California’s waters. The State Water Board consists of five full-time salaried members, each filling a different specialty position. Board members are appointed to four-year terms by the Governor and confirmed by the Senate. There are nine Regional Water Quality Control Boards (Regional Boards). The mission of the Regional Boards is to develop and enforce water quality objectives and implementation plans that will best protect the State's waters, recognizing local differences in climate, topography, geology and hydrology. Each Regional Board has seven part-time members appointed by the Governor and confirmed by the Senate. Regional Boards develop “basin plans” for their hydrologic areas, issue waste discharge requirements, take enforcement action against violators, and monitor water quality. The task of protecting and enforcing the many uses of water, including the needs of industry,

[1] National Archives and Records Administration. Code of Federal Regulations. Title 40: Protection of Environment Part 503: Standards for the Use of Disposal of Sewage Sludge. Accessed April 2024 at: https://www.ecfr.gov/current/title-40/chapter-I/subchapter-O/part-503?toc=1.
[2] United States Environmental Protection Agency. Summary of the Resource Conservation and Recovery Act. Accessed April 2024 at: https://www.epa.gov/laws-regulations/summary-resource-conservation-and-recovery-act ; then click on “EPA History: RCRA”.

agriculture, municipal districts, and the environment is an ongoing challenge for the State and Regional Water Quality Control Boards."[3]

Regional Water Quality Control Board (RWQCB)

"There are nine Regional Water Quality Control Boards (Regional Boards). The mission of the Regional Boards is to develop and enforce water quality objectives and implementation plans that will best protect the State's waters, recognizing local differences in climate, topography, geology and hydrology. Each Regional Board has seven part-time members appointed by the Governor and confirmed by the Senate. Regional Boards develop "basin plans" for their hydrologic areas, issue waste discharge requirements, take enforcement action against violators, and monitor water quality."[4]

The Regional Water Quality Control Board – Biosolids

In California, the beneficial reuse of treated municipal sewage sludge *(a.k.a.,* biosolids*)* generally must comply with the California Water Code in addition to meeting the requirements specified in Part 503 in Title 40 of the Code of Federal Regulations.

In July 2004, the State Water Resources Control Board adopted Water Quality Order No. 2004-12-DWQ (General Order) and certified a supporting statewide Programmatic Environmental Impact Report (PEIR).

The General Order incorporates the minimum standards established by the Part 503 Rule and expands upon them to fulfill obligations to the California Water Code. However, since California does not have delegated authority to implement the Part 503 Rule, the General Order does not replace the Part 503 Rule. The General Order also does not preempt or supersede the authority of local agencies to prohibit, restrict, or control the use of biosolids subject to their jurisdiction, as allowed by law.

Persons interested in seeking coverage under the General Order should contact the appropriate Regional Water Quality Control Board. Only applicants who submit a complete *Notice of Intent* (NOI), appropriate application fee, and are issued a Notice of Applicability by the executive officer of the appropriate Regional Water Quality Control Board are authorized to land apply biosolids at an agricultural, horticultural, silvicultural, or land reclamation site as a soil amendment under the General Order.

State Water Resources Control Board, Divisions of Drinking Water and Clean Water

Recycled water regulations are administered by both Central RWQCB and the California State Water Resources Control Board (SWRCB). The regulations governing recycled water are found in a combination of sources, including the Health and Safety Code, Water Code, and Titles 22 and 17 of the California Code of Regulations (CCR). Issues related to the treatment and distribution of recycled water are generally under the permitting authority of RWQCB and the Clean Water Division of the SWRCB.

State Water Resources Control Board Water Onsite Wastewater Treatment Systems (OWTS) Policy

"The purpose of this Policy is to allow the continued use of OWTS, while protecting water quality and public health. This Policy recognizes that responsible local agencies can provide the most effective means to manage OWTS on a routine basis. Therefore, as an important element, it is the intent of this policy to efficiently utilize and improve upon

[3] California State Water Boards Mission Statement. Accessed April 2024 at: http://www.waterboards.ca.gov/about_us/water_boards_structure/mission.html.
[4] Ibid.

where necessary existing local programs through coordination between the State and local agencies. To accomplish this purpose, this Policy establishes a statewide, risk-based, tiered approach for the regulation and management of OWTS installations and replacements and sets the level of performance and protection expected from OWTS. In particular, the Policy requires actions for water bodies specifically identified as part this Policy where OWTS contribute to water quality degradation that adversely affect beneficial uses."[5]

State NPDES General Construction Permit

The State NPDES General Construction Permit requires development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) that uses storm water "Best Management Practices" to control runoff, erosion and sedimentation from the site both during and after construction. The SWPPP has two major objectives: (1) to help identify the sources of sediments and other pollutants that affect the quality of storm water discharges; and (2) to describe and ensure the implementation of practices to reduce sediment and other pollutants in storm water discharges.

CalRecycle

CalRecycle (formerly the California Integrated Waste Management Board) governs solid waste regulations on the state level, delegating local permitting, enforcement, and inspection responsibilities to Local Enforcement Agencies (LEA). Regulations authored by CalRecycle (Title 14) were integrated with related regulations adopted by the State Water Resources Control Board (SWRCB) pertaining to landfills (Title 23, Chapter 15) to form CCR Title 27.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies, in addition to authorizing video franchises. In 1911, the CPUC was established by Constitutional Amendment as the Railroad Commission. In 1912, the Legislature passed the Public Utilities Act, expanding the Commission's regulatory authority to include natural gas, electric, telephone, and water companies as well as railroads and marine transportation companies. In 1946, the Commission was renamed the California Public Utilities Commission. It is tasked with ensuring safe, reliable utility service is available to consumers, setting retail energy rates, and protecting against fraud.

Local

Tulare County General Plan 2030 Update

As the Project will not utilize any new or expanded water, wastewater treatment or storm water drainage, natural gas, or telecommunications facilities, the applicable Tulare County General Plan 2030 Update policies for this resource are limited to the following for this resource item:

- *PFS-2.3 Well Testing* wherein the County shall require new development that includes the use of water wells to be accompanied by evidence that the site can produce the required volume of water without impacting the ability of existing wells to meet their needs;

- *PFS-5.4 County Usage of Recycled Materials and Products* wherein the County shall encourage all industries and government agencies in the County to use recycled materials and products where economically feasible*;*

[5] California State Water Resources Control Board. OWTS Policy. Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems. June 19, 2012. Accessed April 2024 at: https://www.waterboards.ca.gov/water_issues/programs/owts/docs/owts_policy.pdf.

- *PFS-5.5 Private Use of Recycled Products* wherein the County shall work with recycling contractors to encourage businesses to use recycled products and encourage consumers to purchase recycled products;

- *PFS-5.6 Ensure Capacity* wherein the County shall require evidence that there is adequate capacity within the solid waste system for the processing, recycling, transmission, and disposal of solid waste prior to approving new development;

- *PFS-5.7 Provisions for Solid Waste Storage, Handling, and Collection* wherein the County shall ensure all new development adequately provides for solid waste storage, screening, handling, and collection prior to issuing building permits;

- *PFS-5.8 Hazardous Waste Disposal Capabilities* wherein the County shall require the proper disposal and recycling of hazardous materials in accordance with the County's Hazardous Waste Management Plan*;*

- *PFS-9.1 Expansion of Gas and Electricity Facilities* wherein the County shall coordinate with gas and electricity service providers to plan the expansion of gas and electrical facilities to meet the future needs of County residents;

- *PFS-9.2 Appropriate Siting of Natural Gas and Electric Systems* wherein the County shall coordinate with natural gas and electricity service providers to locate and design gas and electric systems that minimize impacts to existing and future residents;

- *PFS-9.4 Power Transmission Lines* wherein the County shall work with the Public Utilities Commission and power utilities in the siting of transmission lines to avoid interfering with scenic views, historic resources, and areas designated for future urban development; and

- *PFS-9.3 Transmission Corridors* wherein the County shall work with the Public Utilities Commission and power utilities so that transmission corridors meet the following minimum requirements:
    1. Transmission corridors shall be located to avoid health impacts on residential lands and sensitive receptors, and
    2. Transmission corridors shall not impact the economic use of adjacent properties.

Project Impact Analysis

a) Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? Less Than Significant Impact.

Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

The two anaerobic ponds (88' x 88' x 19') will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280' x 87' x 13') where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

The clarifier (24’ diameter x 12’) will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466’ x 280’ x 27’) for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the HDPE double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

Direct rainfall onto the ponds was considered in the storm water volume calculations for the storage pond. A portion of storm water from the southwest plant entry area (driveway, parking, and roof) will be collected and pumped to the lined storage pond. This additional water will reduce the use of the agricultural well for crop irrigation and aid in ground water sustainability issues.

Approximately 434,600 ft2 of pavement and roof from the production area will have its rainfall directed to a sump which will pump it to the lined storage pond. The remainder of the rainfall onto the facility will remain separate from the wastewater and routed to a soil lined pond. Volumes calculated of the remaining stormwater are presented in Section 5.

This 434,600 ft2 of rainfall capture will be pumped separately from the wastewater and be routed directly to the lined storage pond bypassing the treatment ponds. Rainfall runoff factors for surfaced areas were used in storage calculations. A Less Than Significant Impact would occur, and no mitigation would be necessary.

Existing electric power, natural gas and telecommunications facilities have the necessary capacity to accommodate project expansion demand. Any construction or relocation of existing facilities would not cause significant impacts to current electric power, natural gas or telecommunication capacities.

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? Less Than Significant Impact.

The proposed Project site is located in the Tulare Lake Basin, an area significantly affected by overdraft. The Department of Water Resources (DWR) has estimated the groundwater by hydrologic region and for the Tulare Lake Basin. For the Tulare Lake Basin, the total overdraft is estimated at 820,000 acre-feet per year, the greatest overdraft projected in the State, and 56 percent of the Statewide total overdraft. This overdraft is due to many factors including reductions of surface supplies in recent years by Delta export restrictions, Endangered Species Act requirements, and other factors. The proposed Project site is located within the Tule Subbasin portion of the regional area and is within the Eastern Tule GSA Boundary.

Given the nature of the proposed Project, the proposed Project would not require substantial increased use in water consumption. Water usage and wastewater production are currently at 15,600,000 gallons (47.87-acre feet). Anticipated annual wastewater production for the proposed Project is 46,800,000 gallons (143.62-acre feet). This is an increase of 31,200,000 gallons (95.75-acre feet), which is a 300 percent increase.

78.19 acres were purchased for proposed water treatment ponds, land application and nutrient uptake of wastewater. Approximately 66 acres will be available for land application. Section 6.1, Page 7 of The Report of Waste Discharge Technical Report to Revise WDR R-5-2018-0066 Treehouse California Almonds, LLC, states that the proposed Land Application Area (LAA) crop rotation is corn silage in the summer and small grain silage such as wheat, triticale, barley, and mixes of each in the winter. Corn planted 5/15 would consume 24.5 inches of water, or 2.04-acre feet per acre per year. Wheat would consume 22.1 inches of water, or 1.84-acre feet per acre per year. This would total 46.6 inches of water, or 3.88-acre feet of water per acre per year. 3.88 X 66 acres = 256.08-acre feet (83,443,668 gallons) of water per year. The project would increase the amount of water consumption from the existing ag-related use by 208.21-acre feet (67,845,288 gallons) of water per year, which is an 81.31 percent increase.

The average surface water supply for the Pixley Irrigation District is 37,645-acre feet (2023 Municipal Service Review, Tulare County Irrigation Districts). The increase in water use is 208.21-acre feet. The project-related increase in water use would represent 0.55 percent of the water allocated to the Pixley Irrigation District from the Central Valley Project; groundwater is only used as a supplement to surface water rarely during infrastructure maintenance.

Consequently, the project would not result in excessive pumping of groundwater since the increase in water use would be less than one percent of the water supply for the Pixley Irrigation District. Sustainable water management practices, including irrigation at agronomic rates, water conservation measures, and monitoring water levels, would be carried out. Therefore, adequate water supply is expected to accommodate future development during normal, dry and multiple dry years. As a result, available water supply results in a Less Than Significant Impact.

c) Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? No Impact.

The Project site is located in a rural agricultural area where services such as community water, sewer, and wastewater treatment are not provided. The proposed Project is responsible for providing their own services through individual domestic wells, septic systems, and by managing the wastewater generated by their facility in such a way that it does not adversely impact the environment. So, there isn't a wastewater treatment provider that serves or may serve the project. As a result, there isn't a wastewater treatment provider to make an adequacy determination about having capacity to serve the proposed Project, which would result in No Impact.

d) Would the project generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? Less Than Significant Impact.

The solid waste generated by the Project will not be in excess of the capacity of the landfill that receives solid waste from the Project. The proposed expansion of the existing almond processing facility will continue selling almond hulls and shells for cattle feed. Non-compostable solid waste will continue being disposed of in a dumpster and removed weekly by a licensed waste hauler and recycled or discarded at a County landfill that has sufficient permitted capacity. Tulare County currently owns and operates two landfills and six transfer stations. The Tulare County Solid Waste Department manages solid waste in accordance with the Tulare County Integrated Waste Management Plan and is always seeking ways to provide its residents with the latest in recycling and waste disposal (https://tularecounty.ca.gov/solidWaste/about-us/). Programs include household hazardous waste disposal, electronics recycling, tire recovery, yard waste recycling, metal recycling and appliance recovery programs.

Section 1.1 on Page 1-1 of the Visalia Landfill Master Development Plan Draft Environmental Impact Report (https://tularecounty.ca.gov/rma/planning-building/environmental-planning/environmental-impact-reports/visalia-landfill-compost-and-biomass-conversion-facility/visalia-landfill-master-development-plan-eir-2001/) states that "The facility expansion would include: (1) the development and operation of a new Class III (municipal solid waste, no hazardous waste) WMU adjacent to the existing WMU, (2) demolition/recycling diversion area that would be located in the new entrance complex, and (3) a new entrance complex constructed at Avenue 328 (Figure 1.1-2). Based upon the amount of waste currently disposed of the project could extend the life of the facility by approximately 22 to 78 years. The project would be constructed to meet California Code of Regulations Title 27 landfill design requirements and would increase the permitted average daily tonnage from 570 tons per day (tpd) to 1,200 tpd. Ownership and operation of the new facilities would continue to be provided by the Solid Waste Division of the Tulare County Resource Management Agency (County).” [Note: Solid Waste is now part of Tulare County Health and Human Services Agency (HHSA)/Environmental Health Division].

In addition, the Project Description and Objectives contained on Page 2-2 of Chapter 2 of the Draft Environmental Impact Report for the Woodville Disposal Site Project (https://tularecounty.ca.gov/rma/projects/planning-projects/environmental-documents/woodville-landfill-expansion-project/draft-environmental-impact-report-for-woodville-disposal-site-woodville-landfill/) states that “The proposed Project includes the expansion of the existing 160-acre Woodville Disposal Site (or Woodville Landfill or landfill) by 240 acres; combined, the landfill would encompass an area of approximately 400 acres. The currently unused portion of the existing landfill is vacant, unproductive land, while the proposed Project expansion area is predominately under agriculturally productive row crops. The proposed Project is designed to anticipate and meet the demands/needs of increases in project solid waste disposal of the County for the next 55 years. It is anticipated that daily tonnage received, number of vehicles entering/exiting, landfill operations equipment, water usage, ancillary uses, etc., will not increase or decrease.” As a result, the anticipated landfill closure date would be extended by 50 years (to approximately 2074). Because the two existing landfills that are in Tulare County have sufficient capacity for the proposed Project, this would be a Less Than Significant Impact.

e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste? Less Than Significant Impact.

Solid waste disposal must follow the requirements of the contracted waste hauler, which follows federal, state, and local statues and regulations related to collection of solid waste. The proposed project would comply with all State and local waste diversion requirements including the Tulare County Integrated Waste Management Plan regarding recycling and waste disposal. The project will generate minor quantities of solid waste. For this reason, the impact is considered Less Than Significant Impact.

XX. WILDFIRES

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding, or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a new 644 square foot (sf) metal building; warehouse expansion consisting of a 4,966 sf canopy and two (2) 5,013 sf fumigation room buildings with two (2) 902 sf canopies totaling 5,915 sf each; relocation of an existing 750 sf scale house; and construction of a water treatment facility

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88’ x 88’ x 19’) will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280’ x 87’ x 13’) where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

  The clarifier (24’ diameter x 12’) will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466’ x 280’ x 27’) for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

  A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the HDPE double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

- **Phase 2:** Construction of a 5,176 sq. ft. canopy, a 6,263 sq. ft. fumigation room building with a 1,127 sq. ft. canopy for a total of 7,390 sq. ft., and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The facility currently operates two 10-hour shifts, four to five days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

The discussions regarding Environmental Setting, Regulatory Setting, CEQA requirements, Wildfires, etc.; contained in the Tulare County General Plan 2030 Update, Tulare County General Plan Background Report, and the Tulare County General Plan 2030 Update EIR are incorporated herein in their entirety. Where necessary and if available, additional site-specific facts, data, information, etc., are included in this discussion.

Regulatory Setting

Federal

None that apply to the Project.

State

Senate Bill 1241 (Kehoe, 2012)

"Wildfire: Senate Bill 1241 (Kehoe, 2012) required the Office of Planning and Research, the Natural Resources Agency, and CalFire to develop "amendments to the initial study checklist of the [CEQA Guidelines] for the inclusion of questions related to fire hazard impacts for projects located on lands classified as state responsibility areas, as defined in section 4102, and on lands classified as very high fire hazard severity zones, as defined in subdivision (i) of section 51177 of the Government Code." (Pub. Resources Code, § 21083.01 (emphasis added).) The Agency added several questions addressing this issue. Notably, while SB 1241 required the questions to address specific locations, it did not necessarily limit the analysis to those locations, and so the Agency posed the questions for projects located within "or near" those zones. Lead agencies will be best placed to determine precisely where such analysis is needed outside of the specified zones."[1]

"The safety elements of local general plans will also describe potential hazards, including: "any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence; liquefaction; and other seismic hazards ..., and other geologic hazards known to the legislative body; flooding; and wildland and urban fires." (Gov. Code § 65302(g)(1).) Hazards associated with flooding, wildfire and climate change require special consideration. (Id. at subd. (g)(2)-(g)(4).) Lead agencies must "discuss any inconsistencies between the Project and applicable

[1] MJLHMP. Page 70.

general plans" related to a project's potential environmental impacts in a project's environmental review. (State CEQA Guidelines § 15125(d).) Local governments may regulate land use to protect public health and welfare pursuant to their police power. (Cal. Const., art. XI, § 7; California Building Industry Assn. v. City of San Jose (2015) 61 Cal. 4th 435, 455 ("so long as a land use restriction or regulation bears a reasonable relationship to the public welfare, the restriction or regulation is constitutionally permissible.)"[2]

CAL FIRE - Tulare Unit Strategic Fire Plan

As summarized in the 2017 Tulare Multi-Jurisdictional Local Hazard Mitigation Plan (MJLHMP), "The Plan is a local road map to create and maintain defensible landscapes in order to protect vital assets. It seeks to reduce firefighting cost and property loss, increase public and firefighter safety, minimize wildfire risk to communities and contribute to ecosystem health. The Plan identifies pre-suppression projects including opportunities for reducing structural ignitability, and the identification of potential fuel reduction projects and techniques for minimizing those risks. The central goals that are critical to reducing and preventing the impacts of fire revolve around both suppression efforts and fire prevention efforts. The MJLHMP fire hazard analysis and fire related mitigation measures will be provided to Cal Fire to support the Tulare Unit Strategic Fire Plan."[3]

Cal Fire publishes Fire Hazard Severity Zone Maps for all regions in California, which can be viewed here. The fire hazard measurement used as the basis for these maps includes the speed at which a wildfire moves, the amount of heat the fire produces, and most importantly, the burning fire brands that the fire sends ahead of the flaming front. Lead agencies and project proponents can review the Cal Fire maps to determine whether a given project site will be subject to the new CEQA wildfire impacts analysis.

Local

Tulare County General Plan 2030 Update

The Project is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones. The following Tulare County General Plan 2030 Update policies could apply to this Project if it were located on sloped areas, fire hazards areas, lands susceptible to landslides, subsidence/settlement, contamination, and/or flooding; potential for wildland fires; etc.:

- *ERM-7.3 Protection of Soils on Slopes* wherein unless otherwise provided for in this General Plan, building and road construction on slopes of more than 30 percent shall be prohibited, and development proposals on slopes of 15 percent or more shall be accompanied by plans for control or prevention of erosion, alteration of surface water runoff, soil slippage, and wildfire occurrence;

- *HS-1.5 Hazard Awareness and Public Education* wherein the County shall continue to promote awareness and education among residents regarding possible natural hazards, including soil conditions, earthquakes, flooding, fire hazards, and emergency procedures;

- *HS-1.11 Site Investigations* wherein the County shall conduct site investigations in areas planned for new development to determine susceptibility to landslides, subsidence/settlement, contamination, and/or flooding; *HS-6.1 New Building Fire Hazards* - The County shall ensure that all building permits in urban areas, as well as areas with potential for wildland fires, are reviewed by the County Fire Chief;

[2] Ibid. Pages 38 and 39.
[3] Ibid Table 3-1: Legal & Regulatory Capabilities. 14.

- *HS-6.2 Development in Fire Hazard Zones* wherein the County shall ensure that development in extreme or high fire hazard areas is designed and constructed in a manner that minimizes the risk from fire hazards and meets all applicable State and County fire standards;

- *HS-6.3 Consultation with Fire Service Districts* wherein the County shall consult the appropriate fire service district in areas identified as subject to high and extreme fire hazard, for particular regulations or design requirements prior to issuance of a building permit or approval of subdivisions;

- *HS-6.5 Fire Risk Recommendations -* The County shall encourage the County Fire Chief to make recommendations to property owners regarding hazards associated with the use of materials, types of structures, location of structures and subdivisions, road widths, location of fire hydrants, water supply, and other important considerations regarding fire hazard that may be technically feasible but not included in present ordinances or policies;

- *HS-6.6 Wildland Fire Management Plans* wherein the County shall require the development of wildland fire management plans for projects adjoining significant areas of open space that may have high fuel loads;

- *HS-6.13 Restoration of Disturbed Land* wherein the County shall support the restoration of disturbed lands resulting from wildfires;

- *HS-6.14 Coordination with Cities* wherein the County shall coordinate with cities to develop cohesive fire safety plans with overlapping coverage;

- *HS-6.15 Coordination of Fuel Hazards on Public Lands* wherein the County shall work with local and Federal agencies to support efforts to reduce fuel related hazards on public lands.

Project Impact Analysis

a)- d) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan? Due to slope, would prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? Would the project Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? Expose people or structures to significant risks, including downslope or downstream flooding, or landslides, as a result of runoff, post-fire slope instability, or drainage changes? No Impact.

As noted earlier and summarized here, the proposed Project would result in the construction of 644 square foot building, warehouse expansion, relocating an existing 750 sf scale house, and construction of a water treatment facility of the Treehouse California Almond facility (Project). The Project site development area is located south of Avenue 72 and north of Avenue 64, and east and west of Road 160. The Project site is not in a State Responsibility Area.[4] The Project does not impair the implementation of any adopted emergency response plan or evacuation plan. The Project will not exacerbate wildfire risks or expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, due to slope, prevailing winds, and other factors. The Project will not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts

[4] CalFire. Accessed May 2024 at: State Responsibility Area (SRA) Viewer (arcgis.com)

to the environment.

The Project will not expose people or structures to significant risks, including downslope or downstream flooding, or landslides, because of runoff, post-fire slope instability, or drainage changes. Therefore, the proposed Project will result in no impact related to this resource. As it is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones high fire, the Project will not exacerbate wildfire risks or expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, due to slope, prevailing winds, and other factors. The new construction shall comply with all applicable current California Building Code and CFC standards (such as lighting, fire extinguishers, access/egress, etc.). All new construction would require the submittal of plans for fire department review and would be required to meet construction methods in accordance with Chapter 7A of the 2016 California Building Code. Therefore, there will be No Impact to the Wildfires resource.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

	Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal species, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects).	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

The proposed Project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88' x 88' x 19') will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280' x 87' x 13') where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

  The clarifier (24' diameter x 12') will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466' x 280' x 27') for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the High-Density Polyethylene (HDPE) double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

- **Phase 2:** Construction of a 5,176 sq. ft. canopy, a 6,263 sq. ft. fumigation room building with a 1,127 sq. ft. canopy for a total of 7,390 sq. ft., and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

Project Impact Analysis:

The analysis conducted in this Initial Study/Mitigated Negative Declaration results in a determination that with mitigation the Project will have a less than significant effect on the environment.

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal species, or eliminate important examples of the major periods of California history or prehistory? Less Than Significant With Mitigation.

The analysis contained in Item 4 Biological Resources concludes that this resource has the potential to be impacted and has included **Mitigation Measures 4-1 through 4-11**. Accordingly, the proposed Project will involve no potential for significant impacts due to degradation of the quality of the environment, substantial reductions in the habitat of a fish or wildlife species, causing a fish or wildlife population to drop below self-sustaining levels, threatening to eliminate a plant or animal community, reduction in the number or restriction of the range of a rare or endangered plant or animal.

The analyses contained in Items 5 Cultural Resources, 7 Geology/Soils (Paleontological Resources), and 18 Tribal Cultural Resources conclude the Project has potential to impact historical and/or cultural resources. The potential for impacts to historical, cultural (including tribal cultural resources), and paleontological resources from the construction and operation of the proposed Project will be mitigated to less than significant with incorporation of **Mitigation Measures 5-1** through **5-3** as contained in Items 5 Cultural Resources, 7 Geology/Soils (Paleontological Resources), and 18 Tribal Cultural Resources, and **Mitigation Measure 18-1** as contained in Item 18 Tribal Cultural Resources. Accordingly, the proposed Project will involve no potential for significant impacts due to elimination of important examples of the major periods of California history or prehistory. As such, the impact will be Less Than Significant With Mitigation for biological resources and Less Than Significant With Mitigation for cultural, geology/soil, and tribal cultural resources.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects). Less Than Significant Impact.

Projects considered in a cumulative analysis include those that would be constructed concurrently with the Project and those that would be in operation at the same time as the Project. The proposed Project would result in less than significant environmental impacts. The proposed Project involves an expansion to an existing almond processing facility including: 194,261 square feet of almond processing facilities; 18,590 square feet of solar canopy covered parking (111 spaces), a new ±7-acre wastewater treatment facility (WWTF), and expanded land application area for irrigation with treated process water. The Project is intended to provide diversity in the processes within the almond facility without an increase in the permitted volume of raw almonds received. With no increase in permitted volume, the Project will not result in additional heavy duty truck (haul) trips or increased vehicle miles traveled (VMT). As such, there would be little cumulative change within the Project vicinity. There are no other impacts related to construction or operation that would substantially impact any other concurrent construction programs that may be occurring around the Project area.

The majority of the potential impacts resulting from the Project will be short term, temporary, and intermittent occurring during Project construction-related activities; and with negligible impacts resulting from Project operation as discussed in the earlier environmental analysis. Because construction-related impacts are of a short duration, temporary, intermittent, and localized, they would have to occur concurrently and in proximity of other projects in order to have a cumulative impact. Construction-related impacts that are primarily associated with air quality, biological resources, noise, and traffic are not likely to act cumulatively with any other projects in a manner that would result in significant impacts.

Tulare County staff have determined that there are no projects that could have the potential to contribute to cumulative impacts. The Project was determined to have no impacts on Agricultural Resources, Land Use and Planning, Mineral Resources, Recreation, and Wildfire. Therefore, the Project will not result in considerable impacts in combination with the other similar construction projects. The following environmental impacts were determined to be less than significant and did not require mitigation: Aesthetics, Energy, Greenhouse Gases, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Population and Housing, Public Services, Transportation, and Utilities and Service Systems. As discussed earlier, the Project will result in less than significant impacts to Air Quality Biological Resources, Cultural Resources (including Tribal Cultural Resources) and Geology/Soils (Paleontological Resources) with incorporation/ implementation of mitigation measures identified earlier.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? Less Than Significant Impact With Mitigation.

The proposed Project will not result in substantial adverse effects on human beings, either directly or indirectly. Mitigation measures are provided to reduce the Project's potential effects on, Air Quality, Biological Resources, Cultural Resources, Geology/Soils (Paleontological Resources), and Tribal Cultural Resources to less than significant (see **Mitigation Measures 3-1, 4-1 through 4-11**, **5-1 through 5-3**, and **18-1**; respectively). No additional mitigation measures will be required. Therefore, implementation of the proposed Project would result in a Less Than Significant Impact.

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Governor's Office of Planning and Research. Technical Advisories: https://opr.ca.gov/ceqa/technical-advisories.html.

ATTACHMENT "B"

BIOLOGICAL RESOURCES EVALUATION TECHNICAL REPORT

RESOURCE MANAGEMENT AGENCY

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REED SCHENKE, DIRECTOR

MICHAEL WASHAM, ASSOCIATE DIRECTOR

TECHNICAL MEMORANDUM
BIOLOGICAL RESOURCES EVALUATION

DATE: June 17, 2024

TO: Gary Mills, Chief Environmental Planner

FROM: Brenda Alcantar, Planning Technician I

SUBJECT: Biological Resources Evaluation for Treehouse California Almonds PSP 23-064, CEQ 23-005

PROJECT DESCRIPTION

The Project proponent, Treehouse California Almonds, sells a full range of roasted and manufactured almonds, including blanched whole, sliced, and diced almonds, almond meal, almond butter, and natural whole almonds. The almonds are hulled and shelled in the Treehouse Almonds plant near Delano in Kern County. This shelled raw product is then trucked to the Earlimart site for processing. The proposed project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88' x 88' x 19') will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280' x 87' x 13') where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

  The clarifier (24' diameter x 12') will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466' x 280' x 27') for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the High Density Polyethylene (HDPE) double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

- **Phase 2:** Construction of a 5,176 sq. ft. canopy, a 6,263 sq. ft. fumigation room building with a 1,127 sq. ft. canopy for a total of 7,390 sq. ft., and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

PROJECT LOCATION

The project site contains two separate sites and is located northeast community of Earlimart at 6914 Road 160, Earlimart, CA 93219. The project is comprised of Tulare County Assessor Parcels 319-060-019, 022 & 037 (northern site) and 318-290-005 & 006 (southern site). The northern site is located south of Avenue 72 and east of Road 160. The southern site is located north of Avenue 64 and west of Road 160. (see Attachment A).

Assessor Parcel Number(s):	318-290-005 & 006; 319-060-019, 022, & 037 (see Attachment A)
USGS 7.5-minute Quadrangle):	Sausalito School (see Attachment C)
Surrounding Quadrangles:	(Tulare County) Tipton NW, Woodville, Porterville, Pixley, Ducor, Delano West, Delano East (Kern County) Richgrove (see Attachment C)
Public Land Survey System:	Section 19 & 24, Township 23 South, Range 25 & 26 East, Mount Diablo Base and Meridian
Latitude/Longitude:	35° 54’ 49.26” N / 119° 12’ 52.94” W

BIOLOGICAL RESOURCES DATABASE SEARCH

The most recent California Department of Fish and Wildlife's California Natural Diversity Database (CNDDB), RareFind 5 and Biogeographic Information and Observation System (BIOS) mapping applications were accessed on March 11, 2024.[1,2]

Based on the information in the CNDDB and BIOS, there are 41 special status species and 3 natural communities recorded within the 9-quadrangle project area (see Attachment G). These species include: 17 plant species; 1 invertebrate species; 6 insect species; 1 amphibian species, 5 reptile species; 1 fish species; 4 bird species; and 6 mammal species.

The CNDDB and BIOS indicated that there are 15 special status species and 1 natural community, Northern Claypan Vernal Pool, recorded within the Sausalito School quadrangle (see Attachment F). These species include: 9 plant species; 1 amphibian species, 1 invertebrate species, 1 reptile species; 1 bird species; and 2 mammal species.

The results from the CNDDB and BIOS also indicated that there are 5 special status species recorded within half a mile of the project site (see Attachment E). These species include: 3 plant species; 1 reptile species; and 1 bird species. These species are identified as: *Agelaius tricolor* (tricolored blackbird), *Atriplex subtilis* (subtle orache), *Delphinium recurvatum* (recurved larkspur), *Gambelia sila* (blunt-nosed leopard lizard), *Lasthenia chrysantha* (alkali-sink goldfields) (see Attachment E).

However, among these species, three (3) special status species, namely the subtle orache, recurved larkspur, and alkali-sink goldfields, have historically been observed within the project site and adjacent parcels (see Attachment D). According to the CNDDB data, subtle orache is categorized as 'Presumed Extant', recurved larkspur is labeled as 'Extirpated', and alkali-sink goldfields is classified as 'Possibly Extirpated'. 'Presumed Extant' indicates that the occurrence is assumed to still exist until evidence proves otherwise to the CNDDB. 'Possibly Extirpated' suggests that reports of habitat destruction or population loss have been submitted to the CNDDB, but uncertainties remain regarding the element's current existence. 'Extirpated' is applied when there has been no sighting of the element for an extended period or when its habitat at the site has been destroyed.[3] The most recent site year recorded for the three species was in 1975.

To ensure the project will have a less than significant impact on special status species, the following mitigations measure requiring pre-construction surveys will be implemented.

Pre-construction Surveys

BIO-1: ***(Pre-construction Survey – Plant Species)*** A qualified biologist/botanist shall conduct pre-construction surveys for special status plant species in accordance with the California Department of Fish and Wildlife (CDFW) *Protocols for Surveying and Evaluating Impacts*

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[1] California Department of Fish and Wildlife. Biogeographic Information and Observation System (BIOS). Accessed March 11, 2024, at: https://wildlife.ca.gov/Data/BIOS.

[2] California Department of Fish and Wildlife. CDFW BIOS Viewer. Accessed March 11, 2024, at: https://apps.wildlife.ca.gov/bios6/.

[3] California Department of Fish and Wildlife. Metadata Description of CNDDB fields (see Presence). Accessed June 24, 2024, at: https://map.dfg.ca.gov/rarefind/view/RF_FieldDescriptions.htm#:~:text=Presumed%20Extant%3A%20The%20most%20common,is%20received%20by%20the%20CNDDB.

to Special Status Native Plant Populations and Natural Communities (2009). This protocol includes identification of reference populations to facilitate the likelihood of field investigation occurring during the appropriate floristic period. Surveys should be timed to coincide with flowering periods for species that could occur (March-May). In the absence of protocol-level surveys being performed, additional surveys may be necessary.

- If special status plant species are not identified during pre-construction surveys, no further action is required.
- If special status plant species are detected during pre-construction surveys, the biologist/botanist will supervise establishment of a minimum 50-foot no disturbance buffer from the outer edge of the plant population. If buffers cannot be maintained, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be contacted immediately to identify the appropriate minimization actions to be taken as appropriate for the species identified and to determine incidental take permitting needs.

BIO-2: ***(Pre-construction Survey – Animal Species)*** A qualified biologist will conduct pre-construction surveys during the appropriate periods for special status animal species in accordance with the CDFW guidance and recommendations identified below (see measures BIO-4 and BIO-9). In the absence of protocol-level surveys being performed, additional surveys may be necessary. If special status animal species are not identified during pre-construction surveys, no further action is required. If special status animal species are detected during pre-construction surveys, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be contacted immediately to identify the appropriate avoidance and minimization actions to be taken as applicable for the species identified and to determine incidental take permitting needs.

Measures to be Implemented if Special Status Species are Identified

To ensure the proposed project will have a less than significant impact on special status species within the project area, the following mitigations measures will be implemented if special status species are identified during pre-construction surveys.

All Identified Special Status Species

BIO-3: ***(Employee Education Program***) Prior to the start of construction or decommissioning, the applicant shall retain a qualified biologist/botanist to conduct a tailgate meeting to train all construction staff that will be involved with the project on the special status species that occur, or may occur, on the project site. This training will include a description of the species and its habitat needs; a report of the occurrence of the species in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during project construction and implementation.

Nesting Raptors and Migratory Birds (including Loggerhead Shrike and Tricolored Blackbird)

BIO-4: ***(Pre-construction Survey)*** If project activities must occur during the nesting season (February 1-August 31), the project proponent and/or their contractor is responsible for ensuring that implementation does not violate the Migratory Bird Treaty Act or relevant Fish and Game Code. A qualified biologist shall conduct pre-construction surveys for active bird nests within 10 days of the onset of these activities. Nest surveys will include all accessible areas on the project site and within 250 feet of the site for tricolored blackbird, loggerhead shrike and other migratory birds, and within 500 feet for all nesting raptors and migratory birds; with the exception of Swainson's hawk. The Swainson's hawk survey will utilize the Swainson's Hawk Technical Advisory Committee *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (2000) methodology and will extend to ½-mile outside of work area boundaries. Inaccessible areas will be scanned with binoculars or spotting scope, as appropriate. If no nesting pairs are found within the survey area, no further mitigation is required.

BIO-5: ***(Avoidance)*** In order to avoid impacts to nesting birds, construction will occur, where possible, outside the nesting season (between September 1st and January 31st).

BIO-6: ***(Buffers)*** If active nests are found within the survey areas a qualified biologist will establish appropriate no-disturbance buffers based on species tolerance of human disturbance (for example, for tricolored blackbird, no less than 60 feet), baseline levels of disturbance, and barriers that may separate the nest from construction disturbance. These buffers will remain in place until the breeding season has ended or until the qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.

BIO 7: ***(Compensatory Mitigation)*** If Swainson's hawks are determined to be nesting within ½ mile of alfalfa fields, wheat fields, or other high-quality foraging habitat on an individual project site, as determined by nesting surveys conducted during the nesting season immediately prior to the start of construction (Mitigation Measure 3.3.1a), loss of foraging habitat will be compensated through the purchase of credits from an approved mitigation bank, the preservation of on-site habitats, or the acquisition and preservation of off-site habitats. Habitat suitable for the Swainson's hawk will be preserved at a ratio of one acre of habitat preserved for each acre of habitat permanently disturbed by project construction within ½ mile of the nest. The preservation lands will be protected in perpetuity by conservation easement.

BIO-8: ***(Mortality Reporting)*** The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be contacted immediately by phone and in writing within three days in the event of accidental death or injury of a special status bird species during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.

Blunt Nosed-Leopard Lizard

BIO-9: ***(Pre-construction Survey)*** A qualified biologist shall conduct a pre-construction survey to determine if suitable habitat for blunt-nosed leopard exists on the project site within 30 days of the onset of project-related construction activities. If suitable habitat is identified, the qualified biologist shall conduct further surveys utilizing the CDFW *Approved Survey Methodology for the Blunt-Nosed Leopard Lizard* (2019) methodology. If no blunt-nosed leopard lizards are identified within the survey area, no further mitigation is required.

BIO-10: ***(Avoidance and Minimization)*** Construction activities shall be carried out in a manner that minimizes disturbance to blunt-nosed leopard lizard. If a blunt-nosed leopard lizard is detected during pre-construction surveys, prior to the onset of project-related construction activities the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be contacted to determine the best course of action and if required, to initiate the take authorization/permit process.

BIO-11: ***(Mortality Reporting)*** The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be contacted immediately by phone and in writing within three days in the event of accidental death or injury of a blunt-nosed leopard lizard during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.

JURISDICTIONAL WATERS

Waters of the State

"Waters of the State" is a term that encompasses all the various aquatic resources (surface or groundwater, wetlands, and Waters of the U.S.) within the State regulated by various state agencies. It includes rivers, streams, lakes, wetlands, mudflats, vernal pools, and other aquatic sites.

Deer Creek flows in a southwest direction such that it is located approximately one (1) mile north of and two (2) miles west of the project site (see Attachment A). This segment of Deer Creek is located within the jurisdictional boundaries of the Pixley Irrigation District. Based on the BIOS mapping data, this creek is a jurisdictional water of the State. There are no rivers, streams, lakes, mudflats, or vernal pools within the site itself. An existing stormwater ponding basin will be filled in to accommodate the project; however, another basin is currently being constructed within the same APN 319-060-037. The project also includes the construction of a three-pond wastewater treatment system which is regulated by the State Water Resources Control Board (SWRCB).

Waters of the U.S.

"Waters of the U.S." includes essentially all surface waters such as all navigable waters (lakes, rivers, streams, intermittent streams) and their tributaries, all interstate waters and their tributaries, all wetlands adjacent to these waters, and all impoundments of these waters.

The most recent United States Geological Survey (USGS) National Water Information System (NWIS) and United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping applications were accessed on March 11, 2024.[4,5] Other than Deer Creek to the north of the project site, the NWIS mapper does not identify any other water bodies within a 1-mile vicinity (see Attachment H). The NWI mapper identifies many freshwater ponds and emergent wetlands within the 1-mile project vicinity. Freshwater ponds classified as PUBFx[6] were recorded on the northwest corners of APNs 319-060-037 and 318-290-005 and along the eastern border of APN 319-060-022 (see Attachment I), however, as of 2017 the tentative parcel map, PPM 16-043 was finalized with no mentioned of the wetland existing. Since 2017 the construction of metal buildings and a warehouse have been completed through the use of building permits and special use permits.

[4] United States Geological Survey. National Water Information System: Mapper. https://maps.waterdata.usgs.gov/mapper/index.html
[5] United States Fish and Wildlife Service. National Wetlands Inventory: Mapper. https://www.fws.gov/wetlands/data/mapper.HTML
[6] The NWI Mapper, defines classification PUBFx as: Palustrine, Unconsolidated Bottom, Freshwater, Excavated.

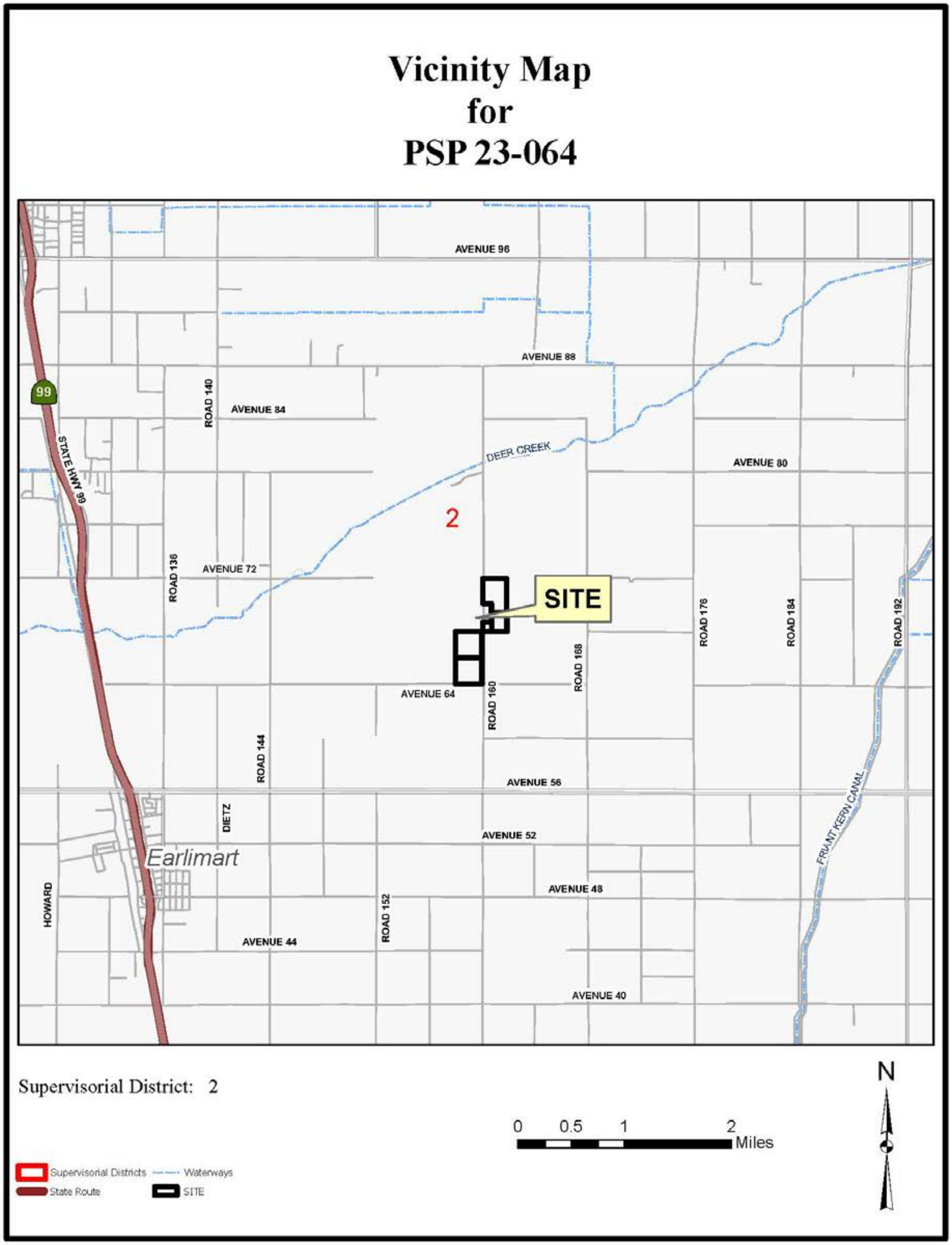
The project also includes the construction of a three-pond wastewater treatment system; however, these ponds are not considered Waters of the U.S. The project must comply with all applicable SWRCB rules and regulations, including Best Management Practices (BMP), as well as Waste Discharge Requirements (WDR), National Pollutant Discharge Elimination System (NPDES), and Stormwater Pollution Prevention Plan (SWPPP) permits. Compliance with the State's permitting requirements will reduce impacts, if any, to biological species, riparian habitats, or other protected wetlands. As such, mitigation measures that would reduce impacts to jurisdictional waters have not been proposed, nor would any measures be warranted.

SUMMARY AND CONCLUSION

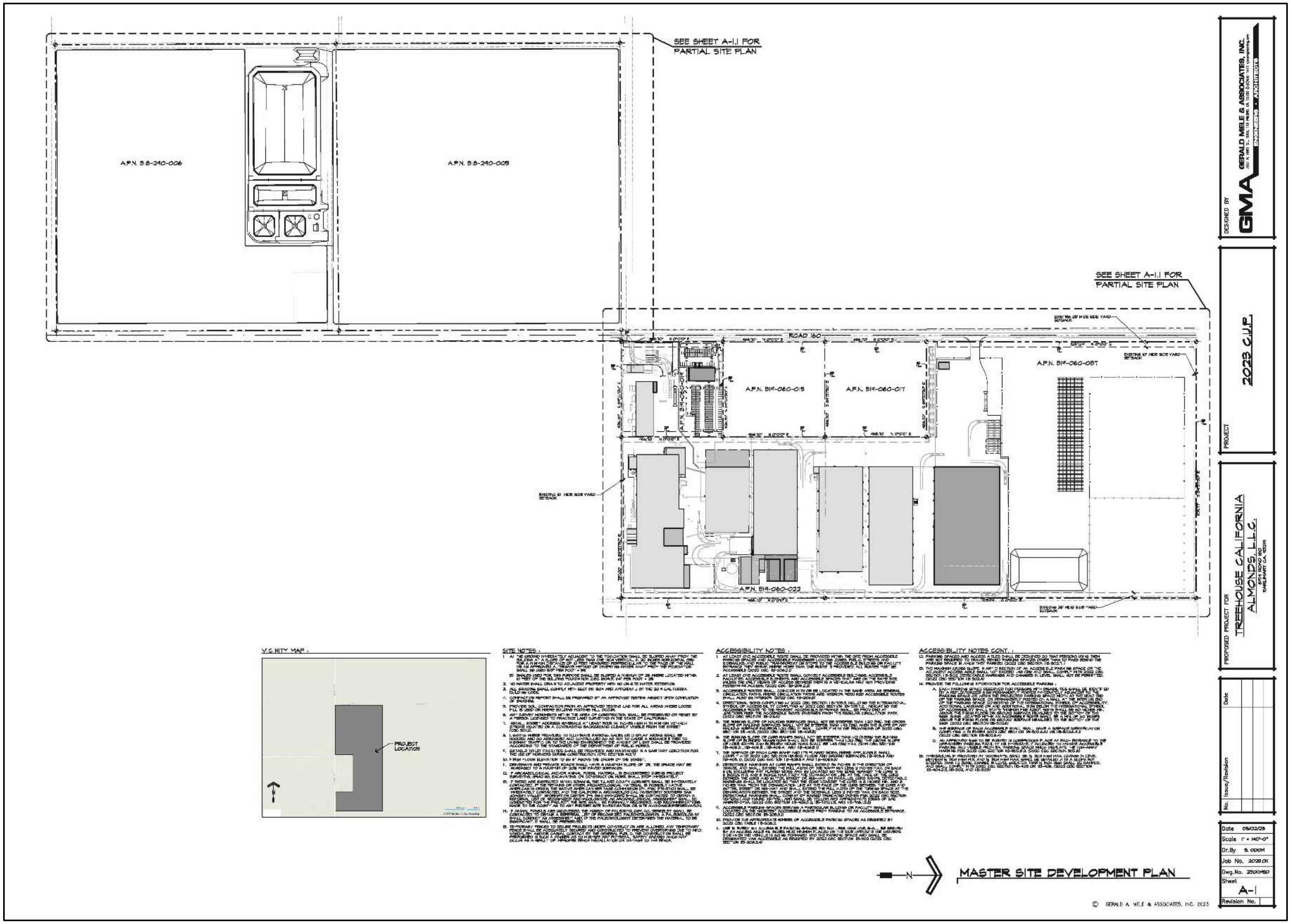
Three (3) special status species have been recorded within the project site and the immediate vicinity (i.e., the parcels adjacent to the site); five (5) special status species have been recorded within one-half (0.5) a mile of the project site. As such, Mitigation Measures BIO-1, BIO-2, BIO-4, and BIO-9, which require pre-construction surveys for special status plant and animal species, respectively, will be implemented prior to the onset of project-related activities. If no special status species are identified within the project site during pre-construction surveys, no further action would be required; however, in the event that special status species are identified, Mitigation Measures BIO-3 through BIO-11 would be implemented as appropriate and in consultation with the CDFW and/or USFWS. Specifically, Mitigation Measure BIO-3 would apply to all identified special status species (plant or animal); Mitigation Measures BIO-4 through BIO-8 would apply to nesting raptors and migratory birds, including loggerhead shrike and tricolored blackbird; and Mitigation Measures BIO-9 and BIO-11 would apply to blunt-nosed leopard lizard. With implementation of Mitigation Measures BIO-1 through BIO-11, impacts to special status plant and animal species will be less than significant with mitigation.

No riparian habitats or other natural communities are located within the Project site. With implementation of a condition of approval requiring compliance with the applicable SWRCB requirements, including BMP, and submittal of a SWPPP and WDR permits, and submittal of a grading and drainage plan to the Tulare County RMA Engineering Branch, impacts to onsite, adjacent and nearby wetlands will be less than significant.

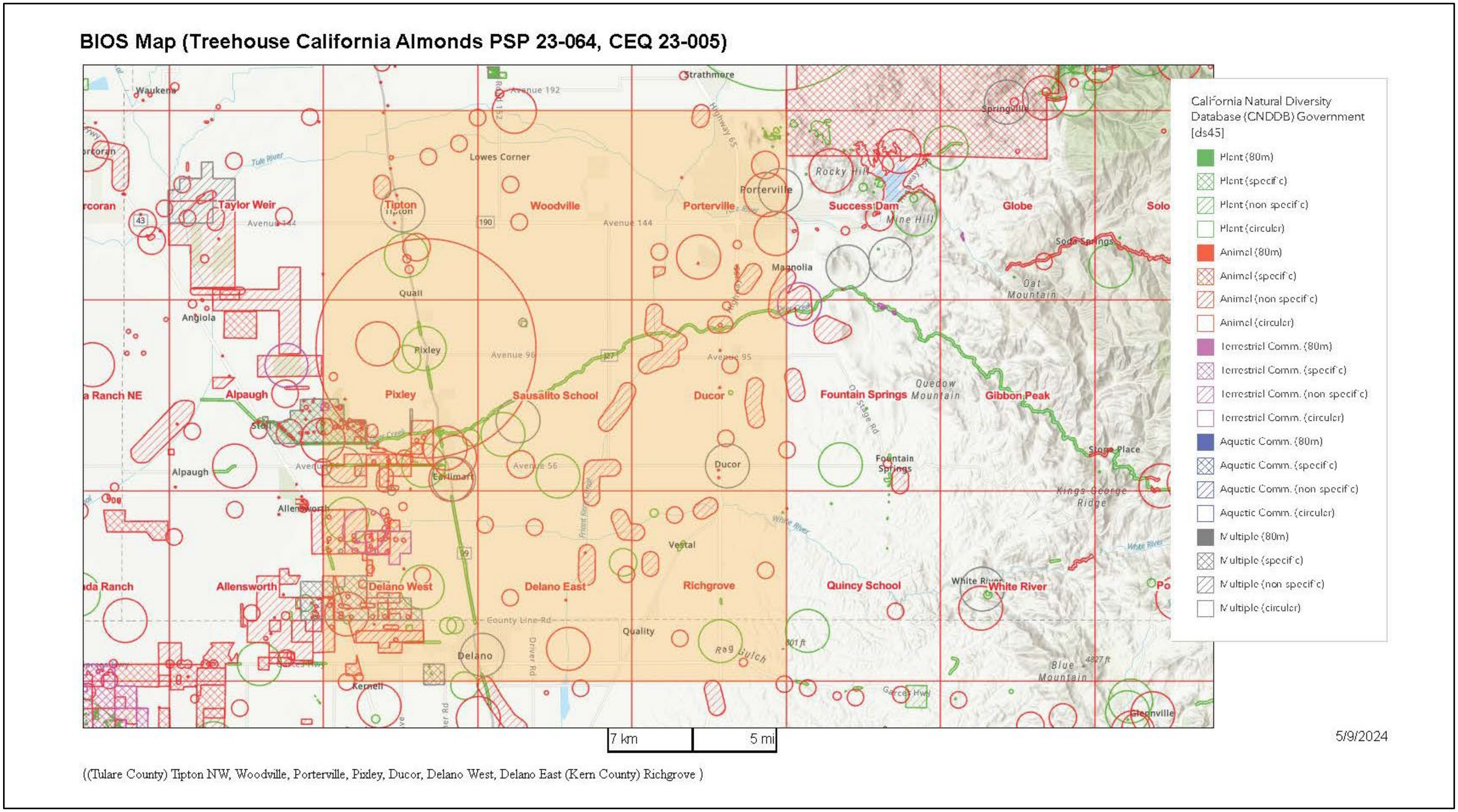
Attachment A. Project Vicinity



Attachment B. Site Map



Attachment C. 9-Quad Project Area Map



Attachment D. Project Site Species List

(Species recorded within the Project boundaries)

OBJECTID	Scientific_Name	Common_Name	Element_Code	Occ_Number	MAPNDX	EONDX	Key_Quad_Code	Key_Quad_Name	Key_County_Code	Accuracy	Presence	Occ_Type	Occ_Rank	Sensitive	Site_Date	Elm_Date	Owner_Management	Federal_Status	State_Status	Global_Rank	State_Rank	Rare_Plant_Rank	CDFW_Status	Other_Status	Symbology	Taxon_Group	GlobalID
60273	Atriplex subtilis	subtle orache	PDCHE042T0	15	39014	34021	3511982	Sausalito School	TUL	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	N	19750711	19750711	UNKNOWN	None	None	G1	S1	1B.2			104	Dicots	4b9c5d04-227d-46dc-bacf-8803a4045b25
88019	Lasthenia chrysantha	alkali-sink goldfields	PDAST5L030	9	82166	118492	3511982	Sausalito School	TUL	1 mile	Possibly Extirpated	Natural/Native occurrence	None	N	19730320	19730320	UNKNOWN	None	None	G2	S2	1B.1			804	Dicots	864e05c5-f6a1-42ca-b73c-2e86b89c0113
50644	Delphinium recurvatum	recurved larkspur	PDRAN0B1J0	96	82166	83129	3511982	Sausalito School	TUL	1 mile	Extirpated	Natural/Native occurrence	None	N	19730320	19730320	UNKNOWN	None	None	G2?	S2?	1B.2		BLM_S; SB_SBBG	804	Dicots	a0b62114-04ef-4ae5-856d-10213a4a72b2

Attachment E. Project Vicinity Species List

(Species recorded within half a mile of Project site)

OBJECTID	Scientific_Name	Common_Name	Element_Code	Occ_Number	MAPNDX	EONDX	Key_Quad_Code	Key_Quad_Name	Key_County_Code	Accuracy	Presence	Occ_Type	Occ_Rank	Sensitive	Site_Date	Elm_Date	Owner_Management	Federal_Status	State_Status	Global_Rank	State_Rank	Rare_Plant_Rank	CDFW_Status	Other_Status	Symbology	Taxon_Group	GlobalID
60273	Atriplex subtilis	subtle orache	PDCHE042T0	15	39014	34021	3511982	Sausalito School	TUL	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	N	19750711	19750711	UNKNOWN	None	None	G1	S1	1B.2			104	Dicots	4b9c5d04-227d-46dc-bacf-8803a4045b25
93392	Gambelia sila	blunt-nosed leopard lizard	ARACF07010	455	B3798	116717	3511982	Sausalito School	TUL	3/5 mile	Possibly Extirpated	Natural/Native occurrence	None	N	1974XXXX	1974XXXX	PVT	Endangered	Endangered	G1	S2		FP	IUCN_EN	204	Reptiles	ed222e7a-f7db-445e-a830-bc9e0e6fac87
88019	Lasthenia chrysantha	alkali-sink goldfields	PDAST5L030	9	82166	118492	3511982	Sausalito School	TUL	1 mile	Possibly Extirpated	Natural/Native occurrence	None	N	19730320	19730320	UNKNOWN	None	None	G2	S2	1B.1			804	Dicots	864e05c5-f6a1-42ca-b73c-2e86b89c0113
50644	Delphinium recurvatum	recurved larkspur	PDRAN0B1J0	96	82166	83129	3511982	Sausalito School	TUL	1 mile	Extirpated	Natural/Native occurrence	None	N	19730320	19730320	UNKNOWN	None	None	G2?	S2?	1B.2		BLM_S; SB_SBBG	804	Dicots	a0b62114-04ef-4ae5-856d-10213a4a72b2
71849	Agelaius tricolor	tricolored blackbird	ABPBXB0020	687	97599	98925	3511983	Pixley	TUL	5 miles	Possibly Extirpated	Natural/Native occurrence	None	N	19350513	19350513	UNKNOWN	None	Threatened	G1G2	S2		SSC	BLM_S; IUCN_EN; USFWS_BCC	204	Birds	39d0c2f1-067c-4e21-ab47-9188ed7a9d9d

Attachment F. Project Area Species List

(Species recorded within the Sausalito School Quadrangle)

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Sausalito School (3511982))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Atriplex cordulata var. erecticaulis Earlimart orache	PDCHE042V0	None	None	G3T1	S1	1B.2
Atriplex coronata var. vallicola Lost Hills crownscale	PDCHE04371	None	None	G4T3	S3	1B.2
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Atriplex persistens vernal pool smallscale	PDCHE042P0	None	None	G2	S2	1B.2
Atriplex subtilis subtle orache	PDCHE042T0	None	None	G1	S1	1B.2
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Caulanthus californicus California jewelflower	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
Gambelia sila blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S2	FP
Lasthenia chrysantha alkali-sink goldfields	PDAST5L030	None	None	G2	S2	1B.1
Monolopia congdonii San Joaquin woollythreads	PDASTA8010	Endangered	None	G2	S2	1B.2
Northern Claypan Vernal Pool Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
Perognathus inornatus San Joaquin pocket mouse	AMAFD01060	None	None	G2G3	S2S3	
Spea hammondii western spadefoot	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S3	

Record Count: 16

Government Version -- Dated March, 1 2024 -- Biogeographic Data Branch

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Report Printed on Monday, March 11, 2024

Information Expires 9/1/2024

Attachment G. 9-Quad Project Area Species List

(Species recorded within the 9-quadrangle Project area)

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Tipton (3611913) OR Woodville (3611912) OR Porterville (3611911) OR Pixley (3511983) OR Ducor (3511981) OR Delano East (3511972) OR Delano West (3511973) OR Richgrove (3511971) OR Sausalito School (3511982))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Andrena macswaini An andrenid bee	IIHYM35130	None	None	G2	S2	
Anniella grinnelli Bakersfield legless lizard	ARACC01050	None	None	G2G3	S2S3	SSC
Anniella pulchra Northern California legless lizard	ARACC01020	None	None	G3	S2S3	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S2	SSC
Atriplex cordulata var. erecticaulis Earlimart orache	PDCHE042V0	None	None	G3T1	S1	1B.2
Atriplex coronata var. vallicola Lost Hills crownscale	PDCHE04371	None	None	G4T3	S3	1B.2
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Atriplex minuscula lesser saltscale	PDCHE042M0	None	None	G2	S2	1B.1
Atriplex persistens vernal pool smallscale	PDCHE042P0	None	None	G2	S2	1B.2
Atriplex subtilis subtle orache	PDCHE042T0	None	None	G1	S1	1B.2
Bombus crotchii Crotch's bumble bee	IIHYM24480	None	Candidate Endangered	G2	S2	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S4	
Calochortus striatus alkali mariposa-lily	PMLIL0D190	None	None	G3	S2S3	1B.2
Caulanthus californicus California jewelflower	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
Cicindela tranquebarica joaquinensis San Joaquin tiger beetle	IICOL0220E	None	None	G5T1	S1	
Clarkia springvillensis Springville clarkia	PDONA05120	Threatened	Endangered	G2	S2	1B.2
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2

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Report Printed on Monday, March 11, 2024

Information Expires 9/1/2024

9-Quad Project Area Species List (continued)

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Dipodomys nitratoides nitratoides Tipton kangaroo rat	AMAFD03152	Endangered	Endangered	G3T1T2	S2	
Eremalche parryi ssp. kernensis Kern mallow	PDMAL0C031	Endangered	None	G3G4T3	S3	1B.2
Eryngium spinosepalum spiny-sepaled button-celery	PDAPI0Z0Y0	None	None	G2	S2	1B.2
Fritillaria striata striped adobe-lily	PMLIL0V0K0	None	Threatened	G1	S1	1B.1
Gambelia sila blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S2	FP
Lampetra hubbsi Kern brook lamprey	AFBAA02040	None	None	G1G2	S1S2	SSC
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Lasiurus cinereus hoary bat	AMACC05032	None	None	G3G4	S4	
Lasthenia chrysantha alkali-sink goldfields	PDAST5L030	None	None	G2	S2	1B.1
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Lytta hoppingi Hopping's blister beetle	IICOL4C010	None	None	G1G2	S2	
Lytta molesta molestan blister beetle	IICOL4C030	None	None	G2	S2	
Lytta morrisoni Morrison's blister beetle	IICOL4C040	None	None	G1G2	S2	
Masticophis flagellum ruddocki San Joaquin coachwhip	ARADB21021	None	None	G5T2T3	S3	SSC
Monolopia congdonii San Joaquin woollythreads	PDASTA8010	Endangered	None	G2	S2	1B.2
Northern Claypan Vernal Pool Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
Onychomys torridus tularensis Tulare grasshopper mouse	AMAFF06021	None	None	G5T1T2	S1S2	SSC
Perognathus inornatus San Joaquin pocket mouse	AMAFD01060	None	None	G2G3	S2S3	
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G4	S4	SSC
Pseudobahia peirsonii San Joaquin adobe sunburst	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
Spea hammondii western spadefoot	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC

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Report Printed on Monday, March 11, 2024

Information Expires 9/1/2024

9-Quad Project Area Species List (continued)

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Valley Saltbush Scrub Valley Saltbush Scrub	CTT36220CA	None	None	G2	S2.1	
Valley Sink Scrub Valley Sink Scrub	CTT36210CA	None	None	G1	S1.1	
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S3	

Record Count: 44

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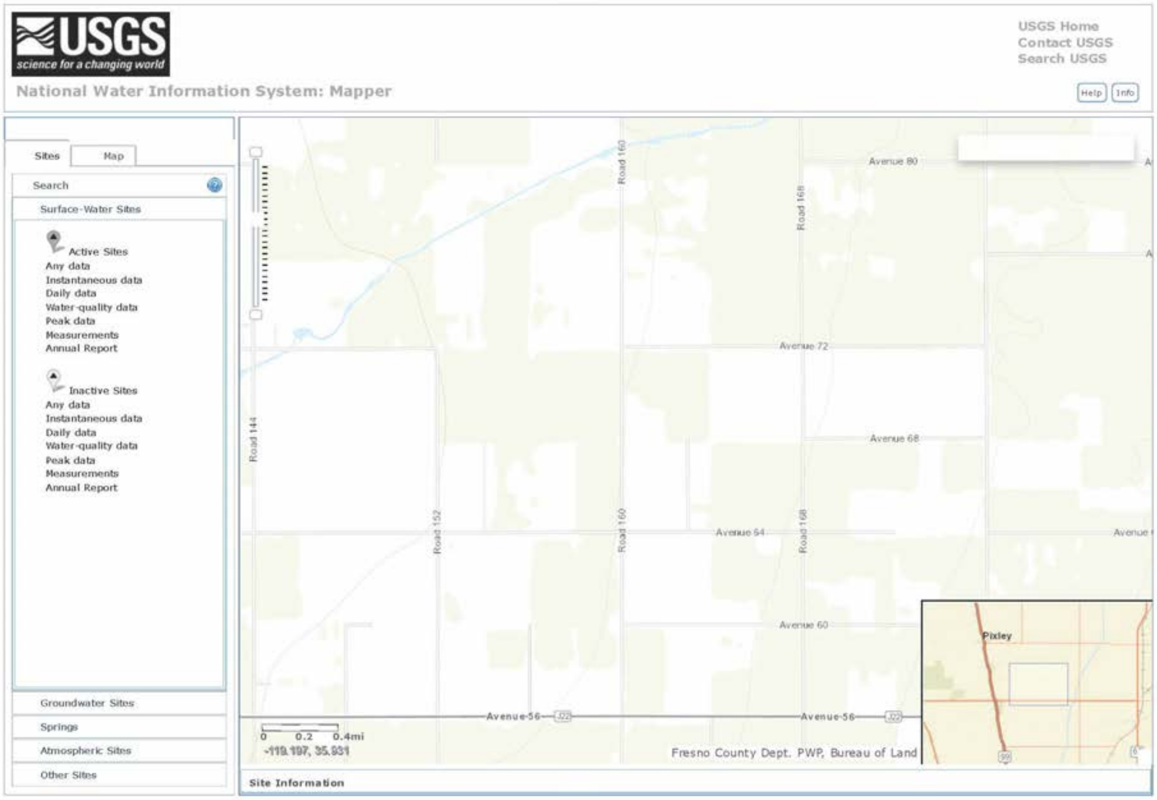
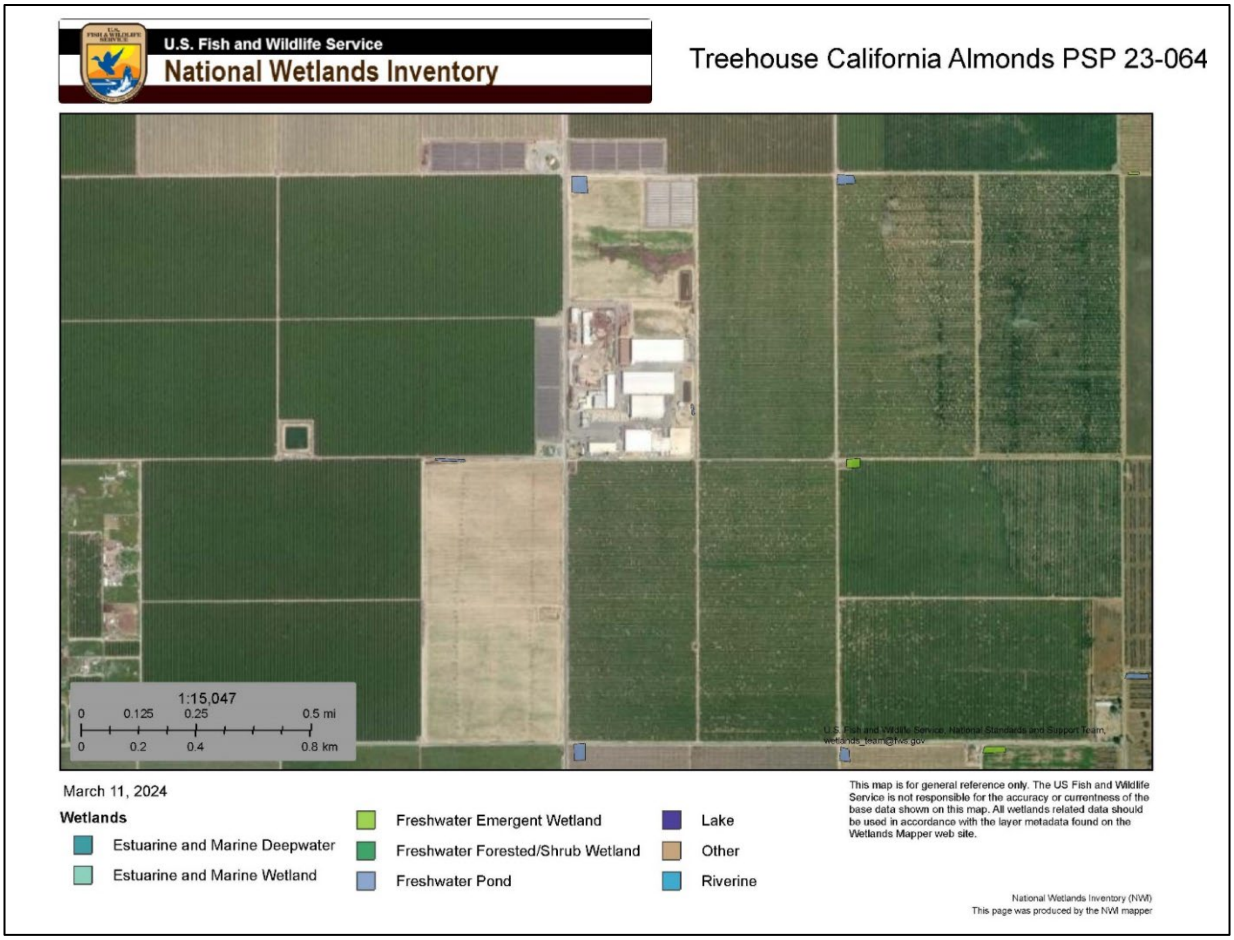
Information Expires 9/1/2024

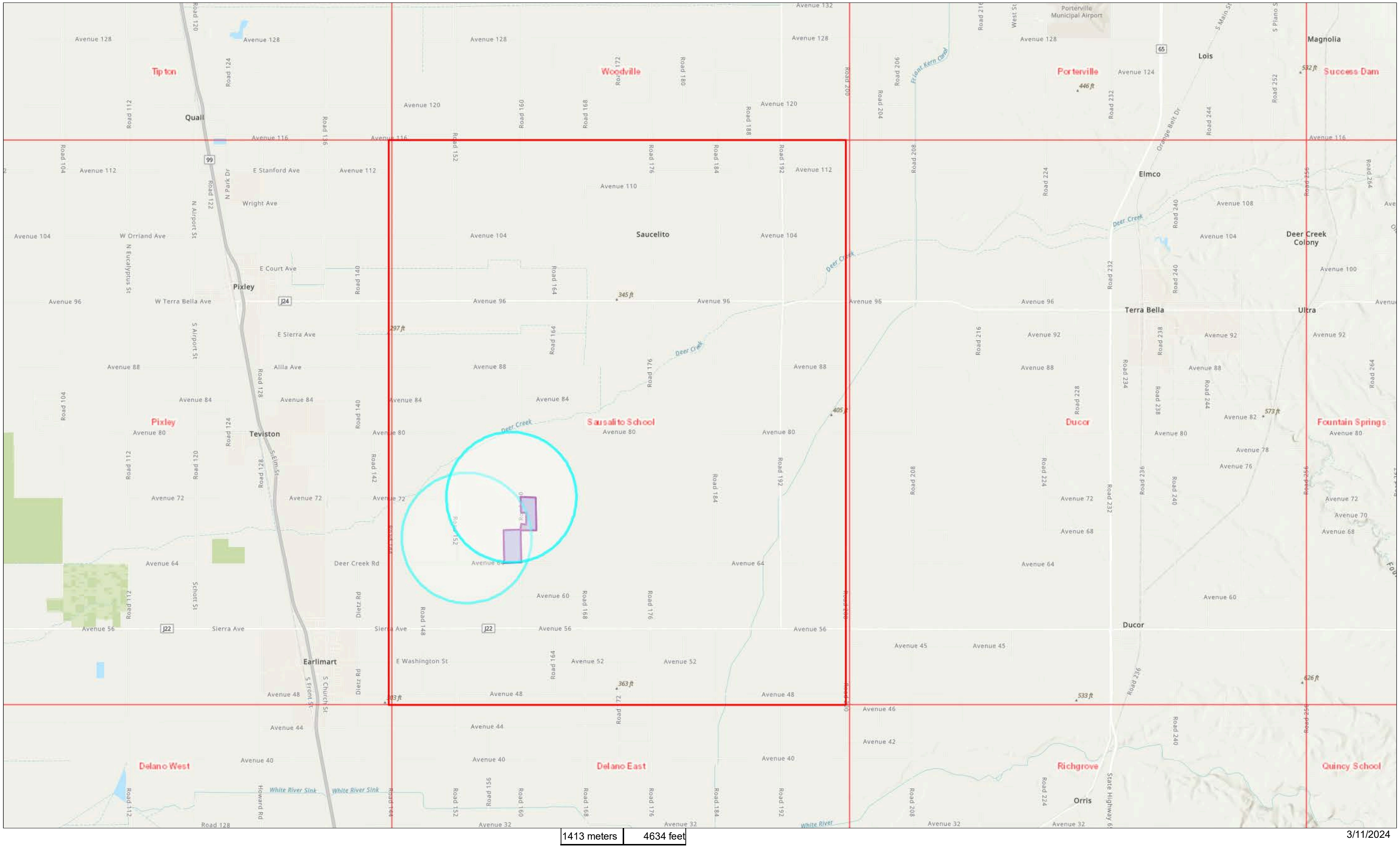
Attachment H. USGS National Water Information System (NWIS) Map



Attachment I. USFW National Wetland Inventory (NWI) Map



BIOS Map (Treehouse California Almonds PSP 23-064, CEQ 23-005)



3/11/2024

On Site

Map Legend

GeoReference

24K Quads (New)

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Tipton (3611913) OR Woodville (3611912) OR Porterville (3611911) OR Pixley (3511983) OR Ducor (3511981) OR Delano East (3511972) OR Delano West (3511973) OR Richgrove (3511971) OR Sausalito School (3511982))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Andrena macswaini An andrenid bee	IIHYM35130	None	None	G2	S2	
Anniella grinnelli Bakersfield legless lizard	ARACC01050	None	None	G2G3	S2S3	SSC
Anniella pulchra Northern California legless lizard	ARACC01020	None	None	G3	S2S3	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S2	SSC
Atriplex cordulata var. erecticaulis Earlimart orache	PDCHE042V0	None	None	G3T1	S1	1B.2
Atriplex coronata var. vallicola Lost Hills crownscale	PDCHE04371	None	None	G4T3	S3	1B.2
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Atriplex minuscula lesser saltscale	PDCHE042M0	None	None	G2	S2	1B.1
Atriplex persistens vernal pool smallscale	PDCHE042P0	None	None	G2	S2	1B.2
Atriplex subtilis subtle orache	PDCHE042T0	None	None	G1	S1	1B.2
Bombus crotchii Crotch's bumble bee	IIHYM24480	None	Candidate Endangered	G2	S2	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S4	
Calochortus striatus alkali mariposa-lily	PMLIL0D190	None	None	G3	S2S3	1B.2
Caulanthus californicus California jewelflower	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
Cicindela tranquebarica joaquinensis San Joaquin tiger beetle	IICOL0220E	None	None	G5T1	S1	
Clarkia springvillensis Springville clarkia	PDONA05120	Threatened	Endangered	G2	S2	1B.2
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Dipodomys nitratoides nitratoides Tipton kangaroo rat	AMAFD03152	Endangered	Endangered	G3T1T2	S2	
Eremalche parryi ssp. kernensis Kern mallow	PDMAL0C031	Endangered	None	G3G4T3	S3	1B.2
Eryngium spinosepalum spiny-sepaled button-celery	PDAPI0Z0Y0	None	None	G2	S2	1B.2
Fritillaria striata striped adobe-lily	PMLIL0V0K0	None	Threatened	G1	S1	1B.1
Gambelia sila blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S2	FP
Lampetra hubbsi Kern brook lamprey	AFBAA02040	None	None	G1G2	S1S2	SSC
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Lasiurus cinereus hoary bat	AMACC05032	None	None	G3G4	S4	
Lasthenia chrysantha alkali-sink goldfields	PDAST5L030	None	None	G2	S2	1B.1
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Lytta hoppingi Hopping's blister beetle	IICOL4C010	None	None	G1G2	S2	
Lytta molesta molestan blister beetle	IICOL4C030	None	None	G2	S2	
Lytta morrisoni Morrison's blister beetle	IICOL4C040	None	None	G1G2	S2	
Masticophis flagellum ruddocki San Joaquin coachwhip	ARADB21021	None	None	G5T2T3	S3	SSC
Monolopia congdonii San Joaquin woollythreads	PDASTA8010	Endangered	None	G2	S2	1B.2
Northern Claypan Vernal Pool Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
Onychomys torridus tularensis Tulare grasshopper mouse	AMAFF06021	None	None	G5T1T2	S1S2	SSC
Perognathus inornatus San Joaquin pocket mouse	AMAFD01060	None	None	G2G3	S2S3	
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G4	S4	SSC
Pseudobahia peirsonii San Joaquin adobe sunburst	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
Spea hammondii western spadefoot	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Valley Saltbush Scrub Valley Saltbush Scrub	CTT36220CA	None	None	G2	S2.1	
Valley Sink Scrub Valley Sink Scrub	CTT36210CA	None	None	G1	S1.1	
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S3	

Record Count: 44

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Sausalito School (3511982))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Atriplex cordulata var. erecticaulis Earlimart orache	PDCHE042V0	None	None	G3T1	S1	1B.2
Atriplex coronata var. vallicola Lost Hills crownscale	PDCHE04371	None	None	G4T3	S3	1B.2
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Atriplex persistens vernal pool smallscale	PDCHE042P0	None	None	G2	S2	1B.2
Atriplex subtilis subtle orache	PDCHE042T0	None	None	G1	S1	1B.2
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Caulanthus californicus California jewelflower	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
Gambelia sila blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S2	FP
Lasthenia chrysantha alkali-sink goldfields	PDAST5L030	None	None	G2	S2	1B.1
Monolopia congdonii San Joaquin woollythreads	PDASTA8010	Endangered	None	G2	S2	1B.2
Northern Claypan Vernal Pool Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
Perognathus inornatus San Joaquin pocket mouse	AMAFD01060	None	None	G2G3	S2S3	
Spea hammondii western spadefoot	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S3	

Record Count: 16

OBJECTID	Scientific_Name	Common_Name	Element_Code	Occ_Number	MAPNDX	EONDX	Key_Quad_Code	Key_Quad_Name	Key_County_Code	Accuracy	Presence	Occ_Type	Occ_Rank	Sensitive	Site_Date	Elm_Date	Owner_Management	Federal_Status	State_Status	Global_Rank	State_Rank	Rare_Plant_Rank	CDFW_Status	Other_Status	Symbology	Taxon_Group	GlobalID
60273	Atriplex subtilis	subtle orache	PDCHE042T0	15	39014	34021	3511982	Sausalito School	TUL	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	N	19750711	19750711	UNKNOWN	None	None	G1	S1	1B.2			104	Dicots	4b9c5d04-227d-46dc-bacf-8803a4045b25
88019	Lasthenia chrysantha	alkali-sink goldfields	PDAST5L030	9	82166	118492	3511982	Sausalito School	TUL	1 mile	Possibly Extirpated	Natural/Native occurrence	None	N	19730320	19730320	UNKNOWN	None	None	G2	S2	1B.1			804	Dicots	864e05c5-f6a1-42ca-b73c-2e86b89c0113
50644	Delphinium recurvatum	recurved larkspur	PDRAN0B1J0	96	82166	83129	3511982	Sausalito School	TUL	1 mile	Extirpated	Natural/Native occurrence	None	N	19730320	19730320	UNKNOWN	None	None	G2?	S2?	1B.2		BLM_S; SB_SBBG	804	Dicots	a0b62114-04ef-4ae5-856d-10213a4a72b2

OBJECTID	Scientific_Name	Common_Name	Element_Code	Occ_Number	MAPNDX	EONDX	Key_Quad_Code	Key_Quad_Name	Key_County_Code	Accuracy	Presence	Occ_Type	Occ_Rank	Sensitive	Site_Date	Elm_Date	Owner_Management	Federal_Status	State_Status	Global_Rank	State_Rank	Rare_Plant_Rank	CDFW_Status	Other_Status	Symbology	Taxon_Group	GlobalID
60273	Atriplex subtilis	subtle orache	PDCHE042T0	15	39014	34021	3511982	Sausalito School	TUL	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	N	19750711	19750711	UNKNOWN	None	None	G1	S1	1B.2			104	Dicots	4b9c5d04-227d-46dc-bacf-8803a4045b25
93392	Gambelia sila	blunt-nosed leopard lizard	ARACF07010	455	B3798	116717	3511982	Sausalito School	TUL	3/5 mile	Possibly Extirpated	Natural/Native occurrence	None	N	1974XXXX	1974XXXX	PVT	Endangered	Endangered	G1	S2		FP	IUCN_EN	204	Reptiles	ed222e7a-f7db-445e-a830-bc9e0e6fac87
88019	Lasthenia chrysantha	alkali-sink goldfields	PDAST5L030	9	82166	118492	3511982	Sausalito School	TUL	1 mile	Possibly Extirpated	Natural/Native occurrence	None	N	19730320	19730320	UNKNOWN	None	None	G2	S2	1B.1			804	Dicots	864e05c5-f6a1-42ca-b73c-2e86b89c0113
50644	Delphinium recurvatum	recurved larkspur	PDRAN0B1J0	96	82166	83129	3511982	Sausalito School	TUL	1 mile	Extirpated	Natural/Native occurrence	None	N	19730320	19730320	UNKNOWN	None	None	G2?	S2?	1B.2		BLM_S; SB_SBBG	804	Dicots	a0b62114-04ef-4ae5-856d-10213a4a72b2
71849	Agelaius tricolor	tricolored blackbird	ABPBXB0020	687	97599	98925	3511983	Pixley	TUL	5 miles	Possibly Extirpated	Natural/Native occurrence	None	N	19350513	19350513	UNKNOWN	None	Threatened	G1G2	S2		SSC	BLM_S; IUCN_EN; USFWS_BCC	204	Birds	39d0c2f1-067c-4e21-ab47-9188ed7a9d9d

ATTACHMENT "C"

CULTURAL AND TRIBAL CULTURAL RESOURCES

California
Historical
Resources
Information
System

Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

To: Gary A. Mills
Tulare County Resource Management Agency
5961 South Mooney Blvd.
Visalia, CA 93277

Record Search 24-055

Date: February 12, 2024

Re: Treehouse California Almond Expansion Project (PSP 23-064)

County: Tulare

Map(s): Sausalito School 7.5’

CULTURAL RESOURCES RECORDS SEARCH

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System’s (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP’s regulatory authority under federal and state law.

The following are the results of a search of the cultural resource files at the Southern San Joaquin Valley Information Center. These files include known and recorded cultural resources sites, inventory and excavation reports filed with this office, and resources listed on the National Register of Historic Places, the OHP Built Environment Resources Directory, California State Historical Landmarks, California Register of Historical Resources, California Inventory of Historic Resources, and California Points of Historical Interest. Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the OHP are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area.

PRIOR CULTURAL RESOURCE STUDIES CONDUCTED WITHIN THE PROJECT AREA AND THE ONE-HALF MILE RADIUS

According to the information in our files, there have been no previous cultural resource studies completed within the project area. There have been three cultural resource studies within the one-half mile radius: TU-00753, 00754, 01009.

Record Search 24-055

KNOWN/RECORDED CULTURAL RESOURCES WITHIN THE PROJECT AREA AND THE ONE-HALF MILE RADIUS

According to the information in our files, there are no recorded resources within the project area. There are no recorded resources within the one-half mile radius.

There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, for the California State Historic Landmarks.

COMMENTS AND RECOMMENDATIONS

We understand the project proposes expand the existing Treehouse California Almonds plant in a six-phase development. Further, we understand this project area is agricultural land. Please note that agriculture does not constitute previous development, as it does not destroy cultural resources, but merely moves them around within the plow zone. Because this project area has not been previously studied for cultural resources, it is unknown if any are present. As such, prior to ground disturbance activities, we recommend a qualified, professional consultant conduct a field survey to determine if cultural resources are present. A list of qualified consultants can be found at www.chrisinfo.org.

We also recommend that you contact the Native American Heritage Commission in Sacramento. They will provide you with a current list of Native American individuals/organizations that can assist you with information regarding cultural resources that may not be included in the CHRIS Inventory and that may be of concern to the Native groups in the area. The Commission can consult their "Sacred Lands Inventory" file to determine what sacred resources, if any, exist within this project area and the way in which these resources might be managed. Finally, please consult with the lead agency on this project to determine if any other cultural resource investigation is required. If you need any additional information or have any questions or concerns, please contact our office at (661) 654-2289.

By:

Jeremy E David, Assistant Coordinator **Date**: February 12, 2024

Please note that invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

February 8, 2024

Jessica Willis
Tulare County Resource Management Agency

Via Email to: ***jwillis@tularecounty.ca.gov***

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Treehouse California Almond Expansion Project (PSP 23-064), Tulare County

Dear Ms. Willis:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measures.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Cameron.vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Tulare County
2/8/2024

County	Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
Tulare	Santa Rosa Rancheria Tachi Yokut Tribe	F	Nichole Escalon, Cultural Specialist I	P.O. Box 8 Lemoore, CA, 93245	(559) 924-1278		nescalone@tachi-yokut-nsn.gov	Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	10/3/2023
	Santa Rosa Rancheria Tachi Yokut Tribe	F	Samantha McCarty, Cultural Specialist II	P.O. Box 8 Lemoore, CA, 93245	(559) 633-3440		smccarty@tachi-yokut-nsn.gov	Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	10/3/2023
	Santa Rosa Rancheria Tachi Yokut Tribe	F	Shana Powers, THPO	P.O. Box 8 Lemoore, CA, 93245	(559) 423-3900		spowers@tachi-yokut-nsn.gov	Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	10/3/2023
	Tule River Indian Tribe	F	Neil Peyron, Chairperson	P.O. Box 589 Porterville, CA, 93258	(559) 781-4271	(559) 781-4610	neil.peyron@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San Benito,San Joaquin,San Luis Obispo,Stanislaus,Tulare,Tuolumne	
	Wuksachi Indian Tribe/Eshom Valley Band	N	Kenneth Woodrow, Chairperson	1179 Rock Haven Ct. Salinas, CA, 93906	(831) 443-9702		kwood8934@aol.com	Foothill Yokut Mono	Alameda,Calaveras,Contra Costa,Fresno,Inyo,Kings,Madera,Marin,Mariposa,Merced,Mono,Monterey,San Benito,San Francisco,San Joaquin,San Mateo,Santa Clara,Santa Cruz,Stanislaus,Tulare,Tuolumne	6/19/2023

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Treehouse California Almond Expansion Project (PSP 23-064), Tulare County.

Record: PROJ-2024-000623
Report Type: AB52 GIS
Counties: Tulare
NAHC Group: All

TRIBAL CONSULTATION NOTICE AND TRACKING TABLE TREEHOUSE CALIFORNIA ALMONDS EXPANSION, CEQ 23-005 PSP 23-064														
TRIBE CONTACTED	**REQUEST TYPE**			**ITEMS & DOCUMENTS SUBMITTED**					**DELIVERY METHOD**		**CONSULTATION PERIOD**		**CONSULTATION / ACTIONS**
	AB 52	**SB 18**	**Sec 106**	**Project Notification Form/Letter**	**Maps**	**SLF Search Results**	**CHRIS Results**	**Other**	**E-mail**	**Certified US Mail**	**Return Receipt**	**Period Ends**	**Summary**
SACRED LAND FILE (SLF) REQUEST													
Native American Heritage Commission NAHC@nahc.ca.gov	X			X	X			Search Request Form	2/1/24				2/8/24, SLF results letter and tribal listing received with Negative results
CONSULTATION REQUEST LETTERS													
Big Sandy Rancheria of Western Mono Indians Elizabeth D. Kipp, Chairperson PO. Box 337 Auberry, CA 93602 lkipp@bsrnnation.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0677	02/06/24	3/7/24	4/29/24 Follow up email.
Big Sandy Rancheria of Western Mono Indians Joel Marvin, Vice Chairperson PO. Box 337 Auberry, CA 93602 jmarvin@bsrnation.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0660	2/6/24	3/7/24	4/29/24 Follow up email.
Big Sandy Rancheria of Western Mono Indians Tom Zizzo, Tribal Administrator PO. Box 337 Auberry, CA 93602 tzizzo@bsrnation.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0653	02/06/24	3/7/24	4/29/24 Follow up email.
Dunlap Band of Mono Indians Benjamin Charley Jr., Tribal Chair P.O. Box 14 Dunlap, CA 93621 ben.charley@yahoo.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0646	2/16/24	03/17/24	4/29/24 Follow up email.
Dunlap Band of Mono Indians Dirk Charley, Tribal Liaison 5509 E. McKenzie Avenue Fresno, CA 93727 dcharley2016@gmail.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0639	02/05/24	03/06/24	4/29/24 Follow up email.
Kern Valley Indian Community Robert Robinson, Co-Chairperson P.O. Box 1010 Lake Isabella, CA 93240 bbutterbredt@gmail.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0622	2/7/24	3/8/24	4/29/24 Follow up email.

TRIBAL CONSULTATION NOTICE AND TRACKING TABLE TREEHOUSE CALIFORNIA ALMONDS EXPANSION, CEQ 23-005 PSP 23-064													
TRIBE CONTACTED	REQUEST TYPE			ITEMS & DOCUMENTS SUBMITTED					DELIVERY METHOD		CONSULTATION PERIOD		CONSULTATION / ACTIONS
	AB 52	SB 18	Sec 106	Project Notification Form/Letter	Maps	SLF Search Results	CHRIS Results	Other	E-mail	Certified US Mail	Return Receipt	Period Ends	Summary
Kern Valley Indian Community Julie Turner, Secretary P. Box 1010 Lake Isabella, CA 93240 meindiangirl@sbcglobal.net	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0615	02/07/24	03/08/24	4/29/24 Follow up email.
Kern Valley Indian Community Brandi Kendricks 30741 Foxridge Court Tehachapi, CA 93561 krazykendricks@hotmail.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0608	02/05/24	03/06/24	4/29/24 Follow up email.
North Fork Mono Tribe Ron Goode, Chairperson 13396 Tollhouse Road Clovis, CA 93619 rwgoode911@hotmail.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0592	02/05/24	3/6/24	Email Reply, R Goode- 2/3/24- No Comment
North Fork Mono Tribe Anna Phipps, Tribal Secretary 6051 Bear Creek Rd. Garden Valley, CA, 95633 Aphipps01@att.net	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0585	X	X	Undeliverable
North Fork Mono Tribe Jesse Valdez, Council Member - Archaeological Dir. 120 Monte Vista St. Lindsey, CA, 93247 ariesgoathead@gmail.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0554	X	X	Return to sender, unclaimed, unable to forward
Santa Rosa Rancheria Tachi Yokut Tribe Leo Sisco, Chairperson 16835 Alkali Drive Lemoore, CA 93245 LSisco@tachi-yokut-nsn.gov	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0547	02/05/24	3/6/24	
Santa Rosa Rancheria Tachi Yokut Tribe Cultural Department Shana Powers, Director 16835 Alkali Drive Lemoore, CA 93245 SPowers@tachi-yokut-nsn.gov	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0530	02/05/24	3/6/24	Email Reply, S. Powers- 2/6/24- Requesting SLF & cultural presentation be required for all staff involved with ground disturbing activities.

TRIBAL CONSULTATION NOTICE AND TRACKING TABLE
TREEHOUSE CALIFORNIA ALMONDS EXPANSION, CEQ 23-005 PSP 23-064

TRIBE CONTACTED	REQUEST TYPE			ITEMS & DOCUMENTS SUBMITTED					DELIVERY METHOD		CONSULTATION PERIOD		CONSULTATION / ACTIONS
	AB 52	SB 18	Sec 106	Project Notification Form/Letter	Maps	SLF Search Results	CHRIS Results	Other	E-mail	Certified US Mail	Return Receipt	Period Ends	Summary
Santa Rosa Rancheria Tachi Yokut Tribe Cultural Department Staff Samantha McCarty SMcCarty@tachi-yokut-nsn.gov Paige Berggren PBerggren@tachi-yokut-nsn.gov Nichole Escalon Berggren nescalone@tachi-yokut-nsn.gov	X			X	X	X	X		2/2/24				
Tubatulabals of Kern Valley Robert L. Gomez, Jr., Chairperson P.O. Box 833 Weldon, CA 93283-0833 rgomez@tubatulabal.org	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0523	02/07/24	03/08/24	4/29/24 Follow up email.
Tule River Indian Tribe Neil Peyron, Chairperson P. O. Box 589 Porterville, CA 93258 neil.peyron@tulerivertribe-nsn.gov	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0516	2/8/24	3/9/24	4/29/24 Follow up email.
Tule River Indian Tribe Dept. of Environmental Protection Kerri Vera, Director P. O. Box 589 Porterville, CA 93258 tuleriverenv@yahoo.com keri.vera@tulerivertribe-nsn.gov	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0509	2/8/24	3/9/24	4/29/24 Follow up email.
Tule River Indian Tribe Joey Garfield, Tribal Archaeologist P. O. Box 589 Porterville, CA 93258 joey.garfield@tulerivertribe-nsn.gov									2/2/24				
Tule River Indian Tribe Felix Christman, Council Member P. O. Box 589 Porterville, CA 93258 tuleriverarchmon1@gmail.com felix.christman@tulerivertribe-nsn.gov	X			X	X	X	X		2/2/24				4/29/24 Follow up email.

TRIBAL CONSULTATION NOTICE AND TRACKING TABLE TREEHOUSE CALIFORNIA ALMONDS EXPANSION, CEQ 23-005 PSP 23-064													
TRIBE CONTACTED	**REQUEST TYPE**			**ITEMS & DOCUMENTS SUBMITTED**					**DELIVERY METHOD**		**CONSULTATION PERIOD**		**CONSULTATION / ACTIONS**
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Wuksache Indian Tribe/Eshom Valley Band Kenneth Woodrow, Chairperson 1179 Rock Haven Ct. Salinas, CA 93906 kwood8934@aol.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 2435	X	X	4/29/24 Follow up email. 02/09/24 Undeliverable

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Tule River Indian Tribe
Dept. of Environmental Protection
Kerri Vera, Director
P. O. Box 589
Porterville, CA 93258

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Ms. Vera,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

- Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine; and
- Native American historic, cultural, or sacred site that is listed or may be eligible for listing in the California Register of Historical Resources including historic or prehistoric ruins and any burial ground, archaeological, or historic site.

In accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (RMA) will be preparing a Mitigated Negative Declaration (MND) to evaluate the environmental effects associated with the Project.

Sacred Lands File Search

The County requested a Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC) on February 1, 2024, for the Project. Results of the SLF search have not yet been received by the County. As such, the SLF search results will be made available upon the release of the MND for public review. However, the results may be made available to your Tribal Representatives if a written request for consultation is submitted to the County within thirty (30) days of receipt of this letter.

California Historical Resources Information System

A California Historical Resources Information System (CHRIS) search for the project area was requested through the Southern San Joaquin Valley Information Center (SSJVIC) on February 1, 2024. Results of the CHRIS search has not yet been received by the County. As such, the CHRIS search results will be made available upon the release of the MND for public review. However, the results may be made available to your Tribal Representatives if a written request for consultation is submitted to the County within thirty (30) days of receipt of this letter.

Consultation Request

If your Tribe desires to consult with the County on the review of this project, please respond in writing within thirty (30) days regarding AB 52. Written correspondence can be mailed to the address provided above or e-mailed to the addresses provided below.

If the County does not receive a response to this notification, it will be presumed that your Tribe has declined the opportunity to consult on this project pursuant to AB 52.

Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail should you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact, Gary Mills, Chief of Environmental Planning by phone at (559) [illegible] or by e-mail at gmills@tularecounty.ca.gov.

Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR

MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Tule River Indian Tribe
Neil Peyron, Chairperson
P. O. Box 589
Porterville, CA 93258

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Chairperson Peyron,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock Economic Development and Planning
Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Tubatulabals of Kern Valley
Robert L. Gomez, Jr., Chairperson
P.O. Box 833
Weldon, CA 93283-0833

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Chairperson Gomez,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) 624-7029
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock Economic Development and Planning
Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Kern Valley Indian Community
Julie Turner, Secretary
P. Box 1010
Lake Isabella, CA 93240

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Ms. Turner,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock Economic Development and Planning
Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

North Fork Mono Tribe
Jesse Valdez, Council Member - Archaeological Dir.
120 Monte Vista St.
Lindsey, CA, 93247

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Mr. Valdez,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
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Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
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PHONE (559) 624-7000
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Aaron R. Bock Economic Development and Planning
Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Santa Rosa Rancheria Tachi Yokut Tribe
Cultural Department
Shana Powers, Director
16835 Alkali Drive
Lemoore, CA 93245

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Ms. Powers,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]9
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock Economic Development and Planning
Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Big Sandy Rancheria of Western Mono Indians
Elizabeth D. Kipp, Chairperson
PO. Box 337
Auberry, CA 93602

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Chairperson Kipp,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) 624-7029
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR

MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA 93906

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Chairperson Woodrow,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) 624-7009
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 South Mooney Blvd
Visalia, CA 93277
Phone (559) 624-7000
Fax (559) 615-3002

Aaron R. Bock Economic Development and Planning
Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Big Sandy Rancheria of Western Mono Indians
Joel Marvin, Vice Chairperson
PO. Box 337
Auberry, CA 93602

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Vice Chair Marvin,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]4-[illegible]9
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RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
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Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR

MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

North Fork Mono Tribe
Ron Goode, Chairperson
13396 Tollhouse Road
Clovis, CA 93619

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Chairperson Goode,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]9
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Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

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VISALIA, CA 93277
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Aaron R. Bock Economic Development and Planning
Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Santa Rosa Rancheria Tachi Yokut Tribe
Leo Sisco, Chairperson
16835 Alkali Drive
Lemoore, CA 93245

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Chairperson Sisco,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
[illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock Economic Development and Planning
Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Big Sandy Rancheria of Western Mono Indians
Tom Zizzo, Tribal Administrator
PO. Box 337
Auberry, CA 93602

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Mr. Zizzo,

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) 624-[illegible]
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Attachment(s): AB 52 Project Notification and Tribal Consultation Request

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Aaron R. Bock Economic Development and Planning
Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Dunlap Band of Mono Indians
Benjamin Charley Jr., Tribal Chair
P.O. Box 14
Dunlap, CA 93621

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Chairperson Charley,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
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Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

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Aaron R. Bock Economic Development and Planning
Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

North Fork Mono Tribe
Anna Phipps, Tribal Secretary
6051 Bear Creek Rd.
Garden Valley, CA, 95633

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Ms. Phipps,

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
dfolk@tularecounty.ca.gov

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Aaron R. Bock Economic Development and Planning
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Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Kern Valley Indian Community
Robert Robinson, Co-Chairperson
P.O. Box 1010
Lake Isabella, CA 93240

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Chairperson Robinson,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

- Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine; and
- Native American historic, cultural, or sacred site that is listed or may be eligible for listing in the California Register of Historical Resources including historic or prehistoric ruins and any burial ground, archaeological, or historic site.

In accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (RMA) will be preparing a Mitigated Negative Declaration (MND) to evaluate the environmental effects associated with the Project.

Sacred Lands File Search

The County requested a Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC) on February 1, 2024, for the Project. Results of the SLF search have not yet been received by the County. As such, the SLF search results will be made available upon the release of the MND for public review. However, the results may be made available to your Tribal Representatives if a written request for consultation is submitted to the County within thirty (30) days of receipt of this letter.

California Historical Resources Information System

A California Historical Resources Information System (CHRIS) search for the project area was requested through the Southern San Joaquin Valley Information Center (SSJVIC) on February 1, 2024. Results of the CHRIS search has not yet been received by the County. As such, the CHRIS search results will be made available upon the release of the MND for public review. However, the results may be made available to your Tribal Representatives if a written request for consultation is submitted to the County within thirty (30) days of receipt of this letter.

Consultation Request

If your Tribe desires to consult with the County on the review of this project, please respond in writing within thirty (30) days regarding AB 52. Written correspondence can be mailed to the address provided above or e-mailed to the addresses provided below.

If the County does not receive a response to this notification, it will be presumed that your Tribe has declined the opportunity to consult on this project pursuant to AB 52.

Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail should you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact, Gary Mills, Chief of Environmental Planning by phone at (559) [illegible] or by e-mail at gmills@tularecounty.ca.gov.

Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Kern Valley Indian Community
Brandi Kendricks
30741 Foxridge Court
Tehachapi, CA 93561

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Ms. Kendricks,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

- Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine; and
- Native American historic, cultural, or sacred site that is listed or may be eligible for listing in the California Register of Historical Resources including historic or prehistoric ruins and any burial ground, archaeological, or historic site.

In accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (RMA) will be preparing a Mitigated Negative Declaration (MND) to evaluate the environmental effects associated with the Project.

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Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail should you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact, Gary Mills, Chief of Environmental Planning by phone at (559) [illegible] or by e-mail at gmills@tularecounty.ca.gov.

Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock Economic Development and Planning
Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Dunlap Band of Mono Indians
Dirk Charley, Tribal Liaison
5509 E. McKenzie Avenue
Fresno, CA 93727

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Mr. Charley,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

- Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine; and
- Native American historic, cultural, or sacred site that is listed or may be eligible for listing in the California Register of Historical Resources including historic or prehistoric ruins and any burial ground, archaeological, or historic site.

In accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (RMA) will be preparing a Mitigated Negative Declaration (MND) to evaluate the environmental effects associated with the Project.

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California Historical Resources Information System

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Consultation Request

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If the County does not receive a response to this notification, it will be presumed that your Tribe has declined the opportunity to consult on this project pursuant to AB 52.

Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail should you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact, Gary Mills, Chief of Environmental Planning by phone at (559) [illegible] or by e-mail at gmills@tularecounty.ca.gov.

Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

From:	Danielle Folk
To:	lkipp@bsrnation.com; jmarvin@bsrnation.com; tzizzo@bsrnation.com
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)
Date:	Friday, February 2, 2024 1:03:16 PM
Attachments:	Project Notification and Consult Request_AB52_Tree House Almonds.pdf Tribal_AB52 + SB18_Consultation_Letter_Tree House Almonds_Kipp_BSRWMI.pdf PSP 23-064 Site Plan Reduced Size PDF.pdf CA_Sausalito_School_2021.pdf PSP 23-064. Aerial Photograph.pdf PSP 23-064. Vicinity Map.pdf

Good afternoon.

Pursuant to AB 52, please find attached the cover letter, Project Notification and Tribal Consultation Request form, project vicinity map, and project site plan maps for the Treehouse California Almonds Expansion Project (PSP 23-064) The hard copies of these documents were sent to you via Certified Mail on Thursday, February 1, 2024.

Please feel free to contact me by phone or email if you would like to begin the consultation process. Also, if your tribe would like to decline the opportunity to consult or defer to another tribe, an email stating so would be greatly appreciated.

Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Dirk Charley; Ben Charley
Cc:	Jessica R Willis; Gary Mills
Subject:	Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)
Date:	Friday, February 2, 2024 1:04:46 PM
Attachments:	Project Notification and Consult Request_AB52_Tree House Almonds.pdf PSP 23-064 Site Plan Reduced Size PDF.pdf CA_Sausalito_School_2021.pdf PSP 23-064. Aerial Photograph.pdf PSP 23-064. Vicinity Map.pdf Tribal_AB52 + SB18_Consultation_Letter_Tree House Almonds_BCharley_DBMI.pdf

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Robert Robinson (bbutterbredt@gmail.com); Julie Turner (meindiangirl@sbcglobal.net); Brandy Kendricks (krazykendricks@hotmail.com)
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)
Date:	Friday, February 2, 2024 1:06:10 PM
Attachments:	Project Notification and Consult Request_AB52_Tree House Almonds.pdf PSP 23-064 Site Plan Reduced Size PDF.pdf CA_Sausalito_School_2021.pdf PSP 23-064. Aerial Photograph.pdf PSP 23-064. Vicinity Map.pdf Tribal_AB52 + SB18_Consultation_Letter_Tree House Almonds_Robinson_KVIC.pdf

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Ron W. Goode; aphipps01@att.net; ariesgoathead@gmail.com
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)
Date:	Friday, February 2, 2024 1:07:15 PM
Attachments:	Project Notification and Consult Request_AB52_Tree House Almonds.pdf PSP 23-064 Site Plan Reduced Size PDF.pdf CA_Sausalito_School_2021.pdf PSP 23-064. Aerial Photograph.pdf PSP 23-064. Vicinity Map.pdf Tribal_AB52 + SB18_Consultation_Letter_Tree House Almonds_Goode_NFMT.pdf

Good afternoon.

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Leo Sisco (LSisco@tachi-yokut-nsn.gov); Shana Powers (SPowers@tachi-yokut-nsn.gov); Samantha McCarty; Paige Berggren; nescalone@tachi-yokut-nsn.gov
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)
Date:	Friday, February 2, 2024 1:10:25 PM
Attachments:	Project Notification and Consult Request_AB52_Tree House Almonds.pdf PSP 23-064 Site Plan Reduced Size PDF.pdf CA_Sausalito_School_2021.pdf PSP 23-064. Aerial Photograph.pdf PSP 23-064. Vicinity Map.pdf Tribal_AB52 + SB18_Consultation_Letter_Tree House Almonds_Sisco_SRRTYT.pdf

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Robert L. Gomez (rgomez@tubatulabal.org)
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)
Date:	Friday, February 2, 2024 1:12:36 PM
Attachments:	Tribal_AB52 + SB18_Consultation_Letter_Tree House Almonds_Gomez_TKV.pdf PSP 23-064 Site Plan Reduced Size PDF.pdf CA_Sausalito_School_2021.pdf PSP 23-064. Aerial Photograph.pdf PSP 23-064. Vicinity Map.pdf Project Notification and Consult Request_AB52_Tree House Almonds.pdf

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Neil Peyron (neil.peyron@tulerivertribe-nsn.gov); Kerri Vera (tuleriverenv@yahoo.com); joey.garfield@tulerivertribe-nsn.gov; Felix Christman (tuleriverarchmon1@gmail.com)
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)
Date:	Friday, February 2, 2024 1:17:10 PM
Attachments:	Project Notification and Consult Request_AB52_Tree House Almonds.pdf CA_Sausalito_School_2021.pdf PSP 23-064. Vicinity Map.pdf PSP 23-064. Aerial Photograph.pdf PSP 23-064 Site Plan Reduced Size PDF.pdf Tribal_AB52 + SB18_Consultation_Letter_Tree House Almonds_Peyron_TRIT.pdf

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Ken Woodrow (Kwood8934@aol.com)
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)
Date:	Friday, February 2, 2024 1:18:43 PM
Attachments:	Project Notification and Consult Request_AB52_Tree House Almonds.pdf PSP 23-064. Vicinity Map.pdf PSP 23-064 Site Plan Reduced Size PDF.pdf Tribal_AB52 + SB18_Consultation_Letter_Tree House Almonds_Woodrow_WIT.pdf PSP 23-064. Aerial Photograph.pdf CA_Sausalito_School_2021.pdf

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Ron W. Goode
To:	Danielle Folk
Subject:	Re: Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)
Date:	Saturday, February 3, 2024 2:19:47 PM

No Comment
Chairman Goode

From: Danielle Folk <DFolk@tularecounty.ca.gov>
Sent: Friday, February 2, 2024 2:07 PM
To: Ron W. Goode <rwgoode911@hotmail.com>; aphipps01@att.net <Aphipps01@att.net>; ariesgoathead@gmail.com <ariesgoathead@gmail.com>
Cc: Jessica R Willis <JWillis@tularecounty.ca.gov>
Subject: Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)

Good afternoon.

Pursuant to AB 52, please find attached the cover letter, Project Notification and Tribal Consultation Request form, project vicinity map, and project site plan maps for the Treehouse California Almonds Expansion Project (PSP 23-064) The hard copies of these documents were sent to you via Certified Mail on Thursday, February 1, 2024.

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Jessica R Willis
To:	Shana Powers ; Samantha McCarty ; Nichole Escalon
Cc:	Gary Mills; Danielle Folk; Sandy Roper
Subject:	RE: Treehouse Almond Expansion Project
Date:	Thursday, February 8, 2024 9:10:00 AM

Good morning, Shana.

Thank you for your quick response regarding the proposed Treehouse Almond Expansion Project. The County will provide your Tribe with the results of the SLF search once it is received. Also, we will include Tribal Resources Sensitivity training for all staff related to ground-disturbing activities as a mitigation measure in the Mitigated Negative Declaration.

Best Regards,

Jessica R. Willis

Jessica Willis, Planner IV
Environmental Planning
Phone: 559-624-7122
jwillis@tularecounty.ca.gov

From: Gary Mills <gmills@tularecounty.ca.gov>
Sent: Tuesday, February 6, 2024 4:01 PM
To: Jessica R Willis <JWillis@tularecounty.ca.gov>
Subject: FW: Treehouse Almond Expansion Project

FYI

From: Shana Powers <SPowers@tachi-yokut-nsn.gov>
Sent: Tuesday, February 6, 2024 3:15 PM
To: Gary Mills <gmills@tularecounty.ca.gov>; Danielle Folk <DFolk@tularecounty.ca.gov>
Cc: Nichole Escalon <nescalon@tachi-yokut-nsn.gov>; Samantha McCarty <SMcCarty@tachi-yokut-nsn.gov>
Subject: Treehouse Almond Expansion Project

Dear Gary and Danielle,
Thank you for contacting Santa Rosa Rancheria about the proposed project. We do have concerns about the project’s adverse effects on cultural resources and or burial. The Tribe is requesting the SLF and a cultural presentation be required for all staff that will be involved with ground disturbing activities.

Sincerely,

Shana Powers M.S.
Tribal Historic Preservation Officer (THPO)/Cultural Director
SPowers@tachi-yokut-nsn.gov
Office: (559)924-1278 Ext: 4093
Cell: (559)423-3900

ATTACHMENT “D”

WASTEWATER TREATMENT FACILITY DESCRIPTION AND REPORTS OF WASTE DISCHARGE APPLICATION

State of California
Regional Water Quality Control Board

APPLICATION/REPORT OF WASTE DISCHARGE
GENERAL INFORMATION FORM FOR
WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT

I. FACILITY INFORMATION

A. FACILITY:

Name Treehouse California Almonds LLC

Address 6914 Road 160

City/County/State/Zip Code Earlimart, Tulare County, CA 93219

Contact Person Brian Ball

Telephone Number (559) 757-5020 Email Brian@treehousealmonds.com

B. FACILITY OWNER:

Name Treehouse California Almonds LLC

Address 6914 Road 160

City/State/Zip Code Earlimart, Tulare County, CA 93219

Contact Person Brian Ball

Telephone Number (559) 757-5020 Email Brian@treehousealmonds.com

Federal Tax ID ______

Owner Type (*Mark one*):

Individual Corporation Governmental Agency Partnership

Other: ______

C. FACILITY OPERATOR (The agency or business, not the person):

Name Same

Address ______

City/State/Zip Code ______

Contact Person ______

Telephone Number ______ Email ______

Operator Type (*Mark one*):

Individual Corporation Governmental Agency Partnership

☐ Other: ______

D. OWNER OF THE LAND

Name Same

Address

City/State/Zip Code

Contact Person

Telephone Number Email

Owner Type (*Mark one*):

Individual Corporation Governmental Agency Partnership

Other:

E. ADDRESS WHERE LEGAL NOTICE MAY BE SERVED

Address Same

City/State/Zip Code

Contact Person

Telephone Number Email

F. BILLING ADDRESS

Address Same

City/State/Zip Code

Contact Person

Telephone Number Email

II. TYPE OF DISCHARGE

Check Type of Discharge(s) Described in this Application:

- [x] **Waste Discharge to Land**
- [ ] **Waste Discharge to Surface Water**

Check all that apply:

- [ ] Animal or Aquacultural Wastewater
- [ ] Animal Waste Solids
- [ ] Biosolids/Residual
- [ ] Cooling Water
- [ ] Domestic/ Municipal Wastewater Treatment and Disposal
- [ ] Dredge Material Disposal
- [ ] Hazardous Waste (*see instructions*)
- [x] Industrial Process Wastewater
- [ ] Land Treatment Unit
- [ ] Landfill (*see instructions*)
- [ ] Mining
- [x] Storm Water
- [ ] Surface Impoundment
- [ ] Waste Pile
- [ ] Wastewater Reclamation
- [ ] Other, *please describe*

III. LOCATION OF THE FACILITY

Describe the physical location of the facility:

1. Assessor's Parcel Number(s)

   Facility: 319-060-019, 319-060-022, 319-060-037, 318-290-005, 318-290-006

   Discharge Point: 318-290-005, 318-290-006, 319-060-037

2. Latitude

   Facility: 35°54'51.32"N

   Discharge Point: 35°54'35.91"N

3. Longitude

   Facility: 119°12'46.64"W

   Discharge Point: 119°13'1.39"W

IV. REASON FOR FILING

Check all that apply:

- ☐ New Discharge or Facility
- ☐ Change in Design or Operation
- ☑ Change in Quantity/Type of Discharge Existing WDR R5-2018-0066
- ☐ Changes in Ownership/Operator (see instructions)
- ☑ Waste Discharge Requirements Update or NPDES Permit Reissuance
- ☐ Other: ______

V. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Name of Lead Agency Tulare County, Nebeyu Menkir - Planner

Has a public agency determined that the proposed project is exempt from CEQA?

☐ Yes ☑ No

If yes, state the basis for the exemption and the name of the agency supplying the exemption on the line below:

Special use permit application has been submitted - PSP 23-064. A CEQA mitigated negative declaration is needed for this project - CEQ 23-005. No determination has been made at this time.

Has a "Notice of Determination" been filed under CEQA?

☐ Yes ☑ No

If Yes, enclose a copy of the CEQA document, Environmental Impact Report (EIR), or Negative Declaration. If No, identify the expected type of CEQA document and expected date of completion.

Expected CEQA Documents: ☐ EIR ☑ Negative Declaration

Expected CEQA Completion Date: Unknown at this time

VI. <u>OTHER REQUIRED INFORMATION</u>

Please provide a COMPLETE characterization of your discharge. A complete characterization includes, but is not limited to, design and actual flows, a list of constituents and the discharge concentration of each constituent, a list of other appropriate waste discharge characteristics, a description and schematic drawing of all treatment processes, a description of any Best Management Practices (BMPs) used, and a description of disposal methods.

Also include a site map showing the location of the facility and, if you are submitting this application for an NPDES permit, identify the surface water to which you propose to discharge. Please try to limit your maps to a scale of 1:24,000 (7.5' USGS Quadrangle) or a street map, if more appropriate.

VII. <u>OTHER</u>

Attach additional sheets to explain any responses which need clarification. List attachments with titles and dates below:

See attached RWD Technical Report to provide requested items in
WDR R5-2018-0066 and to request revision to the WDR.

You will be notified by a representative of the RWQCB within 30 days of receipt of your application. The notice will state if your application is complete or if there is additional information you must submit to complete your Application/Report of Waste Discharge, pursuant to Division 7, Section 13260 of the California Water Code.

VIII. <u>CERTIFICATION</u>

"I certify under penalty of law that this document, including all attachments and supplemental information, were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Print Name Brian Ball Title Manager/Owner

Signature Brian Ball Date 2 June 2023

FOR OFFICE USE ONLY

Date Form 200 Received:	Letter to Discharger:	Fee Amount Received:	Check #:

Report of Waste Discharge Technical Report

To Revise WDR R5-2018-0066

Treehouse California Almonds, LLC

6914 Road 160

Earlimart, California

June 5, 2023

Prepared by:

Provost & Pritchard Consulting Group

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Appendix I – Salinity Control and Minimization Plan

1 Introduction

Waste Discharge Requirements (**WDR**) R5-2018-0066 was issued to Treehouse California Almonds, LLC (**Treehouse**). The WDR authorizes the use of ponds for treatment and storage of the wastewater it produces and then application to fields for nutrient uptake by crops. The WDR requests a Pond Design Work Plan, a Nutrient and Wastewater Management Plan, and a Salinity Control and Minimization Plan. These requested items are provided in this submittal.

Recently Treehouse experienced a fire within the production area. The reconstruction design plans include an increase in the number of production lines which will increase the amount of wastewater produced. To offset that, additional farmable ground has been purchased to align with the increase in wastewater produced. This RWD is to revise the existing WDR for the water production of this plant and the inclusion of additional land for farming. The remainder of the issued WDR is intended to remain in effect.

HDPE double lined ponds with a leakage collection system (R5-2013-0122 Existing Dairy General Order Tier I design requirements) are planned for both treatment and storage ponds. Treatment ponds upstream of storage are being included to reduce BOD and the potential for odors coming from the stored water.

APNs 318-290-005 (39.24 ac) and 318-290-006 (38.95 ac) to the west of Road 160 yet adjacent to the Treehouse plant were purchased for land application and nutrient uptake of the wastewater. This new land is presented in the Proposed Site Map in **Appendix A**. A portion will be used for the treatment and storage ponds. Approximately 66 acres will be available for land application.

The Nutrient and Wastewater Management Plan provided shows that the 66 farmable acres is sufficient to agronomically apply the planned wastewater such that the land to the north of the plant is not intended to be farmed. This area will be reserved for plant warehouse expansion and additional solar power generation.

2 Wastewater Process Description

2.1 Process Flow

The remodeled process flow within the plant remains similar to what was reviewed for the issued WDR. There will be an increase in parallel processing lines from two to four with similar equipment.

Solids collected from the equipment within the plant (culls, skins, almond pieces, etc.) will continue to be hauled off site for use as cattle feed. Solids loading will occur over a concrete pad and directly load into a truck.

In the remodel of the plant there will be a single wastewater collection sump located to the south of the process building receiving water from the plant drains. A pump will send the wastewater to the treatment pond area.

At the treatment area wastewater will flow over a screen to separate out remaining solids, again the same condition as prior. The solids collected from this screen will continue to be combined with solids captured at the plant and will be shipped off-site for animal feed.

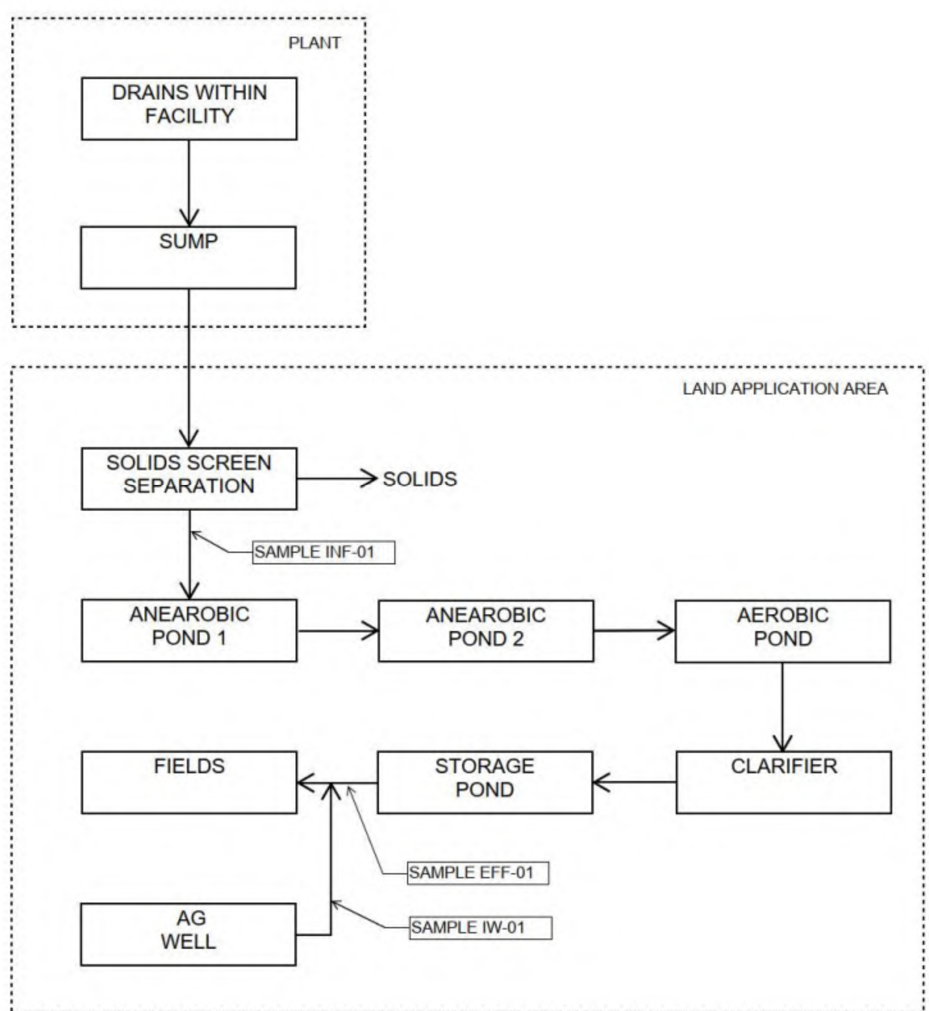
Wastewater will then gravity flow into two lined anaerobic ponds in series. These ponds will mix in the lower portion activating the sludge. Mixing water will be taken from the floor area of the second pond and mixed within both ponds.

Wastewater will then gravity flow into one lined aerobic pond where it will be mechanically aerated.

The discharge from the aeration pond will go into a clarifier. Clarified water will discharge to the storage pond while the remaining wastewater will be returned primarily to the aeration pond and some to the first anaerobic pond.

From the storage pond the water will be applied to the fields for crop nutrient uptake.

Figure 1. Process Wastewater Flow Diagram at Treehouse California Almonds



2.2 Wastewater Characterization

Wastewater created by the additional production lines will be of similar equipment and should have the same characteristic of the ongoing monitoring. Table 1 provides some recent sample data.

Table 1. Average Wastewater Samples 2020 Through 2022

Constituent	Influent (mg/L)	Effluent (mg/L)
Ammonia		12.7
Nitrate	8.2	0.4
TKN		128
Boron	1.9	1.6
Sodium	86	188
Chloride	70	136
BOD	2,744	2,112
TDS	3,101	1,507
FDS	673	737

New treatment is planned, both anaerobic and aerobic, and then clarified prior to placing the wastewater in the storage pond. The purpose of the treatment is to reduce the BOD and some of the nitrogen.

These are the anticipated characteristics of the wastewater after treatment and to be applied to the land application area. Sampling will also occur within the treatment process to monitor the performance of the treatment.

Table 2. Anticipated Effluent After Treatment

Constituent	Treated Effluent – EFF-01 (mg/L)
Ammonia	0 - 10
Nitrate	60 - 75
Total N	60 - 85
Boron	1 - 2
Sodium	200
Chloride	150
BOD	40 - 60
TDS	1200
FDS	730

2.3 Daily Wastewater Volumes

Table 3 provides the anticipated volume flows of wastewater from the remodeled plant.

Table 3. Daily Wastewater Volumes

Wastewater Produced	Remodeled Plant (gal)
Average Daily	123,000
Maximum Average Daily	150,000

The planned operations are 24 hours a day for 5 days a week with occasional weekend work. To account for potential weekend work, 6 days a week at the maximum average daily rate was used to determine needed storage capacity. Anticipated annual wastewater production under these design conditions is 46.8 million gallons.

2.4 Storm Water Comingled with Wastewater

Direct rainfall onto the ponds was considered in the storm water volume calculations for the storage pond.

A portion of storm water from the southwest plant entry area (driveway, parking, and roof) will be collected and pumped to the lined storage pond. This additional water will reduce the use of the agricultural well for crop irrigation and aid in ground water sustainability issues.

Approximately 434,600 ft^2 of pavement and roof from the production area will have its rainfall directed to a sump which will pump it to the lined storage pond. The remainder of the rainfall onto the facility will remain separate from the wastewater and routed to a soil lined pond. Volumes calculated of the remaining stormwater are presented in Section 5.

This 434,600 ft^2 of rainfall capture will be pumped separately from the wastewater and be routed directly to the lined storage pond bypassing the treatment ponds. Rainfall runoff factors for surfaced areas were used in storage calculations.

The WDR requires wastewater storage capacity to be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns. The Western Regional Climate Center Delano Station reports the 100-year return total at 15.71 inches while the average annual rainfall is 7.23 inches. Table 4 shows the conversion of the historical monthly average to the 100-year return along with the CIMIS evaporation rates of the area (Zone 12).

Table 4. Delano Area Weather

Month	Precipitation Average (in.)	Precipitation 100-yr (in)	CIMIS ETo (in.)
January	1.35	2.93	1.24
February	1.27	2.76	1.96
March	1.24	2.69	3.41
April	0.73	1.59	5.10
May	0.31	0.67	6.82
June	0.07	0.15	7.80
July	0.00	0.00	8.06
August	0.01	0.02	7.13
September	0.15	0.33	5.40
October	0.34	0.74	3.72
November	0.83	1.80	1.80
December	0.93	2.02	0.93
Total	7.23	15.71	53.37

Storage and use of the collected wastewater is further described in the Nutrient and Wastewater Management Plan and the Pond Design Report.

3 Flood Zone

This facility lies within an undetermined elevation (Zone A) 100-yr flood zone. Two FEMA maps are provided in **Appendix B**.

Flooding in the area of Treehouse is a result of a limitation of Deer Creek passing by the Friant Kern Canal (Friant Kern Canal goes underneath Deer Creek) 7.2 miles to the northeast of Treehouse. There is anticipated to be excess flow from Deer Creek at this crossing that overtops the banks and routes south along the eastern side of the canal. 3.6 miles to the east of Treehouse are two conduits placed under the Friant Kern Canal to relieve some of this potential flooding pressure, resulting in flood flow alignment towards Treehouse.

Gerald Mele & Associates Inc. working on facility improvements for Treehouse and needing flood proofing for building permits conservatively determined a flood elevation of 2 feet to adjacent grade and a flood proofing elevation of 2.5 feet (copy of a certificate provided in **Appendix B**).

The treatment and storage pond area located in the southern new parcel (APN 310-290-006) is outside of flood Zone A as shown in the second FEMA map of **Appendix B** and by that the ponds do not need flood protection.

4 Lined Treatment and Storage Ponds

Three lined treatment ponds and one lined storage pond will be constructed in the newly acquired land, APN 318-290-006 (see **Appendix A**).

4.1 Treatment Ponds

The first two ponds will provide anaerobic treatment. Each pond will have a volume of approximately two and a half days of wastewater generation at the maximum daily production. Water will gravity flow through these ponds in series. Mixing will be provided near the floors to break up the potential for channelizing flow and activate digestion of the almond particles in the lower zone. These ponds will have a large anchor trench in case they need to be covered to reduce odors.

The third treatment pond will be an extended aeration treatment process that has a treatment volume of approximately eight days of wastewater generation at maximum daily production. Fine-bubble diffused aeration will be provided.

4.2 Storage Pond

The designed storage capacity of the pond was calculated based on a 120-day period of November 1 through March 1 using the 6 days per week of maximum average daily wastewater generation, 100-year annual return rainfall, and evaporation. This resulted in a storage capacity of 17.1 million gallons. Results of the calculations for storage capacity are provided in the Pond Design Report (**Appendix C**).

Subsequently the irrigation schedule/water balance was prepared considering the planned crops not necessarily needing a 120-day storage period. **Section 6** goes into detail of the irrigation plan for providing nutrients during irrigation.

4.3 Liner Design

The liner design for these ponds will be 60 mil HDPE double lined with a leakage collection system to monitor for any leakage through the primary layer. This design is based on the Tier 1 requirements identified in the Existing Dairy General Order R5-2013-0122. By lining the wastewater ponds, groundwater monitoring wells will not be required as identified in the WDR.

A Lined Pond Design Report and a Pond Operation & Maintenance Plan are included with this report (see **Appendix C and D**).

5 Storm Water Basin

Wastewater and storm water are separate stream flows at Treehouse. The almonds are stored and processed indoors resulting in the storm water being free of product.

The existing storm water basin located on the east side of the plant is planned to be removed. A new soil lined storm water basin will be added to the north of the facility to provide the storage needed to capture rainfall runoff.

As identified earlier, approximately 434,600 ft^2 of the rainfall footprint will be collected and stored in the lined storage pond. There is a remainder of approximately 1,177,300 ft^2 of roof and pavement of the current plant and the future warehousing plans.

The Industrial General Permit Order identifies under a NONA classification sufficient storm water capacity of a pond being capable of containment of the maximum historic precipitation event.

For the Delano weather station there was a maximum storm event of 5.43 inches. For a significant storm, event runoff coefficients were not considered resulting in a calculated needed storm volume of 532,722 ft^3.

A new storm pond of 330' x 210' x 13' @ 3:1 side slope will provide 585,792 ft^3 at 1 foot of freeboard. This volume exceeds the calculated capacity needed.

6 Nutrient and Wastewater Management Plan (NMP)

This section generally describes and demonstrates the management of the LAA to beneficially reuse and treat wastewater from the facility while maintaining crop viability, controlling soil salinity, applying wastewater and nutrients at agronomic rates, and protecting environmental quality.

6.1 Land Application Area Cropping and Irrigation Management

The proposed LAA crop rotation is corn silage in the summer and small grain silage such as wheat, triticale, barley, and mixes of each in the winter. Corn silage is grown during the summer months and is harvested (chopped) once. Small winter grains are fall/winter/spring (generally October through May) crops that are also harvested once. Details of LAA cropping, assumed yields, and nitrogen and salt removal rates are summarized in Table 5. Other crops like corn such as sorghum and sudangrass are also options for LAA cropping and generally have the same nutrient and salt removal rates in addition to similar management practices.

For the NMP soil-water and nutrient balance calculations, it was assumed that the entire LAA will be cropped with a rotation of corn and winter forage, and that both fields will generally be harvested at similar times, due to the relatively small acreage.

The LAA will be irrigated via border-check surface irrigation. The estimated irrigation efficiency factor used in this NMP was 70% to generally account for evaporative loss (Solomon, 1998 and PG&E, 1993). The LAA will be managed such that no offsite runoff occurs. There will be a tailwater system to pump water back up to the head of the field.

Air gaps and/or backflow prevention devices are used on the irrigation well, and connection points to prevent back siphoning of wastewater.

6.2 Soil-Water and Nutrient Balances

Design parameters, including crop selection, potential crop evapotranspiration (**ETc**), precipitation rates, wastewater flow, storage ponds, supplemental irrigation water, and soil available water holding capacity were used to calculate daily soil-water balances for the LAA. In general, soil-water balances evaluate all hydraulic inputs (effective precipitation, freshwater irrigation, effluent irrigation), outputs (crop water use), soil moisture, and estimated deep percolation beyond the root zone. These soil-water balances generally maintain a maximum/management allowable depletion (**MAD**) of 70% in the crop root zone, where possible. The soil-water balances were developed with the following objectives:

Table 5. Land application area crop Information.
Treehouse California Almonds, LLC, Earlimart, California

Field	Crop	Harvest Method	Harvest Unit	Approximate Harvest Interval	Number of Cuttings	As Harvested Yield Goals	Dry Matter Yield Goals	Moisture	Typical Protein	Approximate Nutrient Removal Rates [1]			
										N	P	K	Salt
						tons/acre	lbs/acre			pounds/acre			
All Fields	Corn Silage	Silage	tons	n/a	1	32.0	19,200	70%	10%	241	--	--	1,920
All Fields	Wheat Forage	Silage	tons	n/a	1	25.0	15,000	70%	11%	263	--	--	1,500
TOTAL FOR CORN-WHEAT ROTATION:					**2**	**57.0**	**34,200**	**--**	**--**	**503**	**--**	**--**	**3,420**
All Fields	Alfalfa	Hay	100 lb bales	~30 days	7-8	10.0	17,600	12.0%	21%	623	50	384	2,200

NOTES:

Abbreviations: K = potassium; lb = pound; N = nitrogen; P = phosphorus.

1 Nutrient removal rates derived from: Crop Nutrient Harvest Removal. 2009. University of California Cooperative Extension Manure Technical Bulletin Series. http://manuremanagement.ucdavis.edu. G.S. Pettygrove, Cooperative Extension Soils Specialist, and Ian Bay, Department of Land, Air, and Water Resources, University of California, Davis; and Geisseler, D. 2016. Nitrogen Concentrations in harvested plant parts - a literature overview. Department of Land, Air, and Water Resources, University of California, Davis.

- Evaluate LAA Loading Rates:
  - Apply irrigation water at agronomic rates.
  - Minimize deep percolation of water below the root zone.
  - Supply adequate irrigation water and soil moisture to meet crop ETc rates while accounting for an irrigation system efficiency factor (70%) and a MAD of 70%.
  - Manage soil salinity by matching leaching fractions to leaching requirements to maintain land treatment capacity (to maintain the potential for high crop yields and associated crop nutrient removal).
  - Match net nitrogen application rates to crop nitrogen removal rates.
  - Manage salt loading within appropriate rates.
  - Balance the above factors with the available storage pond capacity to ensure minimum freeboard requirements are always maintained.

One soil-water balance scenario was developed for this NMP. The specifics of the soil-water balance variables are provided below:

- 66 design net farmable acres planted to a crop rotation of corn and winter grain silage (Table 5)
- Projected effluent flow to the LAA of 0.150 MGD (Table 3) for 312 days per year.
- Estimated effluent quality (Table 2).
- 100-year return rainfall (Table 4).

6.3 Evapotranspiration

Average reference evapotranspiration (**ETo**) values were multiplied by the appropriate crop coefficients (**Kc**) to calculate potential crop evapotranspiration (**ETc**). The values used in the soil-water balances are tabulated in Table 6.

6.4 Effluent Storage Pond

Details on the storage pond are provided in **Appendix C**.

6.5 Soil-Water Balance Results

The irrigation results from the soil-water balances are summarized in Table 7. Substantial freshwater supplementary irrigation is needed to maintain crop productivity and nutrient removal capacity for the summer crop. On average across the crop rotation, facility wastewater will likely provide approximately 46% of the total crop water demand (Table 7). Leaching Requirements to maintain soil salinity were met and the MAD was mostly maintained around 70%. The daily soil-water balances are provided in **Appendix E1** and associated loading rates are provided as **Appendix E2**.

6.6 Pond Capacity

A storage pond water balance completed in tandem with the soil-water balances. A daily pond water balance included the following variables using a 100-year return rainfall amount:

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
Jan	1	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	2	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	3	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	4	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	5	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	6	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	7	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	8	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	9	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	10	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	11	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	12	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	13	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	14	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	15	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	16	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	17	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	18	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	19	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	20	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	21	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	22	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	23	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	24	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	25	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	26	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	27	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	28	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	29	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	30	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	31	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
Feb	**1**	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	2	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	3	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	4	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	5	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	6	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	7	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	8	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	9	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	10	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	11	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	12	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	13	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	14	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	15	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	16	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	17	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	18	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	19	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	20	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	21	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	22	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	23	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	24	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	25	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	26	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	27	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	28	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
March	1	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	2	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	3	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	4	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	5	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	6	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	7	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	8	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	9	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	10	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	11	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	12	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	13	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	14	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	15	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	16	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	17	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	18	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	19	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	20	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	21	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	22	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	23	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	24	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	25	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	26	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	27	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	28	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	29	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	30	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	31	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
April	**1**	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	2	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	3	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	4	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	5	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	6	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	7	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	8	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	9	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	10	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	11	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	12	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	13	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	14	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	15	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	16	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	17	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	18	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	19	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	20	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	21	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	22	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	23	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	24	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	25	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	26	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	27	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	28	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	29	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	30	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
	1	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	2	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	3	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	4	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	5	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	6	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	7	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	8	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	9	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	10	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	11	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	12	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	13	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	14	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	15	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
May	**16**	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	17	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	18	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	19	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	20	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	21	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	22	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	23	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	24	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	25	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	26	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	27	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	28	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	29	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	30	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	31	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
	1	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	2	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	3	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	4	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	5	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	6	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	7	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	8	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	9	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	10	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	11	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	12	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	13	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	14	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	15	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
June	**16**	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	17	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	18	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	19	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	20	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	21	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	22	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	23	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	24	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	25	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	26	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	27	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	28	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	29	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	30	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
July	1	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	2	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	3	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	4	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	5	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	6	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	7	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	8	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	9	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	10	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	11	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	12	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	13	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	14	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	15	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	16	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	17	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	18	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	19	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	20	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	21	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	22	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	23	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	24	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	25	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	26	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	27	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	28	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	29	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	30	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	31	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
Aug	1	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	2	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	3	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	4	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	5	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	6	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	7	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	8	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	9	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	10	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	11	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	12	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	13	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	14	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	15	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	16	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	17	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	18	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	19	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	20	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	21	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	22	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	23	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	24	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	25	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	26	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	27	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	28	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	29	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	30	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	31	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
Sept	1	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	2	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	3	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	4	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	5	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	6	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	7	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	8	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	9	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	10	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	11	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	12	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	13	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	14	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	15	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	16	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	17	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	18	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	19	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	20	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	21	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	22	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	23	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	24	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	25	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	26	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	27	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	28	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	29	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	30	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
Oct	1	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	2	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	3	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	4	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	5	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	6	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	7	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	8	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	9	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	10	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	11	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	12	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	13	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	14	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	15	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	16	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	17	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	18	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	19	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	20	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	21	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	22	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	23	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	24	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	25	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	26	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	27	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	28	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	29	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	30	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	31	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
Nov	**1**	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	2	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	3	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	4	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	5	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	6	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	7	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	8	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	9	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	10	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	11	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	12	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	13	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	14	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	15	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	16	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	17	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	18	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	19	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	20	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	21	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	22	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	23	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	24	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	25	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	26	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	27	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	28	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	29	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	31	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
	1	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	2	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	3	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	4	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	5	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	6	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	7	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	8	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	9	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	10	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	11	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	12	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	13	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	14	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	15	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
Dec	16	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	17	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	18	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	19	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	20	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	21	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	22	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	23	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	24	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	25	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	26	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	27	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	28	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	29	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	30	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	31	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
Total		**15.71**	**11.53**	**53.37**	**--**	**--**	**--**	**25.87**	**14.03**	**15.39**		**44.91**
Planting				**--**	**15-Jun**	**1-Nov**	**--**	**--**	**--**	**--**	**--**	**--**
Harvesting				**--**	**15-Oct**	**1-May**	**--**	**--**	**--**	**--**	**--**	**--**

NOTES:

1 Weather data from CIMIS station 15 in Stratford, California.

2 Crop coefficients adapted from: http://cekern.ucanr.edu/Irrigation_Management/ and UCCE, 1994. Using reference evapotranspiration (ETo) and crop coefficients to estimate crop evapotranspiration (ETc) for agronomic crops, grasses, and vegetable crops. Leaflet 21427. Cooperative Extension, University of California Division of Agriculture and Natural Resources.

Table 7. Irrigation Summary of soil-water balances.
Treehouse California Almonds, LLC, Earlimart, California

CROP ROTATION	COMMODITY ACRES	GROSS IRRIGATION TOTALS [1]								NET IRRIGATION TOTALS [2]								CROP EVAPOTRANSPIRATION (ETc)	EST. LEACHING VARIABLES	
		Effluent			Freshwater			Total		Effluent [1]			Freshwater [1]			Total		Potential	Leaching Requirement	Leaching Fraction
		MG	inches	% of total	MG	inches	% of total	MG	inches	MG	inches	% of total	MG	inches	% of total	MG	inches	inches		
Scenario 1 - 100% Corn-Wheat Rotation																				
Corn Silage	66	**20.853**	11.6	30%	49.679	27.7	70%	70.532	39.4	14.597	8.1	30%	34.775	19.4	70%	49.372	27.5	28.7	4.2	0.1
Winter Forage	66	**22.423**	12.5	100%	0.000	0.0	0%	22.423	12.5	15.696	8.8	100%	0.000	0.0	0%	15.696	8.8	16.2		2.8
Totals	**132**	**43.276**	**24.1**	**47%**	**49.679**	**27.7**	**53%**	**92.955**	**51.9**	**30.293**	**16.9**	**47%**	**34.775**	**19.4**	**53%**	**65.068**	**36.3**	**44.9**	**4.2**	**2.9**
Acreage-weighted Site-Wide Averages		**21.638**	**12.1**	**--**	**24.839**	**13.9**	**--**	**46.477**	**25.9**	**15.147**	**8.5**	**--**	**17.388**	**9.7**	**--**	**32.534**	**18.2**	**22.5**	**--**	**1.5**

NOTES:
Abbreviations: MG = million gallons.
All values summarized from more detailed soil-water balances.
1 Gross irrigation is before adjusting for irrigation efficiency.
2 Net irrigation accounts for an irrigation efficiency factor.

- Inputs to ponds (Details in **Appendix C**):
    - Direct pond surface precipitation
    - Facility precipitation runoff from approximately
    - Facility wastewater influent flow (Table 3).
- Outputs from ponds:
    - Effluent flow for LAA irrigation (from the soil-water balances in Appendix E1).
    - Pond evaporation (Appendix F).
    - Percolation (assumed to be zero due to plastic pond liners – Appendix F).

Appendix G is an illustration of the pond water balance and **Appendix F** includes the daily pond water balance values used the generate **Appendix G**. It was assumed that the ponds will generally be empty around October 1 annually to prepare for the next winter's rainfall.

From October through early March, there is generally a net accumulation of stored water due to winter rains, stormwater runoff, and lower crop water demand. From early March through September, stored water is drawn down due to less rainfall and high crop water demand in the summer months.

The maximum modeled volume of water stored is approximately 15.0 MG, which is less than the minimum 2 feet freeboard volume of 17.1 MG. Additional pond capacity up to the rim of the pond is available for emergency situations but will not be utilized. Ultimately, the Treehouse Almonds wastewater system has significant flexibility to manage pond water volumes due to the LAA fields.

Actual pond water volumes will vary daily than the modeled values provided in this report based on management, rainfall, and logistics, but this evaluation demonstrates that the system has capacity to manage the design flows.

6.7 Mass Loading and Balances

This section will describe the capabilities of the LAA to treat nitrogen, salt, and BOD loading from the facility's wastewater discharge. Projected effluent flow volumes are summarized in Table 3 and projected effluent water quality data are provided in Table 2. Daily soil-water balance calculations and mass loading rates for corn-wheat rotations are provided as **Appendix E1** and **Appendix E2**, respectively. Daily irrigation rates from the soil-water balances (**Appendix E1**) and effluent water quality data (Table 2) were used to calculate daily mass loading rates (**Appendix E2**). The following concentrations were used for the loading rate calculations: 85 mg/L (Total N), 730 mg/L (FDS), and 60 mg/L (BOD).

6.8 Nitrogen Loading and Nitrogen Balances

6.8.1 Background Information on Nitrogen Balances

6.8.1.1 Background Information on Nitrogen Balances

Nitrogen is often the focus of land treatment systems and regulatory requirements because it is subject to environmental losses that can impair water quality. Nitrogen management is difficult because negatively charged nitrate ions are mobile in soil and move through the root zone and vadose zone with water. Nitrogen applied as ammonium (e.g., ammonia rich wastewater, ammonium sulfate, and ammonium/phosphorus combinations such as MAP, DAP, and 10-34-0) rapidly nitrifies to nitrate. This process generally happens in less than two weeks in California, and in the San Joaquin Valley (WPHA, 2002), it can occur within a few days. To efficiently manage nitrogen, one must carefully manage irrigation and root zone soil moisture. Nitrogen applied to dry soil as ammonia can volatilize ("off-gas") and be lost to the atmosphere. This NMP considered these factors and evaluated nitrogen balances and ratios to determine the potential nitrogen dynamics of the Treehouse Almonds LAA.

Due to the mobility of nitrate in soil, nitrogen balances need to be evaluated in conjunction with soil-water balances that evaluate soil moisture and leaching fractions. It is not as simple as evaluating total nitrogen applied vs. theoretical or measured crop nitrogen removal rates. Timing and irrigation are critical to this process. If all nitrogen is applied early in the season and excessive irrigation results in deep percolation before the crop can consume the water and nutrients, much of the applied nitrogen could be lost beyond the root zone. Moreover, if parts of the root zone are kept excessively moist, substantial amounts of nitrate may be lost via soil micropore denitrification, which may not be desirable for crop production. Gaseous losses of nitrogen can be regulated by many factors, but primarily by environmental conditions such as temperature, soil moisture, pH, and the availability of soil carbon.

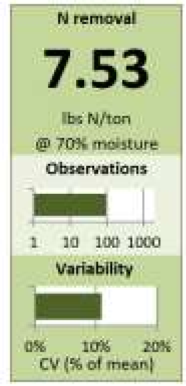
6.8.1.2 Crop Nitrogen Removal Rates

Nitrogen removal rates were derived from a comprehensive literature review completed by Dr. Daniel Geisseler[1] that was funded by the California Department of Food and Agriculture Fertilizer Research and Education Program (CDFA FREP) and originally published in 2016 (Geisseler, 2016) and updated in 2021 (Geisseler, 2021). According to the author: "*The final report identifies the best available nitrogen removed estimates for close to 99% of the crop acreage in the Central Valley . . .".* Snippets from Geisseler (2021) are included below for the crop rotation used in this report.

[1] University of California Cooperative Extension Specialist in the Department of Land, Air, and Water Resources at the University of California, Davis

Update: March, 2021

Corn – Silage



Data sources

A total of 96 observations from three California sources were included in the report. In summer 2014, Heguy and Silva-del-Rio from UC Cooperative Extension visited 20 San Joaquin Valley dairy farms during corn silage harvest, and collected a composite sample from five truckloads of corn silage for nutrient analysis. From 1997 to 2011, Peter Robinson, Cooperative Extension Specialist for Dairy Nutrition and Management at UC Davis, collected samples from commercial dairy farms. In both cases, the silage was analyzed for crude protein. The values from these two sources were already included in the 2016 report.

In addition, we received and analyzed samples from a field trial in Fresno County where two varieties, different N application rates and deficit irrigation treatments were compared. The trial was managed by Bob Hutmacher, UCCE Extension Specialist, and Nick Clark, UCCE Farm Advisor for Kings, Tulare and Fresno counties.

Data sources and number of observations.

Source	Sites		Years sampled		Observations
	Location	n	Years	n	
Heguy and Silva-del-Rio, 2014	California	20	2014	1	20
Robinson, 2011	California		1997-2011		52
Irrigation & N trial	California	1	2017	1	12
Irrigation & N trial	California	1	2018	1	12
Overall					**96**

Summary statistics of corn silage N removal data.

Source	Summary (lbs N/ton @ 70% moisture)			CV (%)
	mean	SD	Range	
Heguy and Silva-del-Rio, 2014	7.39	0.58	6.0 - 8.4	7.8
Robinson, 2011	7.62	0.87	5.0 - 10.4	11.3
Irrigation & N trial 2017	7.59	0.78	6.8 - 9.5	10.3
Irrigation & N trial 2018	7.32	1.00	5.9 - 8.9	13.6
Overall	**7.53**	**0.82**	**5.0 - 10.4**	**10.9**

Variability

The variability of the data is intermediate with a CV of 10.9% of the mean. Since the samples were collected from a large number of farms in different years, such variability can be expected. A factor that will contribute to variability across field is the moisture content of the silage, since it ranged from 60 to 81% in the two datasets from dairy farms. For this report, the N concentration was calculated for a moisture content of 70%.

In the irrigation and N rate trial, the factors year, irrigation level (ranging from 50 to 100% of ET), and variety had no effect on N concentration in the plants. The trial also included three N application rates, namely 0, 120 and 240 lbs N/acre. Nitrogen concentration in the plants was significantly lower in the zero N treatment, while the other two N treatments did not differ significantly. Since the production of silage corn without N applications is not a common practice in California, the values from the zero N treatment were not included in this report.

Discussion

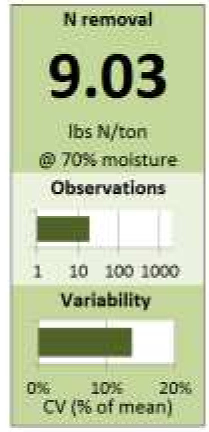
72 samples were collected from dairy farms in the Central Valley. The dairy farms were not selected based on their silage quality. In addition, the 24 samples from the irrigation and N rate trial provide insight into the effects of different factors on N concentration in silage corn. Therefore, the estimate for N removed can be considered a very good estimate of Central Valley corn silage.

References

Robinson, P., 2011. Assays of individual samples of California feedstuffs. Available online at: http://animalscience.ucdavis.edu/faculty/robinson/Projects_folder/pdf/assays_2010_12.pdf

Heguy, J., Silva-del-Rio, N., 2014. 2014 Corn Silage Audit. Available online at: http://corn.ucanr.edu/files/221127.pdf

Triticale – Silage



Data sources

The data included in this report are from a small grain variety trial conducted over multiple years in the Southern San Joaquin Valley by a team led by Steve Wright, UCCE Farm Advisor in Kings and Tulare Counties. Triticale was grown during the winter. Little additional information is available about crop management.

Relevance

The trial was completed in Tulare and Kings Counties with several relevant varieties over a period of four years. Even though the trial was completed at only one site each year, the average N concentration can be considered a good estimate of N concentrations found in triticale silage produced in the Central Valley, as varieties and crop management are likely similar across the valley.

Data sources and number of observations.

Source	Sites		Years sampled		Observations
	Location	n	Years	n	
Wright et al., 2014	Tulare/Kings	1	2014	1	5
Wright et al., 2012	Tulare	1	2011	1	4
Wright et al., 2009	Tulare	1	2009	1	6
Wright et al., 2009	Tulare	1	2008	1	4
Overall	**Tulare**			**4**	**19**

Summary statistics of triticale silage N removal data.

Source	Summary (lbs N/ton at 70% moisture)			
	Mean	SD	Range	CV (%)
Wright et al., 2014	10.64	0.59	10.0 - 11.5	5.5
Wright et al., 2012	9.62	0.12	9.5 - 9.8	1.3
Wright et al., 2009	7.79	0.29	7.4 - 8.2	3.7
Wright et al., 2009	8.30	0.24	8.0 - 8.5	2.9
Overall	**9.03**	**1.24**	**7.4 - 11.5**	**13.7**

Variability

The dataset reveals that year has a large effect on the N concentration in triticale silage. Other factors that may contribute to the variability of silage N contents include growth stage when cut and N fertilization level. With the present trial, the effect of these factors may not have been fully captured.

Discussion

The trial likely provides a good estimate of the average N concentration in triticale silage produced in the Central Valley. The results may not capture the variability of silage produced in growers' fields, as factors such as N application rate and growth stage when harvested likely vary much more among growers' fields. For a better and robust estimate, a relatively large number of samples would need to be collected from fields across the Central Valley over a period of several years.

References

Wright, S., Silva-del-Rio, N., Collar, C., Banuelos, L., 2009. Small grain silage variety study. UC ANR Small Grain News Tulare County October 2009, 11-12. Available online at: http://cetulare.ucanr.edu/newsletters/Small_Grain_News41326.pdf

Wright, S., Banuelos, L., Silva-del-Rio, N., Collar, C., Hernandez, K., Stambach, H., 2012. Small grain silage variety trial 2011. UC ANR Small Grain News Tulare County 6(3), 10. Available online at: http://cetulare.ucanr.edu/newsletters/Small_Grain_News44749.pdf

Wright, S., Banuelos, L., Souza, Collar, C., 2014. Small grain silage variety trial 2014. UC ANR Small Grain News Tulare County 10(3), 7-9. Available online at: http://cetulare.ucanr.edu/newsletters/Small_Grain_News52831.pdf

6.8.2 Nitrogen Balance Results

Nitrogen loading rates, crop nitrogen removal, and associated metrics are summarized in Table 8. Crop information and removal rates are provided in Table 5. Gross nitrogen loading is the amount of nitrogen applied with the wastewater and freshwater irrigation before accounting for likely losses including volatilization of ammonia and denitrification of nitrate. Considering ammonium-nitrogen fraction of the treated wastewater, volatilization will occur. Ammonia volatilization from fertilized soils can be up to 33 to 50% of applied ammonia-nitrogen (IPNIa, undated; Pettygrove and Eagle, 2009; Havlin et al., 2005). Denitrification rates can range from 2 to 25% of nitrogen applied to well-drained soils (Havlin et al., 2005; IPNIb, undated; Pettygrove and Eagle, 2009). For this NMP, gaseous ammonia loss via volatilization was assumed to be a conservatively low 10% and denitrification losses of nitrate-nitrogen were assumed to be only 5%. However, nitrogen loading should still be within agronomic rates even if zero nitrogen gaseous loss was assumed, as represented by gross nitrogen loading rates summarized in Table 8. Net nitrogen loading represents net loading after accounting for potential gaseous losses. Nitrogen applied is represented by the letter "A" and nitrogen removed is represented by the letter "R".

To evaluate the performance of LAA, a nitrogen balance (**A-R**) and the ratio of applied nitrogen to nitrogen removed (**A/R**) were examined. Nitrogen loading is not a limiting factor for the capacity of the LAA. Using the yield goals specified in this NMP, more nitrogen is likely to be removed via crop harvest than will likely be applied via effluent irrigation. For A-R, this is represented by a negative net nitrogen balance (less than 0 pounds/acre). A negative nitrogen balance indicates that more nitrogen was removed via crop harvest than was applied, and a positive nitrogen balance indicates more nitrogen was applied than removed. For A/R, a balanced system is represented by a ratio of approximately 1.00. A ratio of less than 1.00 indicates that less nitrogen was applied than was removed, and a ratio of greater than 1.00 indicates more nitrogen was applied than removed.

As shown in Table 8, net nitrogen balances were less than 0 pounds/acre, and all ratios were less than 1.00. These metrics in combination with an adequate soil-water balance indicate that nitrogen applications should be within agronomic rates at the LAA. Overall gross and net

Table 8. Nitrogen balances from soil-water balances.
Treehouse California Almonds, LLC, Earlimart, California

CROP ROTATION	COMMODITY ACRES	GROSS NITROGEN LOADING 1				NET NITROGEN LOADING [3]				CROP NITROGEN REMOVAL (R) [4]	NET AR METRICS	
		Effluent	Freshwater	Commercial Fertilizer [2]	Total N Applied (A)	Effluent	Freshwater	Commercial Fertilizer [2]	Total N Applied (A)		Nitrogen Balance (A-R) [5]	Nitrogen Applied ÷ Nitrogen Removed (A/R) [6]
		Total N	NO_3-N			Total N	NO_3-N					
		pounds of nitrogen per acre				pounds of nitrogen per acre						
Scenario 1 - 100% Corn-Wheat Rotation												
Corn Silage	66	224	31	0	**255**	211	30	0	**241**	241	**0**	**1.00**
Winter Forage	66	241	0	0	**241**	227	0	0	**227**	263	**-35**	**0.87**
Total	**132**	**465**	**31**	**0**	**496**	**439**	**30**	**0**	**469**	**503**	**-35**	**0.93**
Acreage-Weighted Average	**--**	**232**	**16**	**0**	**248**	**219**	**15**	**0**	**234**	**252**	**-17**	**0.93**

NOTES:
Abbreviations: NO_2-N = nitrite-nitrogen, NO_3-N = nitrate-nitrogen, NH_4-N = ammonium-nitrogen, Total N = TKN + NO_3-N, and
TKN = total Kjeldahl nitrogen (organic N + ammonium N).
1 Gross nitrogen additions represent nitrogen applied before crop removal or atmospheric losses due to ammonium volatilization or micropore denitrification.
2 Nitrogen balance assumes no commercial nitrogen added. Soil testing and crop observation will determine need for nitrogen fertilization.
3 Assumes gaseous loss of 10% of applied nitrogen via ammonia volatilization and 5% loss of nitrate via soil micropore denitrification.
4 Removal rates are described in Table 9.
5 Applied nitrogen (A) minus nitrogen removed (R). A negative balance indicates that more nitrogen was removed than was applied.
6 A ratio of less than 1.00 indicates that less nitrogen was applied than was removed.

nitrogen applied is less than nitrogen removed and leaching beyond the crop root zone was limited to the winter rainfall periods from an assumed 100-year Return rainfall year and the amount required to maintain root zone salinity.

6.9 Soil Loading and Balances

Salt loading is another important item to consider when designing and managing a land application system. Design of these systems should not be based only on hydraulic, nitrogen, or BOD loading. Excessive salt loading can have detrimental impacts to crops with diminishes the treatment capacity of the land treatment system, and it can also degrade groundwater quality if excessive mass is leached beyond the root zone.

The Salinity Control and Minimization Plan described below evaluates individual sources of salinity that contribute to the overall wastewater salinity and summarizes options to minimize salinity contributions.

6.9.1 Agronomic Rates for Salt Loading

Agronomic rates for salt loading are not well known. Soil scientists and agronomists can evaluate nutrient demand, fertilizer requirements, and nutrient removal rates for essential macro- and micronutrients. Essential *macronutrients* include structural nutrients (carbon, hydrogen, oxygen), primary nutrients (nitrogen, phosphorus, potassium), and secondary nutrients (calcium, magnesium, and sulfur). Essential *micronutrients* include iron, boron, copper, chloride, manganese, molybdenum, zinc, cobalt, and nickel. Many of these nutrients are salts that contribute to the overall salt loading from wastewater irrigation.

It is known that more salt is applied to root zones in irrigated agriculture in the semi-arid western United States than is removed by crop harvests. That is why periodic leaching of salt is a necessary management practice to maintain productive irrigated agriculture. There are various methods to calculate leaching requirements based on crop salinity tolerances and irrigation water electrical conductivity (ECw). These leaching requirements do not directly inform the impact leaching may have on groundwater quality on a landscape level. Determining the impact of salt leaching on groundwater quality requires complex analysis based on various hydrogeologic properties. As a result, simple and clear regulatory guidelines for salt loading that are technically justified are generally lacking.

Waste Discharge Requirements Order R5-2010-0130 – General Order for Dairies with Manure Anaerobic Digesters of Co-digester Facilities (Digester General Order) provides one regulatory reference point. It differentiates “nutrient salts” (nitrogen, phosphorus, and potassium) and “non-nutrient” salts (sodium, calcium, magnesium, carbonate, bicarbonate, chloride, and sulfate). The Digester General Order limits non-nutrient salt loading to 2,000 pounds/acre/year for single-cropped fields and 3,000 pounds/acre/year for multi-cropped fields. Nutrient salt loading can be determined by analyzing crop tissue samples for ash content and using those results to calculate salt removal rates. Total salt load is calculated form all relevant inputs (irrigation water and wastewater) and salt removal from crop harvest is subtracted from that amount. The remaining “non-nutrient” salt loading is compared to the 2,000 to 3,000 pounds/acre/year limit. Other sources of salt “losses” or “removal” above the 2,000 to 3,000 pounds /acre crop removal rates include precipitation as insoluble carbonates, fixation by soil clay minerals, and other complex soil chemistry processes but these factors were not considered in this analysis.

Undoubtedly, more work on appropriate salt loading rates is needed in California. Central Valley Salinity Alternatives for Long-Term Sustainability (**CV-SALTS**) Salt Control Program is a discharger-led collaborative to develop long-term solutions for salinity management. As that program develops, better and more scientifically based salt loading strategies will likely become available. In the meantime, the provisions in the Digester General Order were used as a reference point for general guidance but are not necessarily considered adequate as an explicit salt loading limit for land application systems. Routine monitoring of salt loading, soil-water balances, and soil salinity (via soil testing) are effective methods to manage salt loading.

6.9.2 Salt Balance Results

Salt loading rates were based on projected fixed dissolved solids (**FDS**) concentrations of the wastewater (Table 2) and estimated supplemental freshwater irrigation quality. Daily salt loading rates were calculated from the soil-water balances (**Appendix E1** and **Appendix E2**). Crop salt removal rates were adapted from Brown and Caldwell, Kennedy/Jenks Consultants (2007). Salt loading and balances are summarized in Table 9. Results indicate the salt applications to the LAA should be within appropriate rates. The non-nutrient salt balance was less than to the 3,000 pounds/acre guideline for a double crop rotation. Approximately 76% of the salt loading comes from the effluent, and the remaining 24% comes from supplemental freshwater irrigation.

6.9.3 CV-SALTS Nitrate and Salt Control Programs

Treehouse Almonds filed a Notice of Intent with the CVRWQCB and all required documents to join the Tule Basin Management Zone. Treehouse Almonds is pursuing Pathway B (nitrate management zone pathway) for the CVRWQCB Central Valley Salinity Alternatives for Long-term Sustainability (CV-SALTS) Nitrate Control Program. Treehouse Almonds is also pursuing Option 2 (alternative option for salt permitting) for the Salt Control Program and participating in the Prioritization & Optimization Study (P&O Study). Under Option 2, the following Common Salt Requirements will be implemented, as applicable:

- Continued implementation of salinity management practices and/or source control efforts.
- Implementation of pollution prevention plans, watershed plans, and/or salt reduction plans.
- Maintain current discharge levels of salinity to the extent feasible, reasonable, and practicable, while accounting for conservation, salinity levels in the water supply source, and some appropriate increment of growth.
- Comply with interim permit limits, to the extent that the CVRWQCB finds appropriate and necessary to adopt such limits.

6.10 Biochemical Oxygen Demand Loading

The appropriate metric to evaluate BOD loading is cycle average BOD loading rates. To calculate cycle average BOD loading rates, irrigation cycles must be known for each LAA field. To determine irrigation cycles, the following information for each irrigation and field must be known: the start date of an irrigation, end date of the irrigation, and the beginning date of the next irrigation. Total volume of effluent applied to that field during that interval must also be known, in addition BOD concentrations (typically three-to-four sample rolling average concentrations).

Table 9. Salt loading and balances from soil-water balances.
Treehouse California Almonds, LLC, Earlimart, California

CROP ROTATION	COMMODITY ACRES	SALT/FIXED DISSOLVED SOLIDS (FDS) LOADING, REMOVAL, AND BALANCES						
		Effluent	Freshwater	Total (A)	Est. Crop Removal (R)	Non-Nutrient Salt Balance	Generally Recommended Maximum Non-Nutrient Salt Loading Guideline [1]	Salt Loading at Agronomic Rates?
		pounds / acre						
Scenario 1 - 100% Corn-Wheat Rotation								
Corn Silage	66	1,924	1,256	3,179	1,920	**1,259**	--	--
Winter Forage	66	2,068	0	2,068	1,500	**568**		
Total	**132**	**3,992**	**1,256**	**5,248**	**3,420**	**1,828**	**3,000**	**Yes**
Acreage-weighted Averages	**--**	**1,996**	**628**	**2,624**	**--**	**914**	**--**	**--**

NOTES:
1 From: California Regional Board Waste Discharge Requirements Order R5-2010-0130 – General Order for Dairies with Manure Anaerobic Digesters of Co-digester Facilities (Digester General Order).

For this NMP, a generalized irrigation schedule for the LAA was developed via the soil-water balance in **Appendix E1**. Daily BOD loading rates calculated from irrigation events in the soil-water balance are also provided in **Appendix E2** and were only up to a maximum of 13 pounds/acre/day.

A cycle average BOD loading matrix is provided as Table 10. This matrix shows BOD cycle average loading rates based on a range of irrigation cycle days (from 1 to 40) and depth of irrigation applied per irrigation event (from 0.1 to 5.0 inches). According to Table 11, a broad range of total cycle days (irrigation + rest) and depth of effluent applied are possible while maintaining appropriate BOD cycle average loading rates. All possible cycle average loading rates shown in the table are less than 100 pounds/acre/cycle days.

To better demonstrate how BOD loading can be managed, an example daily irrigation plan was developed for each field. The following information is provided:

- Appendix H1 – Daily irrigation plan (inches and MG applied)
    - The total daily volume of effluent applied was taken from the daily soil-water balance (Appendix E1)
- Appendix H2 – BOD loading based on the irrigation plan (pounds/acre and pounds applied)
- Appendix H3 – Nitrogen loading based on the irrigation plan (gross and net loading, pounds/acre)
- Appendix H4 – Salt loading based on the irrigation plan (pounds/acre)
-

A summary of the cycle average BOD loading rates based on the irrigation plan (**Appendix H**) is provided as Table 11. Cycle average loading rates range from 0.2to 37.1pounds per acre per cycle days and are less than the generally recommended 100 pounds per acre per cycle day maximum limit. Actual irrigation schedules and BOD loading rates will vary daily based on management, rainfall, and logistics, but this evaluation demonstrates that the system has capacity to manage BOD loading.

6.11 Recommended Management Practices

The following sections generally describe the recommended management practices to be utilized under this NMP.

6.11.1 Irrigation Management Scheduling

For effective irrigation management, detailed knowledge of the following items is critical:

- Volume of water applied to each field (ideally measured with a flow meter with a totalizer)
- Total time and dates of irrigation events
- Knowledge of soil variability
- Soil AWHC
- Soil bulk density
- Soil infiltration rates and saturated hydraulic conductivity rates (ksat)
- Irrigation system application rates

Table 10. Matrix of biochemical oxygen demand cycle average loading rates.
Treehouse California Almonds, LLC, Earlimart, California

Basic Information:			**Flow and Loading Rates:**		**Applied Numbers**
Average BOD:	60	mg/L	BOD/day:	75 lbs BOD/day	163 lbs BOD/ac-ft
LAA Acres:	1.0	acres	Daily BOD loading rate:	75.1 lbs BOD/acre/day	14 lbs BOD/ac-in
Operational Days:	312	days	Annual BOD Mass Loading:	23,419 lbs BOD/year	500 lbs BOD/MG
Effluent Flow:	0.150	MGD	Annual BOD Loading Rate:	23419 lbs BOD/acre	0.001 lbs BOD/gal
			Average Daily Annual Loading Rate:	75.1 lbs/acre/day	

Total Cycle Days (Irrigation + Rest)	Depth Applied Per Effluent Irrigation Event (inches)																				
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.3	1.5	1.6	1.7	1.8	1.9	2.0	3.0	3.5	4.0	5.0
	Biochemical Oxygen Demand Cycle Average Loading Rate (pounds/acre/cycle days)																				
1	1	3	4	5	7	8	10	11	12	14	18	20	22	23	24	26	27	41	48	54	68
2	1	1	2	3	3	4	5	5	6	7	9	10	11	12	12	13	14	20	24	27	34
3	0	1	1	2	2	3	3	4	4	5	6	7	7	8	8	9	9	14	16	18	23
4	0	1	1	1	2	2	2	3	3	3	4	5	5	6	6	6	7	10	12	14	17
5	0	1	1	1	1	2	2	2	2	3	4	4	4	5	5	5	5	8	10	11	14
6	0	0	1	1	1	1	2	2	2	2	3	3	4	4	4	4	5	7	8	9	11
7	0	0	1	1	1	1	1	2	2	2	3	3	3	3	3	4	4	6	7	8	10
8	0	0	1	1	1	1	1	1	2	2	2	3	3	3	3	3	3	5	6	7	8
9	0	0	0	1	1	1	1	1	1	2	2	2	2	3	3	3	3	5	5	6	8
10	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2	3	3	4	5	5	7
11	0	0	0	0	1	1	1	1	1	1	2	2	2	2	2	2	2	4	4	5	6
12	0	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2	2	3	4	5	6
13	0	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2	2	3	4	4	5
14	0	0	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2	3	3	4	5
15	0	0	0	0	0	1	1	1	1	1	1	1	1	2	2	2	2	3	3	4	5
16	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2	2	2	3	3	3	4
17	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2	2	2	3	3	4
18	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	2	2	3	3	4
19	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	2	3	3	4
20	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	2	2	3	3
25	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	2	2	3
30	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	2	2
35	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2	2
40	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2

NOTES:

Abbreviations: BOD = biochemical oxygen demand.

Table 11. Cycle Average Biochemical Oxygen Demand (BOD) Loading Summary Based on Irrigation Plan.
Treehouse California Almonds, LLC, Earlimart, California

Field	Acres	Effluent Irrigation Dates			Days of Irrigation	Days of Rest	Total Cycle Days	Estimated Biochemical Oxygen Demand (BOD) Loading [2]	
		Start	End	Start of Next Irrigation				lbs/acre	lbs/acre/cycle days (Limit:100)
1	38.00	10/22	10/25	11/5	4	10	14	12	**0.9**
		11/5	11/12	3/1	8	108	116	21	**0.2**
		3/1	3/8	3/15	8	6	14	22	**1.6**
		3/15	3/22	3/29	8	6	14	23	**1.6**
		3/29	4/5	4/11	8	5	13	37	**2.9**
		4/11	4/21	5/20	11	28	39	70	**1.8**
		5/20	5/27	6/1	8	4	12	11	**0.9**
		6/1	6/2	6/5	2	2	4	3	**0.7**
		6/5	6/10	6/21	6	10	16	8	**0.5**
		6/21	6/28	7/6	8	7	15	11	**0.7**
		7/6	7/14	7/20	9	5	14	21	**1.5**
		7/20	7/28	8/3	9	5	14	21	**1.5**
		8/3	8/11	8/17	9	5	14	17	**1.2**
		8/17	8/25	8/31	9	5	14	17	**1.2**
		8/31	9/8	9/14	9	5	14	17	**1.2**
		9/14	9/22	9/28	9	5	14	17	**1.2**
		9/28	9/30	10/22	3	21	24	6	**0.2**
2	28.00	10/22	10/25	11/13	4	18	22	12	**0.5**
		11/13	11/17	3/9	5	111	116	18	**0.2**
		3/9	3/14	3/23	6	8	14	21	**1.5**
		3/23	3/28	4/6	6	8	14	25	**1.8**
		4/6	4/10	5/7	5	26	31	38	**1.2**
		5/7	5/9	5/28	3	18	21	97	**4.6**
		5/28	5/31	6/15	4	14	18	7	**0.4**
		6/15	6/20	6/29	6	8	14	11	**0.8**
		6/29	6/30	7/3	2	2	4	4	**0.9**
		7/3	7/5	7/15	3	9	12	10	**0.8**
		7/15	7/19	7/29	5	9	14	16	**1.1**
		7/29	8/2	8/12	5	9	14	15	**1.0**
		8/12	8/16	8/26	5	9	14	13	**0.9**
		8/26	8/30	9/9	5	9	14	13	**0.9**
		9/9	9/13	9/23	5	9	14	13	**0.9**
		9/23	9/27	10/22	5	24	29	13	**0.4**

- Crop water requirements
- Crop salinity tolerance
- Leaching fractions and leaching requirements
- Irrigation efficiency
- Distribution Uniformity

Flow meters with totalizers will record the volume of influent that is produced by the facility and discharged to the LAA. Meter readings and dates will be recorded on a log sheet so that daily flows can be calculated. It is recommended that flow meters with built-in data loggers be utilized to automatically log daily flow volumes. The total irrigation run times, field numbers, and flow rates will be recorded. This information will be used to calculate the volume and depth of water applied to each field daily.

The NRCS Web Soil Survey Custom Soil Resource Report for the LAA will be routinely referenced to gain an understanding of the geographic distribution and impact of the predominant soil series located within the LAA. Information on soil AWHC, bulk density, and soil infiltration rates is also included in this information and has been evaluated in this NMP.

Soil moisture status should be monitored on an as-needed basis using the NRCS “feel and appearance” method, which with proper experience can estimate soil moisture conditions to an accuracy of five percent. A soil push probe or auger should be used to evaluate the soil moisture status at various depths throughout the root zone. This information will be used to guide future irrigation sets.

Irrigation system application rates will be based on the discharge flow rate from the storage pond. Border check surface irrigation will be used to apply irrigation water to the fields. Visual observations, grower knowledge of the LAAs, irrigation water volumes applied, and soil moisture status will help determine the appropriate irrigation schedule. Crop water requirements will be derived from the closets CIMIS station (or a similar source) and the appropriate crop coefficients.

Corn forage is rated as “moderately sensitive” of salinity and has a threshold soil EC (**ECe**) value of 1,800 µmhos/cm above which salinity will limit growth or yield (Havlin et al., 2005). Winter forages such as wheat are generally “moderately tolerant” and have threshold ECe values around 6,000 µmhos/cm above which salinity will limit growth or yield.

Deep percolation will be limited to or less than the soil salinity leaching requirements and will only be necessary as soil salinity exceeds crop thresholds (i.e., only occasionally based on observations and data). General trends of soil salinity will be monitored by soil monitoring and field scouting. Farm staff will survey the field on a regular basis to evaluate crop health and the general conditions of the LAA. Farm staff will also maintain the irrigation systems and mitigate issues that may occur, such as nozzle plugging and leaks. Proper upkeep and maintenance of the irrigation systems will help achieve sufficient distribution uniformity values, and adequate irrigation scheduling will help achieve reasonably high irrigation efficiencies.

6.11.2 Blending of Effluent and Freshwater

Effluent discharged from the storage pond should be occasionally blended with supplemental freshwater. Supplemental freshwater can be pumped into standpipes and comingled with the effluent in the system before irrigating the LAA. Measurements or flow rates and run times will be used to determine the flow contribution from each supplemental freshwater irrigation source, and all sources will be tested via an irrigation suitability analysis. This will allow calculation of constituent loading rates from each water source. irrigation.

6.11.3 Management of Objectionable Odors

Odors are not anticipated to be a problem at this facility or LAA due to the pretreatment system. This process reduces the amount of nutrients and organics which reduces odor producing compounds. Blending of the effluent with supplemental freshwater may also help reduce odors.

When possible, irrigation events are limited to days with dry and slightly breezy conditions and the fields will be graded to encourage good distribution and drainage. The LAA soils should transmit water into the soil quickly which will limit standing water and odors. Irrigations are cycled through the fields to allow adequate drying and rest times. Cycle average BOD loading demand loading is withing appropriate rates (Table 11).

Where possible, irrigation lines will be flushed with freshwater after each effluent irrigation to minimize solids left in pipelines that may produce odors. Wind breaks such as trees or bushes may also be used in select locations to better manage possible odors.

Dissolved oxygen concentrations in the storage pond should be maintained at a minimum of 1.0 mg/L. If dissolved oxygen concentrations are less than 1.0 mg/L for 3 consecutive sampling events, the issue must be resolved as soon as possible.

Visual observations of the ponds such as algae, vegetation, or scum accumulating on the surface of the ponds will be noted. The LAA will also be inspected daily for evidence of erosion, field saturation, or the presence of nuisance conditions such as flies and ponding. If any nuisance conditions are observed, a swift action plan to mitigate the issues will be developed and implemented, as appropriate.

6.11.4 Sediment and Erosion Control Plan

A sediment and erosion control plan (**SECP**) is another important component of a NMP. Certain nutrients such as phosphorus are generally immobile in the soil profile and not a primary concern for groundwater quality. However, if significant erosion is occurring across the LAA, phosphorus will move with the soil particles and organic matter and may reach surface water bodies. As phosphorus moves to surface water bodies, it becomes a water quality concern because it contributes to eutrophication.

Treehouse Almonds will implement effective sediment and erosion control practices to guide management of erosion, runoff, and minimize possible surface water quality issues.

Frequent observations of any erosion issues will be noted and the SECP practices will be reevaluated as necessary. The SECP for the LAA will include the following practices, which should be sufficient to minimize any water quality issues from erosion:

- Timing irrigation events to crop need (irrigation scheduling).
- Field borders to capture runoff and supplement irrigation.
- Land grading to increase irrigation efficiency and improve drainage control.
- Time between pesticide applications and the next irrigation is as long as possible. Weather is tracked to determine appropriate spray days.

- Improved soil infiltration rates from amendments such as compost and gypsum, and deep ripping.
- Farm roads are graded to reduce erosion, and roads are avoided as much as possible when wet.
- Decomposed granite used on some roads.
- Pocket gopher, ground squirrel, and other rodent management.

6.11.5 The 4Rs of Nutrient Management

The 4Rs of nutrient management is a concept that can maximize crop yields while minimizing environmental impacts. The principles of the 4Rs were considered in development of this NMP and will be considered throughout the management of the LAA. The 4Rs are as follows:

- **R**ight source at the
- **R**ight rate at the
- **R**ight time and in the
- **R**ight place

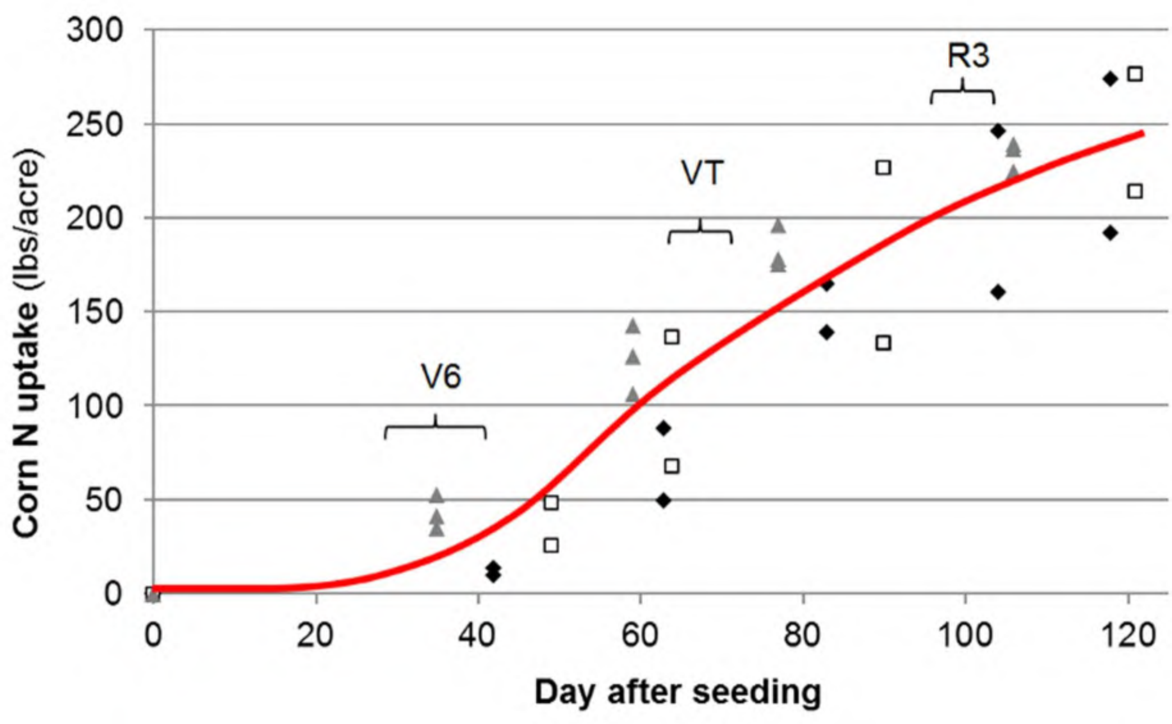
Additional California-specific information on fertilization guidelines can be found via the California Fertilization Guidelines website. Links to information about the recommended LAA crops are provided below. This information and similar sources should be used to guide nutrient management activities.

- Corn silage: http://geisseler.ucdavis.edu/Guidelines/Corn.html
- Wheat: http://geisseler.ucdavis.edu/Guidelines/Wheat.html
- Barley: http://geisseler.ucdavis.edu/Guidelines/Barley.html

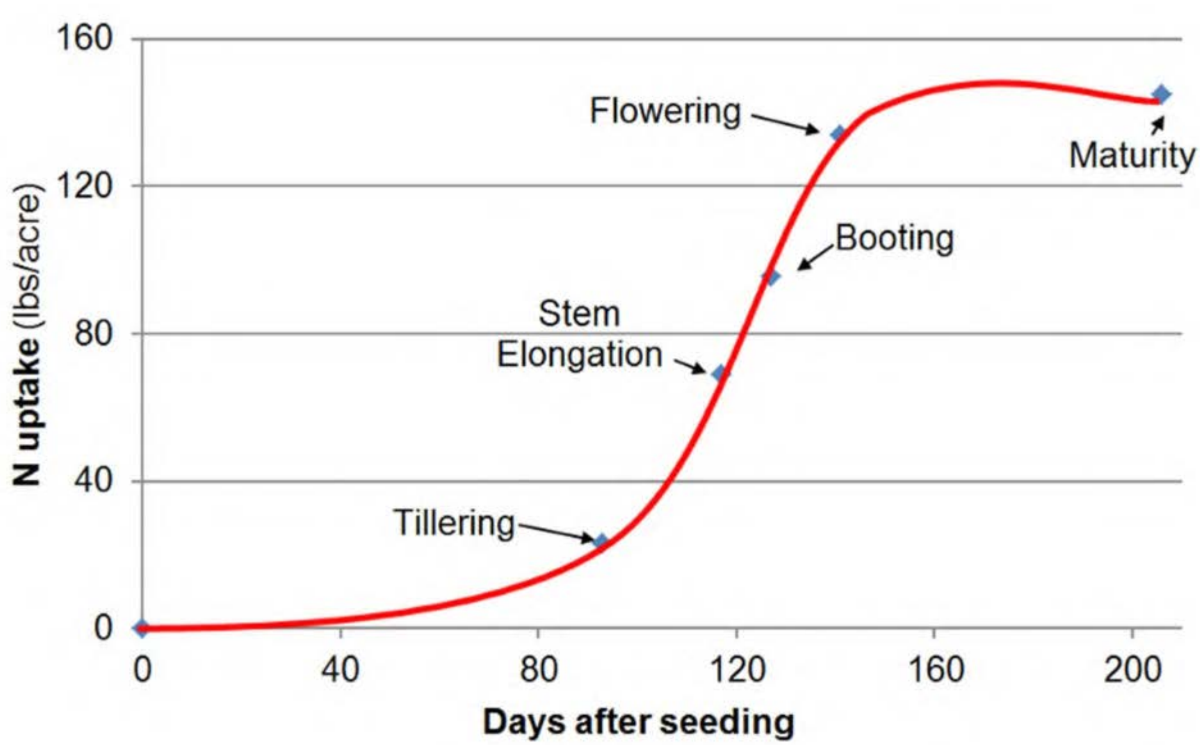
6.11.5.1 Nitrogen

Only small amounts of commercial fertilizer nitrogen should be needed on an occasional basis for the LAA crops. The effluent-, atmospheric-, soil organic matter mineralization-, and residual soil-nitrogen should generally be sufficient to sustain forage crops. Occasionally, 20 to 40 lbs/ac of a starter fertilizer such as monoammonium phosphate may be useful if the residual soil nitrogen concentrations are low, which should be determined from soil samples, farmer judgement, and CCA recommendations. Tissue samples can further guide nitrogen sufficiency evaluations. The soil-water balances (Table 7 and **Appendix E1**) evaluated the timing of nitrogen application and determined that the nitrogen should be available in the crop root zone when it is needed, and leaching is limited to only what is necessary to maintain soil salinity.

The following information from the California Fertilization Guidelines website summarizes nitrogen uptake and partitioning in the recommended LAA crops. This information is useful to time effluent applications to match crop demand:



Picture 1. Nitrogen uptake and partitioning curve for corn silage (http://geisseler.ucdavis.edu/Guidelines/N_Corn_Silage.html)



Picture 2. Nitrogen uptake and partitioning curve for wheat (http://geisseler.ucdavis.edu/Guidelines/N_Wheat.html)

6.11.5.2 Phosphorus

No phosphorus fertilizer is recommended at this time. More information on effluent phosphorus and soil phosphorus concentrations is needed to determine additional phosphorus requirements. Soil and tissue tests should guide phosphorus management. Some phosphorus (30 to 60 lbs/ac) may be applied using monoammonium phosphate when establishing new forage fields. Phosphorus can be incorporated into the top two-to-four inches of the soil surface with a double disk or applied as a band on the soil surface. Application can generally occur at any time, but applications in October through February will generally result in the best response.

6.11.5.3 Potassium

Potassium deficiency in the San Joaquin Valley is generally not an issue, but it can be diagnosed with soil and tissue tests. Potassium requirements for many crops are often similar to nitrogen requirements. The most economical source of potassium is muriate of potash (0-0-60) or potassium sulfate (0-0-52-18) if sulfur is also needed. Applications can be made at any time, but October through February will generally result in the best response. Applications can be made to the soil surface and should not exceed 200-300 pounds of K_2O per acre (166 to 249 pounds of potassium per acre).

For the LAA, potassium fertilizer is not currently recommended. Soil and tissue tests will guide potassium management, and potassium management will be routinely reevaluated as more data is collected.

6.11.5.4 7Rs of Nutrient Management and Conservation

Although the 4Rs are a great starting point, Delgado (2016) states that 4Rs are not enough and that 7Rs are needed. Delgado found that incorporating the 4Rs without considering soil and water conservation does not address soil quality, soil carbon sequestration, sustainability, and maintaining productivity. The principles of both the 4Rs and 7Rs will be considered during the management of this LAA.

6.11.6 Soil Testing

Soil testing should be completed at least once per year. Preferably, soil samples should be collected and analyzed after harvest and before planting of each crop (e.g., once in May and once in October), or presidedress. Soil testing can provide insights into nitrate and salt movement throughout the root zone, and will also be useful to track soil pH, phosphorus, potassium, and other constituents. The goal will be to generally maintain soil test phosphorus levels between 10 to 30 milligrams per kilogram (mg/kg), and soil test potassium levels between 80 to 150 mg/kg. Boron levels should be around 0.2 to 0.4 mg/kg.

6.11.7 Plant Tissue Testing

Crop samples should be collected to determine nutrient removal rates.

6.11.8 Integrated Pest Management

Integrated pest management (IPM) involves the use of all available strategies to properly manage pests, such as selecting pest resistant varieties, timing of cutting schedules, habitat modification such as strip-border cutting, use of biological controls, and careful use of pesticides when necessary. Pest management is important because pest pressures can reduce crop yield and water and nutrient use efficiency. Major forage pests may include weeds, and several diseases and insects. Preplant or postemergence herbicide applications may be necessary because weeds complete with light, moisture, and nutrients. Soil pests are not common, but can include armyworm, wireworms, white grubs, corn rootworms, and cutworms. Spider mites can also damage young plants. Of particular concern, rodents such as pocket gophers and ground squirrels must be managed to protect crop health and minimize erosion issues. A licensed California Pest Control Adviser (PCA) should develop and oversee the IPM program to minimize pest issues while also limiting pesticide use. Site specific monitoring, trapping, and development of economic thresholds will be used as necessary.

6.11.9 Water Source Protection

Effluent should not be applied within a minimum of 100 feet of any irrigation sources, such as irrigation wells and turn outs. Effluent and all chemicals shall be prevented from entering the wellhead. The link provided below provides useful wellhead protection and maintenance practices that should be utilized:

https://agmpep.com/mpep/wp-content/uploads/Wellhead_Protection_V9.pdf

7 Sampling, Analysis, and Record Keeping Plan

The following section describes the sampling and analysis program that should be utilized for this NMP. All laboratory analyses should be completed by a laboratory that is accepted in the Environmental Laboratory Accreditation Program (**ELAP**), the North American Proficiency Testing Program (**NAPT**) by the Soil Science Society of America, or laboratories whose tests are accepted by the University of California.

- Acceptable Laboratories: Analyses shall be performed by laboratories that are accepted in one or more of the following programs:
  - Environmental Laboratory Accreditation Program (ELAP), http://www.dhs.ca.gov/ps/ls/elap/elapindex.htm for appropriate categories:
  - The North American Proficiency Testing Program (NAPT) by Soil Science Society of America http://www.naptprogram.org/about/participants/
  - Laboratories whose tests are accepted by the University of California.

Recommendations provided in this NMP should not be considered regulatory requirements but practical on farm management practices.

7.1 Effluent Monitoring

Effluent samples should be collected from a sampling port from the storage pond immediately prior to irrigation of the LAA. A magnetic flow meter with a totalizer and data logger functionality should be used to monitor effluent flow. The constituents to monitor are listed below:

Frequency	Constituent	Units	Sample Type	Notes
Continuous	Flow	MGD	Flow Meter	

Weekly	pH	pH units	Grab	
Weekly	Electrical Conductivity (ECw)	µmhos/cm	Grab	
Monthly	Total Dissolved Solids (TDS)	mg/L	Grab	
Monthly	Fixed Dissolved Solids (FDS)	mg/L	Grab	
Monthly	Biochemical Oxygen Demand (BOD)	mg/L	Grab	
Monthly	Chemical Oxygen Demand (COD)	mg/L	Grab	
Monthly	Total Suspended Solids (TSS)	mg/L	Grab	
Monthly	Nitrite-Nitrogen (NO_2-N)	mg/L	Grab	
Monthly	Nitrate-Nitrogen (NO_3-N)	mg/L	Grab	
Monthly	Ammonium-Nitrogen (NH_4-N)	mg/L	Grab	
Monthly	Total Kjeldahl Nitrogen (TKN)	mg/L	Grab	
Monthly	Boron (B)	mg/L	Grab	
Quarterly	Total Organic Carbon (TOC)	mg/L	Grab	
Quarterly	General Minerals[1]	mg/L	Grab	

[1] Alkalinity (as CaCO3), bicarbonate (as CaCO3), calcium, carbonate (as CaCO3), chloride, iron, magnesium, manganese, phosphate, potassium, sodium, sulfate, zinc, and MBAS.

7.2 Supplemental Freshwater Irrigation Monitoring

All supplemental freshwater irrigation sources should be monitored for water quality twice annually, when possible and only when actively being used for irrigation. The first sample should be collected near the beginning of the irrigation season (e.g., March to May), and the second sample should be collected near the end of the irrigation season (e.g., October). Ideally, samples will be collected from a sampling port or from water going into a standpipe. Irrigation wells should run for a minimum of 30-minutes prior to sample collection. Trends in water quality results should be monitored.

Magnetic flow meters with totalizers and data logger functionality should be used to monitor flow from each source.

Frequency	**Constituent**	**Units**	**Sample Type**	**Notes**
Continuous	Flow	MGD	Flow Meter	

Twice per Year	Agricultural Suitability Analysis (pH, EC, Cl, B, HCO_3+CO_3, SO_4, NO_3-N, SAR, Langelier Index, Dissolved: Ca, Mg, B, Na, Fe, Mn)	mg/L	Grab	
Twice per Year	Total Dissolved Solids (TDS)	mg/L	Grab	
Twice per Year	Fixed Dissolved Solids (FDS)	mg/L	Grab	
Twice per Year	Ammonium-Nitrogen (NH_4-N)	mg/L	Grab	

7.3 Soil Monitoring

Representative soil monitoring locations should be established in each field. Soil monitoring locations should be based on soil variability, field boundaries, and other practical considerations. Soil samples should be collected using manually propelled soil augers, and each sample should be a composite of at least two bore holes. Samples should be collected from the following depths to adequate characterize the crop root zone:

- 0 to 1 foot
- 1 to 2 feet
- 3 to 4 feet
- 4 to 5 feet

Samples should ideally be collected twice per year after harvest of each crop but before planting of the next crop or just prior to any fertilization events. For example, if winter forage is harvested in late-April, soil samples should be collected soon after harvest once the field is accessible. If corn silage is harvested mid-October, soil samples should be collected soon after harvest once the field is accessible. This sampling program will provide current information on residual fertility going into each new crop. Fertility plans can be adjusted based on the soil test results, as needed.

Soil monitoring locations should be established with reasonably accurate GPS units (± 20 feet), and the same locations should be sampled each event. Trends in soil test results should be monitored, especially for less dynamic constituents such as pH, organic matter, P, and K.

It is also recommended that soil backhoe pits be excavated so that soil profile descriptions can be completed across the LAA to better understand site-specific vertical and horizontal soil variability, in addition to any soil limitations such as hard pans (duripans). Another option is to develop soil maps using the electromagnetic induction (EMI) techniques, which are fast and relatively low-cost surveys. One example of this technology can be reviewed at the Veris Technologies website (www.veristech.com). These surveys will produce detailed soil maps that will help inform site-specific management.

Frequency	Constituent	Units	Sample Type	Notes
Twice per year	Standard Fertility Assay (Saturation percentage, pH, EC, Ca, Mg, Na, ESP, B, gypsum requirement or lime requirement (buffer pH), NO_3-N, PO_4-P, K, Zn, Cl)	Various	Composite	
Twice per year	Organic Matter	Percent	Composite	
Twice per year	Ammonium-nitrogen (NH_4-N)	mg/kg	Composite	
Twice per year	Total Kjeldahl Nitrogen (TKN)	Mg/kg	Composite	
Twice per year	USDA NRCS Soil Texture by feel	n/a	Grab	

7.4 Crop and Plant Tissue Monitoring

The following crop information should be collected from all crops grown each season. **Only crop type, planting and harvest dates, and crop yield should be a component of regulatory monitoring reports**. Crop yield is an extremely important factor to evaluate LAA performance. Treehouse Almonds and any custom harvesters must maintain clear records of crop yield by field.

Frequency	Constituent	Units	Sample Type	Notes
Once per crop	**Crop Type (e.g., corn silage)**	**n/a**	**n/a**	
Once per crop	**Crop plant date**	**Date**	**n/a**	
Once per crop	Seed Cultivar	n/a	n/a	
Once per crop	Seeding Rate	pounds/acre	n/a	
Weekly	Crop status, growth stage, and health	n/a	Observation	
Each cutting	**Crop harvest date (all cuttings)**	**Date**	**n/a**	
Each cutting	**Crop yield (all cuttings)**	**tons/acre**	**n/a**	
Each cutting	If a crop removal sample was collected	yes/no	Composite	
Once per crop	Crop destination (e.g., buyer)	n/a		

Leaf and petiole analysis can be conducted on an as-needed basis based on farmer and Certified Crop Adviser (CCA) judgement. The following crop removal analysis should be completed:

Frequency	Constituent	Units	Sample Type	Notes
Each cutting	Crop Removal Analysis (moisture, N, P, K, Ash)	percent	Composite	

7.5 Land Application Area Monitoring

To adequality monitor and assess the performance of the land treatment system, comprehensive loading rate information is needed, including loading from irrigation, nitrogen, salt, and BOD.

Frequency	**Constituent**	**Units**	**Sample Type**	**Notes**
Daily	What LAA fields were irrigated with effluent	Field #s	n/a	
Daily	What LAA fields were irrigated with supplemental freshwater irrigation	Field #s	n/a	
Daily	Precipitation	inches	Rain gauge	
Daily	Hydraulic loading (all sources)	inches	Calculation	
Daily	Nitrogen loading from effluent	pounds/acre	Calculation	
Daily	Nitrogen loading from supplemental freshwater irrigation	pounds/acre	Calculation	
Daily	Nitrogen loading from fertilizers or other sources (e.g., compost, solids, sludge, etc.)	pounds/acre	Calculation	
Daily	Salt (FDS) loading from effluent	pounds/acre	Calculation	
Daily	Salt (FDS) loading from supplemental freshwater irrigation	pounds/acre	Calculation	
Daily	BOD loading from effluent	pounds/acre	Calculation	
Cycle	Cycle average BOD loading rates	pounds/acre/ cycle days	Calculation	
Daily	<u>Visual Observations</u> (Wind conditions, erosion, standing water, runoff, odors, insects, etc.)	n/a	n/a	
Annual	Soil-water balance (reporting annually at least on a monthly basis)	n/a	n/a	
Annual	Nitrogen mass balance	n/a	n/a	
Annual	Salt mass balance	n/a	n/a	

Annual	<u>Annual cropping plan</u> Evaluate crops to be planted for the calendar year, water and nutrient requirements, and a general plan to ensure crop yield is maximized while applying all inputs at agronomic rates.	n/a	n/a	

7.6 Annual Audit Process

The information collected according to the Sampling, Analysis, and Record Keeping Plan should be compiled into an annual LAA audit report. This report will evaluate the performance of the land treatment system and identify opportunities for process improvements in the following year. The audit should be completed by a Certified Crop Adviser (CCA) or Certified Professional Soil Scientist (CPSS). Results of the audit report should be reviewed with Treehouse Almonds, the LAA farmer, and associated staff.

8 NMP Summary

This NMP characterizes Treehouse Almonds wastewater management. Soil-water balance, a nitrogen balance, a salt loading balance, and a BOD loading plan were evaluated. The results of these calculations demonstrate that wastewater can be applied at agronomic rates. Management practices, a Sampling, Analysis, and Record Keeping Plan, and an annual audit process were recommended to manage the LAA and evaluate system performance. This NMP should be updated by a certified soil scientist and agronomist as more data becomes available or as conditions change. The recommended update frequency is every three to five years. A log of all NMP revisions should be included with all updates.

9 Salinity Control and Minimization Plan

A Salinity Control and Minimization Plan was requested by WDR R5-2018-0066 and is presented in **Appendix I**.

10 Monitoring and Reporting Program

The monitoring and reporting program will be similar to MRP R5-2018-0066 and per the recommendations of the NMP.

It is proposed to submit all monitoring reports on a quarterly basis or less, such as semi-annually. **To provide adequate time to receive laboratory results, review for quality assurance, address inconsistencies, compile all farming data, analyze all information, and develop and internally review quarterly monitoring reports, the proposed schedule for submittal of quarterly monitoring reports to the CVRWQCB is June 1 (Q1 report), September 1 (Q2 report), December 1 (Q2 report), and March 1 (Q4/annual report).**

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Appendix A – Proposed Site Map

Know what's below.
Call before you dig.

WARNING
POWER LINES OVERHEAD

SUMMARY OF LAND USE		
#	APN #	GROSS ACRES
LAND PRODUCTION		
1	319-060-037	41.40
2	319-060-022	16.30
3	319-060-019	4.65
LAND APPLICATION		
4	318-290-005	39.24
5	318-290-006	38.95
GROSSED ACRES (OWNED)		140.54
TOTAL GROSS ACRES (LEASED)		0
PRODUCTION AREA		62.35
POND TREATMENT AREA		9.08
FARMABLE ACREAGE		
4	318-290-005	38.29
5	318-290-006	27.27
NET FARMABLE ACRES		65.56

SCALE IN FEET
0 150 300 600

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

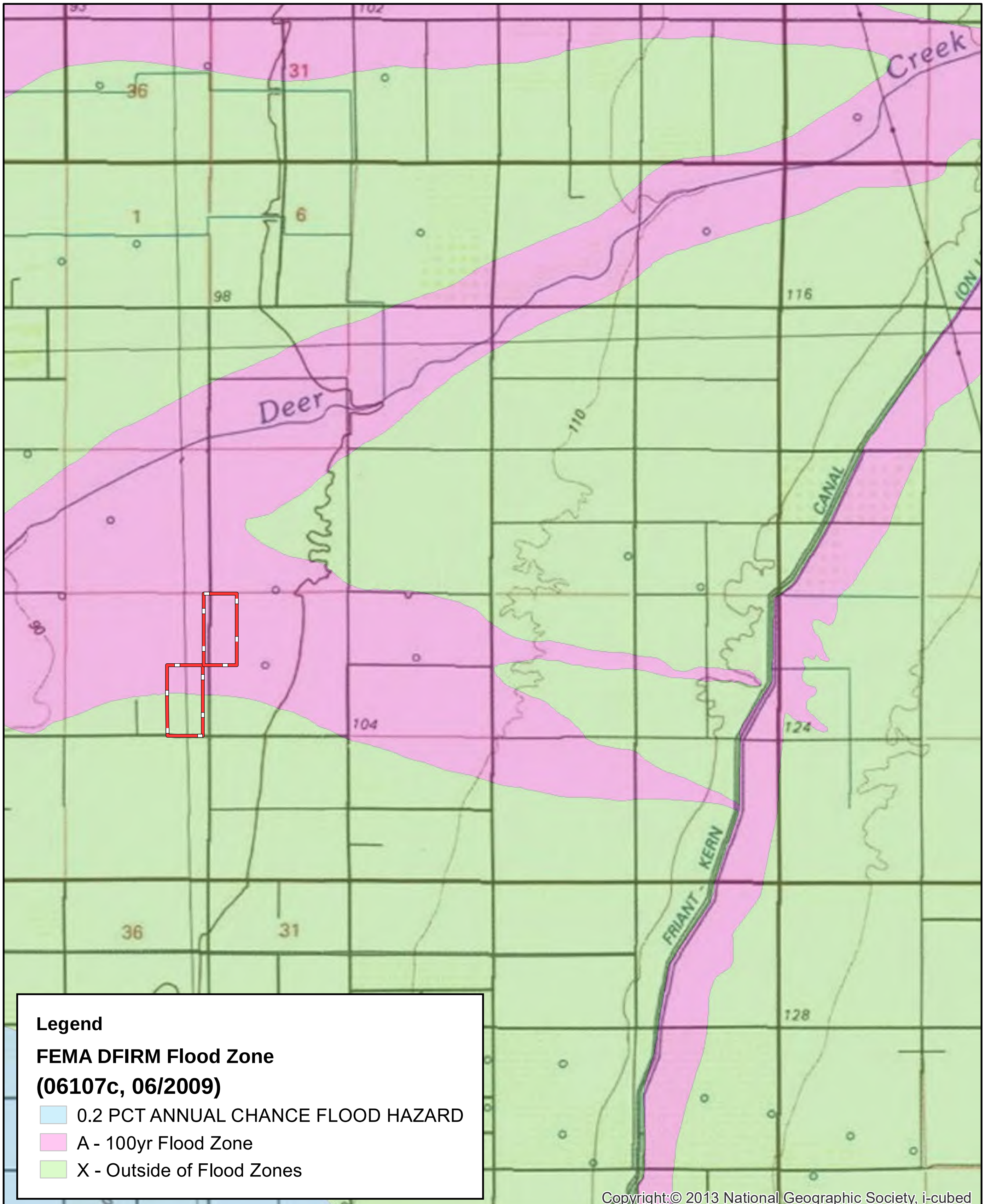
WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL
PROPOSED SITE

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:
0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.
SHEET C2
5 OF 36

6/7/2023 11:36 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C2 PROPOSED SITE.dwg -Evan Freitas

Appendix B – FEMA Flood Maps



EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company

N

0 0.25 0.5 0.75
Miles

Legend

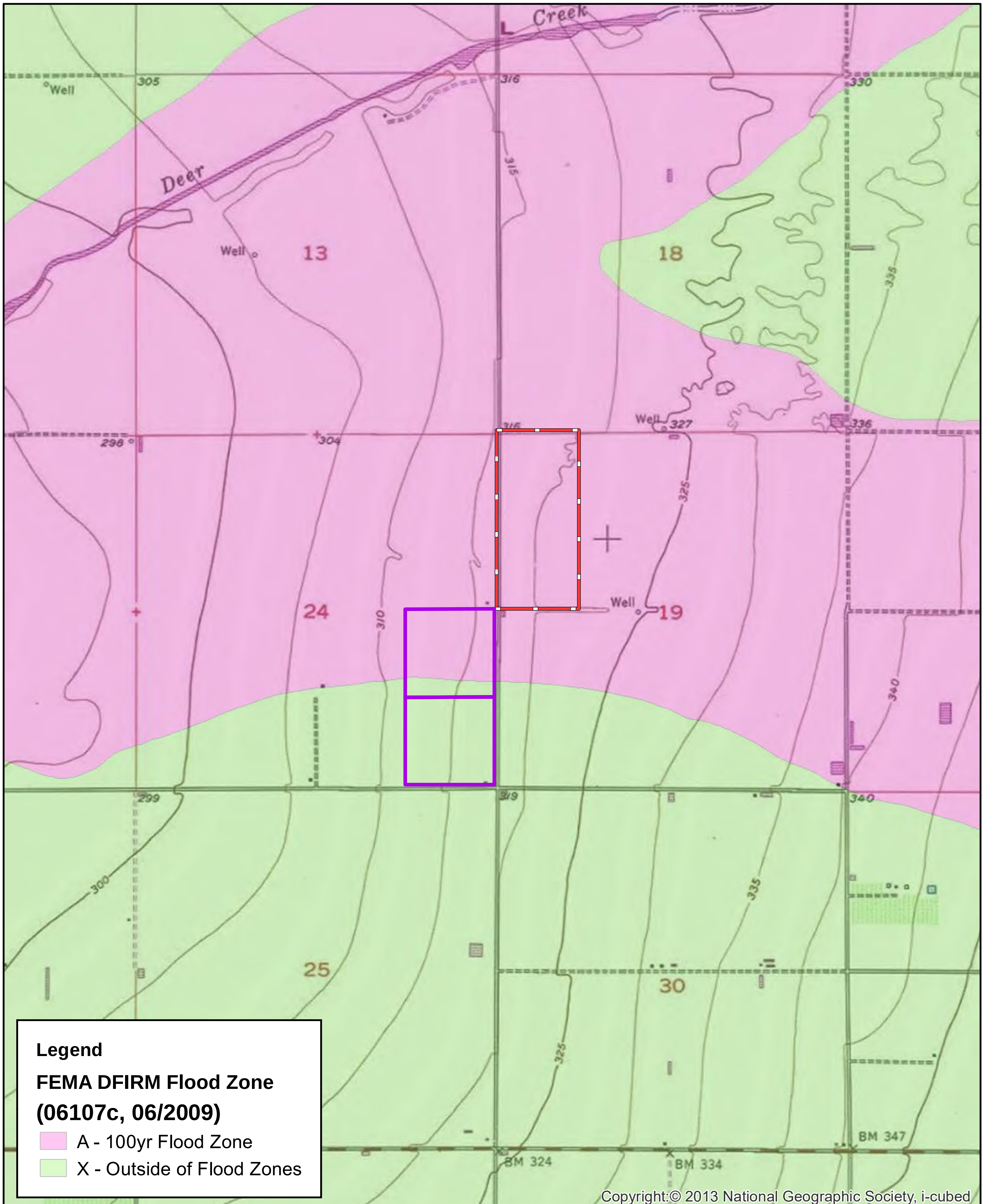
Project Area

Treehouse Almonds

FEMA Flood Zone Map

FIRM Panel No.
06107C1950E

Job # 2912-19001



PROVOST & PRITCHARD CONSULTING GROUP EST. 1968 An Employee Owned Company

N

0 500 1,000 1,500

Feet

Legend

Project Area

New Parcels

Treehouse Almonds

FEMA Flood Zone Map

FIRM Panel No. 06107C1950E

Job # 2912-19001

12/13/2022: \\ppeng.com\pzdata\clients\Treehouse CA Almonds-2912\291219001-Treatmt-Storage LD\GIS\Map\FEMA Flood Map New Parcels.mxd

THIS LAYOUT OF THE REVISED FLOODPROOFING CERTIFICATE FOR NON-RESIDENTIAL STRUCTURES, IS PROVIDED FOR YOUR REFERENCE. THE FINAL FORM WILL BE RELEASED UPON O.M.B. APPROVAL.

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
National Flood Insurance Program

FLOODPROOFING CERTIFICATE
FOR NON-RESIDENTIAL STRUCTURES

The floodproofing of non-residential buildings may be permitted as an alternative to elevating to or above the Base Flood Elevation; however, a floodproofing design certification is required. This form is to be used for that certification. Floodproofing of a residential building does not alter a community's floodplain management elevation requirements or affect the insurance rating unless the community has been issued an exception by FEMA to allow floodproofed residential basements. The permitting of a floodproofed residential basement requires a separate certification specifying that the design complies with the local floodplain management ordinance.

BUILDING OWNER'S NAME: Treehouse California Almonds,LLC

STREET ADDRESS (Including Apt., Unit, Suite, and/or Bldg. Number) OR P.O. ROUTE AND BOX NUMBER: 6914 Road 160

OTHER DESCRIPTION (Lot and Block Numbers, etc.)

FOR INSURANCE COMPANY USE

POLICY NUMBER

COMPANY NAIC NUMBER

CITY: Earlimart, STATE: CA. ZIP CODE: 93219

SECTION I – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

Provide the following from the proper FIRM:

COMMUNITY NUMBER	PANEL NUMBER	SUFFIX	DATE OF FIRM INDEX	FIRM ZONE	BASE FLOOD ELEVATION (In AO Zones, Use Depth)
06107C	1950		6-19-2009	A	+2

Indicate elevation datum used for Base Flood Elevation shown above: ☐ NGVD 1929 ☐ NAVD 1988 ☐ Other/Source: ______

SECTION II – FLOODPROOFING INFORMATION (By a Registered Professional Engineer or Architect)

All elevations must be based on finished construction.

Floodproofing Elevation Information:

Building is floodproofed to an elevation of 318.7 feet (In Puerto Rico only: ____ . ____ meters). ☐ NGVD 1929 ☐ NAVD 1988 ☒ Other/Source: NAD83
(Elevation datum used must be the same as that used for the Base Flood Elevation.)

Height of floodproofing on the building above the lowest adjacent grade is 2.5 feet (In Puerto Rico only: ______ meters).

For Unnumbered A Zones Only:

Highest adjacent (finished) grade next to the building (HAG) 316.2 feet (In Puerto Rico only: ____ . ____ meters)
☐ NGVD 1929 ☐ NAVD 1988 ☒ Other/Source: NAD83

(NOTE: For insurance rating purposes, the building's floodproofed design elevation must be at least 1 foot above the Base Flood Elevation to receive rating credit. If the building is floodproofed only to the Base Flood Elevation, then the building's insurance rating will result in a higher premium. See the Instructions section for information on documentation that must accompany this certificate if being submitted for flood insurance rating purposes.)

Non-Residential Floodproofed Construction Certification:

I certify the structure, based upon development and/or review of the design, specifications, as-built drawings for construction and physical inspection, has been designed and constructed in accordance with the accepted standards of practice (ASCE 24-14 or its equivalent) and any alterations also meet those standards and the following provisions.

The structure, together with attendant utilities and sanitary facilities is watertight to the floodproofed design elevation indicated above, is substantially impermeable to the passage of water, and shall perform in accordance with the 44 Code of Federal Regulations (44 CFR 60.3(c)(3).

All structural components are capable of resisting hydrostatic and hydrodynamic flood forces, including the effects of buoyancy, and anticipated debris impact forces.

I certify that the information on this certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.

CERTIFIER'S NAME: Gerald A. Mele

LICENSE NUMBER (or Affix Seal): SE 2663, PE 31958

TITLE: President

COMPANY NAME: Gerald Mele & Associates, Inc

ADDRESS: 7337 N 1st Street, Suite 110

CITY: Fresno STATE: CA ZIP CODE: 93720

SIGNATURE

DATE

PHONE

Copies should be made of this Certificate for: 1) community official, 2) Insurance agent/company, and 3) building owner.

Appendix C – Pond Design Report

TIER 1

POND DESIGN REPORT

Prepared for

Treehouse California Almonds LLC

6914 Road 160
Earlimart, CA 93219

Tulare County

June 5, 2023

Prepared by:

PROVOST & PRITCHARD CONSULTING GROUP
EST. 1968
An Employee Owned Company

400 E. Main Street, Suite 300
Visalia, CA 93291-6362
Phone: (559) 636-1166
Fax: (559) 636-1177
www.ppeng.com

2912-19-001

ENGINEERING CERTIFICATION

I have reviewed this pond design report and certify that this was prepared by me or under my responsible charge, as a registered Civil Engineer who is registered to practice in California pursuant to California law.

Signature:

Print: Edward J Caminata

Date: June 5, 2023

Limitations

Provost & Pritchard performs its services in a manner consistent with the standards of care and skill ordinarily exercised by members of the profession practicing under similar conditions in the geographic vicinity. This report was prepared in accordance with generally accepted engineering practices which existed at the time it was written. No warranty, expressed or implied, is made. This report is based on information provided to Provost & Pritchard by materials suppliers and other project subcontractors. Provost & Pritchard is not responsible for misinformation or product use, misuse or defects, and cannot warranty any work conducted by others. If any changes are implemented that materially alter the project, additional engineering services and/or Regional Water Quality Control Board approval may be required, along with revisions to the recommendations given herein.

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G. Construction Quality Assurance Plan
    1. Earthwork Construction Specifications
    2. Geosynthetic Materials Specifications

I. PROJECT DESCRIPTION

This Pond Design Report was prepared for Treehouse Almonds located at the following address.

Owner Name	Treehouse California Almonds LLC
Street Address	6914 Road 160
City/State/Zip	Earlimart CA 93219
County	Tulare

Treehouse Almonds was issued Waste Discharge Requirements (**WDR**) General Order No. R5-2018-0066. This WDR requests Treehouse Almonds either line the wastewater ponds or install monitoring wells to monitor the wastewater ponds.

Treehouse Almonds has selected to line its new ponds with two layers of HDPE liner including a leakage collection system of the primary layer. This liner system is identified as a Tier 1 liner in R5-2013-0122 the General Order for Existing Milk Cow Dairies. This design report follows the requirements outlined in that General Order.

Following screen separation, the wastewater will flow through several ponds in series. First will be two anaerobic treatment ponds of the same size, then one aerobic treatment pond, and then one storage pond. The flow process is described in the RWD.

This Pond Design Report includes plan and cross-sectional views of the ponds, discussions of on-site investigations, design criteria and specifications, a Construction Quality Assurance (CQA) Plan, local groundwater levels, and the flood zone designations in the area.

The CQA Plan (**Section VI**) shall be implemented as detailed in this Work Plan. The CQA Plan includes construction inspections, testing, record keeping, for inclusion in a final CQA Report to be submitted to the RWQCB for approval prior to pond use.

II. DESIGN CONSIDERATIONS

A. Pond Descriptions

There will be two anaerobic ponds of the same dimensions with 0.38 MG capacity each, one mechanically aerated pond of 1.28 MG capacity, and one storage pond of 17.09 MG capacity.

The proposed ponds are the following dimensions. The pond design drawings are included in **Appendix A**. Placement is a minimum of 100 feet from any wells or water bodies.

Pond ID	Length (ft)	Width(ft)	Depth(ft)	Freeboard(ft)	Slope
Anaerobic	88	88	19	2	1.75:1
Aerobic	280	87	13	2	1.75:1
Storage	466	280	27	2	2:1

To ensure drainage of potential leakage and the venting of gases from beneath the liner the floor will be sloped for the aerobic and storage ponds. The anaerobic pond floor is the size of the LCRS sump.

Floor slope is presented as percent drop and total distance dropped along the length direction, width direction, and then the summation of both directions.

	Floor Slope - Length		Floor Slope - Width		Resultant	
Pond ID	(%)	(ft)	(%)	(ft)	(%)	(ft)
Anaerobic						
Aerobic	1.50	3.52			1.50	3.52
Storage	0.50	1.86	1.50	1.25	1.58	3.11

B. Liner Design

The proposed Tier 1 pond design includes a double liner constructed with two layers of HDPE with a leakage collection and removal system (LCRS) between the two liners.

The LCRS sump is designed to be constructed in accordance with Section 20340 of Title 27 CCR. A pan lysimeter will be beneath the LCRS sump to monitor for potential leakage in the area of the secondary liner where standing water is most likely to occur during operation. A CQA Plan in accordance with Section 20323 and Section 20324 of Title 27 CCR is included as required in the General Order. Further details are outlined in **Section VI** of this report.

C. Containment Capacity

The anaerobic and aeration ponds will remain full during operation and therefore do not provide any storage volume.

To size the storage pond the following was considered. Approximately 120 days, November 1 through March 1, is a conservative wet period of the year that irrigations may not be needed to support the growing crops. This was the design storage period.

The maximum average daily wastewater generation is anticipated to be 150,000 gallons a day. The planned operations are 24 hours a day for 5 days a week with occasional weekend work. To account for potential weekend work, 6 days a week at the maximum average was used to determine needed storage capacity. For a daily basis, this is 128,570 gallons a day.

Some storm water from the plant roof and parking area will be used to augment groundwater supplied by the well for irrigations. Approximately 434,600 ft^2 of area will be collected and sent to the storage pond.

The WDR requires wastewater storage capacity to be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns. The ponds will collect any direct rainfall while the plant roof and parking area are affected by surface runoff therefore coefficients were used. Evaporation from all the ponds was considered within the storage period.

A presentation of the summary of the storage design tables and calculations are presented in **Appendix B**.

D. Groundwater Levels

The Water Quality Control Plan for the Tulare Lake Basin requires that new manure retention ponds be sited, designed, constructed, and operated to ensure that the invert of the pond will be at least 5 feet above the highest anticipated elevation of underlying groundwater. Other basins in this valley do not specify a separation distance to highest anticipated.

A review of Department of Water Resources (DWR) data was conducted to determine the highest anticipated groundwater level and is presented in the table below. State well number 23S25E12R001M just to the northwest of the facility shows a water level in excess of 200 feet below surface grade. The storage pond will be 3 feet above grade and therefore the design depth of the pond will maintain the minimum separation between the bottom of the pond and the anticipated high groundwater level.

Ground Surface to Groundwater (ft)	Pond Above Ground Surface (ft)	Pond Floor to Groundwater (ft)
200	3	176

E. Flood Zone Determination

The FEMA Flood Zones Map included as **Appendix C** identifies that these ponds are outside of an established 100-year flood zone. No flood protection is required for the ponds.

F. Geotechnical Investigation

ASR Engineering Services, Inc. prepared a Geotechnical Investigation Report for the project (Dated January 19, 2023, **Appendix D**). Their investigation concluded that the onsite soils are suitable for construction of the proposed project.

III. LINER AND LEACHATE COLLECTION SYSTEM

A double layer HDPE synthetic liner is proposed for this facility. Drawings of the liner are in **Appendix A**. Construction Specifications for earthwork and geomembrane liner are included in the Construction Quality Assurance Plan in **Appendix G**.

A. Material Specification

The geomembrane liner shall be constructed of two layers of high-density polyethylene (HDPE), with a nominal thickness shown in the table below (See **Appendix G** for material data). The material has excellent cold temperature flexibility and long-term UV resistance. It is designed to be left exposed to sunlight, and it is inert to chemicals that can cause environmental stress and cracking.

The primary layer shall be conductive material while the secondary layer shall be non-conductive. A drainage layer of HDPE Geonet will be placed between the two liners.

Venting strips of HDPE Geonet and Geotextile will be used beneath the liner. The Geonet shall meet or exceed the Geosynthetic Research Institute's (GRI) GM13 specifications.

Double Liner Layers

Description	Location	Material	Minimum Nominal Thickness	Top Finish
Primary	Top	Conductive HDPE	60 mils	Smooth
Geonet	Middle	HDPE	175 mils	N/A
Secondary	Bottom	Non-Conductive HDPE	60 mils	Smooth

Venting Strips Beneath Bottom Liner

Description	Location	Material	Minimum Nominal Thickness
Geonet/Geotextile	Below Liner	HDPE	175 mils
		Polypropylene	12 oz/yd^2

B. Pond Seepage

If constructed properly and verified with a leak check following construction, a geomembrane liner should be free of gross leakage unless subsequent damage should occur. Field leak detection equipment has the sensitivity to detect circular holes with a diameter of 1 mm.

The rate of leakage through a geomembrane liner due to geomembrane permeability is negligible when compared to the rate of leakage through manufacturing defects in the geomembrane material. Therefore, only leakage through liner defects will be considered.

The *USBR Report DS-13(20)-13, Chapter 20 – Geomembranes*, estimates that geosynthetic liners have defects about every 4,000 square meters (equivalent to about one defect per acre) with an average size of 0.1 cm^2 when a strict construction quality assurance program is implemented. Bernoulli's equation for free flow through an orifice is used to evaluate the rate of leakage through this small defect into a relatively porous medium such as a geonet. See **Appendix E** for assumptions and calculations.

Presented below are the determinations of the wetted surface of the liner, the potential number of defects for the completed primary liner, and the corresponding leakage rate based on the maximum potential of water head on the primary liner. This Potential Leakage rate will be the *Action Leakage Rate* during initial fill and normal operations as defined in the Operations & Maintenance Plan.

Using safety factor of 2, the minimum LCRS removal rate was also determined. A submersible pump in the LCRS sump which can pump more than this rate will be used. The leakage removal system is detailed in **Appendix A**.

Pond Id	Wetted Area (ac)	Potential Defects	Potential Leakage (gpm)	Minimum LCRS Flow Rate (gpm)
Anaerobic	0.2	1	0.3	0.7
Aerobic	0.5	1	0.3	0.6
Storage	2.9	3	1.2	2.5

C. Gas Venting

Upward moving gases are caused by biodegradation of organic material in the subsurface soils and from rising water-table levels that expel the air from the soil voids. Strips of venting geocomposite material can be used beneath liners to allow gases to vent above the high waterline. The liner design includes geocomposite vent strips below the secondary liner to reduce the potential for the formation of gas bubbles underneath the liner that could cause the liner to float.

Geonet material between the two layers of liner will provide any needed venting within the liner. The vents will be installed above the high-water line according to details shown in **Appendix A**, or an equivalent design approved by the Engineer.

D. Material Loading on the Anchor Trench

There is an anchor trench around the upper perimeter of the pond to anchor the liner material. The anchor trench must be sized sufficiently to support the tension forces primarily from the weight of the materials lying on the side slopes.

The anaerobic pond anchor trench is sized such that if a cover needs to be installed to control odors, the holding capacity is over twice the strength of the liner material.

Anchor trench calculations are presented in **Appendix F** following the guidance provided by *Designing with Geosynthetics, 6th Edition*. The weight of the materials on the side slopes is evaluated and is compared to the ability of the anchor trench to hold the load.

Pond ID	Trench Size (ft)		Liner Loading (plf)	Trench Hold Capacity (plf)	Material Strength (plf)
	Width	Depth			
Anaerobic	3.0	4.0	27	3,475	1,512
Aerobic	1.5	1.5	19	532	1,512
Storage	1.5	1.5	43	525	1,512

The anchor trench is typically backfilled and compacted with native soil. Details are provided in the design drawings and CQA plan (**Appendix G**).

The project engineer should be contacted for a revised anchor trench design if different materials or different thickness are to be used.

E. Liner Subgrade

Structural fill (embankments, anchor trench backfill, etc.) will be scarified, moisture conditioned, graded and compacted as indicated in the Geotechnical Report (**Appendix D**). A subgrade will be constructed in accordance with the recommendations of the Geotechnical Report and as indicated in the Construction Quality Assurance (CQA) plan in **Appendix G**.

F. Pipeline Connections

All pipes that penetrate the liner material require pipe boots or a bootless pipe penetration detail. Details are provided on the design drawings. The boots shall be made of HDPE, the same material as the liner.

A concrete collar is used below a synthetic liner pipe penetration boot to absorb the shock from flow being turned off and on in the pipeline. Typically, pond inlet and outlet pipes in the design have open discharges and thrust is expected to be negligible. Therefore, installing a concrete thrust block is considered unnecessary, but may be done at the owner or contractor’s option. If a pressurized inlet or outlet pipe is to be installed, the engineer should be contacted for thrust block design.

G. Seepage Collection and Removal System

A leakage collection and removal system (constructed in accordance with Section 20340 of Title 27) is included between the primary and secondary liners. Additionally, a pan lysimeter will be installed below the secondary liner.

The pond will be equipped with a gravel-lined leak detection monitoring sump located between the primary and secondary HDPE liners in the low spot on of the secondary liner (**Appendix A** shows the location of the sump and details the LCRS system). A perforated pipe is located within the gravel sump and extends from the sump to above grade.

The Pan Lysimeter will be located directly below the secondary liner and LCRS. It will also be lined with the HDPE lining material (**Appendix A** shows the location of the sump and details the Pan Lysimeter). This sump area below the secondary liner will also be backfilled with washed gravel. A perforated pipe is located within the gravel sump and extends from the sump to above grade and next to the LCRS pipe.

Both of these leakage collection sumps and removal pipes provide access for monitoring and removal of liquid from the sumps. The LCRS systems are designed to accept submersible pumps for pumping leakage out of the sump.

H. Slope Stability

Slope stability analysis was conducted in the Geotechnical Investigation (**Appendix D**). The report concluded that the embankment slopes will have a static and a pseudo-static factor of safety greater than 1.5.

The contractor is responsible for providing safe working conditions with respect to slope stability during construction.

I. Geomembrane Strength

Designing with Geosynthetics, 6th Edition, provides assumptions for soil to geomembrane friction angles and design stress calculations for the geomembrane (see **Appendix F**). The soil to geomembrane friction angle, combined with the anchor trench, will provide a stable design for the geomembrane. The HDPE material selected will be adequate to handle the loading and design stresses.

J. Safety

The pond design presented in this Work Plan does not include several safety features that could be beneficial. These items are recommended; however, the dairy owner will add these safety features at the owner's discretion. These include fencing around the entire pond area (a minimum of 20 feet clear of the edges of any ponds for Mosquito Abatement District access), warning signs, life rings, lifelines, poles, ropes, boats and ladders.

Single-sided textured HDPE liner material could also be used with the textured side facing up on the primary layer to provide a less slippery surface at the owner's option.

IV. GROUNDWATER MODELING AND GROUNDWATER MONITORING

The liner system proposed by this design report is a Tier 1 or double liner system. Groundwater modeling and monitoring is therefore not required for this design.

V. SCHEDULE FOR CONSTRUCTION

A construction time schedule will be determined after contractors and suppliers have been contacted and materials ordered, and delivery dates are understood. Near the completion of the earthwork and a timely schedule of the geomembrane liner installation can be determined, a Liner Preconstruction Meeting will be scheduled at least 48 hours in advance of the meeting. Attendees at minimum will include the CQA officer, installer, contractor, and geotechnical engineer. The RWQCB will be notified at this time also.

VI. CONSTUCTION QUALITY ASSURANCE PLAN

Construction Quality Assurance (CQA) Specifications for Earthwork and Geomembrane Liner are included in **Appendix G**.

Upon completion of the proposed ponds, a Post-Construction Report will be prepared under the responsible charge of the project CQA Officer, a third-party California Registered Civil Engineer or Engineering Geologist working directly for the facility owner. This report shall include the results of testing data, along with a statement that the liner was installed in accordance with the approved CQA Plan based on the CQA Officer's observations and test results. This will be the CQA Officer's professional opinion that the ponds have been constructed in accordance with the specifications contained in this Work Plan.

VII. OPERATION AND MAINTENANCE PLAN

Treehouse will be responsible for all maintenance after the ponds have been constructed. Regularly scheduled inspections and timely maintenance by personnel experienced with installation and repair of geosynthetic materials are important for a waste storage pond.

An Operations & Maintenance Manual will detail startup procedures, normal operations, and normal maintenance, including rodent control.

If the ponds require cleaning, precautions need to be taken to prevent contact of the cleaning equipment with the liner material. A cleaning service with experience in cleaning ponds with geosynthetic materials will be required. Further information is provided in the Operations & Maintenance Manual.

APPENDIX A

Project Construction Drawings

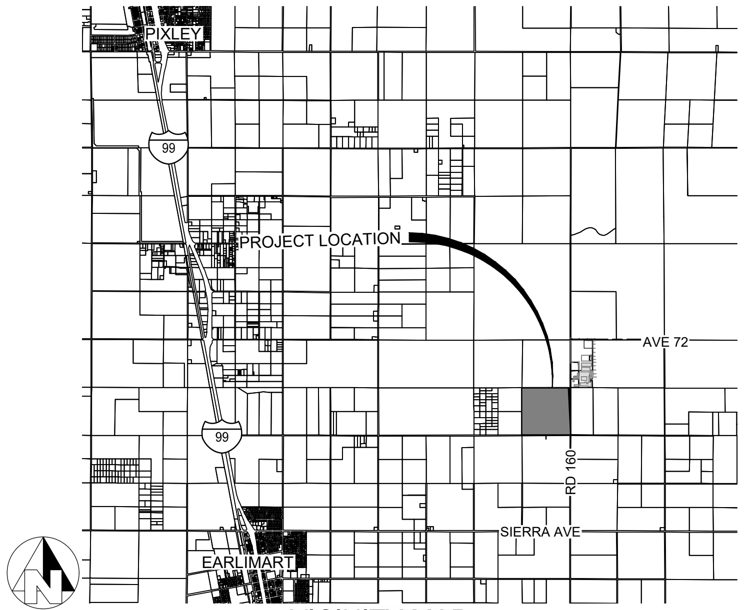
811
Know what's below.
Call before you dig.

WARNING
POWER LINES
OVERHEAD

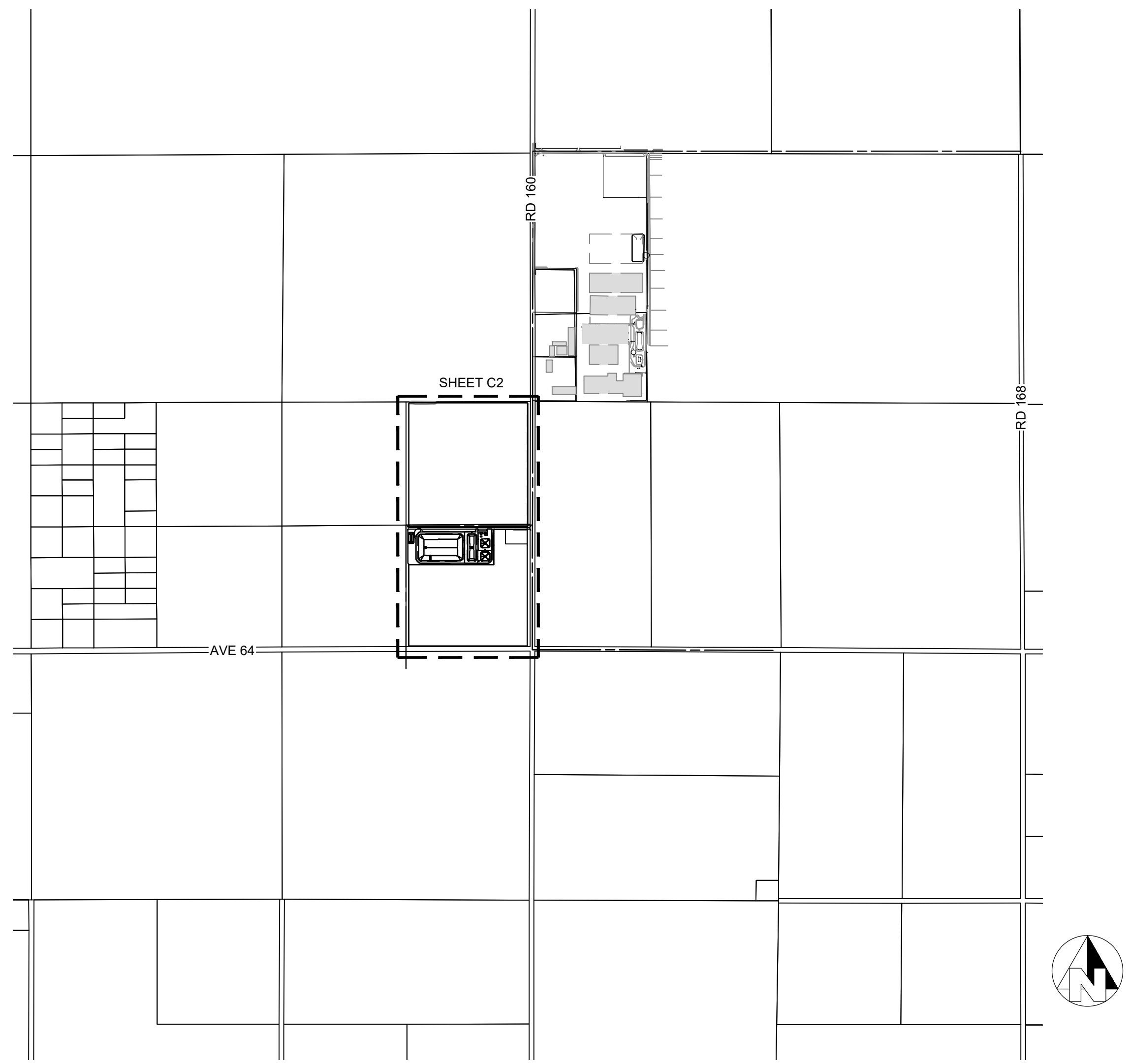
TREEHOUSE CALIFORNIA ALMONDS

EARLIMART, CA

WASTEWATER TREATMENT AND STORAGE SYSTEM



VICINITY MAP
NOT TO SCALE



SITE MAP
NOT TO SCALE

SPECIAL NOTE

WHERE UNDERGROUND AND SURFACE STRUCTURES ARE SHOWN ON THE PLANS, THE LOCATIONS, DEPTH AND DIMENSIONS OF STRUCTURES ARE BELIEVED TO BE REASONABLY CORRECT, BUT ARE NOT GUARANTEED. SUCH STRUCTURES ARE SHOWN FOR THE INFORMATION OF THE CONTRACTOR, BUT INFORMATION SO GIVEN IS NOT TO BE CONSTRUED AS A REPRESENTATION THAT SUCH STRUCTURES WILL, IN ALL CASES, BE FOUND WHERE SHOWN, OR THAT THEY REPRESENT ALL OF THE STRUCTURES WHICH MAY BE ENCOUNTERED.

SITE SAFETY AND PROTECTION NOTES

THE DUTY OF THE ENGINEER, OWNER OR ITS AGENTS TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE AND THE UNDERTAKING OF INSPECTIONS OR THE GIVING OF INSTRUCTIONS AS AUTHORIZED HEREIN IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES IN, ON, OR NEAR THE CONSTRUCTION SITE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF THE ACTUAL CONSTRUCTION NOR MAKE THE ENGINEER, OWNER OR ITS AGENTS RESPONSIBLE FOR PROVIDING A SAFE PLACE FOR THE PERFORMANCE OF WORK BY THE CONTRACTOR, SUBCONTRACTORS, OR SUPPLIERS, OR FOR ACCESS, VISITS, USE, WORK, TRAVEL OR OCCUPANCY BY ANY PERSON.

THE CONTRACTOR SHALL HAVE AT THE WORK SITE, COPIES OR SUITABLE EXTRACTS OF CONSTRUCTION SAFETY ORDERS, ISSUED BY CAL-OSHA. CONTRACTOR SHALL COMPLY WITH PROVISIONS OF THESE AND ALL OTHER APPLICABLE LAWS, ORDINANCES AND REGULATIONS. THE CONTRACTOR MUST COMPLY WITH PROVISIONS OF THE SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION, PROMULGATED BY THE SECRETARY OF LABOR UNDER SECTION 107 OF THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT, AS SET FORTH IN TITLE 29 C.F.R.

TO PROTECT THE LIVES AND HEALTH OF CONTRACTOR'S EMPLOYEES UNDER THE CONTRACT, THE CONTRACTOR SHALL COMPLY WITH ALL PERTINENT PROVISIONS OF THE "MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION" ISSUED BY THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA, INC., AND SHALL MAINTAIN AN ACCURATE RECORD OF ALL CASES OF DEATH, OCCUPATIONAL DISEASE, AND INJURY REQUIRING MEDICAL ATTENTION OR CAUSING LOSS OF TIME FROM WORK, ARISING OUT OF AND IN THE COURSE OF EMPLOYMENT OR WORK UNDER THE CONTRACT.

THE CONTRACTOR ALONE SHALL BE RESPONSIBLE FOR THE SAFETY, EFFICIENCY, AND ADEQUACY OF CONTRACTOR'S FACILITIES, APPLIANCES, AND METHODS AND FOR ANY DAMAGE, WHICH MAY RESULT FROM THEIR FAILURE OR THEIR IMPROPER CONSTRUCTION, MAINTENANCE OR OPERATION.

THE CONTRACTOR AGREES THAT IT SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER, PROVOST & PRITCHARD CONSULTING GROUP, AND THEIR RESPECTIVE AGENTS HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF OWNER, ENGINEER, OR THEIR RESPECTIVE AGENTS.

THE OWNER AND ITS AGENTS' SITE RESPONSIBILITIES ARE LIMITED SOLELY TO THE ACTIVITIES OF THEIR EMPLOYEES ON SITE. THESE RESPONSIBILITIES SHALL NOT BE INFERRED BY ANY PARTY TO MEAN THAT THE OWNER OR ITS AGENTS HAVE RESPONSIBILITY FOR SITE SAFETY. SAFETY IN, ON, OR ABOUT THE SITE IS THE SOLE AND EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR ALONE. THE CONTRACTOR'S METHODS OF WORK PERFORMANCE, SUPERINTENDENCE AND THE CONTRACTOR'S EMPLOYEES, AND SEQUENCING OF CONSTRUCTION ARE ALSO THE SOLE AND EXCLUSIVE RESPONSIBILITIES OF THE CONTRACTOR ALONE.

TOPOGRAPHY NOTE

TOPOGRAPHY SHOWN WAS COLLECTED BY PROVOST AND PRITCHARD CONSULTING GROUP DURING A FIELD SURVEY CONDUCTED IN JULY, 2019 UNDER THE DIRECTION OF TIMOTHY M. ODOM, PLS 8468.

BOUNDARY NOTE

THE BOUNDARY/EASEMENT INFORMATION SHOWN ON THESE PLANS IS BASED UPON RECORD INFORMATION TIED TO PHYSICAL MONUMENTS, AND WAS PREPARED UNDER THE DIRECTION OF TIMOTHY M. ODOM, PLS 8468.

BASIS OF BEARINGS

THE CALIFORNIA COORDINATE SYSTEM OF 1983, ZONE 4, AS ESTABLISHED LOCALLY BY GPS OBSERVATIONS.

BENCHMARKS

PROJECT BENCHMARK
A 3/4" IRON PIPE WITH A PLASTIC PLUG STAMPED "SURVEY CONTROL", SET FLUSH IN THE GROUND AT THE NORTHEAST CORNER OF THE FENCED PORTION OF THE SITE, 4' SOUTH AND 4' WEST OF A FENCE CORNER.
ELEVATION = 313.31' NAVD88 DATUM

GENERAL NOTES

1. USED MATERIAL, REJECTS, MISFITS, OR SECONDS, ETC. ARE NOT ACCEPTABLE FOR USE ON FACILITIES.
2. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THESE PLANS, PROJECT SPECIFICATIONS.
3. CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING FACILITIES PRIOR TO COMMENCING WORK. CALL UNDERGROUND SERVICE ALERT (USA) AT 8-1-1. CONTRACTOR SHALL MAKE ENGINEER AWARE OF ANY DISCREPANCIES.
4. THE COUNTY SHALL INSPECT ALL WORK PHASES ON CONCRETE FACILITIES FOR CONFORMANCE TO COUNTY SPECIFICATIONS. REINFORCING SHALL NOT BE ENCASED IN CONCRETE WITHOUT PRIOR COUNTY INSPECTIONS. LIKEWISE, CONCRETE SHALL NOT BE COVERED WITH EARTH PRIOR TO COUNTY INSPECTION.
5. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE HEALTH AND SAFETY LAWS OF THE STATE OF CALIFORNIA AND CAL/OSHA STANDARDS.
6. CONTRACTOR WILL BE RESPONSIBLE FOR THE REPAIR OF ALL PIPELINE CRACKS, WHICH DEVELOP DURING CONSTRUCTION OF IMPROVEMENTS AFFECTING EXISTING FACILITIES.
7. ALL EXCESS MATERIAL AND/OR DEBRIS SHALL BE REMOVED UPON COMPLETION OF INSTALLATION.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE DUST CONTROL AT ALL TIMES.

PREPARATION FOR RAINFALL EVENTS

THE GRADING CONTRACTOR SHALL BE RESPONSIBLE FOR RAINWATER REMOVAL PRIOR TO LINER INSTALLATION. THE LINER INSTALLER SHALL BE RESPONSIBLE FOR RAINWATER REMOVAL AFTER LINER INSTALLATION HAS COMMENCED. IF THE SOIL LINER LAYER IS PARTIALLY COMPLETE, BOTH PARTIES WILL WORK TOGETHER TO REMOVE RAINWATER AND MINIMIZE THE EFFECT ON THE INSTALLED LINER. A TSURUMI MODEL LB-800 (1HP, 60 FT HEAD, 80 GPM) PUMP IS RECOMMENDED.

GRADING NOTES (SEE SUBGRADE SPECIFICATION FOR DETAILS)

1. ALL EARTHWORK FOR THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH THESE DRAWINGS, GEOTECH REPORT AND SUBGRADE SPECIFICATION & TABLES. THE SUBGRADE SPECIFICATION & TABLES FOR THIS PROJECT HAVE BEEN UPDATED TO INCLUDE FINDINGS OF THE GEOTECH REPORT.
2. A REPRESENTATIVE OF THE FIRM WHO PREPARED THE GEOTECHNICAL INVESTIGATION REPORT SHOULD BE PRESENT DURING SITE CLEARING AND GRADING FILL OPERATIONS (MINIMUM) TO TEST AND OBSERVE EARTHWORK CONSTRUCTION. THE GEOTECHNICAL ENGINEER MAY REJECT ANY MATERIAL THAT DOES NOT MEET COMPACTION AND STABILITY REQUIREMENTS SET FORTH IN THE GEOTECHNICAL REPORT.
3. A GPS MODEL OF THE BASIN AND GPS PERIMETER STAKES WILL BE PROVIDED PRIOR TO CONSTRUCTION START. CONSTRUCTION PLANS TAKE PRECEDENCE OVER GPS FILE FOR ANY GRADING DISCREPANCIES. GPS GRADING FILE IS A CONSTRUCTION AID ONLY.
4. WORK WILL BE COORDINATED WITH THE LINER INSTALLER TO PREPARE CENTER TRENCH AND LCRS SUMP.
5. ALL PIPE PENETRATIONS NEED TO BE PLACED AT FINAL CONTOURS, TEMPORARILY CAPPED AND BACKFILLED. CONNECTING THE REMAINDER OF THE PIPE SYSTEMS WILL BE COMPLETED AFTER LINER INSTALLATION.
6. ANCHOR TRENCH TAILINGS NEED TO BE BLADED DOWN FOR LINER INSTALLER. TAILINGS TO BE USED FOR BACKFILL OF ANCHOR TRENCH.

GENERAL LINER INSTALLATION NOTES (SEE LINER SPECIFICATION FOR DETAILS)

1. ALL LINER INSTALLATION WORK FOR THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH THESE DRAWINGS AND LINER INSTALLATION SPECIFICATION & TABLES.
2. GEOSYNTHETIC MATERIALS USED MUST MEET OR EXCEED GEOSYNTHETIC RESEARCH INSTITUTES'S (GRI) GM13 SPECIFICATIONS.
3. THE ENGINEER RESERVES THE RIGHT TO INSPECT THE MATERIALS AND WORKMANSHIP AT ANY TIME. MATERIALS OR WORKMANSHIP FOUND NOT CONFORMING TO THE DRAWINGS OR SPECIFICATION MAY BE REJECTED.
4. LINER INSTALLER SHALL HAVE ONE PERSON ON CREW ASSIGNED TO RECORD CONSTRUCTION QUALITY DATA. LINER INSTALLER SHALL PERFORM TESTING OF CONDUCTIVE LINER AFTER INSTALLATION.

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
GENERAL
COVER

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET 1
1 OF 36

6/7/2023 11:35 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\01_General\TREATMENT POND SET\1 COVER.dwg -Evan Freitas

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
ACP	ASBESTOS-CEMENT PIPE
AD	ALUMINUM DISK
AGG	AGGREGATE
AH	AHEAD
ALT	ALTERNATE
AP	ANGLE POINT
APPROX	APPROXIMATE
APN	ASSESSOR'S PARCEL NUMBER
ARV	AIR RELIEF VALVE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AV	AIR VENT
AVE	AVENUE
AWWA	AMERICAN WATER WORKS ASSOCIATION
BAR	BARRIER
BC	BEGIN CURVE
BD	BRASS DISK
BFP	BACKFLOW PREVENTER
BK	BACK
BLDG	BUILDING
BM	BENCHMARK
BO	BOLLARD
BTM	BOTTOM
BVC	BEGIN VERTICAL CURVATURE
BW	BACK OF WALK
BWL	BACK OF WALL
BWR	BARB WIRE
C, CONC	CONCRETE
CA	CALIFORNIA
CAB	CABINET
CBL	CABLE
CFS	CUBIC FEET PER SECOND
C&G	CURB & GUTTER
CHK	CHECK
CHLK	CHAIN LINK
CI	CAST IRON
CIP	CAST IRON PIPE
CIPCP	CAST-IN-PLACE CONCRETE PIPE
CL	CLASS
CLVT	CULVERT
℄	CENTERLINE
CLF	CHAIN LINK FENCE
CLR	CLEAR, CLEARANCE
CMLC	CEMENT MORTAR LINED & COATED
CMP	CORRUGATED METAL PIPE
CN	CONCRETE NAIL
CNS	COMPACTED NATIVE SOIL
CO	SEWER CLEAN OUT
CONT	CONTINUOUS
CONST	CONSTRUCT/CONSTRUCTION
COR	CORNER
CORP	CORPORATION
COL	COLUMN
COUP	COUPLING
CP	CONTROL POINT
CR	CROWN
CU	CUBIC
CY	CUBIC YARDS
DA	DRIVE APPROACH
DEC	DECIDUOUS
DEMO	DEMOLISH/DEMOLITION
DI	DROP INLET
DIA, Ø	DIAMETER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
D/S	DOWNSTREAM
DW	DRIVEWAY
DWG	DRAWING
(E)	EXISTING, EAST
EA	EACH
EC	END CURVE
ECC	ECCENTRIC
EF	EACH FACE
EG	EXISTING GRADE
EL, ELEV	ELEVATION
ELC	EPOXY LINED & COATED
ELEC	ELECTRIC
ELL	ELBOW
EM	ELECTRIC METER
EOL	END OF LINE
EP	EDGE OF PAVEMENT
EQUIV	EQUIVALENT
ESMT	EASEMENT
EUC	EUCALYPTUS
EVC	END VERTICAL CURVE
EW	EACH WAY
EXP	EXPOSED
(F)	FUTURE
F&I	FURNISH & INSTALL
FD	FOUND
FDC	FIRE DEPARTMENT CONNECTION
FF	FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
℄, FL	FLOW LINE
FLG	FLANGE
FLGD	FLANGED
FM	FORCE MAIN
FNC	FENCE
FRP	FIBER REINFORCED POLYESTER PIPE
FT	FOOT/FEET
FW	FRONT OF WALK
FWL	FACE OF WALL
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GB	GRADE BREAK
GM	GAS METER
GPM	GALLONS PER MINUTE
GRVL	GRAVEL
GS	GAS
GSV	GAS VALVE
GUY	GUY WIRE
GV	GATE VALVE
HD	HEAD
HDPE	HIGH DENSITY POLYETHYLENE
HDR	HEADER
HDW	HEADWALL
HGL	HYDRAULIC GRADE LINE
HORIZ	HORIZONTAL
HP	HINGE POINT, HIGH POINT, HORSEPOWER
HP GAS	HIGH PRESSURE GAS
HPS	HIGH PRESSURE SWITCH
HR	HANDRAIL
H/T	HUB & TACK
HWL	HIGH WATER LEVEL
HYDRO	HYDROPNEUMATIC
ID	INSIDE DIAMETER
IN	INCH
INV	INVERT
IP	IRON PIPE
IRR	IRRIGATION
JP	JUNCTION POLE
LBS	POUNDS
LC	LENGTH OF CURVE
LCW	LONG CRESTED WEIR
LF	LINEAR FEET
LG	LONG
LT	LEFT
LPG	LIQUEFIED PETROLEUM GAS
MAX	MAXIMUM
MB	MAILBOX
MCC	MOTOR CONTROL CENTER
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MN	MAG NAIL
MP	MEDIUM PRESSURE GAS LINE
MPT	MALE PIPE THREAD
MRKR	MARKER
MS	MILD STEEL
(N)	NORTH
NAVD	NORTH AMERICAN VERTICAL DATUM
NC	NORMALLY CONSOLIDATED
NGVD	NATIONAL GEODETIC VERTICAL DATUM
NIC	NOT IN CONTRACT
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OP	OPERATING
OSHA	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
O&M	OPERATIONS & MAINTENANCE
(P)	PROPOSED
PB	PULL BOX
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCC	PORTLAND CEMENT CONCRETE
PE	PERMANENT EASEMENT
PER	PERIMETER
PI	POINT OF INTERSECTION
PIP	PLASTIC IRRIGATION PIPE
PLC	PROGRAMMABLE LOGIC CONTROLLER
℘	PROPERTY LINE
PNL	PANEL
POC	POINT ON CURVE
POL	POINT ON LINE
POT	POINT ON TANGENT
PP	POWER POLE
PRC	POINT OF REVERSE CURVATURE
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVCC	POINT OF VERTICAL COMPOUND CURVATURE
PVMT	PAVEMENT
PVRC	POINT OF VERTICAL REVERSE CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
RBR	REBAR
RC	RADIUS OF CURVE
RCP	REINFORCED CONCRETE PIPE
RD	RELATIVE DENSITY
RD	ROAD
RE	REFERENCE
REQD	REQUIRED
RET	RETURN
REV	REVISION
RGRCP	RUBBER GASKETED REINFORCED CONCRETE PIPE
RGS	RIGID GALVANIZED STEEL
RP	RADIUS POINT
RR	RAILROAD
RT	RIGHT
RTU	REMOTE TERMINAL UNIT
R/W	RIGHT OF WAY
(S)	SOUTH, SOLVENT WELD
S	SLIP
S=	SLOPE
SCH	SCHEDULE
SCP	STANDARD CONCRETE PIPE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SEC	SECTION
SERV	SERVICE
SF	SQUARE FEET
SP	SERVICE POLE
SPEC	SPECIFICATION
SPNDL	SPINDLE
SQ	SQUARE
SS	SANITARY SEWER
SS OR STS	STAINLESS STEEL
SSMH	SANITARY SEWER MANHOLE
STA	STATION
STD	STANDARD
STL	STEEL
STP	STAND PIPE
STRC	STRUCTURE
STRP	STRIPING
SWL	SWALE
STWL	STILLING WELL
(T)	THREADED
T	THREAD
T&B	TOP & BOTTOM
TB	TOP OF BANK
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TCE	TEMPORARY CONSTRUCTION EASEMENT
TDI	TENSILE DUCTILE IRON
TELE	TELEPHONE
TF	TOP OF FOOTING
TFC	TOP FACE OF CURB
TG	TOP OF GRATE
TH	THREAD
TL	TOP OF LINING
TOE	TOE OF SLOPE
TOP	TOP OF SLOPE
TP	TELEPHONE POLE
TR	TELEPHONE RISER
TRANS	TRANSFORMER
TRFC	TRAFFIC
TS	TOP OF STRUCTURE
TSB	TELEPHONE SPLICE BOX
TYP	TYPICAL
TWL	TOP OF WALL
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
UP	UTILITY POLE
UT	UTILITY
U/S	UPSTREAM
VCP	VERIFIED CLAY PIPE
VERT	VERTICAL
VG	VALLEY GUTTER
VLT	VAULT
VLV	VALVE
(W)	WEST
W	WATER
WL	WATER LINE
WM	WATER METER
WS	WATER SERVICE
WV	WATER VALVE
WW	WASTE WATER
W/	WITH
W/O	WITHOUT

LINETYPES

LINETYPE: EXISTING / NEW — DESCRIPTION

- WATER LEVEL
- BARRICADE
- CONTOUR (DEPRESSION)
- CONTOUR (MAJOR) — 123
- CONTOUR (MINOR)
- EMBANKMENT TOE
- EMBANKMENT TOP
- FENCE (BLOCK WALL)
- FENCE (CHAIN LINK)
- FENCE (WOOD)
- FENCE (WIRE)
- FENCE (SILT) — SF
- GATE SWING
- GRADE BREAK
- GUARDRAIL
- RAILROAD
- RETAINING WALL
- SWALE CENTERLINE
- SWALE W/FLOW ARROWS
- WATER (LAKE/POND)
- WATER (MARSH/SWAMP)
- BLOWER PIPE — BW
- COMPUTER/COMM. (BURIED) — XX" C/C, UCO
- DRAIN PIPE — D
- ELECTRIC (AERIAL) — OE; XX" ELEC (AERIAL)
- ELECTRIC (BURIED) — UE; XX" ELEC (BURIED)
- FIBER-OPTIC — FO; XX" FO
- GAS — XX" GAS
- IRRIGATION — IRR; XX" IRR
- MIXING PIPE — FM
- OIL
- SANITARY SEWER — SS; XX" SS
- SANITARY SEWER FORCE MAIN — FM; XX" FM
- SANITARY SEWER LATERAL — XX"
- SIGNAL INTERCONNECT (BURIED) — S I; XX" SI
- STEAM
- STORM DRAINAGE — SD; XX" SD
- TELEPHONE (AERIAL) — OT; XX" TELE (AERIAL)
- TELEPHONE (BURIED) — UT; XX" TELE (BURIED)
- TELEVISION (AERIAL LINE) — OTV; XX" TV (AERIAL)
- TELEVISION (BURIED LINE) — UTV; XX" TV (BURIED)
- WATER — W; XX" W
- CENTERLINE
- EASEMENT
- MEANDER LINE
- PROPERTY LINE
- RESERVATION/PARK/FOREST
- RIGHT-OF-WAY
- RELINQUISH ACCESS LINE
- SECTION LINE
- STATE/COUNTY/CORPORATE LIMIT
- REVISION CLOUD
- SAWCUT LINE
- DEMO LINE
- WORK LIMITS

HATCH TYPE: EXISTING / NEW — DESCRIPTION

- AGGREGATE
- AC PAVEMENT
- CONCRETE
- CONCRETE LINING (PLAN VIEW)
- EARTH
- RIP RAP
- SAND
- GRATING
- EXPANDED METAL

SYMBOLS

SYMBOL: EXISTING / NEW — DESCRIPTION

- ELECTRIC METER
- PAD MOUNTED TRANSFORMER
- ELECTRIC VAULT (E)
- UTILITY POLE
- UTILITY POLE ANCHOR
- ELECTRIC MANHOLE
- GAS METER
- GAS VALVE
- SANITARY SEWER CLEAN OUT (SCO)
- SANITARY SEWER MANHOLE (S)
- SSMH (ECCENTRIC CONE)
- STORM DRAIN CATCH BASIN
- STORM DRAIN INLET
- STORM DRAIN CULVERT
- STORM DRAIN MANHOLE (D)
- MAIL BOX
- SIGN
- YARD LIGHT
- GUARD POST
- CONTROL POINT
- BENCH MARK
- IRON PIPE
- MONUMENT
- MONUMENT (OPTIONAL)
- OWNERSHIP TIE
- LOT NUMBER (NO.)
- TELEPHONE RISER
- TELEPHONE VAULT (T)
- 2-NOZZLE HYDRANT
- 3-NOZZLE HYDRANT
- FIRE DEPT. CONNECTION (FD)
- FIRE VAULT (F)
- WATER METER
- WELL (W)
- WATER VALVE
- BLOW-OFF
- AIR RELIEF VALVE
- BACK FLOW PREVENTOR (BFP)
- GATE VALVE HANDLE
- STILLING WELL
- FENCE POST
- FENCE GATE
- REVISION (XX)
- CONSTRUCTION CALLOUT
- DETAIL CALLOUT — XX / XXXX; DETAIL NUMBER / SHEET NUMBER
- LINE BREAK
- PIPE END (SCHEMATIC)
- PIPE END
- EMBANKMENT ARROW
- HIGH WATER LINE — HWL= XXX.XX
- SPOT ELEVATION — (E) XX XXX.XX; XX XXX.XX
- SECTION VIEW

N — SCALE IN FEET — 0 X X X

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

FOR CONSTRUCTION 6/7/2023

REGISTERED PROFESSIONAL ENGINEER — EDWARD J. CAMINATA — No. C88473 — CIVIL — STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

GENERAL
LEGEND & ABBREVIATIONS

EST. 1968
PROVOST & PRITCHARD CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA | CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 — 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET 2

GRADING NOTES

1. THE GRADING CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR GRADING THE SITE SUCH THAT ALL SOIL CONSTRAINTS ARE MET.
2. IF EXPANSIVE CLAY SOIL CONDITIONS EXIST, THE CONTRACTOR MUST CONSULT WITH THE SOILS ENGINEER FOR SUBGRADE REQUIREMENTS AND COORDINATE EARTHMOVING OPERATIONS TO ENSURE THAT APPROVED SUBGRADE MATERIALS ARE RESERVED IN SUFFICIENT QUANTITIES TO ACCOMMODATE CONCRETE FOOTINGS AND SLABS.
3. ALL CONCRETE FOOTINGS AND SLABS SHALL BEAR UPON AND/OR PENETRATE INTO UNDISTURBED SOIL OR COMPACTED SOIL: EACH SOIL SHALL HAVE A MINIMUM IN-PLACE DENSITY OF 90% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AT THE PROJECT SITE (SEE GEOTECHNICAL REPORT).
4. EXCAVATION AND GRADING TO BE DONE PER 2022 CBC, APPENDIX CHAPTER J.

FOUNDATION NOTES

1. FOUNDATION WORK TO BE DONE PER 2022 CBC, CHAPTER 18.
2. ENGINEERING DESIGN OF FOUNDATION IS BASED ON:
   SOILS INVESTIGATION REPORT NUMBER: 12-22108
   DATE WHEN SOILS REPORT WAS PREPARED: JANURARY 19, 2023
   DATE WHEN SOILS REPORT WAS REVISTED: JANURARY 19, 2023
   NAME OF SOILS ENGINEER COMPANY: ASR ENGINEERING INC.
   PHONE NUMBER OF SOILS ENGINEER: (559) 271-5260
3. NOTIFY THE SOILS ENGINEER FOR INSTRUCTIONS PRIOR TO CONTINUING WORK SHOULD ANY UNUSUAL CONDITIONS BECOME APPARENT DURING GRADING OR FOUNDATION EXCAVATION. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE RECOMMENDATIONS OUTLINED IN THE SOILS REPORT. THE SOILS ENGINEER SHOULD BE RETAINED TO OBSERVE FOUNDATION EXCAVATIONS PRIOR TO PLACEMENT OF REINFORCING STEEL OR CONCRETE TO ASSESS WHETHER THE ACTUAL CONDITIONS ARE COMPATIBLE WITH THE CONDITIONS ANTICIPATED DURING THE PREPARATION OF THE REPORT.
4. UNLESS NOTED OTHERWISE, FOUNDATION REINFORCEMENT SHALL HAVE 3" CONCRETE COVER.

CONCRETE SCHEDULE

SITE AREA	THICKNESS	REINFORCEMENT	NOTES
DRYING PAD / COMMODITY SLAB	6"	UNREINFORCED WITH CONTROL JOINTS PER ACI/PCA	5,6
DRIVE LANES	6"	UNREINFORCED WITH CONTROL JOINTS PER ACI/PCA	1,6
FEED LANES/WALK LANES	5"	UNREINFORCED WITH CONTROL JOINTS PER ACI/PCA	1,6
TRANSFER LANES	4"	UNREINFORCED WITH CONTROL JOINTS PER ACI/PCA	1,6
SIDEWALKS	3 1/2"	UNREINFORCED WITH CONTROL JOINTS PER ACI/PCA	--
TANKER PADS	5 1/2"	#5 @ 18" O.C.	4,5,6
PARKING AREAS	5"	UNREINFORCED WITH CONTROL JOINTS PER ACI/PCA	--
BUILDINGS/STRUCTURAL CONCRETE	AS SPECIFIED	AS SPECIFIED	--
SAND LANE CONCRETE	**5 1/2"**	**#5 @ 18" O.C.**	4,5,6
PEBBLE LANE CONCRETE	**6"**	**#5 @ 18" O.C.**	
SEPARATION BASINS/WEEPING WALLS	AS SPECIFIED	AS SPECIFIED	--
WASH AREA/DEAD ANIMAL AREA	6"	UNREINFORCED WITH CONTROL JOINTS PER ACI/PCA	--
ROADS	6"	UNREINFORCED WITH CONTROL JOINTS PER ACI/PCA	2,3,6

NOTES:
1. MINIMUM THICKNESS
2. RECOMMENDED THICKNESS
3. PROVIDE 12" THICK AGGREGATE BASE.
4. SLAB REINFORCING IS TO BE PLACES BETWEEN THE CENTER AND 2" BELOW THE TOP OF THE SLAB UNLESS NOTED OTHERWISE.
5. FILL SAWCUT JOINTS WITH A SEMI RIGID EPOXY.
6. SEE GEOTECHNICAL REPORT FOR SUBGRADE PREPARATION.

IMPORTANT: CONCRETE SLABS ARE NOT TO BE PLACED ON EXPANSIVE SOIL. AN EXPANSIVE SOIL CONDITION **AUTOMATICALLY VOIDS** THIS DESIGN. IN CASE OF EXPANSIVE SOILS, CONSULT WITH THE SOILS ENGINEER.

CONCRETE NOTES

1. ALL CONCRETE FOOTINGS AND SLABS SHALL BEAR UPON AND/OR PENETRATE INTO UNDISTURBED SOIL OR COMPACTED SOIL: EACH SOIL SHALL HAVE A MINIMUM IN-PLACE-DENSITY OF 90% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AT THE PROJECT SITE (SEE GEOTECHNICAL REPORT). IN CASE OF EXPANSIVE CLAY SOIL CONDITION THE CONTRACTOR MUST CONSULT WITH THE GEOTECHNICAL ENGINEER AND THE FOUNDATION PLAN MUST BE APPROVED BY THE GEOTECHNICAL ENGINEER.
2. ALL FORMED CONCRETE SHALL BE THOROUGHLY CONSOLIDATED WITH A VIBRATOR OPERATING AT NO LESS THEN 4,500 VIBRATIONS PER MINUTE.
3. ALL CONCRETE SHALL CONSIST OF TYPE II PORTLAND CEMENT, FINE AGGREGATE, COARSE AGGREGATE, AND WATER (WATER: CEMENT RATIO SHALL NOT EXCEED 0.45 ABSOLUTE BY WEIGHT, AND SLUMP SHALL NOT EXCEED 4 INCHES) TO YIELD AT 28 DAYS A MINIMUM COMPRESSIVE STRENGTH AS FOLLOWS:

PAVING, NON-STRUCTURAL SLABS, AND SIDEWALKS	2500 PSI
SAND & PEBBLE LANE SLABS	4000 PSI
SAND & PEBBLE LANE WALLS	4000 PSI
STRUCTURAL CONCRETE	4000 PSI

4. SECONDARY (CRACK CONTROL) REINFORCEMENT OF CONCRETE SLABS SHALL BE 1.5 LBS OF FIBERMESH PER CUBIC YARD OF CONCRETE.
5. PROVIDE CONTROL JOINTS IN UNREINFORCED SLABS PER PCA GUIDELINES.
6. ALL CONCRETE SLAB COLD JOINTS AND PIPE PENETRATIONS REQUIRE BENTONITE STRIP WATER STOP.
7. ALL CAST-IN-PLACE CONCRETE STRUCTURES SHALL BE FORMED INSIDE AND OUT AND CONCRETE VIBRATED SUFFICIENTLY TO PROVIDE FOR SMOOTH SURFACED WALLS/FLOORS WITHOUT VOIDS AND HONEYCOMBS.

CONTROL JOINT SPACING (FT)

SLAB THICKNESS (IN)	SLUMP 4 TO 6 IN.		SLUMP LESS THAN 4 IN.
	MAXIMUM-SIZE AGGREGATE LESS THAN 3/4"	MAXIMUM-SIZE AGGREGATE 3/4" AND LARGER	
5	10	13	15
6	12	15	18
7	14	18	21
8	16	20	24
9	18	23	27
10	20	25	30

REINFORCING STEEL NOTES

1. ALL REBAR SHALL BE GRADE 60.
2. SPLICES MADE IN REINFORCING STEEL SHALL BE LAPPED 50 DIAMETERS WITH A MINIMUM OF 28".
3. ALL REINFORCING STEEL SHALL HAVE 3" MINIMUM COVER. (UNLESS OTHERWISE NOTED)
4. SLAB REINFORCING IS TO BE LOCATED IN THE CENTER OF THE SLAB, UNLESS NOTED OTHERWISE.

SPECIAL INSPECTION NOTES

1. THE CONTRACTOR SHALL NOTIFY THE OWNER 48 HOURS BEFORE PLACEMENT OF REINFORCING STEEL AND CONCRETE SO THAT THE SUBGRADE OF EXCAVATIONS MAY BE INSPECTED BY THE GEOTECHNICAL ENGINEER. THE GEOTECHNICAL ENGINEER SHALL VERIFY BACKFILL MATERIAL, BACKFILLING PROCEDURES AND SOIL COMPACTION TESTS.
2. STRUCTURAL OBSERVATION SHALL BE PROVIDED BY THE DESIGN ENGINEER(S) OF RECORD OR THEIR AUTHORIZED REPRESENTATIVES IN ACCORDANCE WITH CBC 2022, SECTION 1704. STRUCTURAL OBSERVATION SHALL CONSIST OF SITE VISITS AT INTERVALS APPROPRIATE TO THE STAGE OF CONSTRUCTION TO OBSERVE CONSTRUCTION IN PROGRESS AND REVIEW OF TESTING AND INSPECTION REPORTS FOR GENERAL COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS RELATING TO THE STRUCTURAL WORK AND THE NONSTRUCTURAL COMPONENTS AND EQUIPMENT ANCHORAGE.
3. SPECIAL INSPECTION IN ACCORDANCE WITH CBC 2022 SECTIONS 1704 & 1705, SHALL BE REQUIRED AS INDICATED IN THE SPECIAL INSPECTION AND TESTING SCHEDULE ON THIS SHEET.
4. ALL SPECIAL INSPECTIONS REQUIRED MUST BE BY APPROVED INDEPENDENT INSPECTORS WHO SHALL BE RETAINED BY THE OWNER. INSPECTORS SHALL SUBMIT THEIR REPORTS DIRECTLY TO THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. THESE INSPECTORS ARE IN ADDITION TO ANY REQUIRED TULARE COUNTY INSPECTIONS. CONTRACTOR SHALL COORDINATE INSPECTIONS AND ALLOW ACCESS FOR THE SPECIAL INSPECTOR TO PERFORM REQUIRED INSPECTIONS.

SPECIAL INSPECTION & TESTING SCHEDULE

SPECIAL INDEPENDENT INSPECTIONS SHALL BE REQUIRED FOR:
(CHECK ALL THAT APPLY)

1. CONCRETE & REINFORCING
   INSPECTIONS PER CBC 2022 TABLE 1705.3
   EXCEPTIONS:
   [ ] 2,500 PSI OR TYPE E CONCRETE
   [ ] CONCRETE FOOTING FOR BUILDING 3 STORIES OR LESS
   [ ] NON-STRUCTURAL CONCRETE SLABS
2. BOLTS INSTALLED IN CONCRETE/MASONRY
   [ ] ALL BOLTS
   [ ] LOCATION: SEPARATOR PEDESTAL
3. SOILS AND DEEP FOUNDATIONS
   INSPECTIONS PER CBC 2022 SECTIONS 1705.6, 1705.7 & 1705.8
4. MECHANICAL & ELECTRICAL COMPONENTS
   INSPECTIONS PER CBC 2022 SECTIONS 1705.12.6

STEEL NOTES

1. ALL EXPOSED STEEL SHALL BE PAINTED WITH A MINIMUM OF ONE (1) COAT OF RUST INHIBITIVE PRIMER AFTER BEING THOROUGHLY CLEANED OF ALL LOOSE SCALE AND RUST, OR BE GALVANIZED.

PIPE NOTES

1. GRAVITY PIPE INVERTS TAKE PRECEDENCE OVER PRESSURE PIPE INVERTS. IN CASE OF CONFLICTS, LOWER OR RAISE PRESSURE PIPE TO PROVIDE 12" CLEAR DISTANCE BETWEEN PIPES.
2. ALWAYS MAINTAIN MINIMUM 2' OF COVER FOR BURIED PIPE UNLESS NOTED OTHERWISE.
3. WASTEWATER PRESSURE LINES TO BE PVC PIPE SDR 32.5. GRAVITY LINES TO BE PVC PIPE SDR 41. HDPE PIPE THAT PENETRATES THE POND LINERS SHALL BE SDR 17.
4. WASTEWATER PVC PIPE ABOVE GRADE SHALL BE PAINTED. CONFIRM COLOR SELECTION WITH THE OWNER.
5. BLOWER HEADER PIPE AND RISER TO BE BLACK STEEL.
6. THRUST RESTRAINTS TO BE PROVIDED AT ALL UNDERGROUND PIPELINE BENDS, WHETHER OR NOT SHOWN ON THE PLANS.
7. TRENCH BACKFILL AND RESERVOIR EMBANKMENTS SHALL BE COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS AND THE GEOTECHNICAL REPORT CONTAINED IN THE SPECIFICATIONS.

WARNING
POWER LINES OVERHEAD

811
Know what's below.
Call before you dig.

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
GENERAL
NOTES

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-0242
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET 3

WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.

SCALE IN FEET
0 150 300 600

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

CIVIL

EXISTING SITE

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CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C1

6/7/2023 11:36 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C1 EXISTING SITE.dwg -Evan Freitas

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WARNING
POWER LINES OVERHEAD

SUMMARY OF LAND USE

#	APN #	GROSS ACRES
LAND PRODUCTION		
1	319-060-037	41.40
2	319-060-022	16.30
3	319-060-019	4.65
LAND APPLICATION		
4	318-290-005	39.24
5	318-290-006	38.95
GROSSED ACRES (OWNED)		140.54
TOTAL GROSS ACRES (LEASED)		0
PRODUCTION AREA		62.35
POND TREATMENT AREA		9.08
FARMABLE ACREAGE		
4	318-290-005	38.29
5	318-290-006	27.27
NET FARMABLE ACRES		65.56

SCALE IN FEET
0 150 300 600

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL
PROPOSED SITE

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559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:
0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.
SHEET C2
5 OF 36

6/7/2023 11:36 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C2 PROPOSED SITE.dwg -Evan Freitas

PLN
C3

WARNING
POWER LINES OVERHEAD

811
Know what's below.
Call before you dig.

SCALE IN FEET
0 30 60 120

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL
PROPOSED FACILITY

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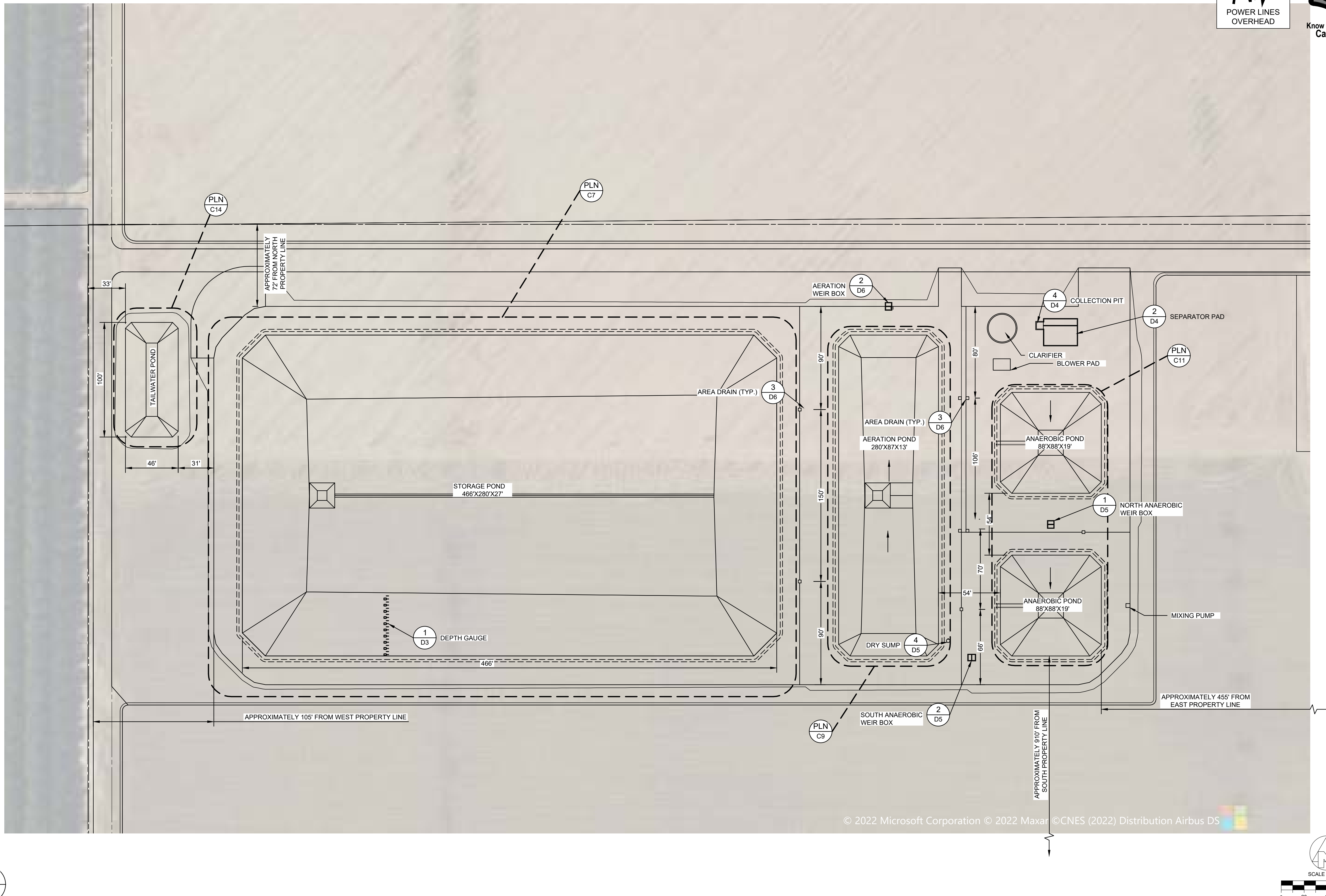
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C3
6 OF 36



PLN C4

WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.

No.	REVISION	BY	DATE

FOR REVIEW
6/7/2023

FOR REVIEW ONLY

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL

PROPOSED PONDS

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
400 E. MAIN STREET, SUITE 300
VISALIA, CALIFORNIA 93291-6337
559/636-1166 FAX 559/636-1177
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C4
7 OF 36

6/7/2023 11:37 AM g:\treehouse ca almonds-2912\291219001-treatmt+storage ld\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C4 PROPOSED PONDS.dwg -Evan Freitas

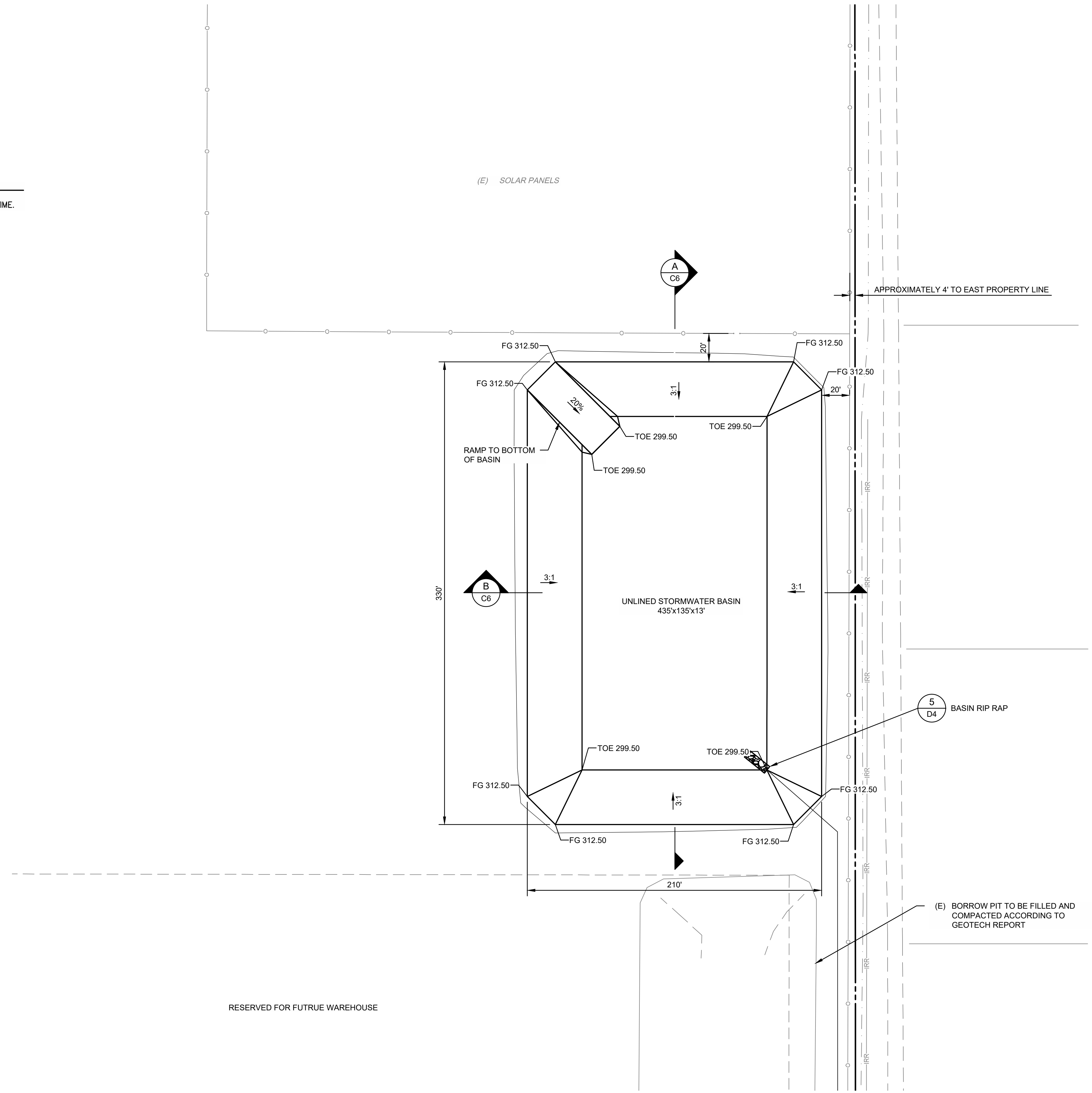
Know what's below. Call before you dig.

WARNING
POWER LINES OVERHEAD

STORMWATER POND GRADING CUT/FILL SUMMARY		
CUT/FILL FACTOR		CU. YD.
1.0	CUT	22409.51
1.2	FILL	120.76
	NET (CUT)	22288.75

NOTES

1. SIZE OF BORROW PIT IS UNKNOWN AT THIS TIME.



PLN
C5

SCALE IN FEET
0 20 40 80

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

CIVIL

STORM BASIN PLAN

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559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

DRAFTED BY:	CHECKED BY:
NPA	SCB

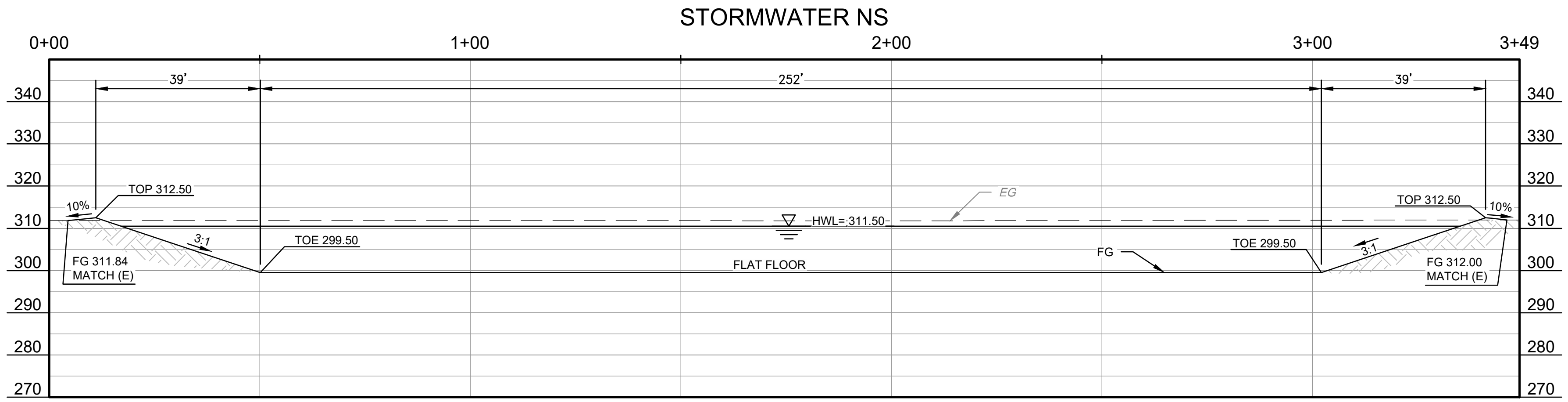
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C5

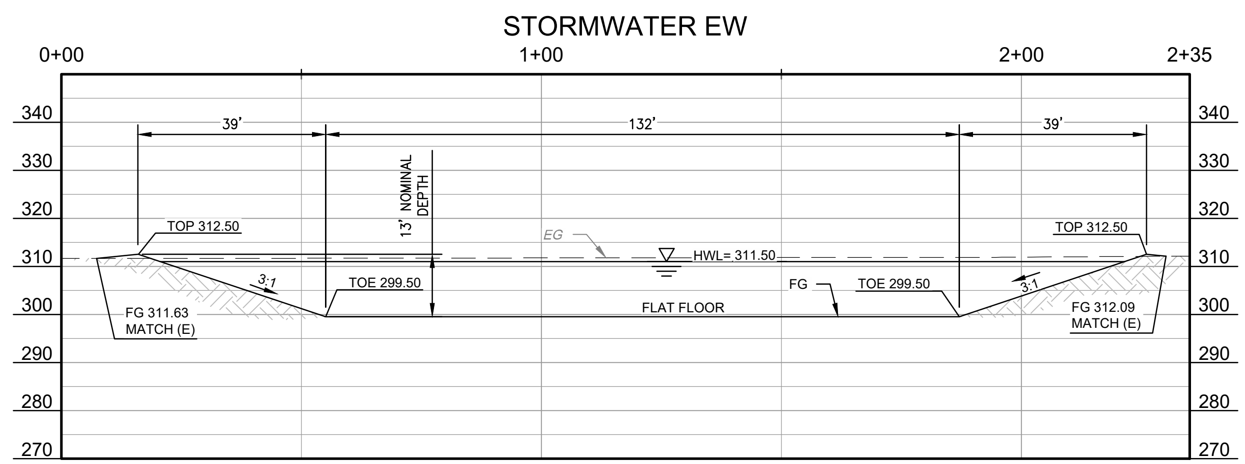
8 OF 36

6/7/2023 11:37 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage lot\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C5 STORM BASIN PLAN.dwg -Evan Freitas



A
C6

POND PROFILE VIEW



B
C6

POND CROSS SECTION VIEW

WARNING
POWER LINES OVERHEAD

Know what's below. Call before you dig.

HATCH LEGEND

EXISTING EARTH

FINISHED EARTH

SCALE IN FEET
0 10 20 40

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL

STORM BASIN SECTION VIEW

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LICENSE NO: 88473
DRAFTED BY: NPA
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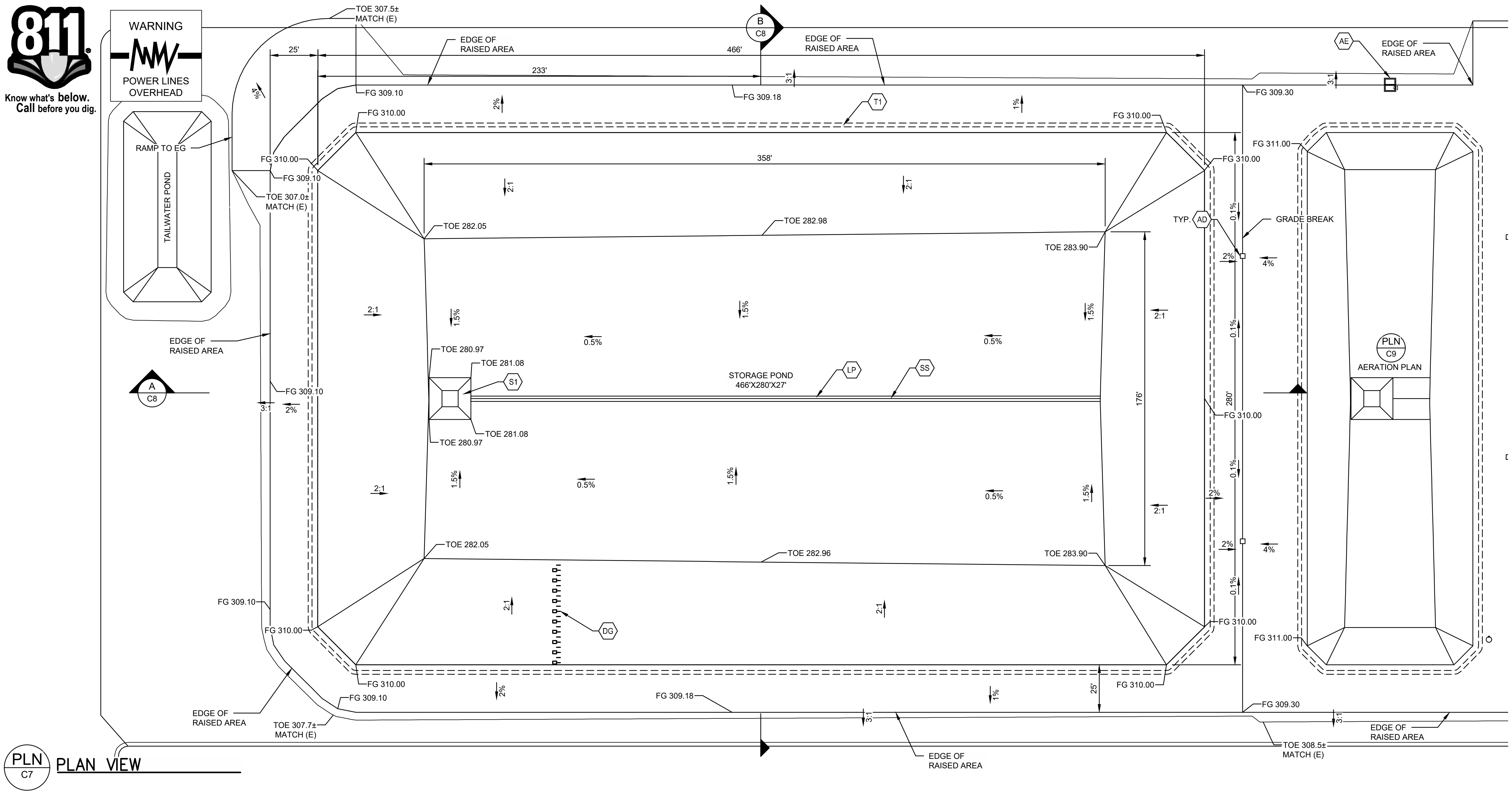
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C6

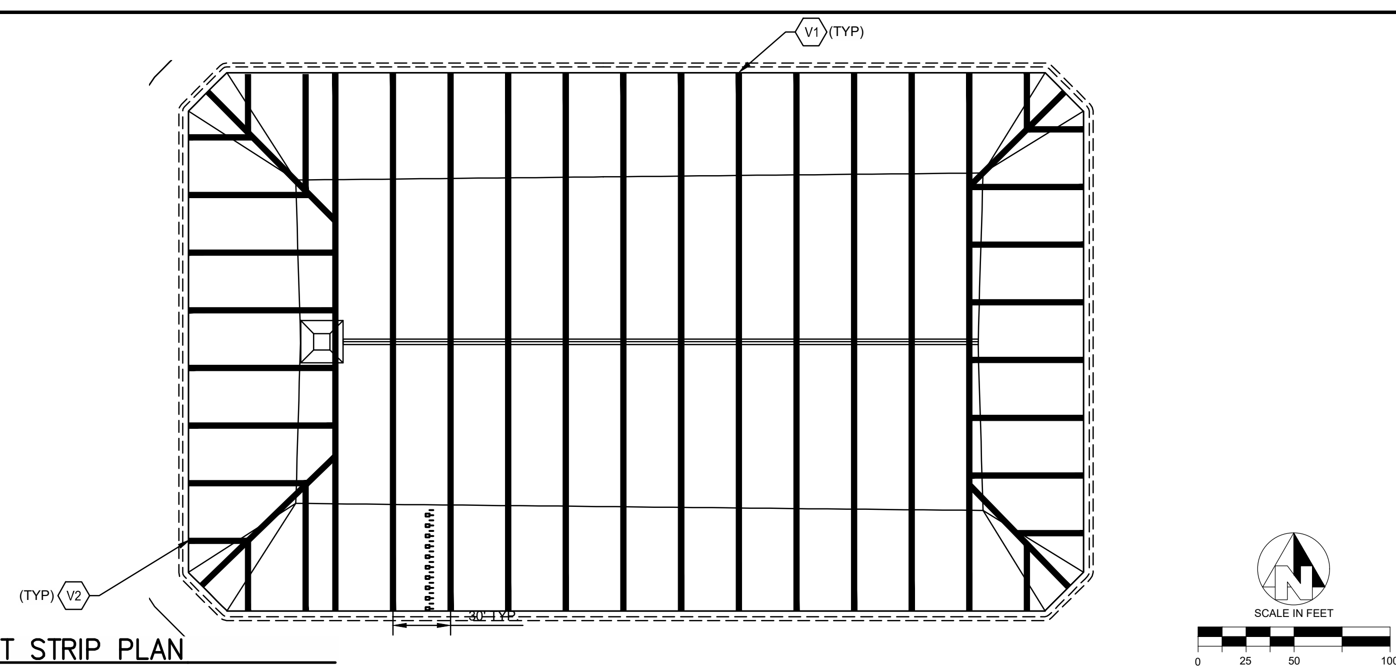


NOTES

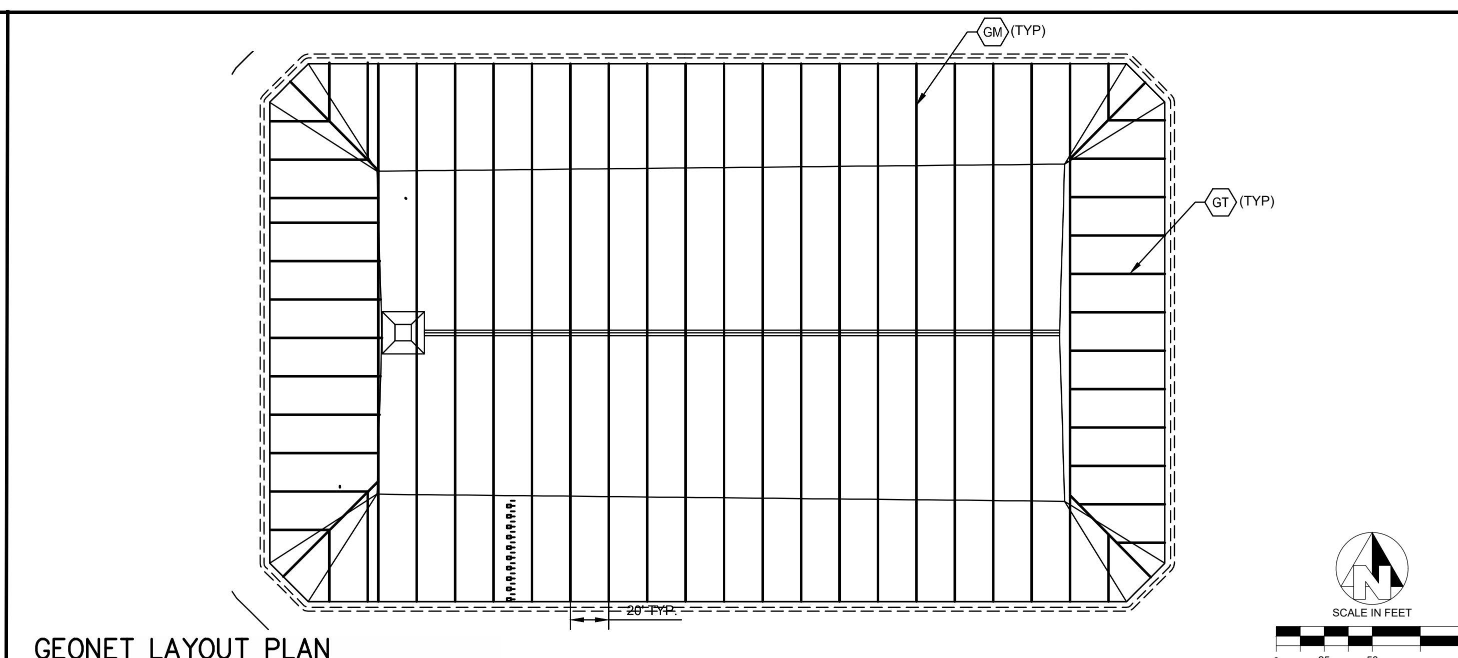
1. POND SUBGRADE AND LINER SHALL BE INSTALLED IN ACCORDANCE WITH THE POND DESIGN WORK PLAN THAT HAS BEEN APPROVED BY THE REGIONAL WATER QUALITY CONTROL BOARD.
2. HIGH WATER LINE (HWL) IS THE FREEBOARD LEVEL.
3. POINTS WILL BE GIVEN FOR GPS LOCATION OF GRADING EQUIPMENT.
4. CONSTRUCT LAGOON UPPER PERIMETER SURFACE TO THE INSIDE ELEVATION CALLED OUT. WHEN FILLING THE ANCHOR TRENCH, POST LINING INSTALLATION, ADJUST OUTER SURFACE TO THE LOWER ELEVATION CALLED OUT.
5. VENT STRIPS REQUIRE 30' SPACING WITH GAS ROUTE TO FLOOR. ADJUSTMENTS TO WHAT IS SHOWN CAN OCCUR DURING INSTALLATION.

CONSTRUCTION LEGEND

- (AD) AREA DRAIN (3/D6)
- (AE) AERATION WEIR BOX (1/D6)
- (DG) DEPTH GAUGE (1/D3)
- (GM) OVERLAP GEONET EDGES A MINIMUM OF 3 INCHES. INSTALL PLASTIC CABLE TIES EVERY 5 FEET.
- (GT) OVERLAP GEONET ENDS OR END TO EDGE WITH MATERIALS SHINGLED DOWN A MINIMUM 5 FEET FROM THE TOE OF POND IN THE DIRECTION OF THE SLOPE A MINIMUM OF 12 INCHES. INSTALL PLASTIC CABLE TIES EVERY 12 INCHES.
- (LP) LEAKAGE PIPE AT CENTER OF POND TO SUMP-DOUBLE LINER
- (S1) LCRS/LYSIMETER SUMPS (6/D2)
- (SS) 1/8" STAINLESS STEEL CABLE LOCATED IN CENTER TRENCH AND EXITS AT SURFACE.
- (T1) ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND) (3/D1)
- (V1) VENT ORIFICE (5/D1)
- (V2) 2' WIDE DOUBLE FACED 160ML MINIMUM GEOCOMPOSITE DRAINAGE VENT STRIPS. (MATERIAL TO BE APPROVED BY ENGINEER)



VENT STRIP PLAN



GEONET LAYOUT PLAN

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL

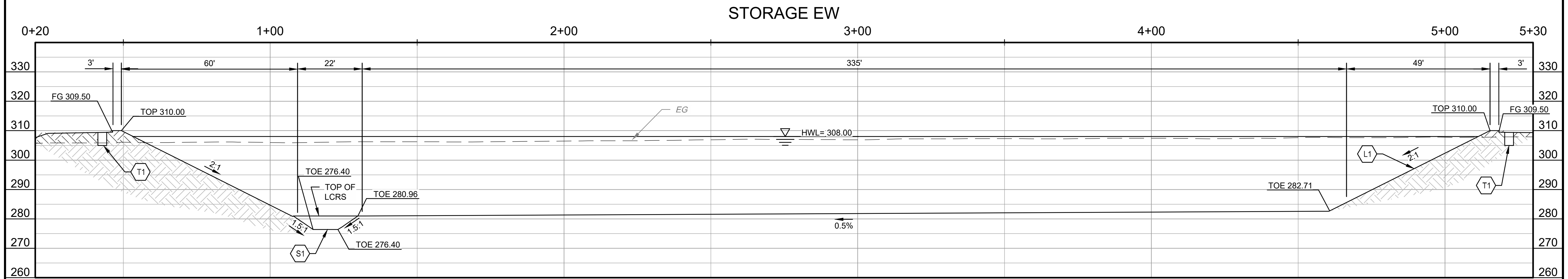
STORAGE PLAN VIEW

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-0242
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA | CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

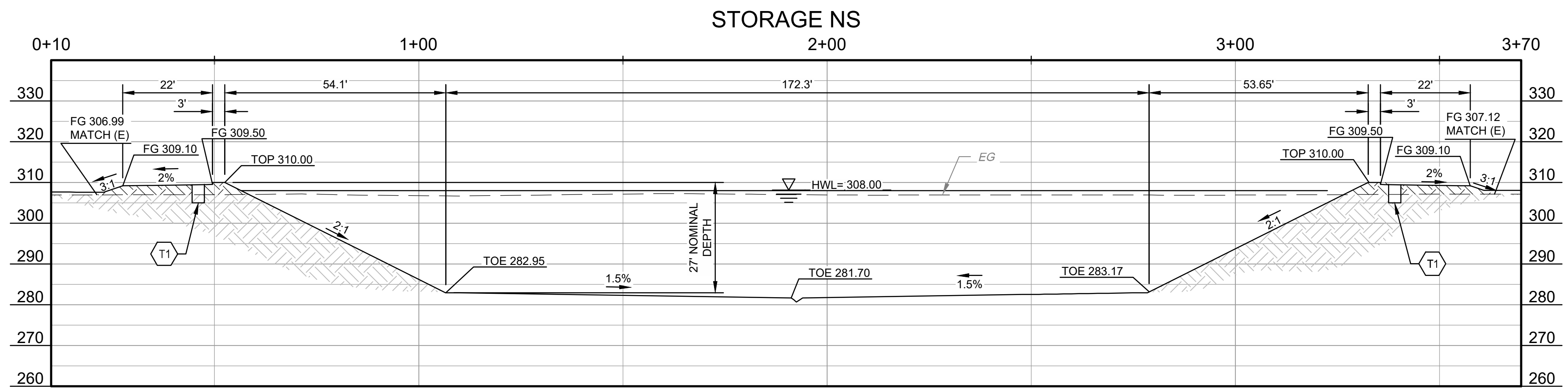
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C7



A
C8

POND PROFILE VIEW



B
C8

POND CROSS SECTION VIEW

WARNING
POWER LINES OVERHEAD

811
Know what's below.
Call before you dig.

CONSTRUCTION LEGEND

L1	DOUBLE LINER LAYERING	1/D1
S1	LCRS/LYSIMETER SUMPS	6/D2
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3/D1

HATCH LEGEND

EXISTING EARTH

FINISHED EARTH

SCALE IN FEET
0 10 20 40

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL

STORAGE SECTION VIEW

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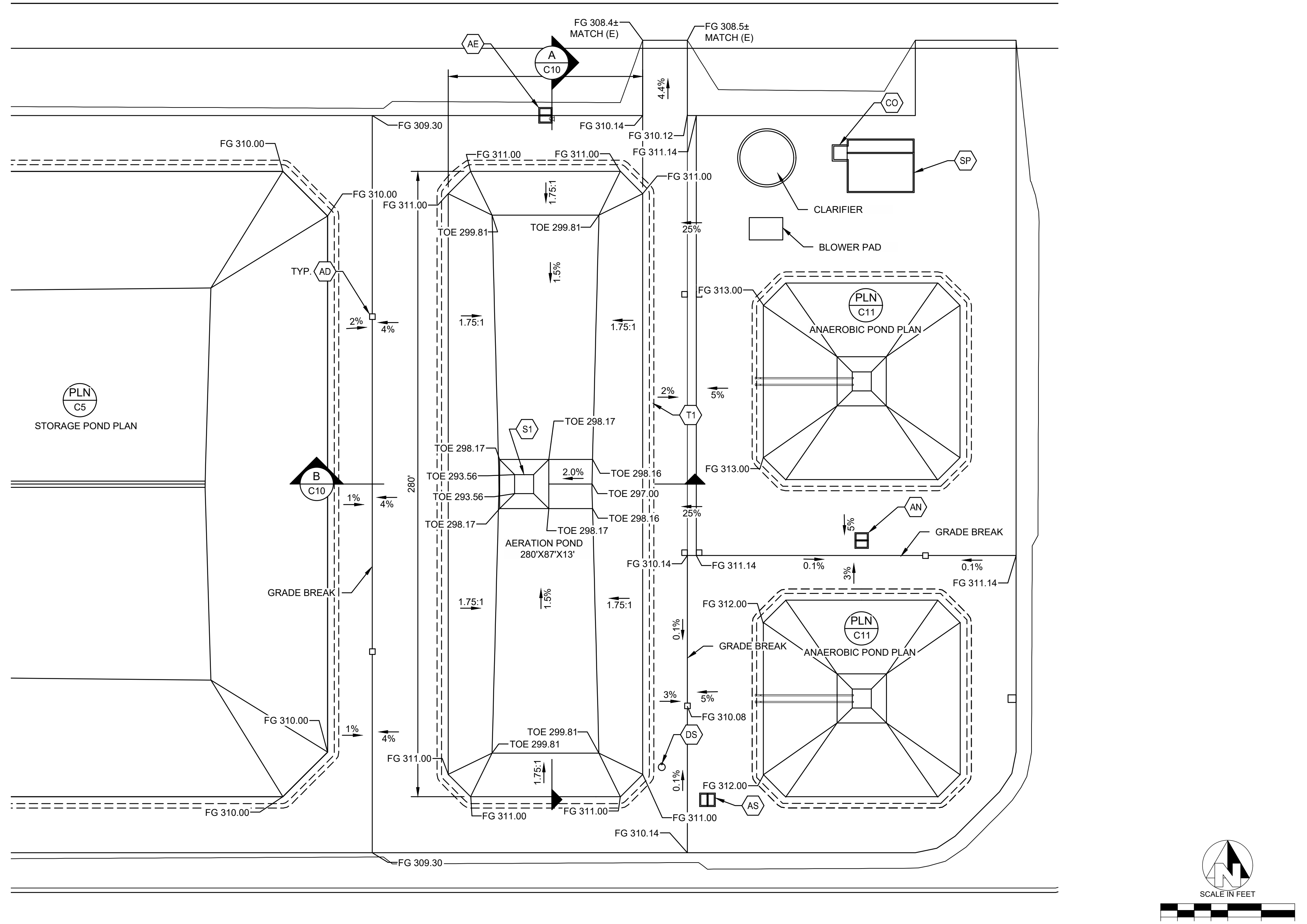
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C8

6/7/2023 11:38 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C8 STORAGE SECTION VIEW.dwg -Evan Freitas



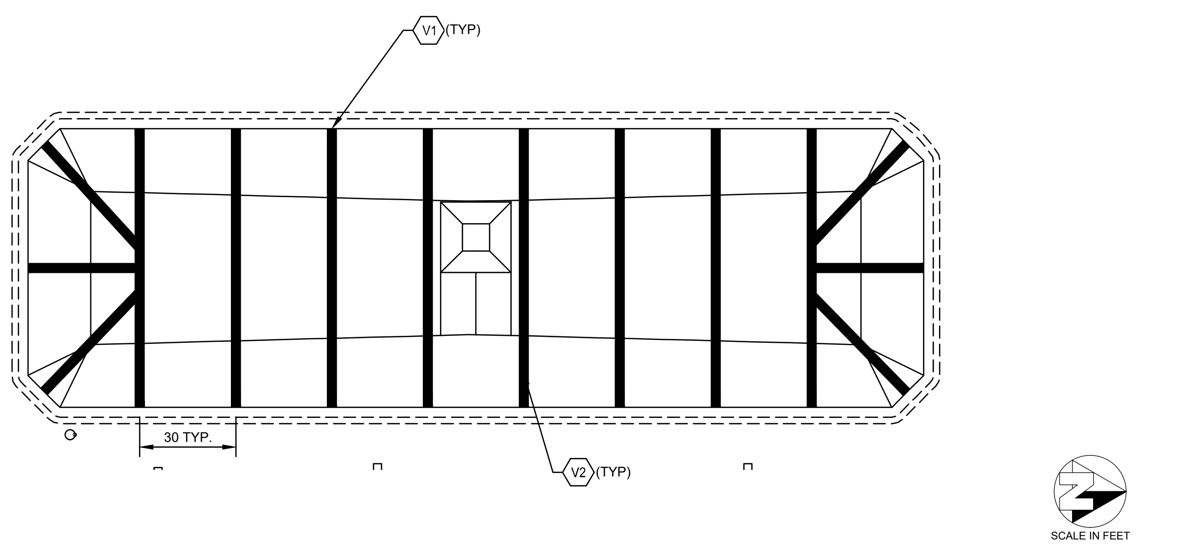
PLN
C9
PLAN VIEW

NOTES

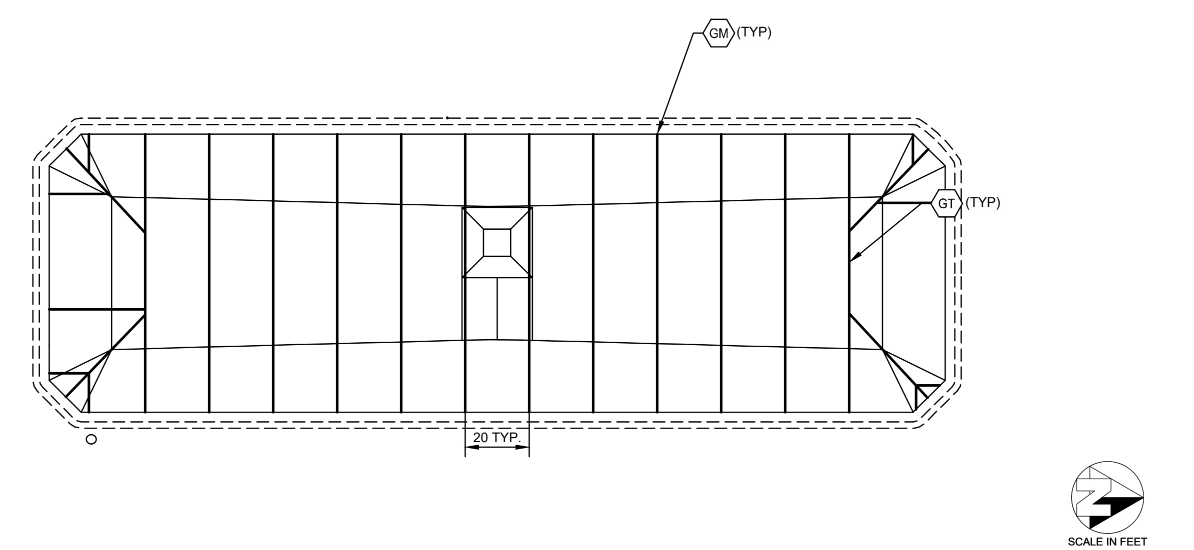
1. [illegible] LINER S[illegible]ED [illegible] THE PO[illegible] APPRO[illegible] ITY CO[illegible]
2. [illegible]) IS THE FRE[illegible] LEVEL.
3. [illegible] FOR GPS LOCATION OF GRADING EQUIPMENT.
4. CONSTRUCT LAGOON UPPER PERIMETER SURFACE TO THE INSIDE ELEVATION CALLED OUT. WHEN FILLING THE ANCHOR TRENCH, POST LINING INSTALLATION, ADJUST OUTER SURFACE TO THE LOWER ELEVATION CALLED OUT.
5. VENT STRIPS REQUIRE 30' SPACING WITH GAS ROUTE TO FLOOR. ADJUSTMENTS TO WHAT IS SHOWN CAN OCCUR DURING INSTALLATION.

CONSTRUCTION LEGEND

Symbol	Description	Detail
AD	AREA DRAIN	3 / D6
AE	AERATION WEIR BOX	1 / D6
AN	NORTH ANAEROBIC WEIR BOX	1 / D5
AS	SOUTH ANAEROBIC WEIR BOX	2 / D5
CO	COLLECTION PIT	4 / D4
DS	DRY SUMP	4 / D5
GM	OVERLAP GEONET EDGES A MINIMUM OF 3 INCHES. INSTALL PLASTIC CABLE TIES EVERY 5 FEET.	
GT	OVERLAP GEONET ENDS OR END TO EDGE WITH MATERIALS SHINGLED DOWN A MINIMUM 5 FEET FROM THE TOE OF POND IN THE DIRECTION OF THE SLOPE A MINIMUM OF 12 INCHES. INSTALL PLASTIC CABLE TIES EVERY 12 INCHES.	
S1	LCRS/LYSIMETER SUMPS	6 / D2
SP	SEPARATOR PAD	2 / D4
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1
V1	VENT ORIFICE	5 / D1
V2	2' WIDE DOUBLE FACED 160ML MINIMUM GEOCOMPOSITE DRAINAGE VENT STRIPS. (MATERIAL TO BE APPROVED BY ENGINEER)	



VENT STRIP PLAN



GEONET LAYOUT PLAN

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

FOR CONSTRUCTION
6/7/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL
AERATION PLAN VIEW

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
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CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

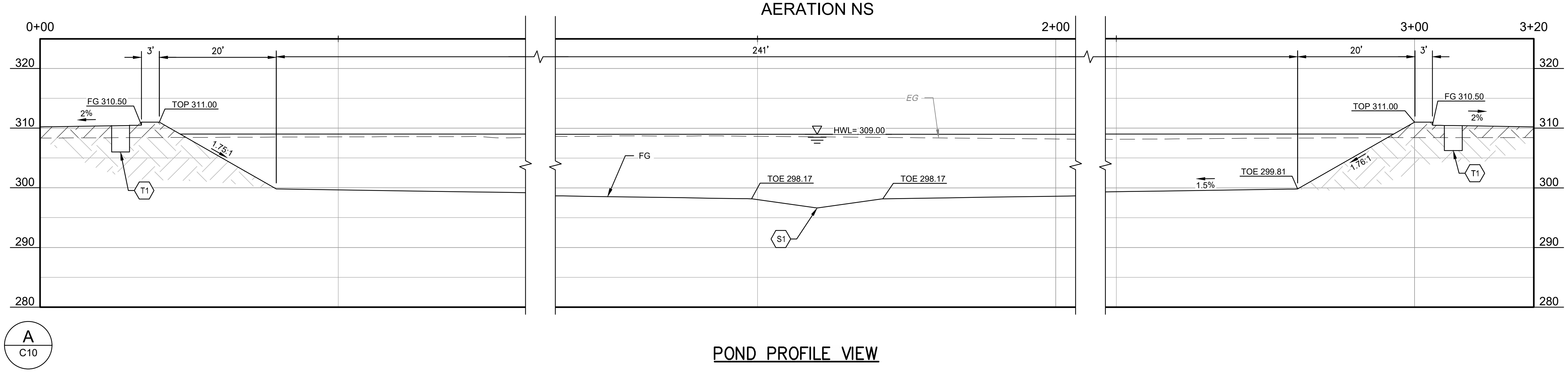
DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

DRAFTED BY:	CHECKED BY:
NPA	SCB

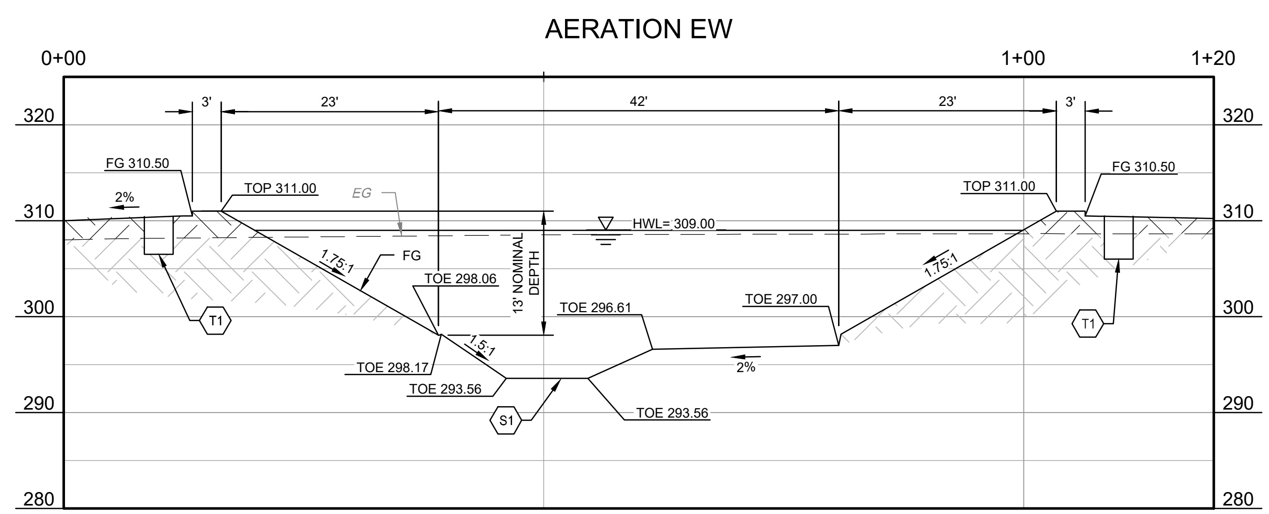
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C9



POND PROFILE VIEW



POND CROSS SECTION VIEW

WARNING
POWER LINES OVERHEAD

811
Know what's below.
Call before you dig.

CONSTRUCTION LEGEND

L1	DOUBLE LINER LAYERING	1 / D1
S1	LCRS/LYSIMETER SUMPS	6 / D2
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1

HATCH LEGEND

EXISTING EARTH

FINISHED EARTH

SCALE IN FEET
0 5 10 20

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL
AERATION SECTION VIEW

EST. 1968
PROVOST & PRITCHARD
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An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER:
E. CAMINATA
LICENSE NO:
88473

DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

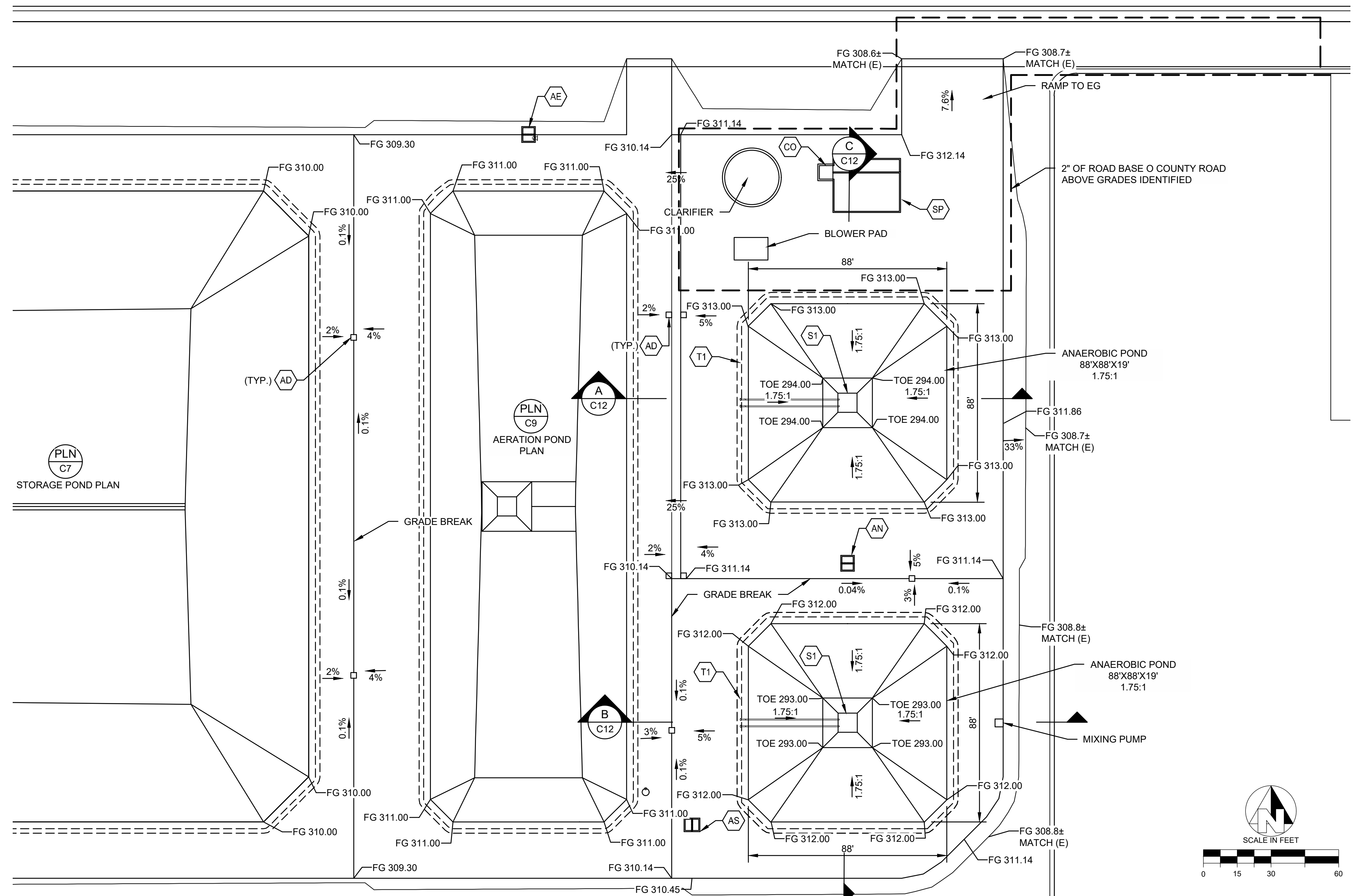
0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C10

6/7/2023 11:39 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage tt\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C10 AERATION SECTION VIEW.dwg -Evan Freitas

811 Know what's below. Call before you dig.

WARNING
POWER LINES OVERHEAD



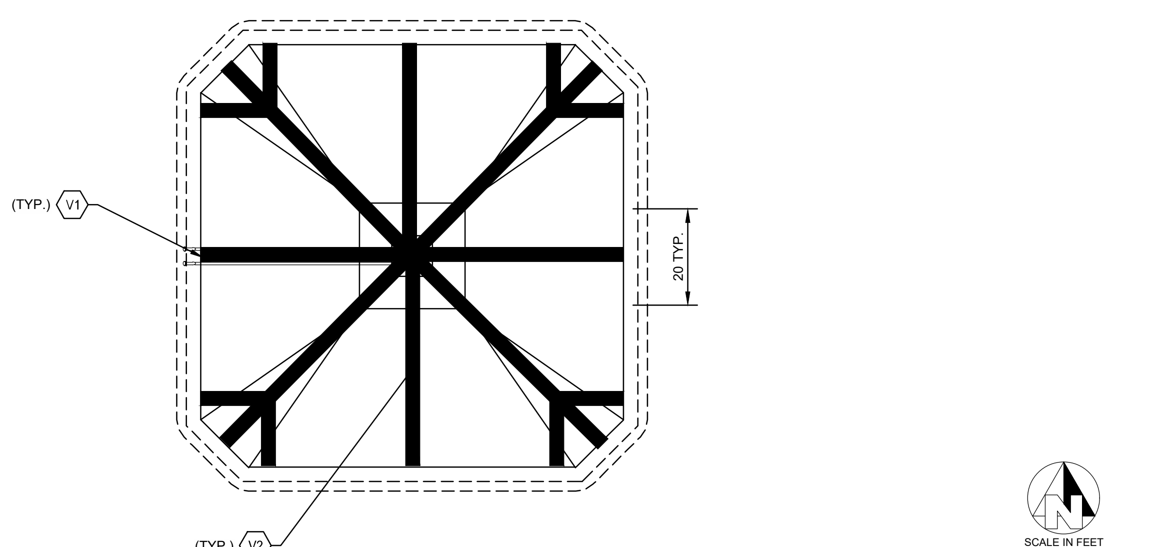
PLN
C11
PLAN VIEW

NOTES

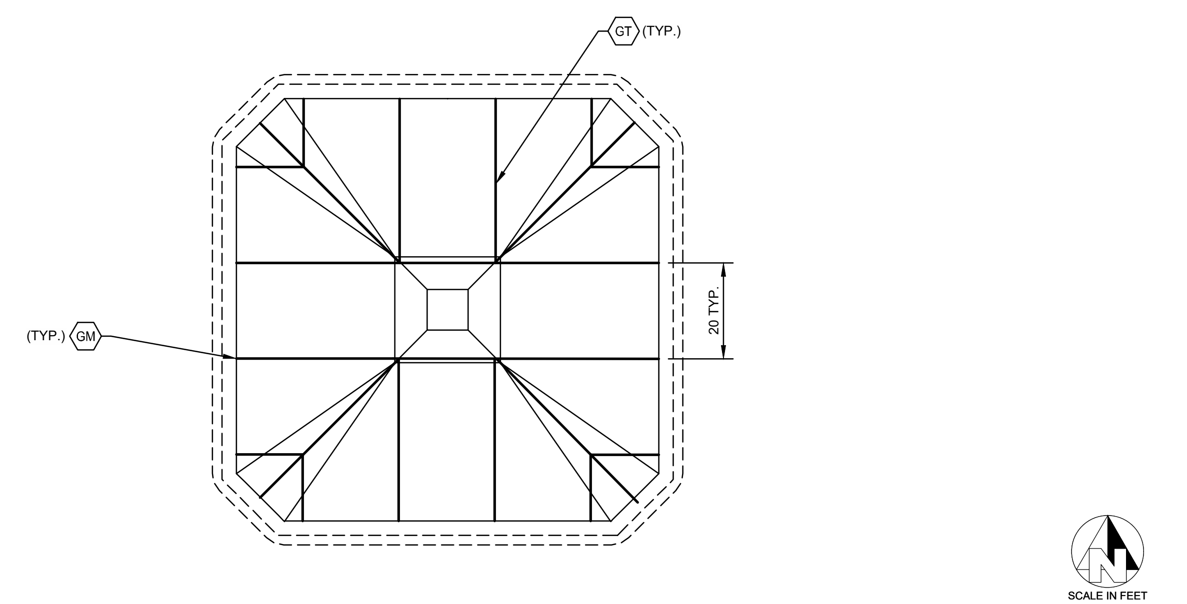
1. POND SUBGRADE AND LINER SHALL BE INSTALLED IN ACCORDANCE WITH THE POND DESIGN WORK PLAN THAT HAS BEEN APPROVED BY THE REGIONAL WATER QUALITY CONTROL BOARD.
2. HIGH WATER LINE (HWL) IS THE FREEBOARD LEVEL.
3. POINTS WILL BE GIVEN FOR GPS LOCATION OF GRADING EQUIPMENT.
4. CONSTRUCT LAGOON UPPER PERIMETER SURFACE TO THE INSIDE ELEVATION CALLED OUT. WHEN FILLING THE ANCHOR TRENCH, POST LINING INSTALLATION, ADJUST OUTER SURFACE TO THE LOWER ELEVATION CALLED OUT.
5. VENT STRIPS REQUIRE 30' SPACING WITH GAS ROUTE TO FLOOR. ADJUSTMENTS TO WHAT IS SHOWN CAN OCCUR DURING INSTALLATION.

CONSTRUCTION LEGEND

AD	AREA DRAIN	3/D6
AE	AERATION WEIR BOX	1/D6
AN	NORTH ANAEROBIC WEIR BOX	1/D5
AS	SOUTH ANAEROBIC WEIR BOX	2/D5
CO	COLLECTION PIT	4/D4
DS	DRY SUMP	4/D5
GM	OVERLAP GEONET EDGES A MINIMUM OF 3 INCHES. INSTALL PLASTIC CABLE TIES EVERY 5 FEET.	
GT	OVERLAP GEONET ENDS OR END TO EDGE WITH MATERIALS SHINGLED DOWN A MINIMUM 5 FEET FROM THE TOE OF POND IN THE DIRECTION OF THE SLOPE A MINIMUM OF 12 INCHES. INSTALL PLASTIC CABLE TIES EVERY 12 INCHES.	
S1	LCRS/LYSIMETER SUMPS	6/D2
SP	SEPARATOR PAD	2/D4
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3/D1
V1	VENT ORIFICE	5/D1
V2	2' WIDE DOUBLE FACED 160ML MINIMUM GEOCOMPOSITE DRAINAGE VENT STRIPS. (MATERIAL TO BE APPROVED BY ENGINEER)	



VENT STRIP PLAN



GEONET LAYOUT PLAN

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

FOR CONSTRUCTION
6/7/2023

REGISTERED PROFESSIONAL ENGINEER E. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL

ANAEROBIC PLAN VIEW

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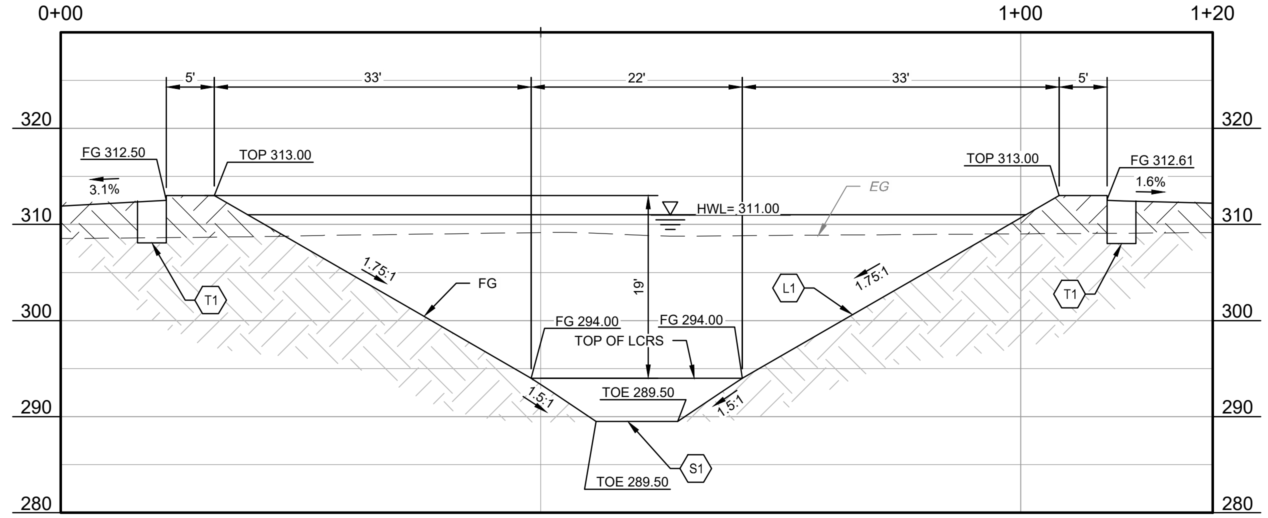
DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA | CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:
0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.
SHEET C11

6/7/2023 11:39 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage fd\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C11 ANAEROBIC PLAN VIEW.dwg -Evan Freitas

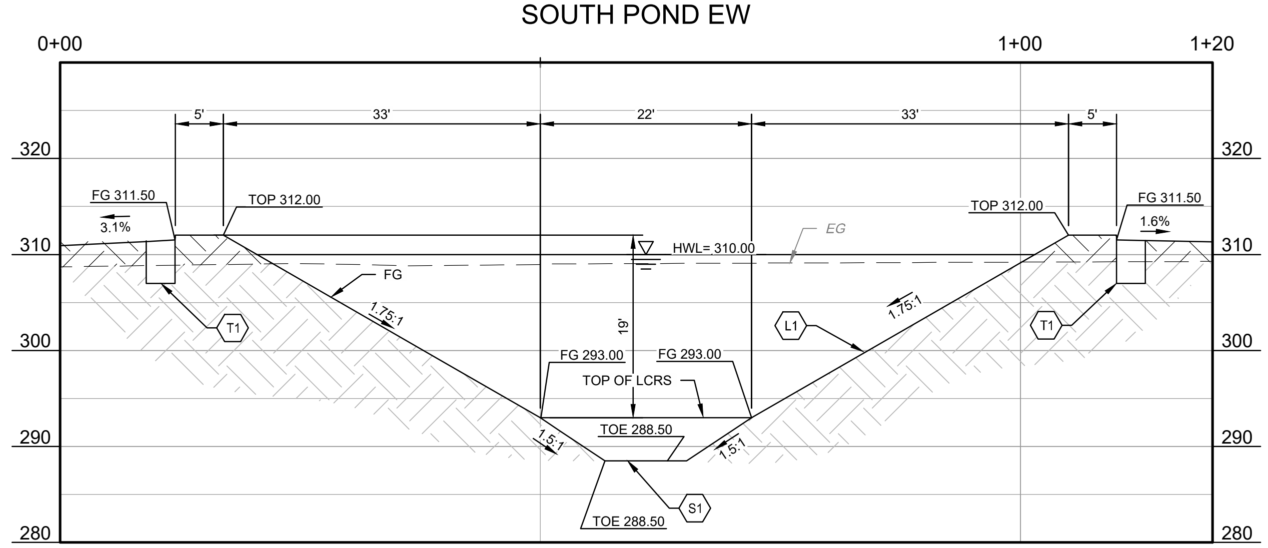
ANAEROBIC EW



A
C12

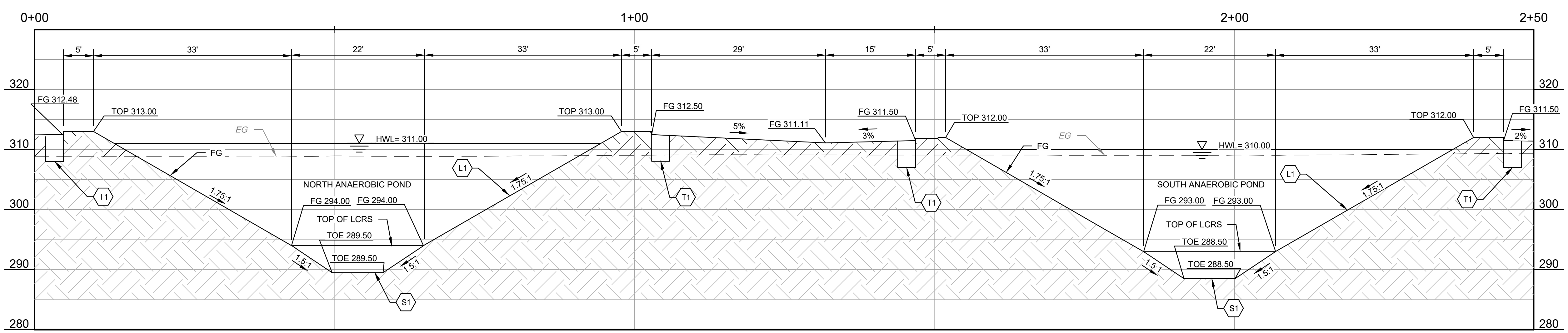
NORTH POND CROSS SECTION VIEW

SOUTH POND EW



B
C12

SOUTH POND CROSS SECTION VIEW



C
C12

POND PROFILE VIEW

WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.

CONSTRUCTION LEGEND

L1	DOUBLE LINER LAYERING	1/D1
S1	LCRS/LYSIMETER SUMPS	6/D2
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3/D1

HATCH LEGEND

EXISTING EARTH

FINISHED EARTH

SCALE IN FEET
0 5 10 20

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
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STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
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ANAEROBIC SECTION VIEW

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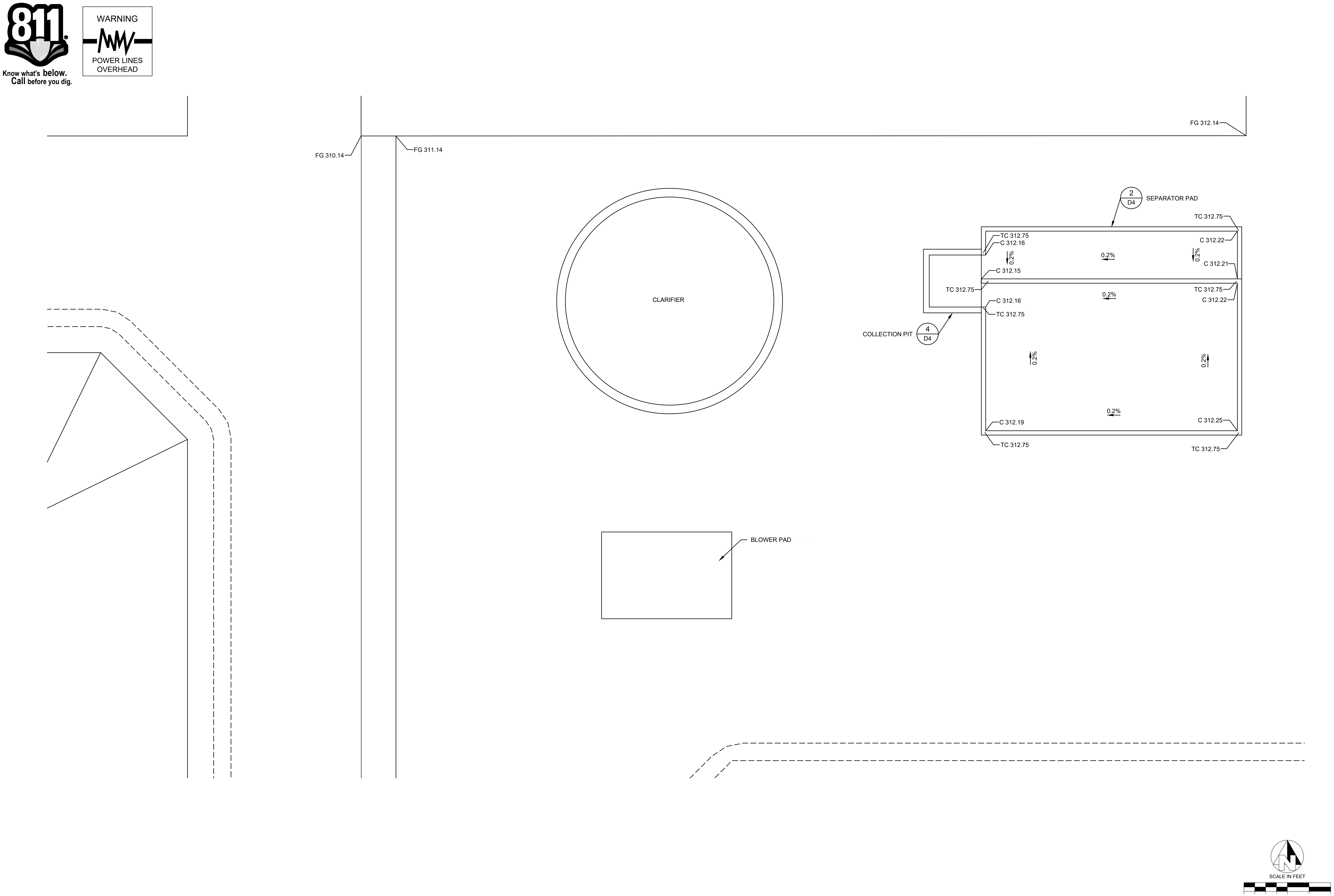
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C12



FOR CONSTRUCTION
6/7/2023

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REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

CIVIL

SEPARATOR PAD GRADING

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E. CAMINATA
LICENSE NO:
88473

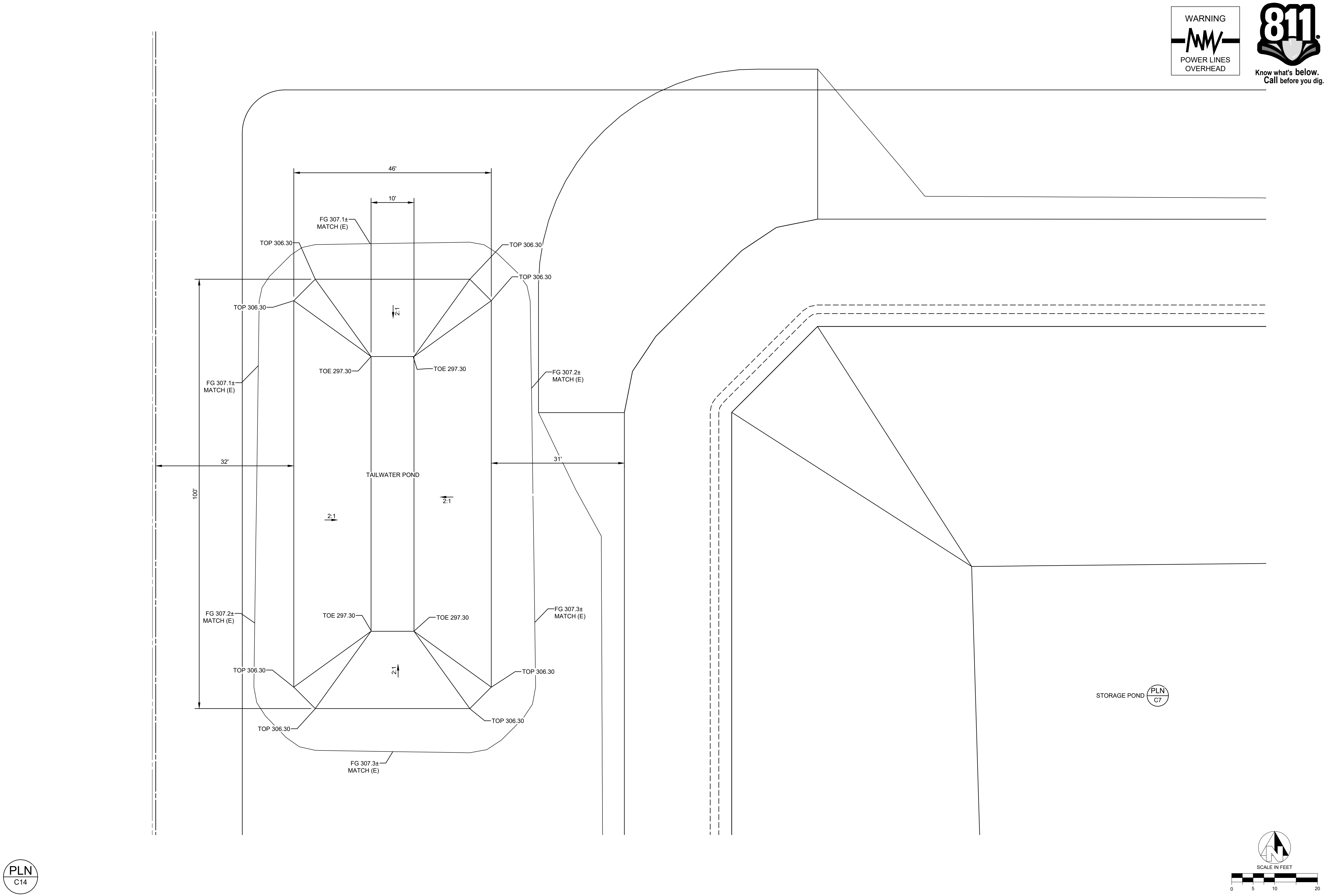
DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C13

6/7/2023 11:40 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C13 SEPARATOR PAD GRADING.dwg-Evan Freitas



FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
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CIVIL
STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM

TREEHOUSE CALIFORNIA ALMONDS
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TAILWATER POND

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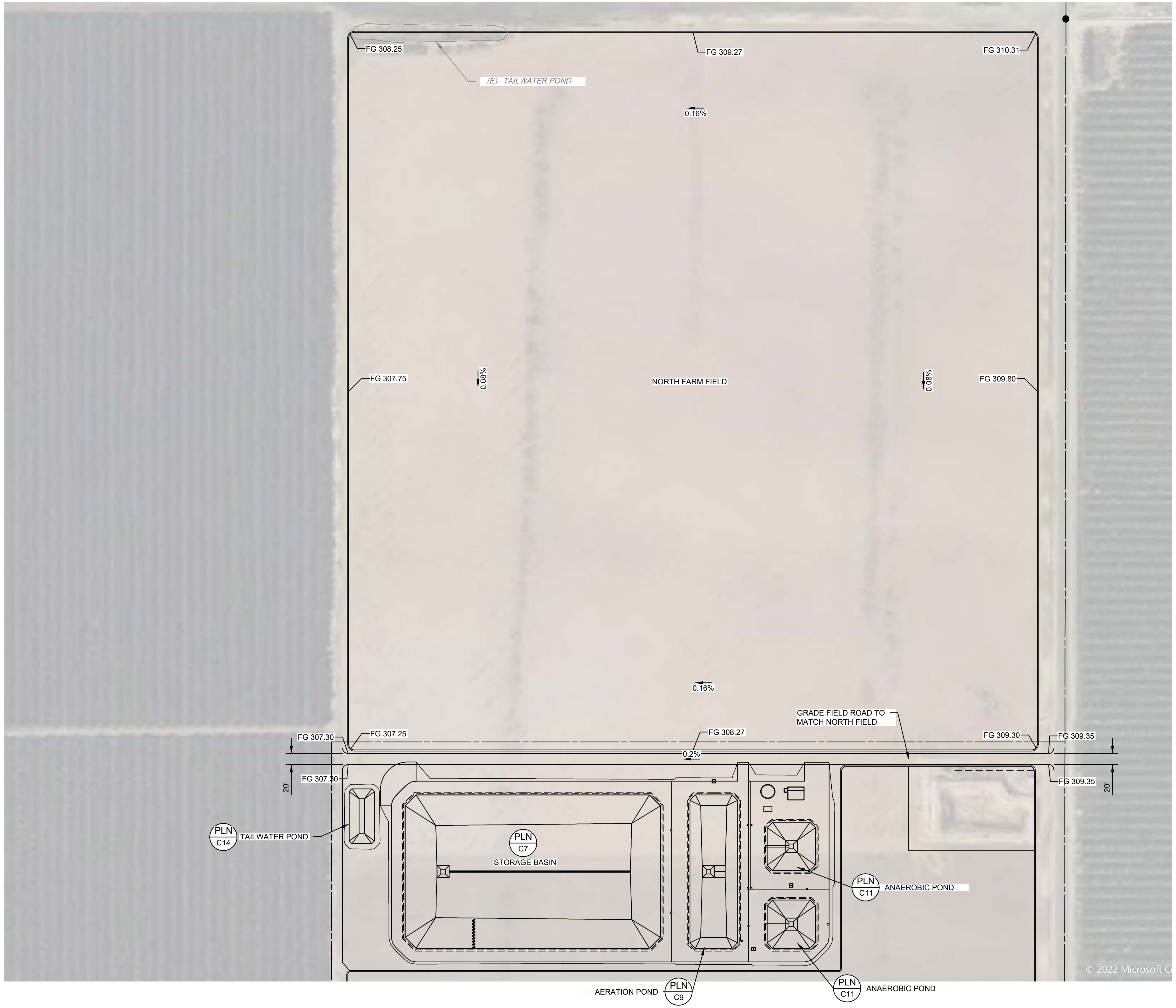
DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C14

6/7/2023 11:40 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage \t\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C14 TAILWATER POND.dwg -Evan Freitas



PLN
C15

WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.

NOTES

1. EXCESS DIRT FROM BASIN EXCAVATION TO BE PLACED AND LEVELED ACROSS THE NORTH FIELD
2. FILL IN EXISTING TAILWATER POND TO MATCH EXISTING GRADE

DETAILED CUT/FILL SUMMARY					
LOCATION	CUT FACTOR	FILL FACTOR	CUT CY	FILL CY	NET CY
TREATMENT PONDS VS EG	1.00	1.20	91429.09	15322.73	76106.36 (C)
NORTH FARM FIELD VS EG	1.00	1.20	6675.70	71849.69	65173.99 (F)
SOUTH FARM FIELD VS EG	1.00	1.20	16085.23	26797.85	10712.63 (F)
				NET (CUT)	220.34

SCALE IN FEET
0 50 100 200

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL
FIELD GRADING

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DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C15
18 OF 36

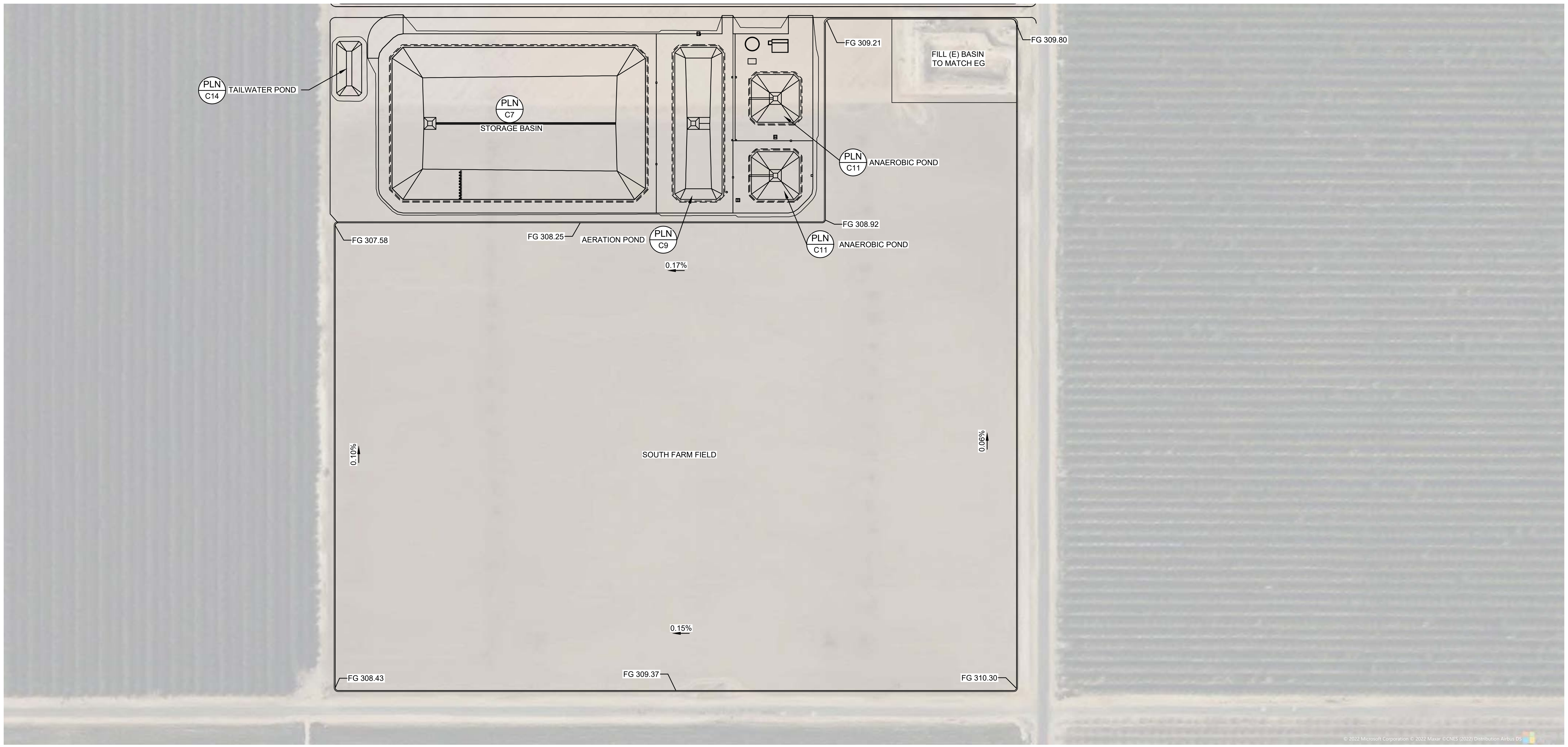
DETAILED CUT/FILL SUMMARY					
LOCATION	CUT FACTOR	FILL FACTOR	CUT CY	FILL CY	NET CY
TREATMENT PONDS VS EG	1.00	1.20	91429.09	15322.73	76106.36 (C)
NORTH FARM FIELD VS EG	1.00	1.20	6675.70	71849.69	65173.99 (F)
SOUTH FARM FIELD VS EG	1.00	1.20	16085.23	26797.85	10712.63 (F)
				NET (CUT)	220.34

NOTES

1. EXISTING IRRIGATION BASIN TO BE FILLED IN TO MATCH EXISTING GRADE
2. GRADING OF THE SOUTH FIELD AT THE TIME OF CONSTRUCTION IS UP TO THE OWNER

WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.



PLN C16

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL

SOUTH FIELD

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559/449-2700 FAX 559/449-2715
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DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

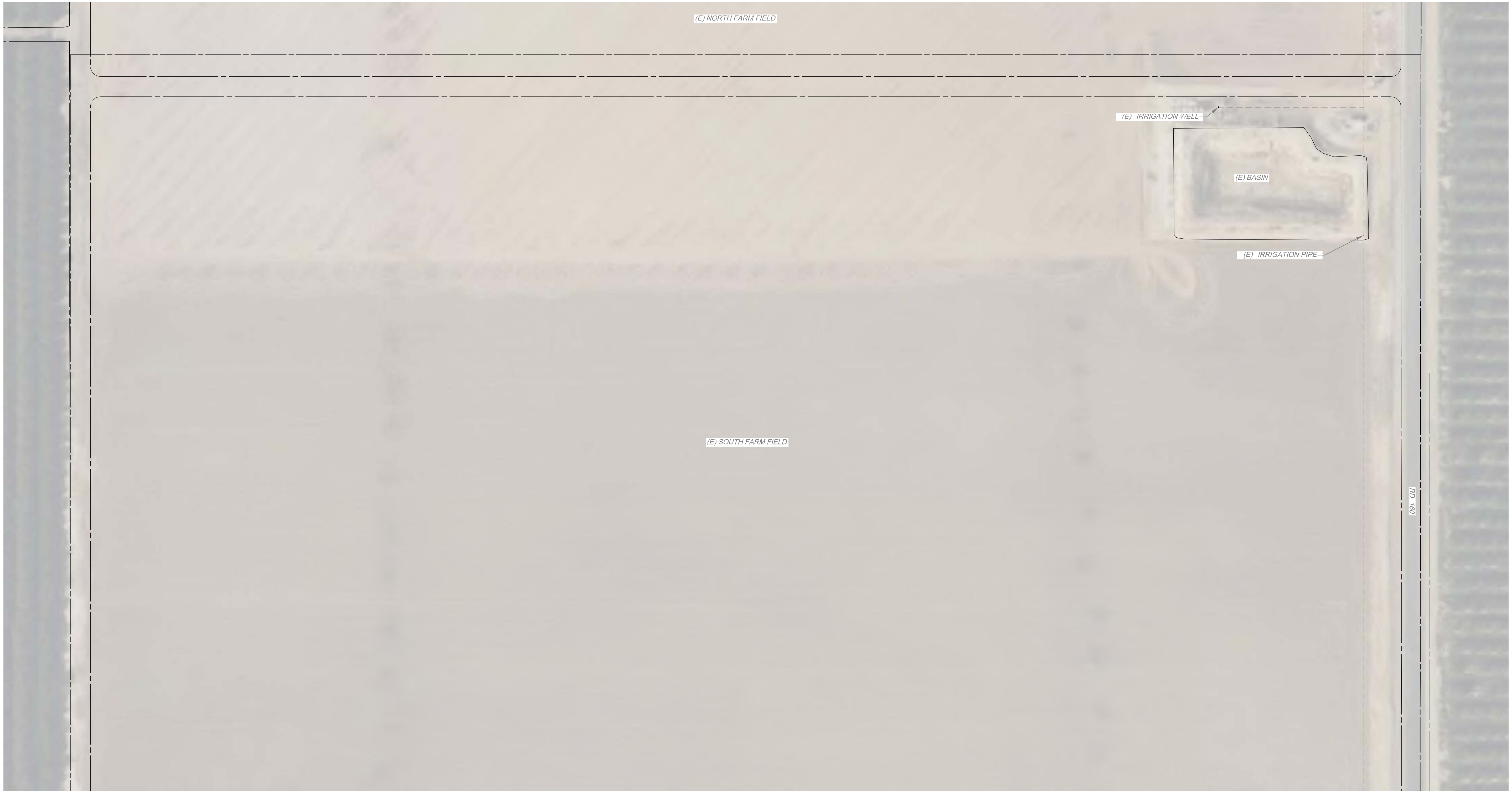
0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C16

6/7/2023 11:41 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C16 SOUTH FIELD.dwg -Evan Freitas

Know what's below. Call before you dig.

WARNING
POWER LINES OVERHEAD



SCALE IN FEET
0 25 50 100

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

PLUMBING

EXISTING PLUMBING

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559/449-2700 FAX 559/449-2715
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DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET P1

20 OF 36

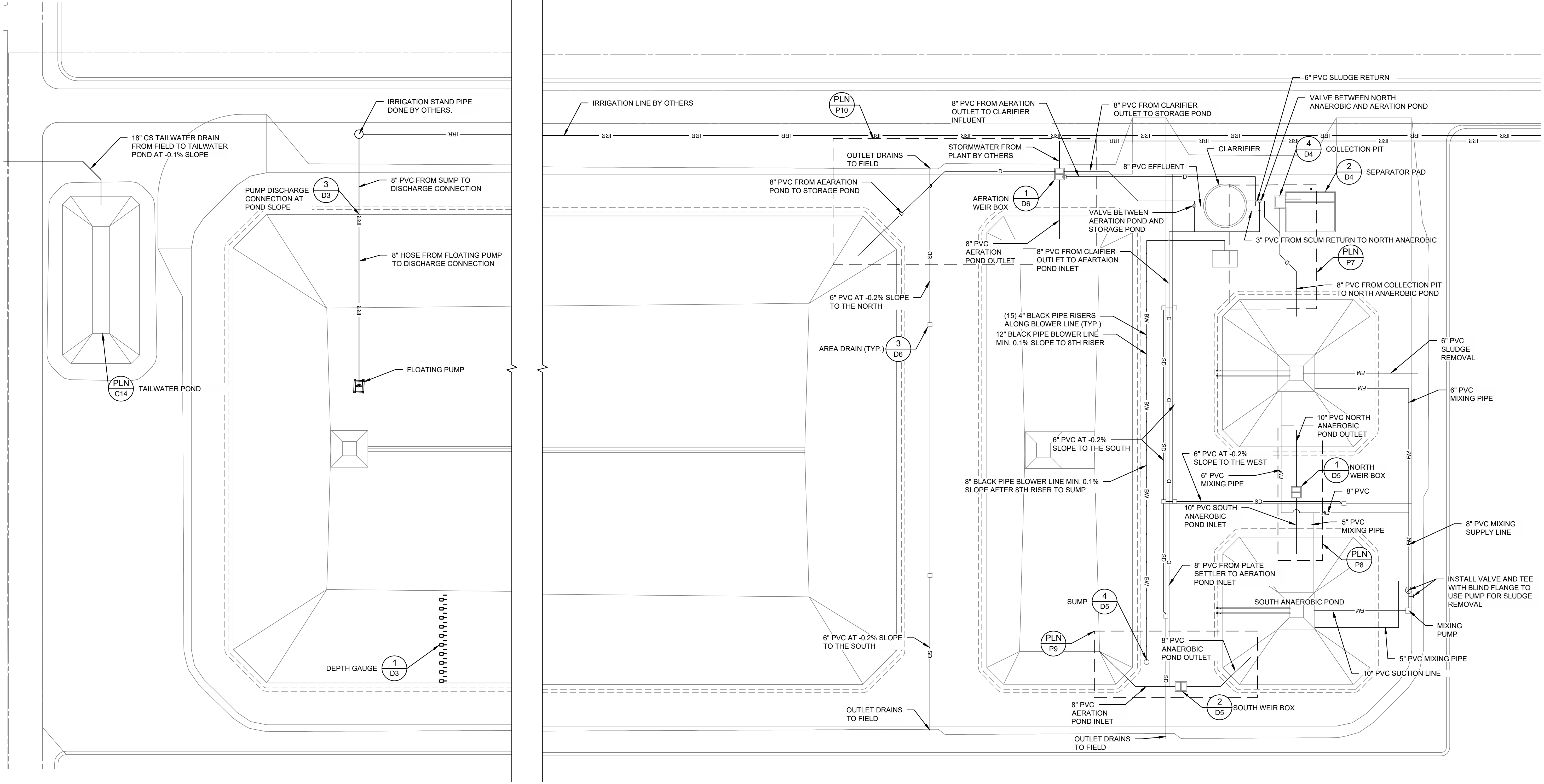
6/7/2023 11:42 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\07_Utilities\TREATMENT PONDS\P1 EXISTING PLUMBING.dwg -Evan Freitas

NOTES:

1. PIPES PENETRATING LINER WILL BE INSTALLED AFTER EXCAVATION AND PRIOR TO LINER INSTALLATION, TEMPORARILY CAPPED AND BACKFILLED. ONCE LINER INSTALLATION IS COMPLETE, REMAINDER OF THE PIPE ROUTES CAN BE INSTALLED.
2. ANAEROBIC MIXING PUMP - 10 HP, 1,000 GPM.
3. AERATION POND WEIR PUMP - 225 GPM
4. CLARIFIER SELECTION VALVE - SLUDGE RETURN. NORMALLY OPEN TO AERATION POND. ACTIVATE VALVE TO COLLECTION PIT FOR 15 MINUTES EVERY HOUR.
5. CLARIFIER SELECTION VALVE - CLARIFIED WATER. NORMALLY OPEN TO STORAGE POND. ACTIVATE VALVE TO AERATION POND WHEN AERATION POND WATER LEVEL DROPS 6", DEACTIVATE WHEN NORMAL WATER LEVEL RETURNS AT 2" BELOW WEIR LEVEL.
6. 1200 GPM, OR EQUIVALENT, FLOATING PUMP BY VALMETAL. VARIABLE SPEED WITH FLOW METER.
7. TAILWATER PUMP TO BE SIZED AND PROVIDED BY OTHERS.

WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.



SCALE IN FEET
0 15 30 60

FOR CONSTRUCTION
6/7/2023

No.	DRAWINGS ISSUED / REVISION	BY	DATE
0		SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
PLUMBING

PROPOSED PLUMBING

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559/449-2700 FAX 559/449-2715
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DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:
0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.
SHEET P2

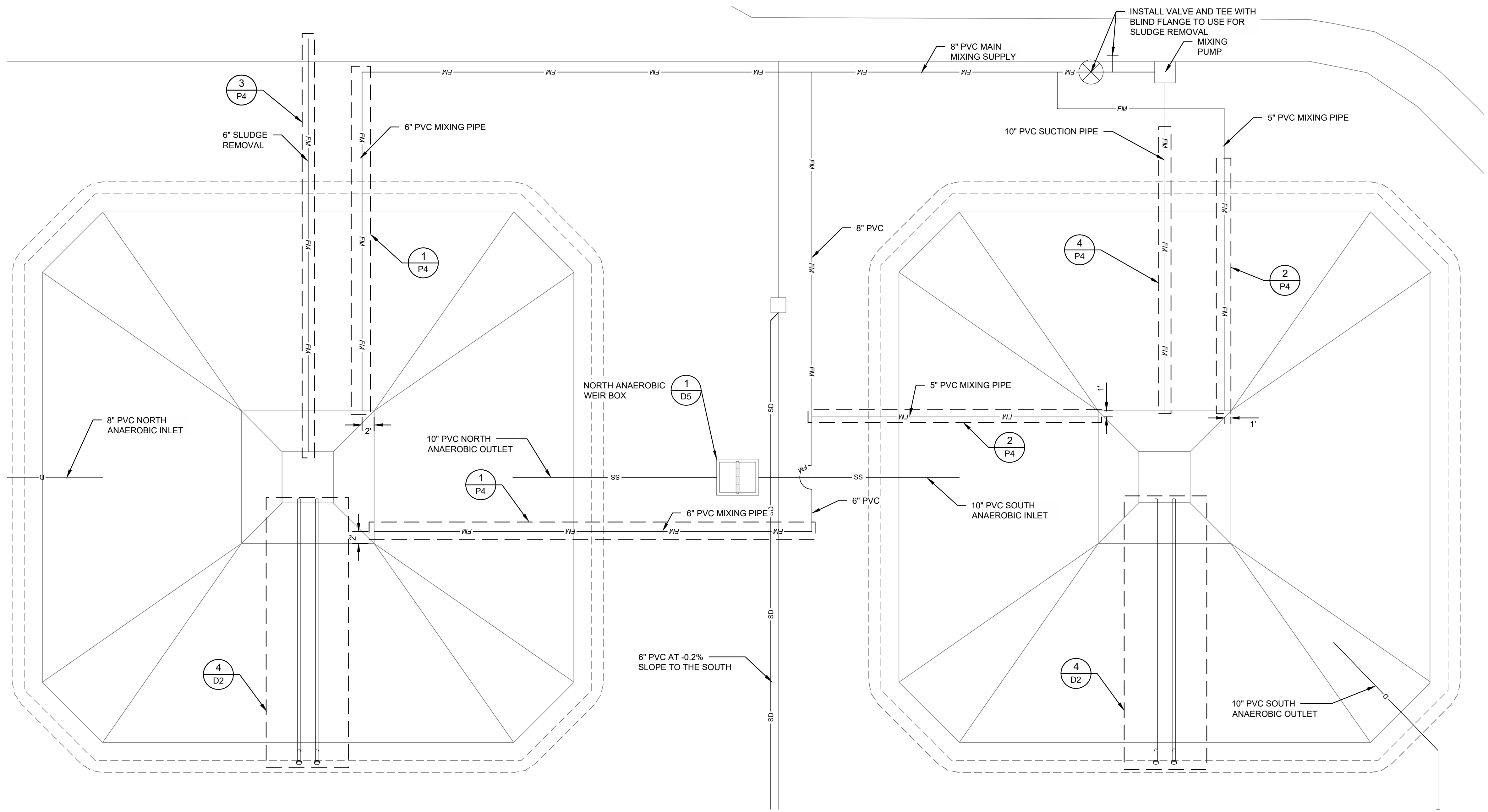
6/7/2023 11:42 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage fd\DWG\40_sheet sets\07_Utilities\TREATMENT PONDS\P2 PROPOSED PLUMBING.dwg-Evan Freitas

WARNING

POWER LINES OVERHEAD

811

Know what's below. Call before you dig.



SCALE IN FEET

0 5 10 20

FOR CONSTRUCTION 6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM

TREEHOUSE CALIFORNIA ALMONDS

EARLIMART, CA

PLUMBING

MIXING SYSTEM PLAN

EST. 1968 PROVOST & PRITCHARD CONSULTING GROUP

An Employee Owned Company

455 W FIR AVENUE

CLOVIS, CALIFORNIA 93611-9166

559/449-2700 FAX 559/449-2715

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DESIGN ENGINEER: E. CAMINATA

LICENSE NO: 88473

DRAFTED BY: NPA

CHECKED BY: SCB

DATE: 06/07/2023

JOB NO: 291219001

PROJECT NO: 291219001

PHASE:

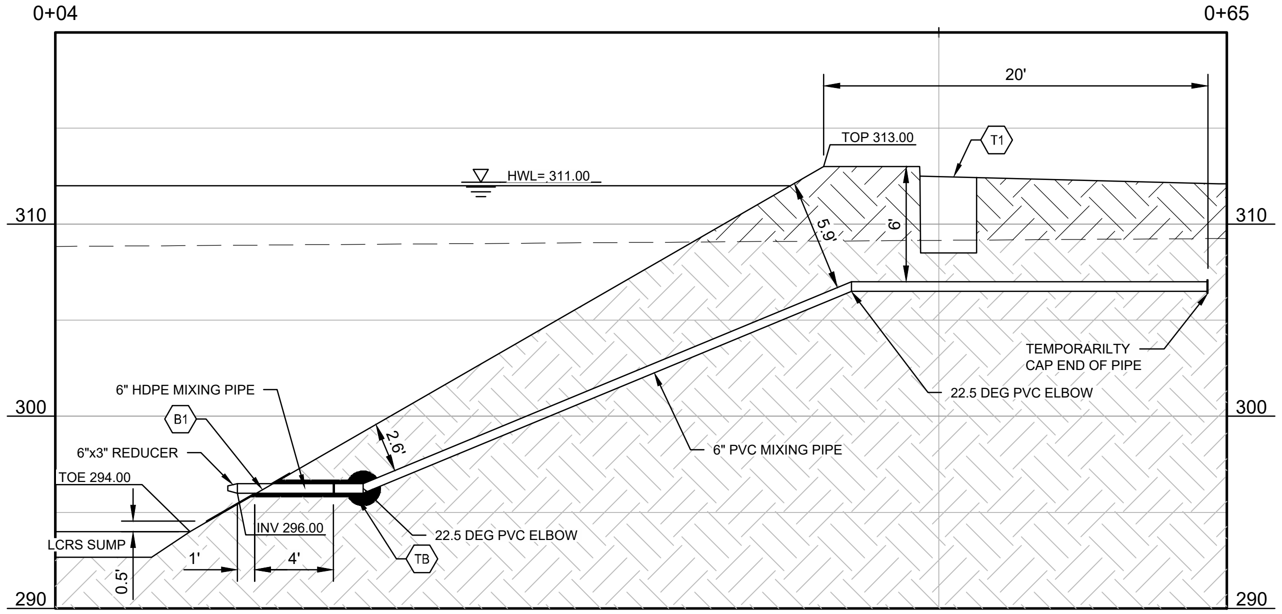
0 1"

ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET P3

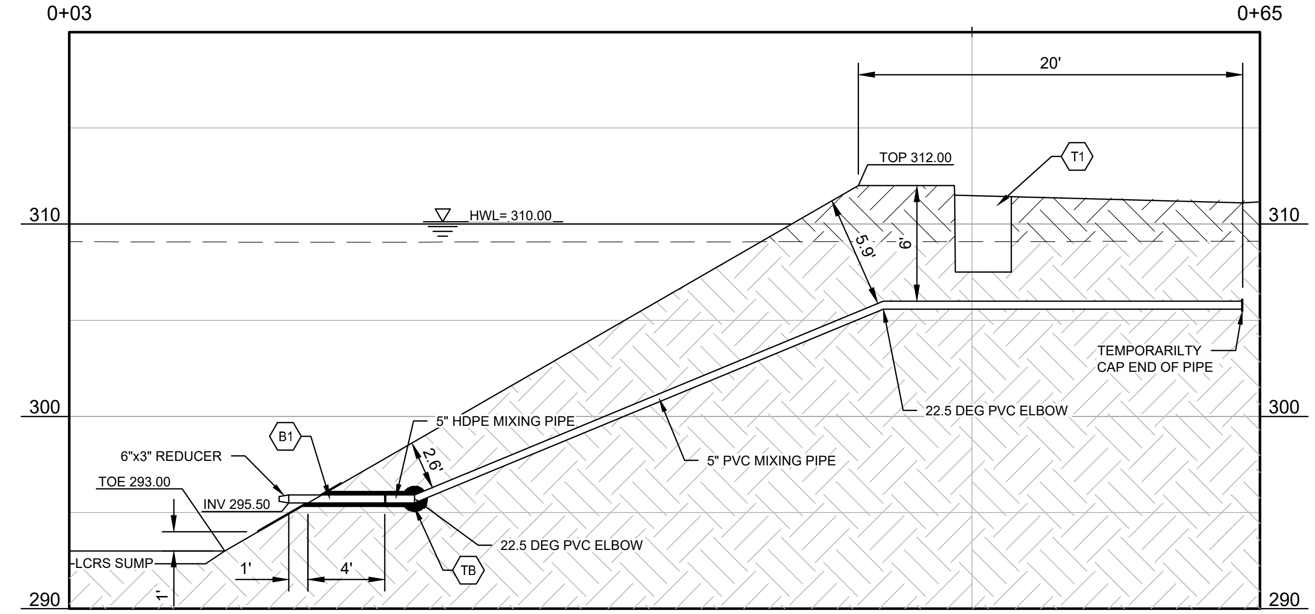
6/7/2023 11:42 AM g:\treehouse ca almonds-2912\291219001-treatmt+storage\d\DWG\40_sheet sets\07_Utilities\TREATMENT PONDS\P3 MIXING SYSTEM PLAN.dwg Evan Freitas

NORTH ANAEROBIC MIXING PIPE



1
P4

SOUTH ANAEROBIC MIXING PIPE



2
P4

NOTES

1. SEE PLAN VIEW FOR PIPE SIZE.
2. ALL HDPE PIPE TO BE DR17.

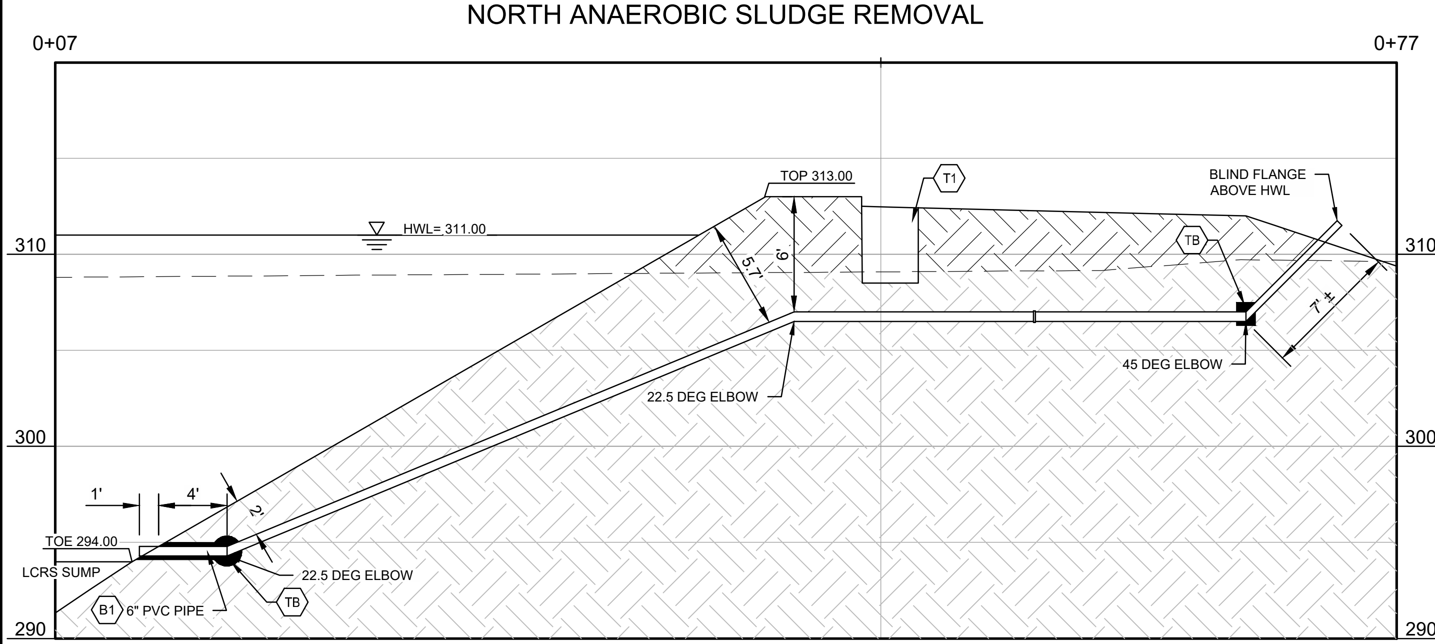
CONSTRUCTION LEGEND

- B1 BOOTLESS PIPE PENETRATION (4 / D1)
- T1 ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND) (3 / D1)
- TB THRUST BLOCK (5 / D2)

HATCH LEGEND

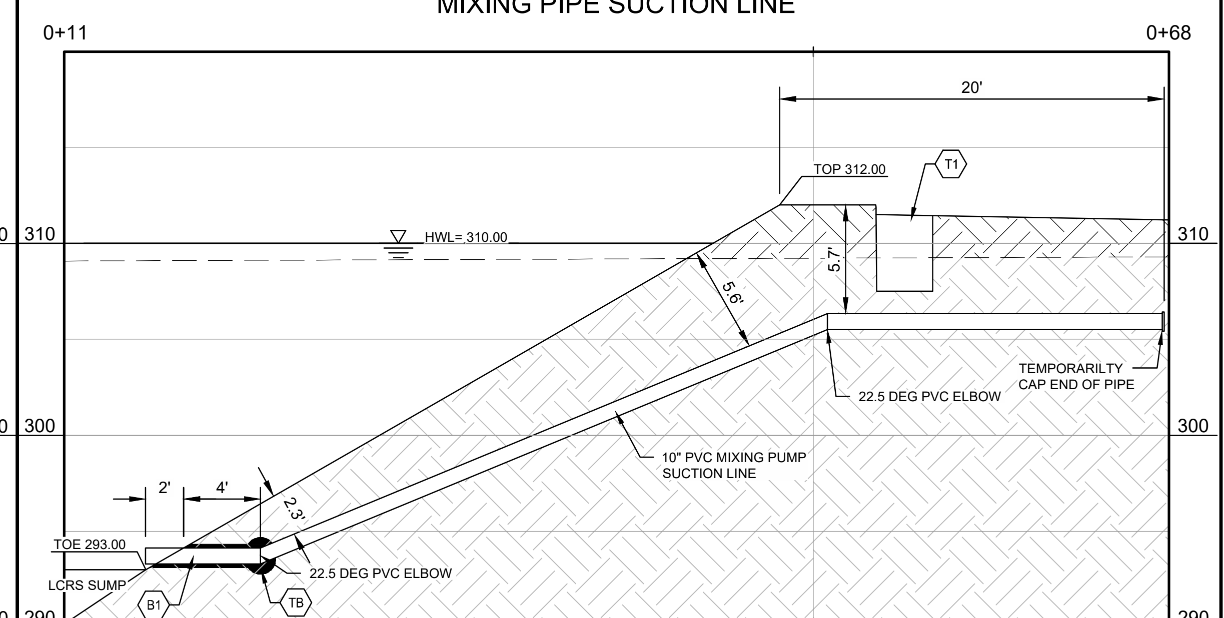
- EXISTING EARTH
- FINISHED EARTH

NORTH ANAEROBIC SLUDGE REMOVAL



3
P4

MIXING PIPE SUCTION LINE



4
P4

WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.

SCALE IN FEET
0 2.5 5 10

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
PLUMBING

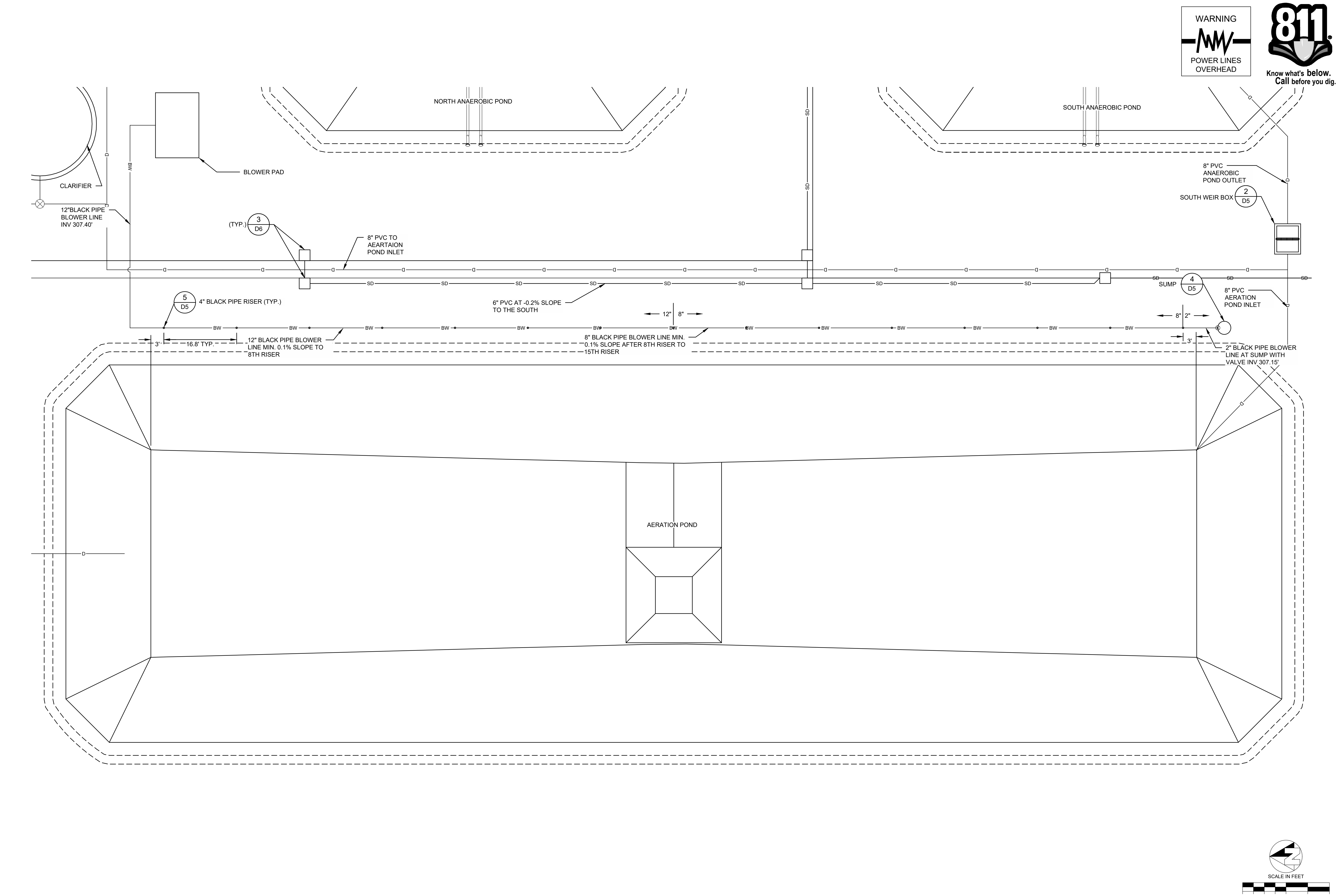
MIXING SYSTEM SECTIONS 1

PROVOST & PRITCHARD
EST. 1968
CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET P4
23 OF 36



No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

FOR CONSTRUCTION
6/7/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM

TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

PLUMBING

BLOWER SYSTEM PLUMBING

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https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

DRAFTED BY:	CHECKED BY:
NPA	SCB

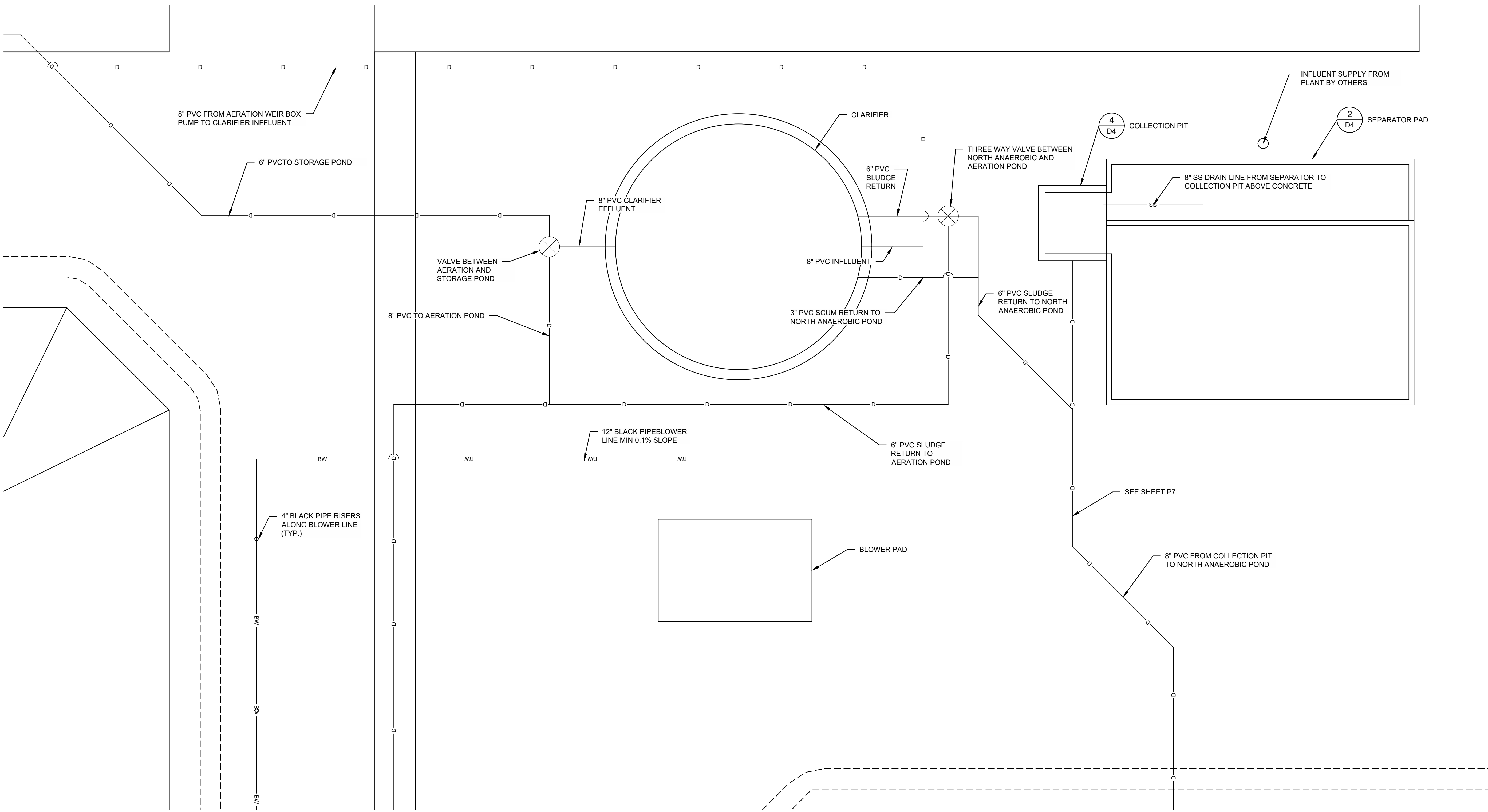
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET P5

WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.



FOR CONSTRUCTION
6/7/2023

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0	DRAWINGS ISSUED	SCB	06/07/2023

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DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
PLUMBING

TREATMENT PLUMBING

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DRAFTED BY: NPA
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DATE: 06/07/2023
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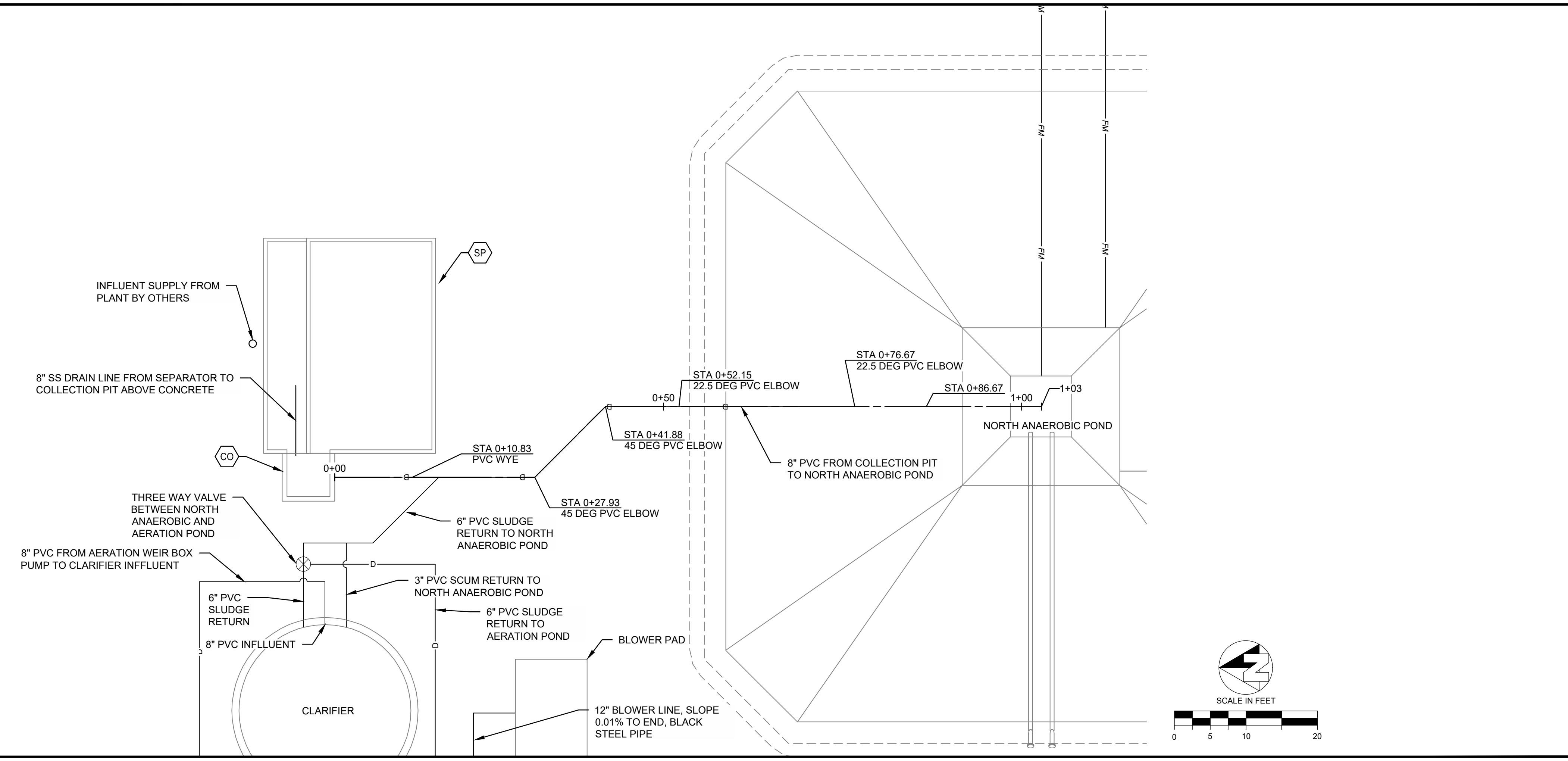
PROJECT NO: 291219001
PHASE:

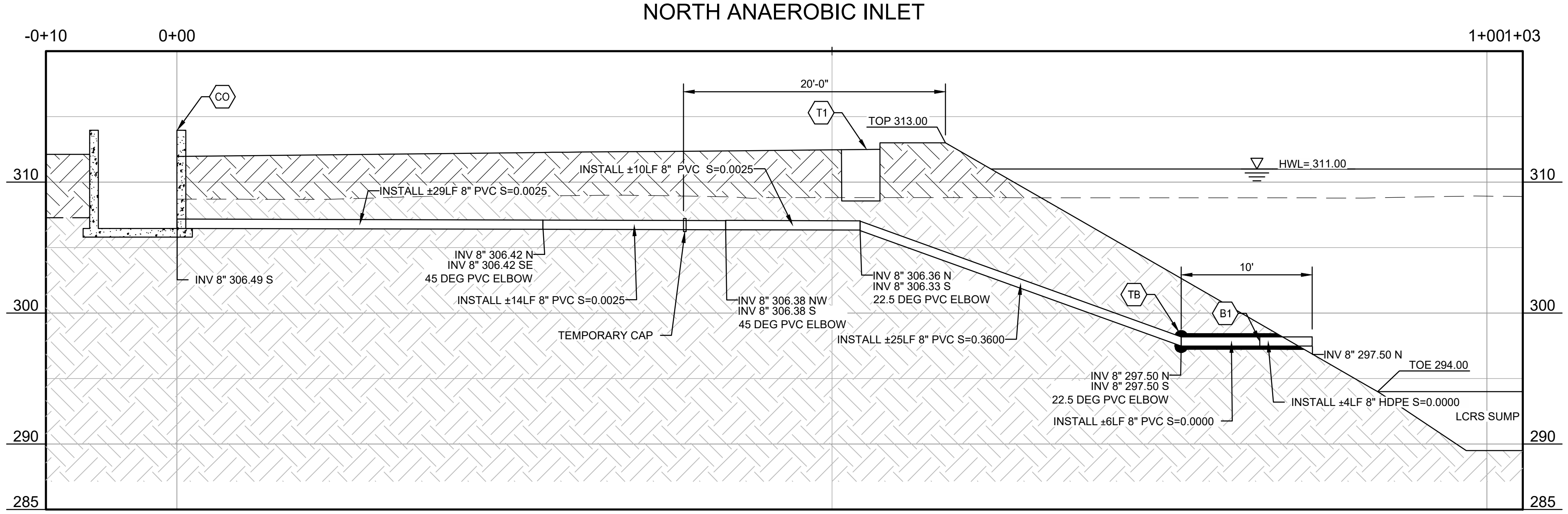
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET P6

6/7/2023 11:43 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage td\DWG\40_sheet sets\07_Utilities\P6 TREATMENT PLUMBING.dwg -Evan Freitas



NORTH ANAEROBIC INLET



PLN
P7

WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.

NOTES

1. SEE PLAN VIEW FOR PIPE SIZE.
2. ALL HDPE PIPE TO BE DR17.

CONSTRUCTION LEGEND

B1	BOOTLESS PIPE PENETRATION	4 / D1
CO	COLLECTION PIT	4 / D4
SP	SEPARATOR PAD	2 / D4
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1
TB	THRUST BLOCK	5 / D2

HATCH LEGEND

EXISTING EARTH

FINISHED EARTH

SCALE IN FEET
0 3 6 12

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
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REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

PLUMBING

STA 0+00-1+00

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CLOVIS, CALIFORNIA 93611-0166
559/449-2700 FAX 559/449-2715
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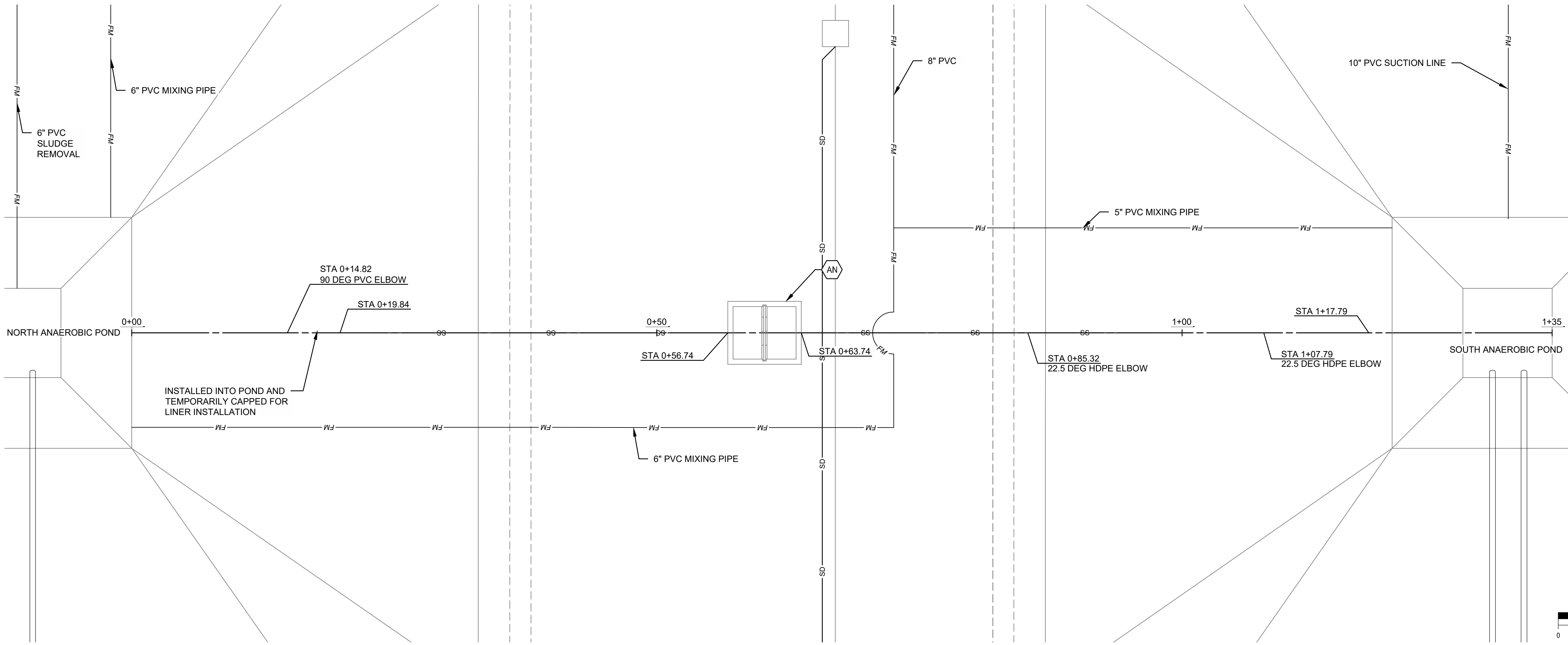
DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET P7



SCALE IN FEET

0 3 6 12

WARNING

POWER LINES OVERHEAD

811

Know what's below. Call before you dig.

NOTES

1. SEE PLAN VIEW FOR PIPE SIZE.
2. ALL HDPE PIPE TO BE DR17.

CONSTRUCTION LEGEND

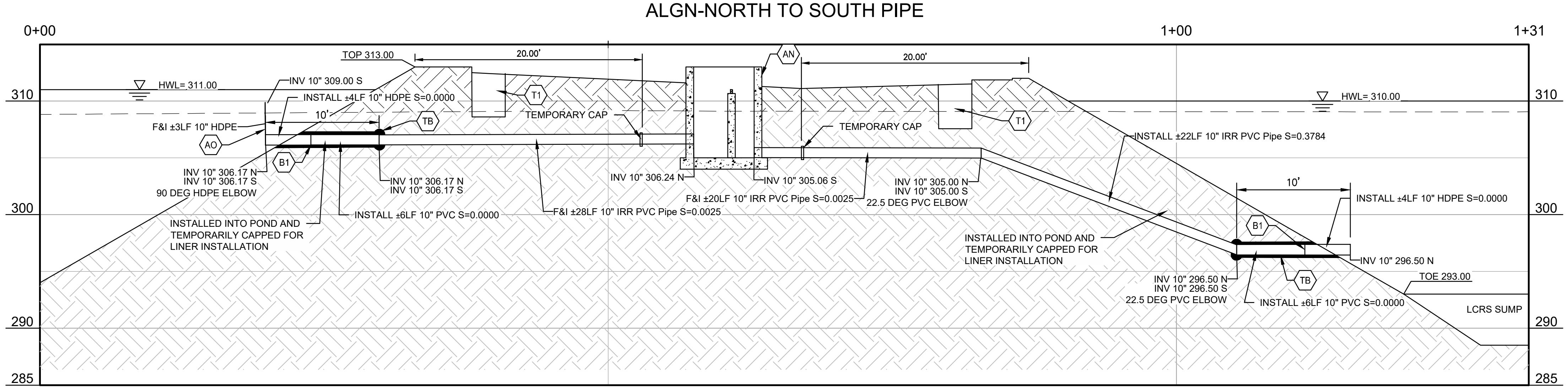
AO	ANAEROBIC OUTLET	4 / D3
AN	NORTH WEIR BOX	1 / D5
B1	BOOTLESS PIPE PENETRATION	4 / D1
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1
TB	THRUST BLOCK	5 / D2

HATCH LEGEND

EXISTING EARTH

FINISHED EARTH

ALGN-NORTH TO SOUTH PIPE



PLN
P8

SCALE IN FEET

0 3 6 12

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

FOR CONSTRUCTION
6/7/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

PLUMBING

STA 0+00-1+35.25

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CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

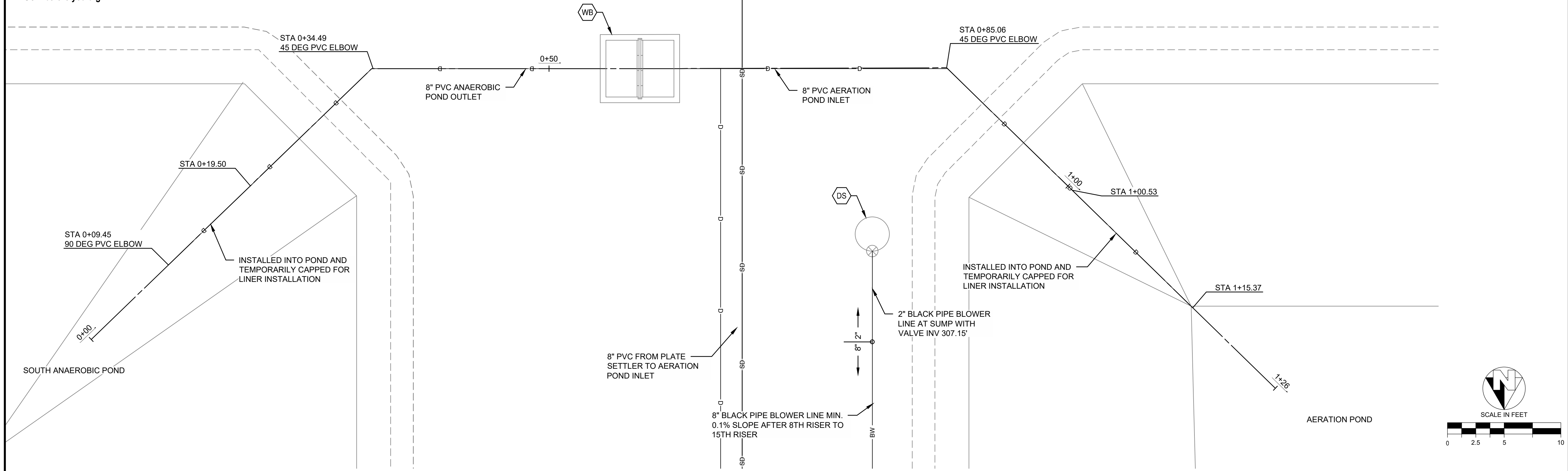
0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET P8

6/7/2023 11:44 AM g:\treehouse ca almonds-2912\291219001-treatmt+storage fd\DWG\40_sheet sets\07_Utilities\TREATMENT PONDS\P8 STA 0+00-1+35.25.dwg -Evan Freitas

811
Know what's below. Call before you dig.

WARNING
POWER LINES OVERHEAD



NOTES

1. SEE PLAN VIEW FOR PIPE SIZE.
2. ALL HDPE PIPE TO BE DR17.

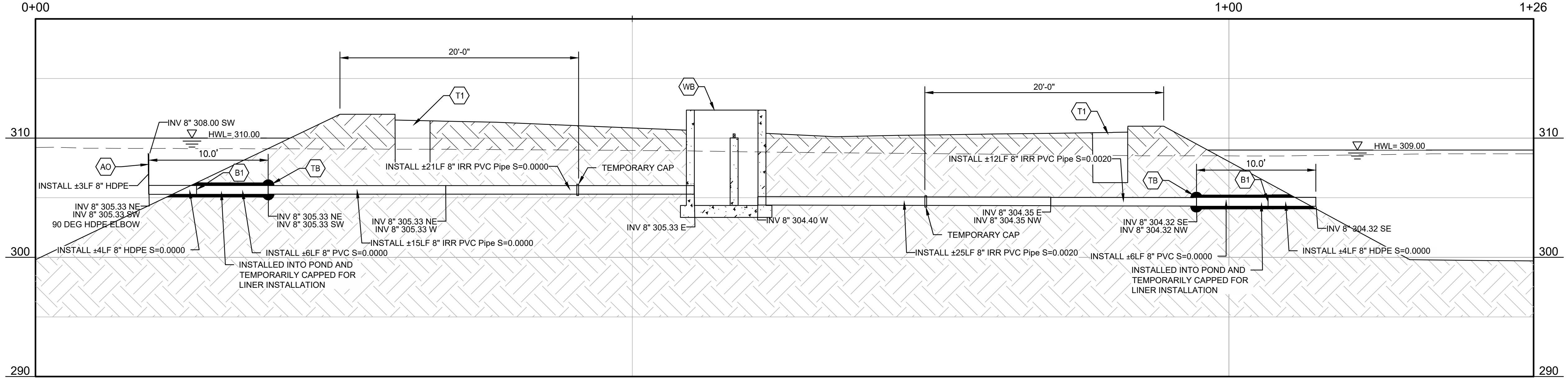
CONSTRUCTION LEGEND

B1	BOOTLESS PIPE PENETRATION	4/D1
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3/D1
TB	THRUST BLOCK	5/D2
AO	ANAEROBIC OUTLET	4/D3
WB	SOUTH WEIR BOX	2/D5
DS	DRY SUMP	4/D5

HATCH LEGEND

EXISTING EARTH
FINISHED EARTH

ALGN-SOUTH ANAEROBIC TO AERATION



FOR CONSTRUCTION
6/7/2023

No.	DRAWINGS ISSUED REVISION	BY	DATE
0		SCB	06/07/2023

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DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
PLUMBING
STA 0+00-1+36.71

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DESIGN ENGINEER: E. CAMINATA
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PHASE:
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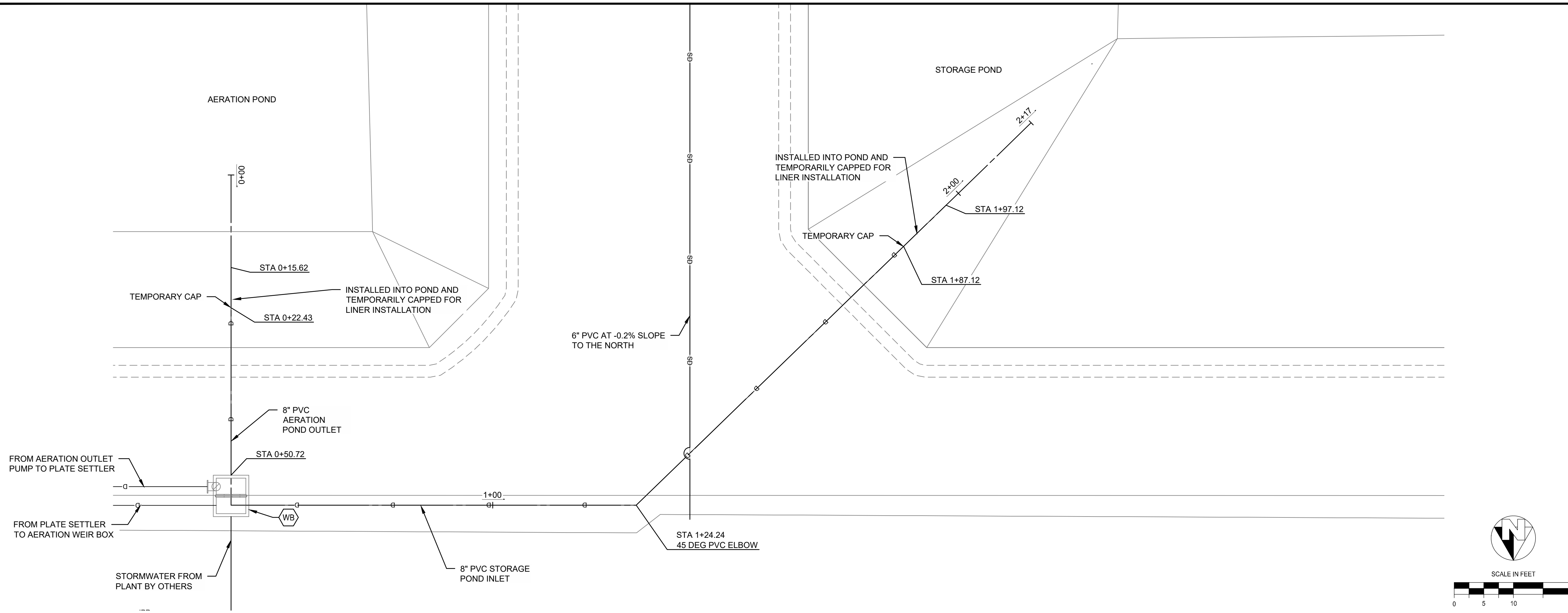
SHEET P9
28 OF 36

PLN
P9



WARNING
POWER LINES
OVERHEAD

811
Know what's below.
Call before you dig.

NOTES

1. SEE PLAN VIEW FOR PIPE SIZE.
2. ALL HDPE PIPE TO BE DR17.

CONSTRUCTION LEGEND

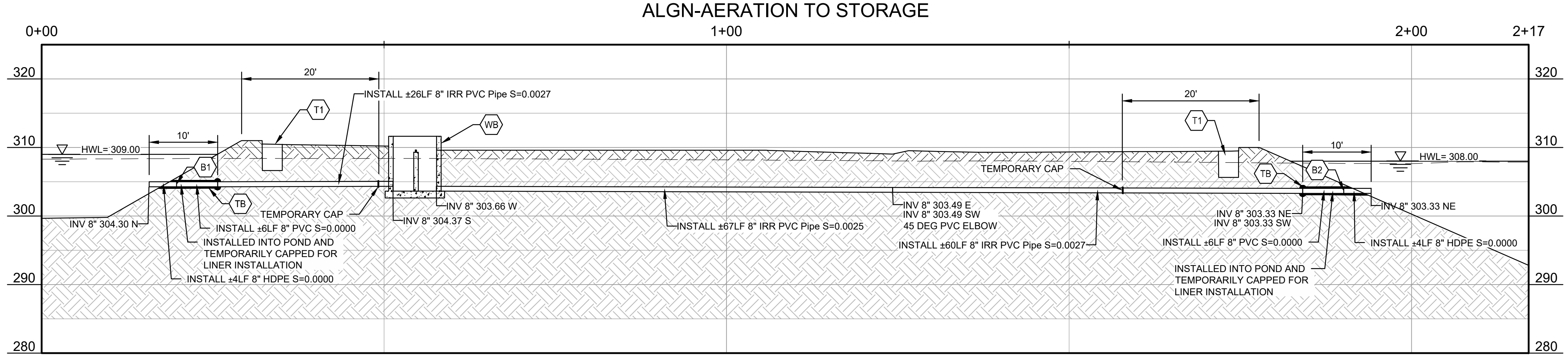
B1	BOOTLESS PIPE PENETRATION	4 / D1
B2	BOOTED PIPE PENETRATION	7 / D1
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1
TB	THRUST BLOCK	5 / D2
WB	AERATION WEIR BOX	2 / D6

HATCH LEGEND

EXISTING EARTH

FINISHED EARTH

ALGN-AERATION TO STORAGE



PLN
P10

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

FOR CONSTRUCTION
6/7/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

PLUMBING

STA 0+00-1+89.78

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https://provostandpritchard.com/

DESIGN ENGINEER:
E. CAMINATA
LICENSE NO:
88473

DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

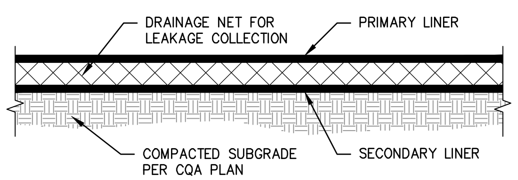
0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET P10

6/7/2023 11:45 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\07_Utilities\TREATMENT PONDS\P10 STA 0+00-1+89.78.dwg -Evan Freitas

PC-0213

LINER LAYERS					
DESCRIPTION	LOCATION	MATERAIL	THICKNESS (MINIMUM)	TOP FINISH	BOTTOM FINISH
PRIMARY LINER	TOP	HDPE CONDUCTIVE	60 MIL	SMOOTH	SMOOTH
DRAINAGE NET	MIDDLE	HDPE	175 MIL	N/A	N/A
SECONDARY LINER	BOTTOM	HDPE	60 MIL	SMOOTH	SMOOTH



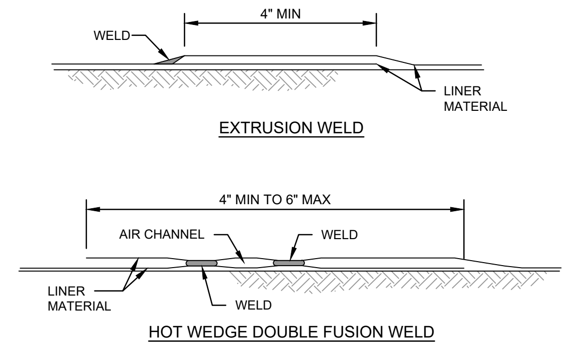
NOT TO SCALE

1 D1 DOUBLE LINER LAYERING

WWTP

NOTES

1. VACUUM TEST ALL EXTRUSION WELDS
2. AIR TEST ALL WEDGE WELDS
3. DOUBLE PATCH ALL PATCHES ON PRIMARY LAYER



NOT TO SCALE

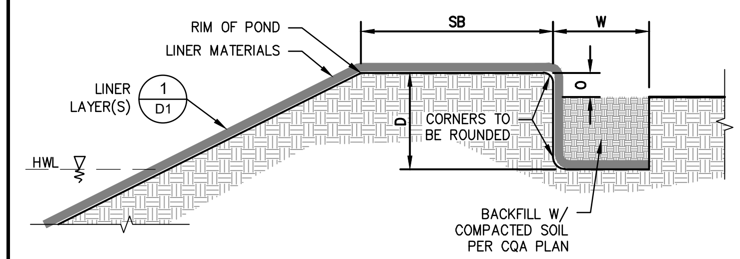
2 D1 HDPE WELDS

PC-0210

ANCHOR TRENCH LAYOUT				
LOCATION	SB=(SETBACK)	W=(WIDTH)	D=(DEPTH)	O=(OFFSET)
STORAGE POND	36"	18"	24"	6"
AERATION POND	36"	18"	24"	6"
ANAEROBIC POND	60"	36"	48"	6"

NOTES

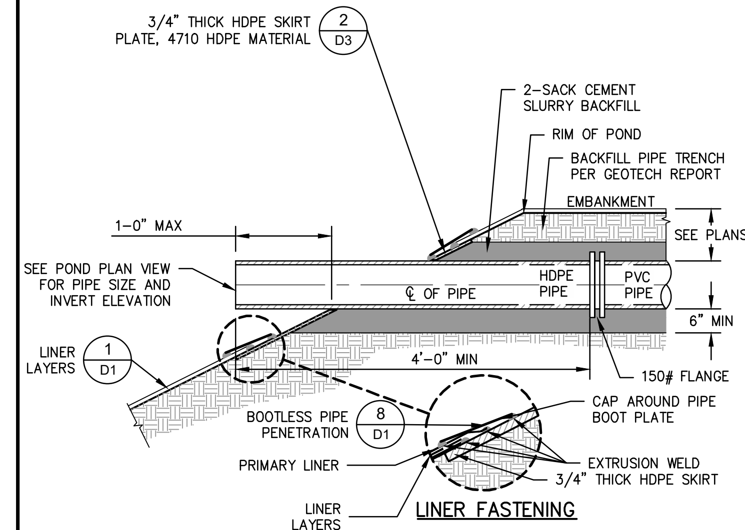
1. CONSTRUCT POND UPPER PERIMETER SURFACE TO THE INSIDE ELEVATION CALLED OUT. WHEN FILLING THE ANCHOR TRENCH, POST LINING INSTALLATION, ADJUST OUTER SURFACE TO THE LOWER ELEVATION CALLED OUT.
2. AT CORNERS CUT AND FIT ALL LAYERS AGAINST INTERIOR TRENCH WALL. FLOOR LAYERS NOT TO HAVE FOLDS. TRIM EXCESS LINER AT OUTER TRENCH WALL.
3. PUNCTURE THROUGH ALL LAYERS ON FLOOR APPROXIMATELY EVERY 20' WITH ½" HOLES BEFORE SOIL IS PLACED IN TRENCH



NOT TO SCALE

3 D1 ANCHOR TRENCH

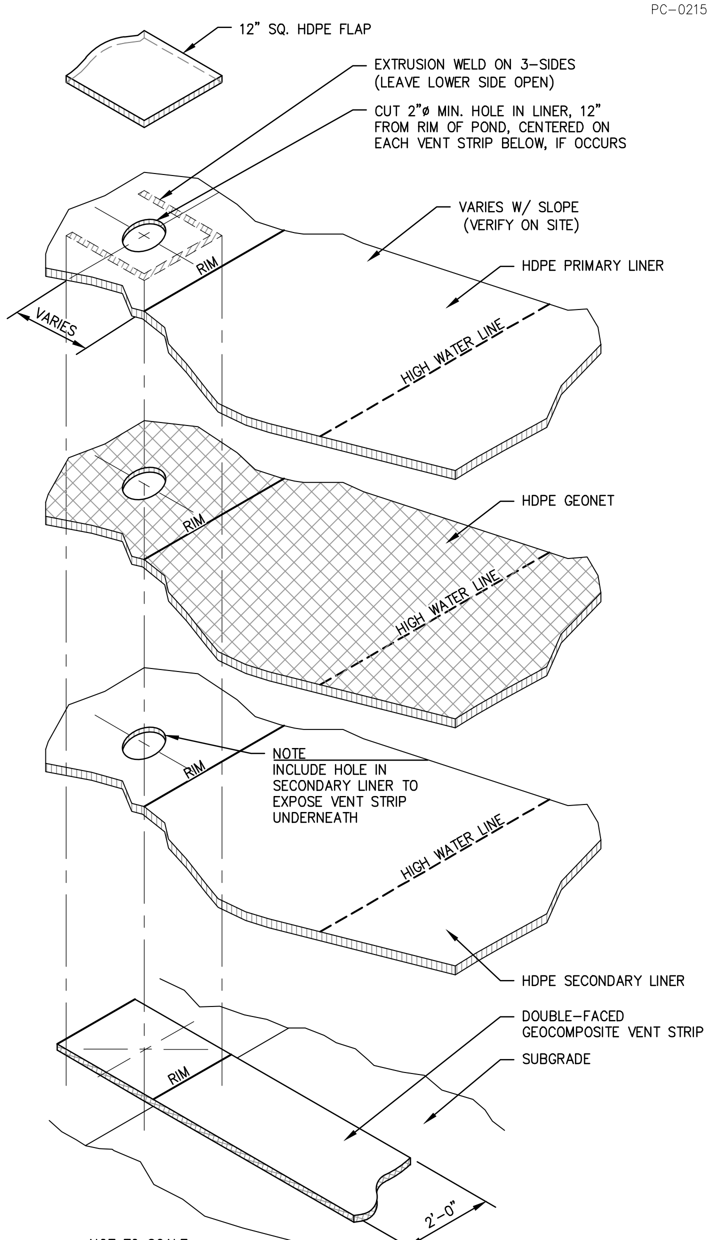
PC-0415



NOT TO SCALE

4 D1 BOOTLESS PIPE PENETRATION

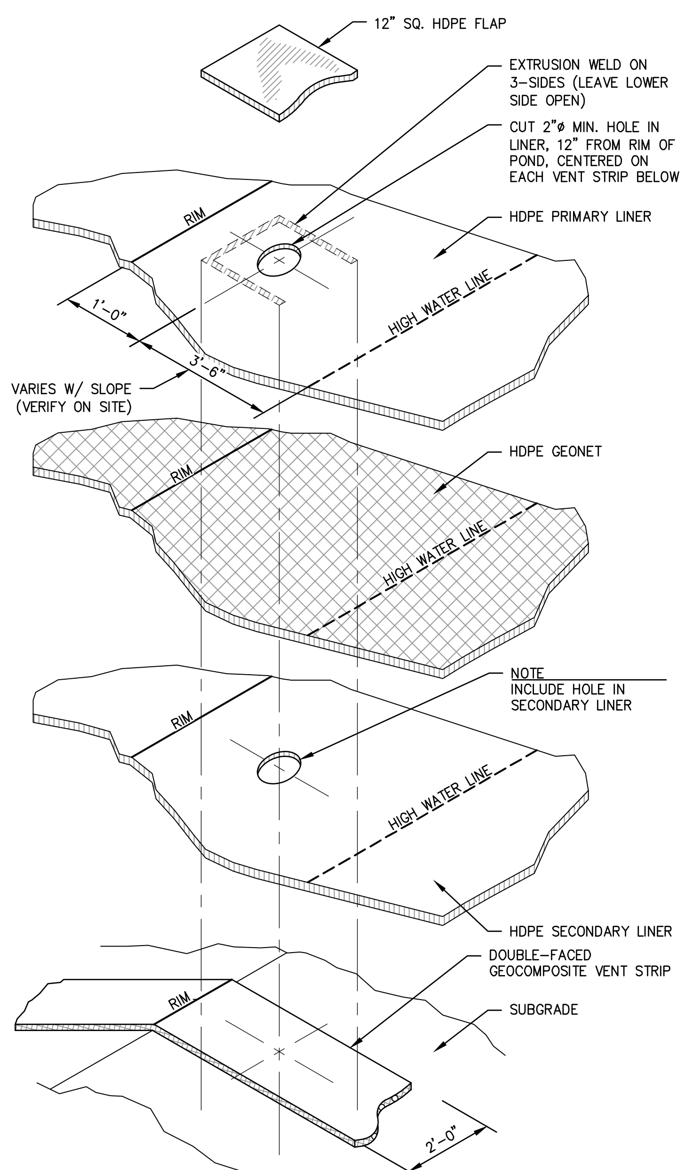
PC-0215



NOT TO SCALE

5 D1 ANAEROBIC VENT ORIFICE (ISOMETRIC VIEW)

PC-0215

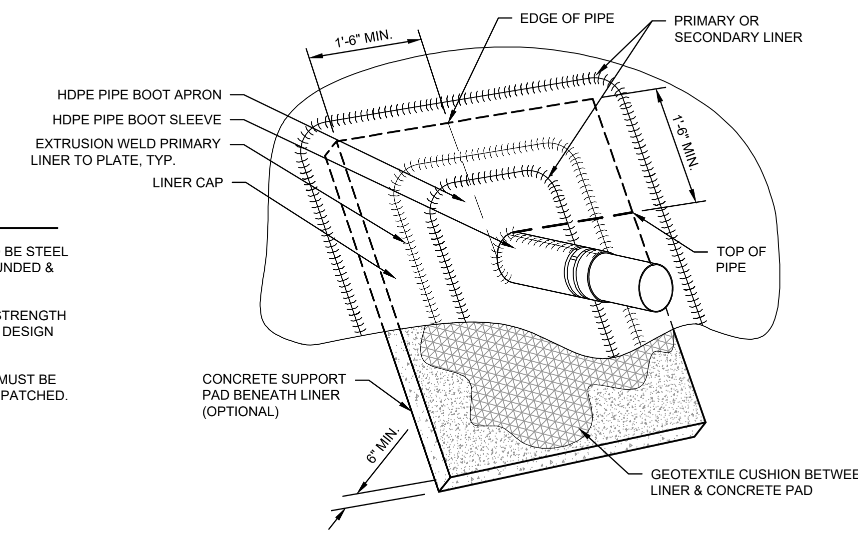


NOT TO SCALE

6 D1 STORAGE VENT ORIFICE (ISOMETRIC VIEW)

NOTES

1. CONCRETE SURFACES TO BE STEEL TROWEL FINISH WITH ROUNDED & SMOOTHED EDGES.
2. 4000PSI MIN. CONCRETE STRENGTH OR AS APPROVED BY THE DESIGN ENGINEER.
3. ALL PIPE PENETRATIONS MUST BE AIR TESTED AND DOUBLE PATCHED.

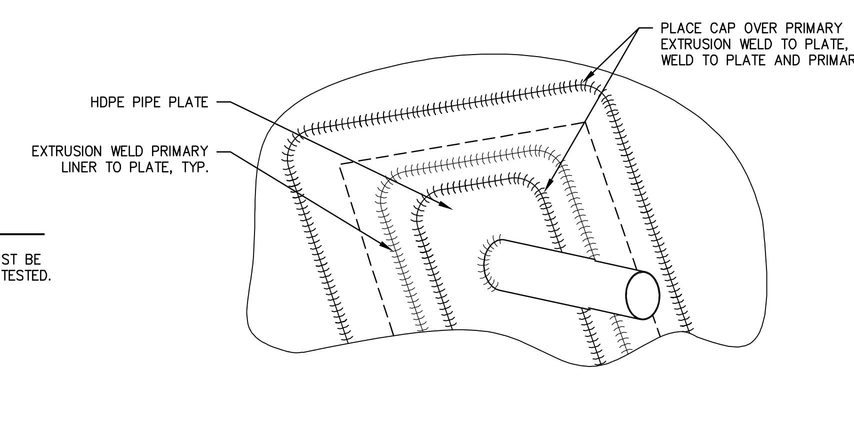


NOT TO SCALE

7 D1 BOOT PIPE PENETRATION WITH LINER CAP

NOTES

1. ALL PIPE PENETRATIONS MUST BE DOUBLE PATCHED AND AIR TESTED.



NOT TO SCALE

8 D1 BOOTLESS PIPE PENETRATION WITH LINER CAP

FOR CONSTRUCTION 6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
DETAILS

DETAILS 1

EST. 1968 PROVOST & PRITCHARD CONSULTING GROUP
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455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
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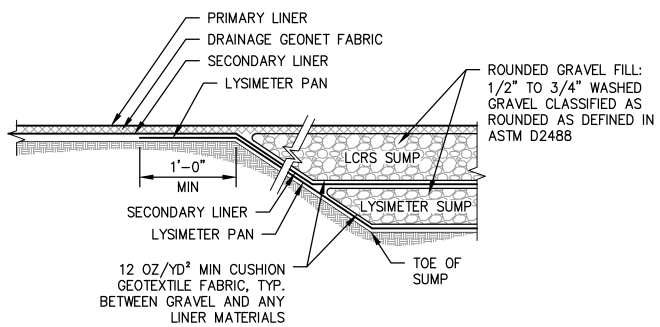
SHEET D1

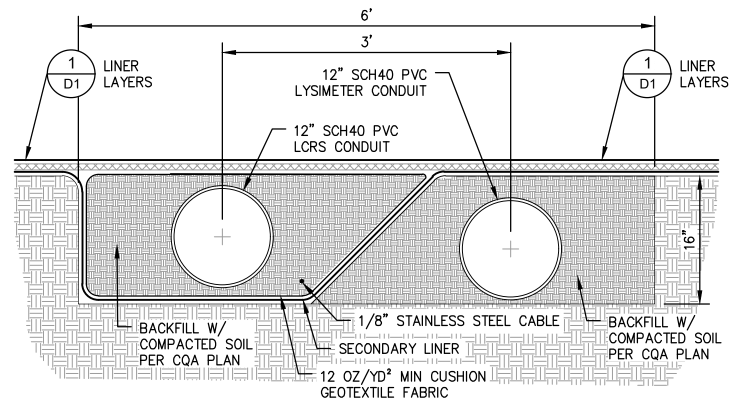


NOT TO SCALE

1 / D2 TYPICAL LINER LAYERS AT SUMP

NOTES

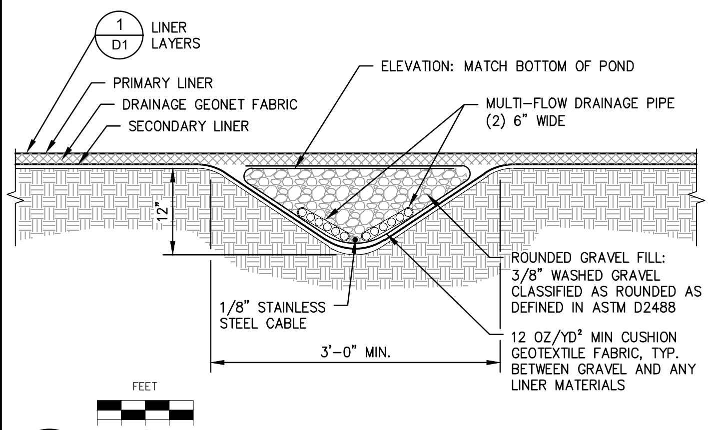
1. 12" SCH 40 CAN BE SUBSTITUTED W/ CLASS 125



NOT TO SCALE

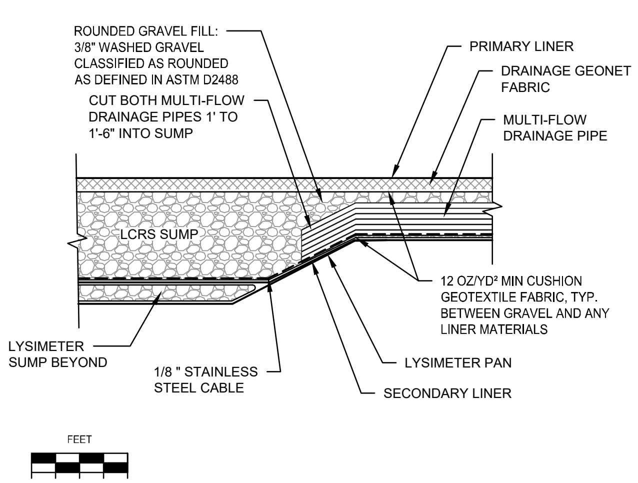
4 / D2 LINER LAYERS AT LCRS & LYSIMETER PIPES

PC-0404



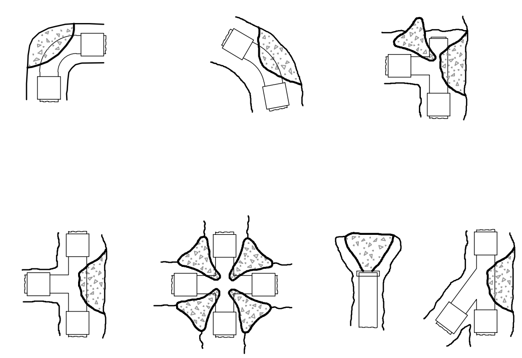
2 / D2 LEAKAGE PIPE-DOUBLE LINER

LIBRARY FOLDER NAME



3 / D2 TRENCH CROSS SECTION

PPNG



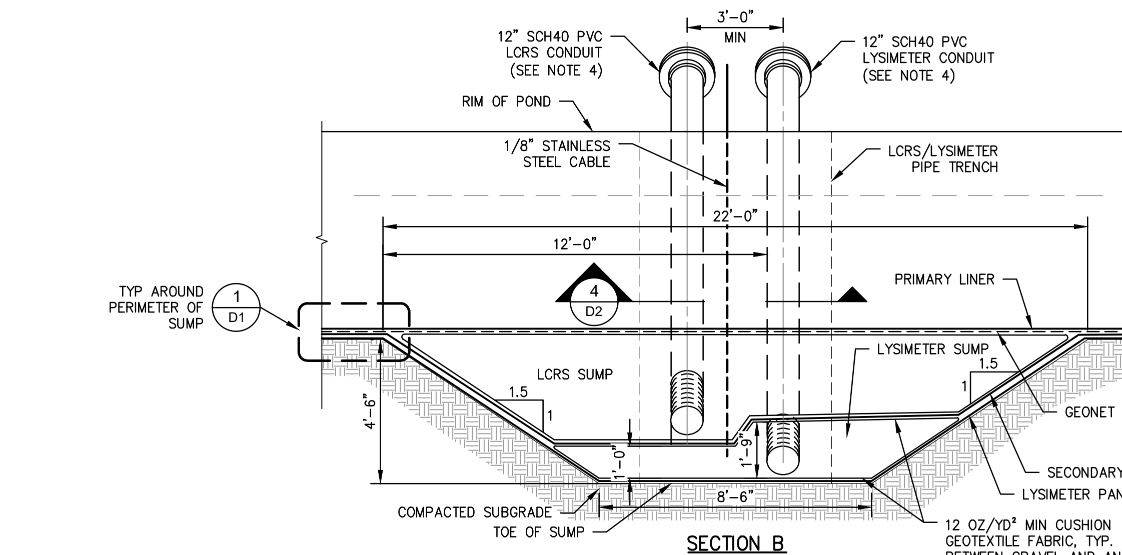
MAX INTERNAL PRESSURE (PSI)						50
SOIL BEARING PRESSURE (PSF)						1500
SAFETY FACTOR						1.5
MINIMUM BEARING AREA (SF)						
PIPE SIZE	DEAD END OR TEE	90° BEND	45° BEND	22.5° BEND	11.25° BEND	
3	0.4	0.5	0.3	0.1	0.1	
4	0.6	0.9	0.5	0.2	0.1	
6	1.4	2.0	1.1	0.6	0.3	
8	2.5	3.6	1.9	1.0	0.5	
10	3.9	5.6	3.0	1.5	0.8	
12	5.7	8.0	4.3	2.2	1.1	
16	10.1	14.2	7.7	3.9	2.0	
18	12.7	18.0	9.7	5.0	2.5	
20	15.7	22.2	12.0	6.1	3.1	
24	22.6	32.0	17.3	8.8	4.4	
30	35.3	50.0	27.1	13.8	6.9	
36	50.9	72.0	39.0	19.9	10.0	
42	69.3	98.0	53.0	27.0	13.6	
48	90.5	128.0	69.2	35.3	17.7	

NOTES

1. ALL FITTINGS TO BE WRAPPED IN 4 MIL VISQUEEN.
2. CONCRETE SHALL NOT ENCROACH ON END FITTINGS.
3. CONCRETE SHALL BEAR AGAINST UNDISTURBED SOIL.
4. CONCRETE TO HAVE ULTIMATE STRENGTH OF 3000 PSI @ 28 DAYS.
5. THRUST BLOCK DATA FOR VERTICAL PIPE BENDS MAY REQUIRE ENGINEERING NOT INCLUDED IN THIS DETAIL.

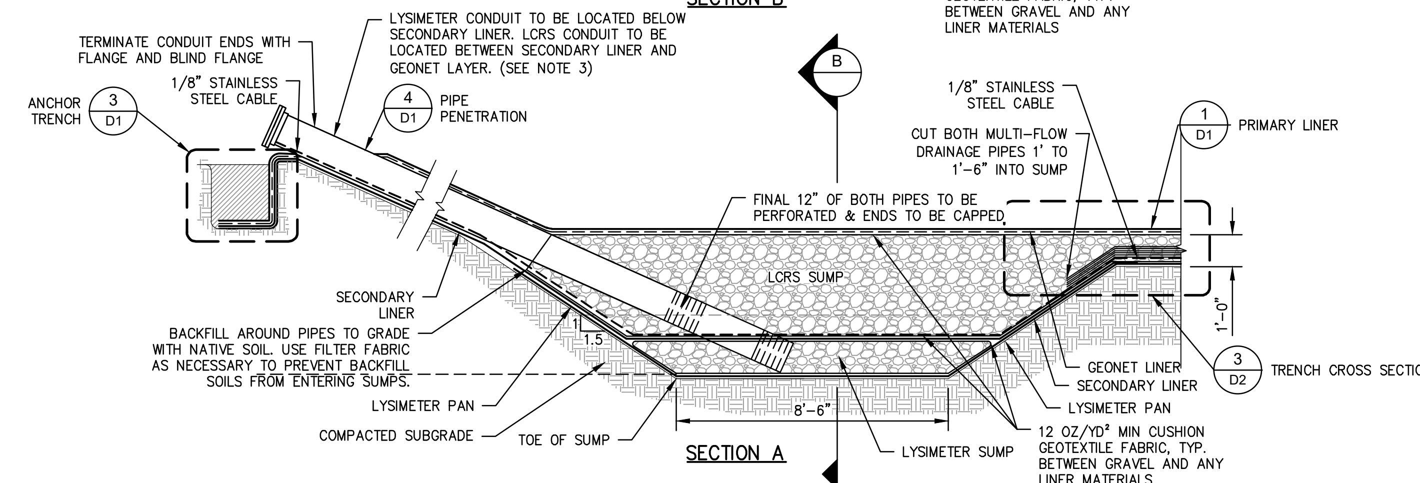
5 / D2 THRUST BLOCKS

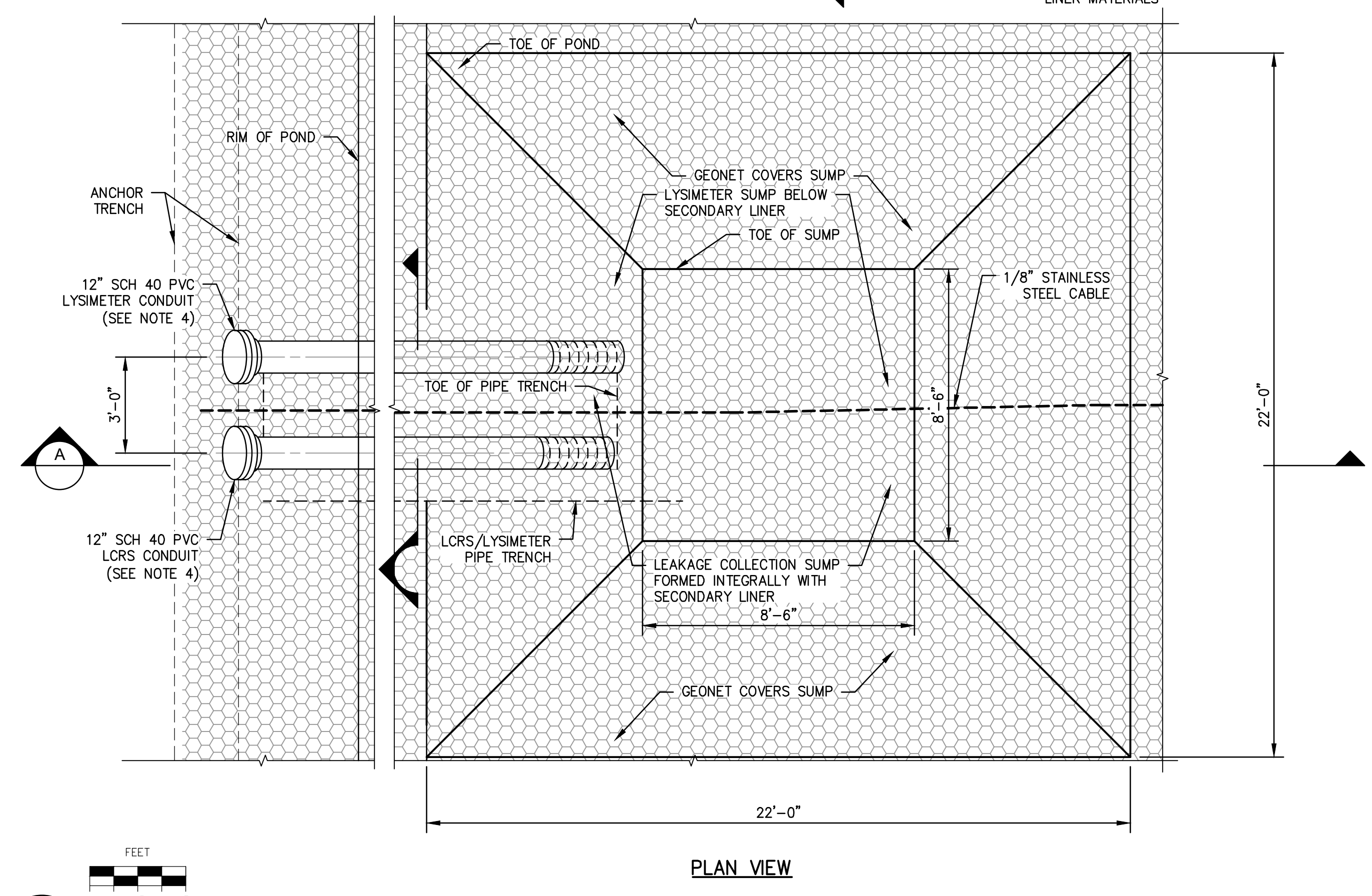
PC-0403



NOTES

1. FILL BOTH LYSIMETER AND LCRS SUMPS WITH ROUNDED GRAVEL. 1/2" TO 3/4" WASHED GRAVEL CLASSIFIED AS ROUNDED AS DEFINED IN ASTM D2488.
2. DURING CONSTRUCTION GEOTEXTILE FABRIC SHALL EXTEND 2 FT BEYOND EDGE OF LINER.
3. LCRS/LYSIMETER PIPE LAYOUT IS NOT TO SCALE DUE TO ANGLE OF PIPE INTRUSION INTO THE SUMP. DIMENSIONS MAY VARY. WHEN LOOKING DOWN AT THE SUMP FROM THE RIM, LYSIMETER WILL BE ON THE LEFT AND LCRS WILL BE ON THE RIGHT.
4. 12" SCH 40 CAN BE SUBSTITUTED WITH CLASS 125.
5. WHEN INSTALLING LINER BOOTS ON THE LCRS/LYSIMETER PIPES, CONTINUE BOOTS TO FLANGES
6. CONTRACTOR TO SUPPLY OWNER A SUMP PUMP (RECOMMENDED LITTLE GIANT WE10G05P4-21 OR ENGINEER APPROVED) PREPARED WITH HOSE AND CORD TO REACH SUMP.





6 / D2 LCRS & LYSIMETER DRAINAGE SUMPS

FOR CONSTRUCTION
6/7/2023

No.	DRAWINGS ISSUED / REVISION	BY	DATE
0		SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
DETAILS

DETAILS 2

EST. 1968
PROVOST & PRITCHARD CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

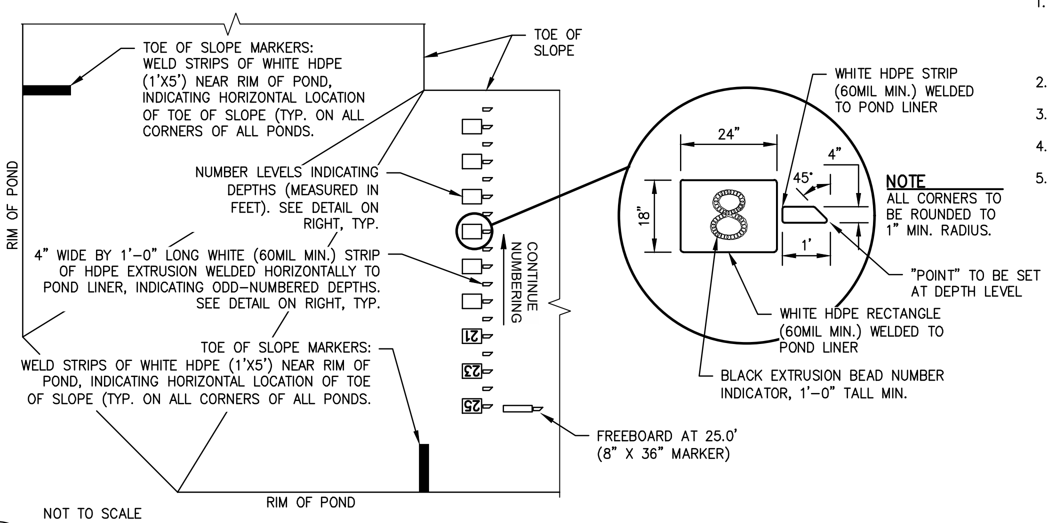
SHEET D2

PC-0525

NOTES

1. DEPTH GAUGE LEVELS ARE MEASURED **VERTICALLY**. SURVEY EQUIPMENT SHALL BE USED TO LOCATE VERTICAL POSITIONS OF HDPE NUMBERS AND STRIPS. HDPE STRIP "POINT" SHALL BE SET AT THE INDICATED VERTICAL LEVEL.
2. THE ZERO ELEVATION IS SET BASED OFF THE CENTER OF POND IN THE LONG DIRECTION.
3. ALTERNATE MARKERS TO BE APPROVED BY THE ENGINEER.
4. ADDITIONAL DEPTHS MARKERS TO BE SET FOR FREEBOARD. (SEE TABLE BELOW FOR DEPTHS)
5. PLACE NUMBERS FROM RIM OF POND TO BOTTOM.

ADDITIONAL DEPTH MARKERS	
DESCRIPTION	DEPTH
FREEBOARD	2' FROM TOP



NOT TO SCALE

1
D3

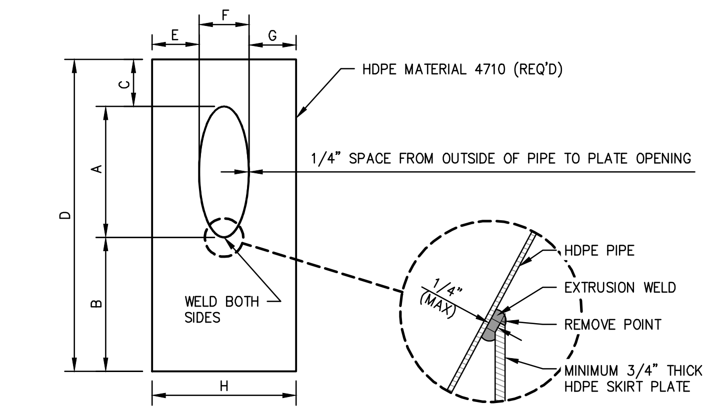
TYPICAL DEPTH GAUGE & TOE OF SLOPE MARKERS

PC-0415

NOTES

1. FIELD CUT PLATE HOLE TO FIT HDPE PIPE.

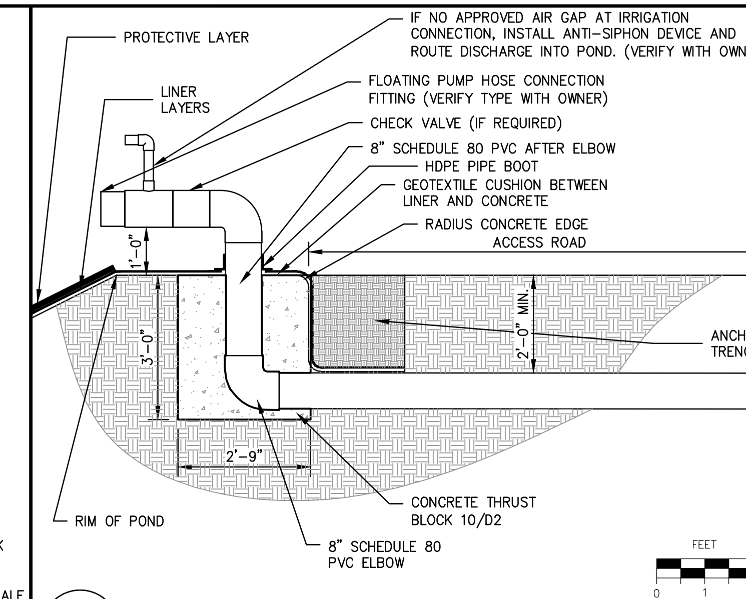
PIPE SIZES	SIDE SLOPE	DIM A	DIM B	DIM C	DIM D	DIM E	DIM F	DIM G	DIM H
5"	1.75:1	10"	1'-6"	1'-8"	4'-0"	1'-0 1/32"	5 3/8"	1'-0 1/32"	2'-6"
6"	1.75:1	1'-0"	3'-0" MIN	1'-0" MIN	5'-6"	11 7/8"	6 1/8"	11 7/8"	2'-6"
8"	1.75:1	1'-4 1/8"	3'-0" MIN	1'-0" MIN	5'-6"	10 3/4"	8 1/2"	10 3/4"	2'-6"
10"	1.75:1	1'-8"	3'-0"	1'-10"	6'-6"	9 5/8"	10 3/4"	9 5/8"	2'-6"



NOT TO SCALE

2
D3

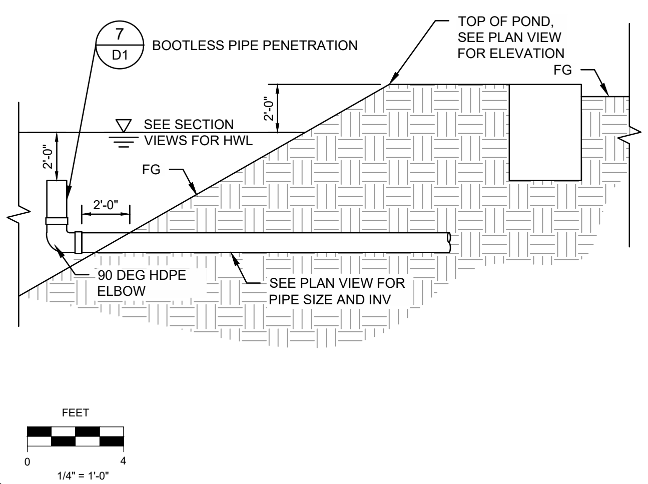
SMALL HDPE PIPE TO HDPE SKIRT PLATE WELD FOR BOOTLESS PENETRATION



3
D3

FLOATING PUMP CONNECTION

LIBRARY FOLDER NAME



4
D3

ANAEROBIC OUTLET

FOR CONSTRUCTION
6/7/2023

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DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
DETAILS

DETAILS 3

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

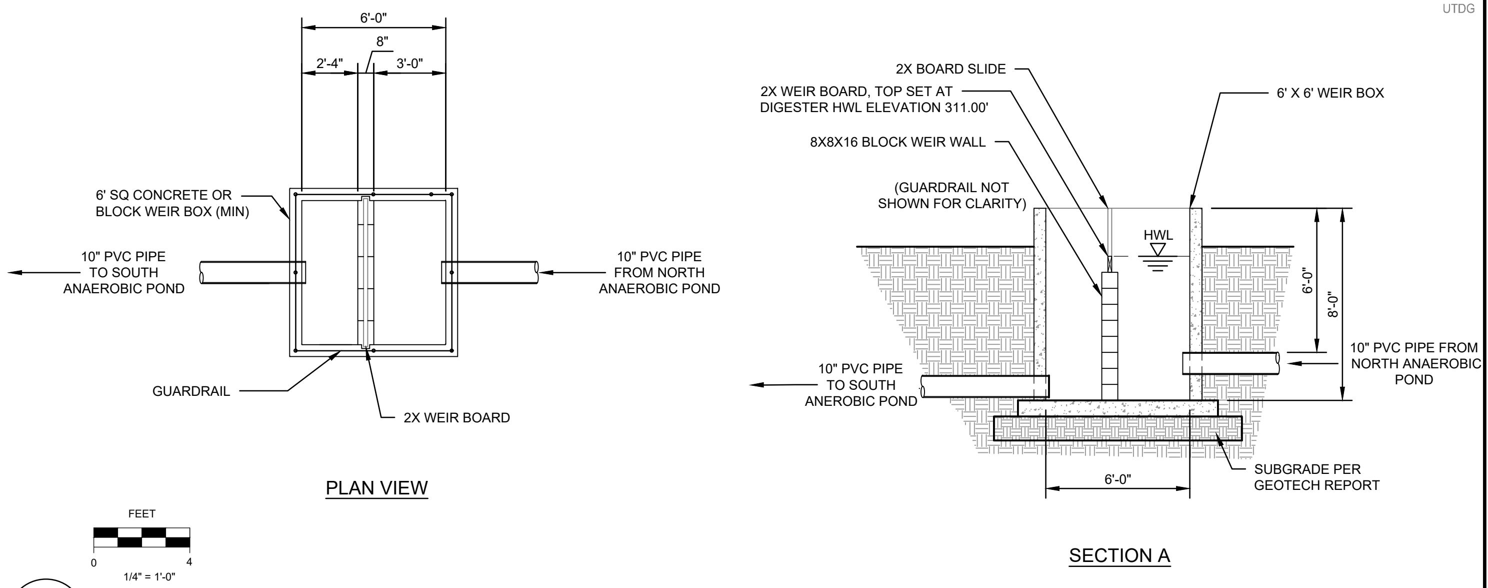
0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET D3

32 OF 36

6/7/2023 11:46 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage fd\DWG\40_sheet sets\04_Civil_Details\TREATMENT PONDS\D3 DETAILS 3.dwg-Evan Freitas

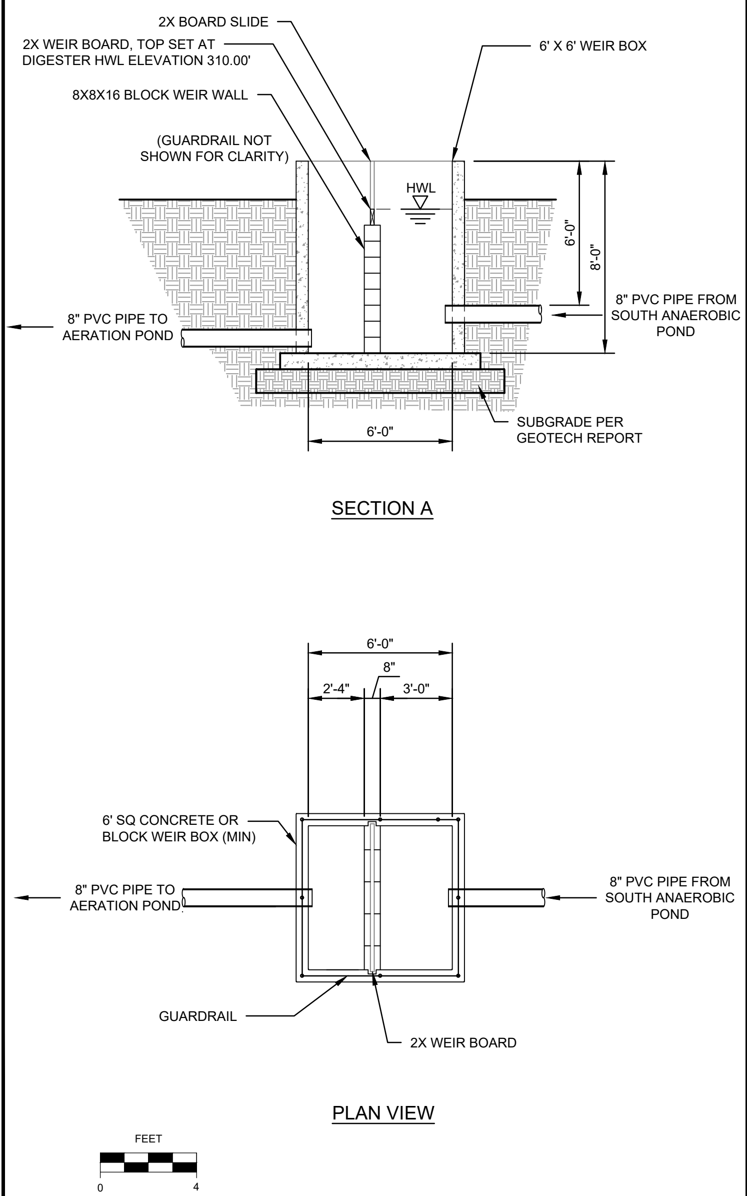
UTDG



1
D4

NORTH POND WEIR BOX

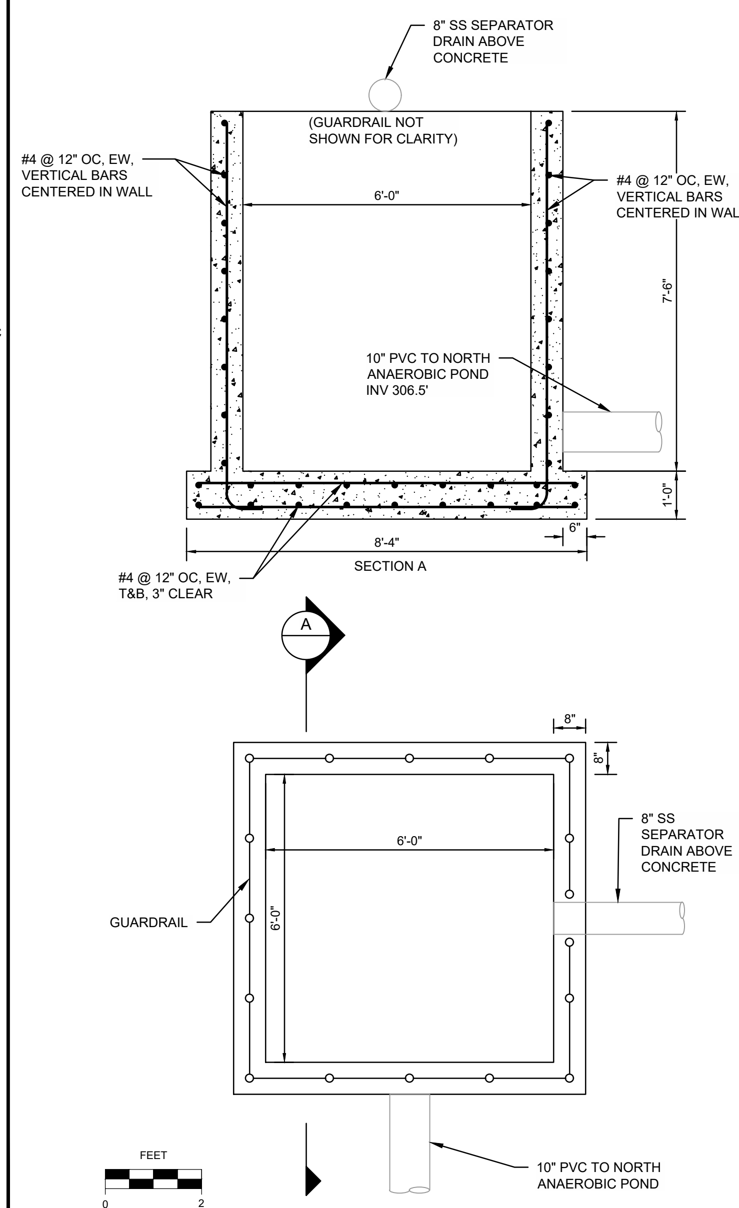
UTDG



3
D4

SOUTH POND WEIR BOX

LIBRARY FOLDER NAME



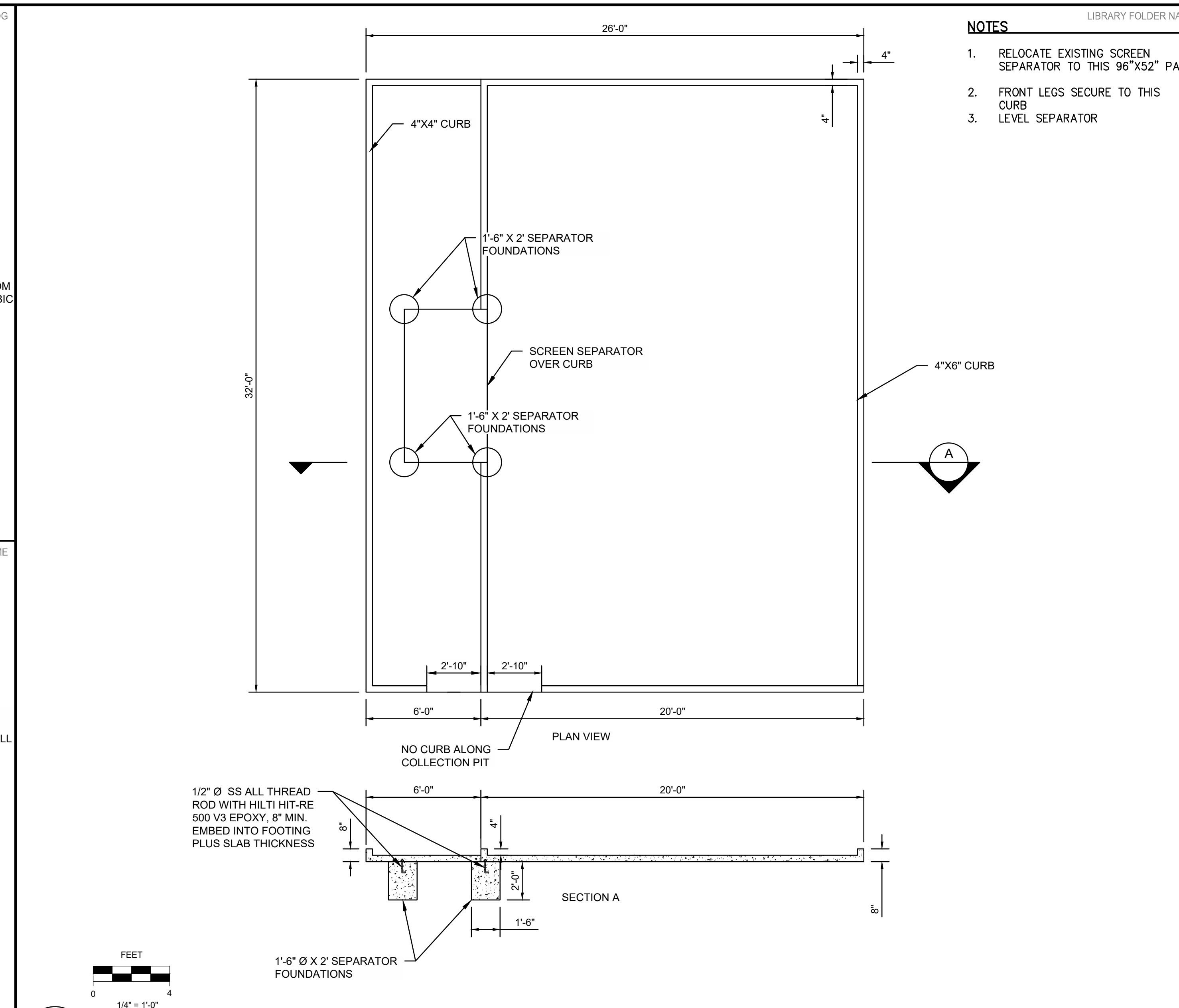
4
D4

COLLECTION PIT

LIBRARY FOLDER NAME

NOTES

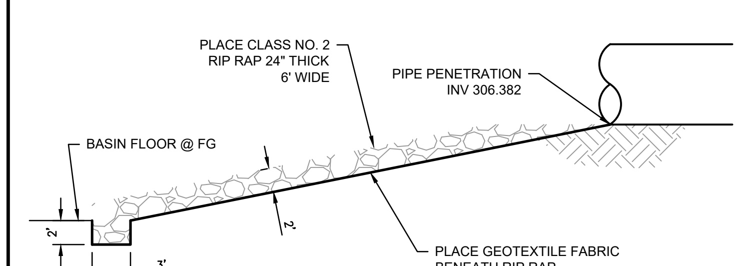
1. RELOCATE EXISTING SCREEN SEPARATOR TO THIS 96"X52" PAD
2. FRONT LEGS SECURE TO THIS CURB
3. LEVEL SEPARATOR



2
D4

SEPARATOR PAD

PC-0106



NOT TO SCALE

5
D4

BASIN RIP RAP

FOR CONSTRUCTION
6/7/2023

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WASTEWATER TREATMENT AND STORAGE SYSTEM
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EARLIMART, CA

DETAILS

DETAILS 3

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DATE: 06/07/2023
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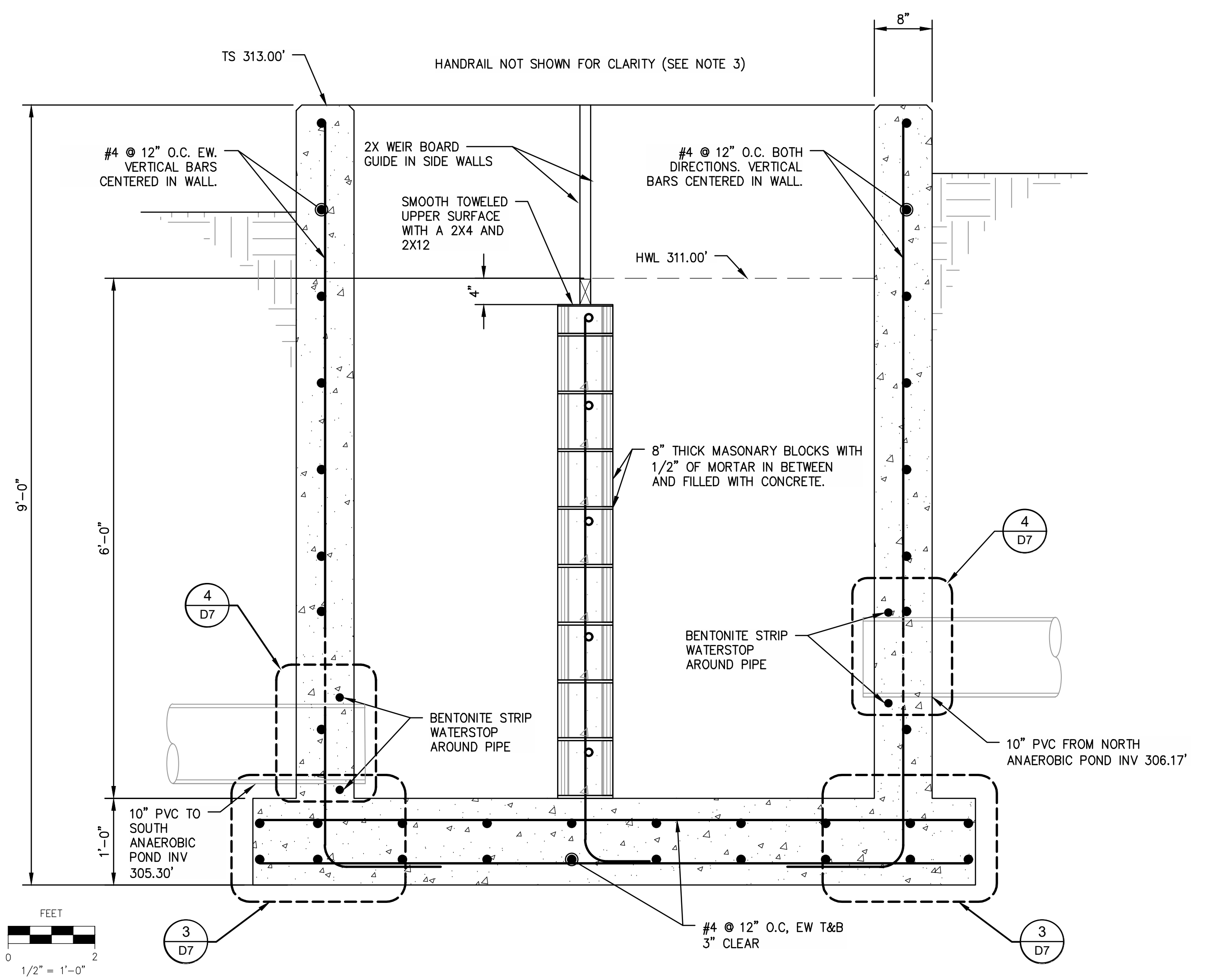
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET D4

NOTES

1. APPLY COAL TAR EPOXY PAINT (RUST-OLEUM OR EQUIVALENT) TO THE INTERIOR UPPER 3 FEET OF THE WEIR BOX.

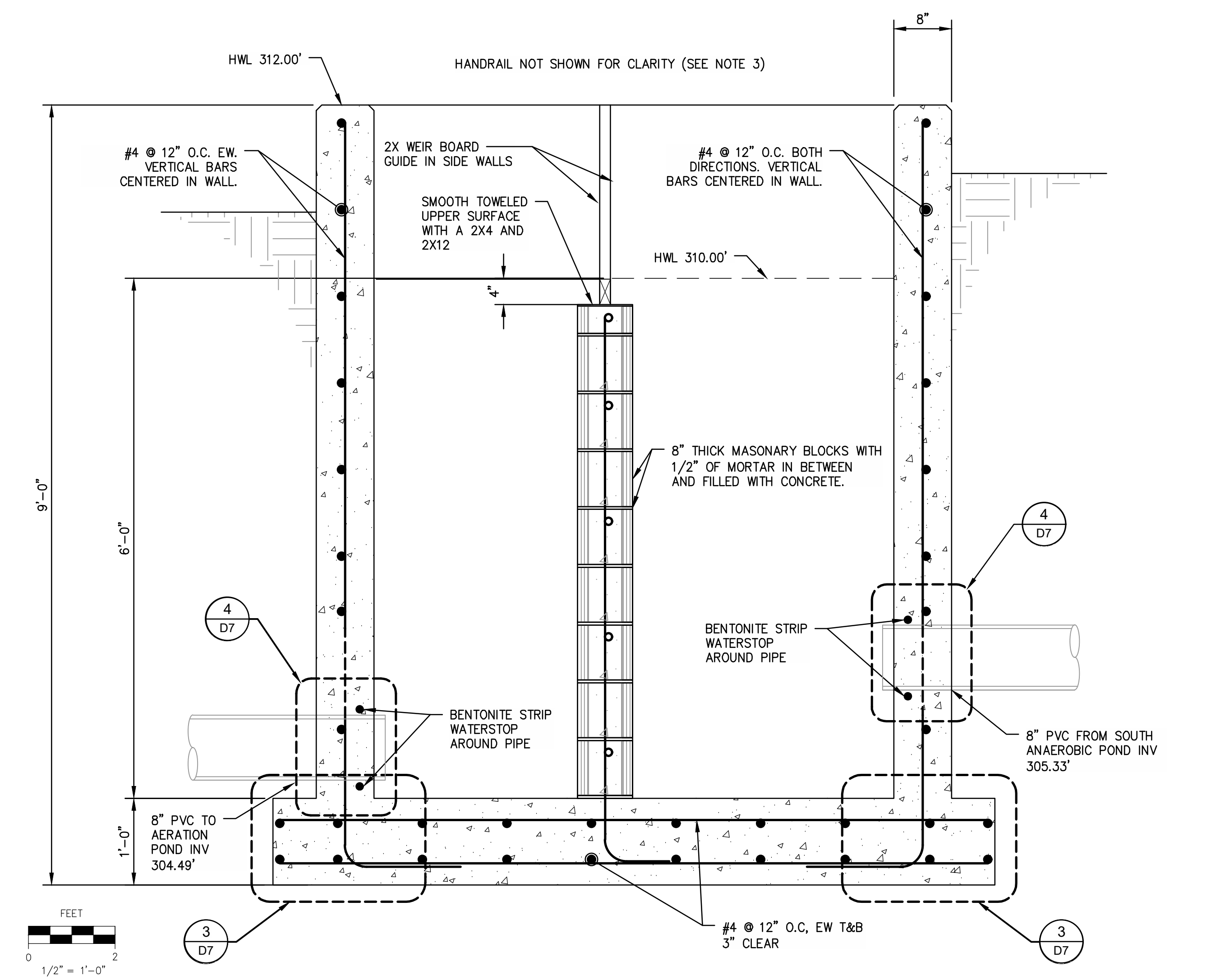


1 D5

NORTH POND WEIR BOX STRUCTURE

NOTES

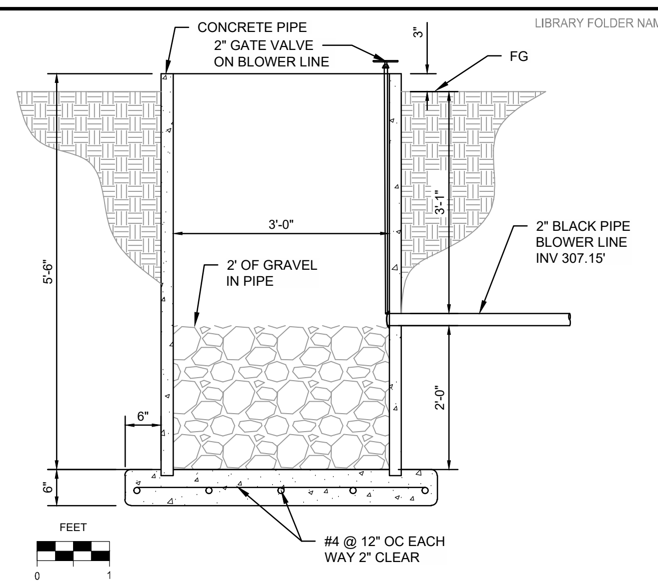
1. APPLY COAL TAR EPOXY PAINT (RUST-OLEUM OR EQUIVALENT) TO THE INTERIOR UPPER 3 FEET OF THE WEIR BOX.



2 D5

SOUTH POND WEIR BOX STRUCTURE

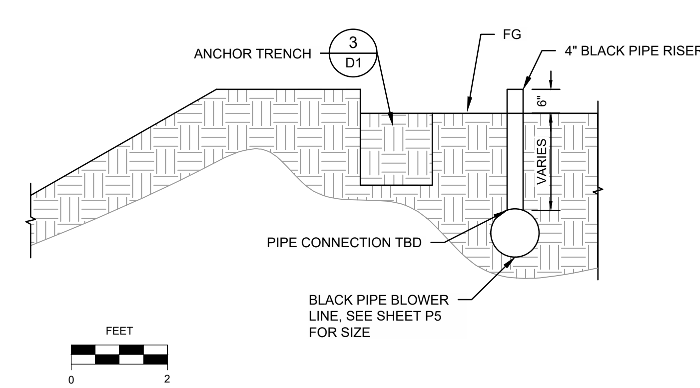
LIBRARY FOLDER NAME



4 D5

DRY SUMP

LIBRARY FOLDER NAME



5 D5

PVC RISER

FOR CONSTRUCTION 6/7/2023

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DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

DETAILS

DETAILS 4

EST. 1968 PROVOST & PRITCHARD CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-0242
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
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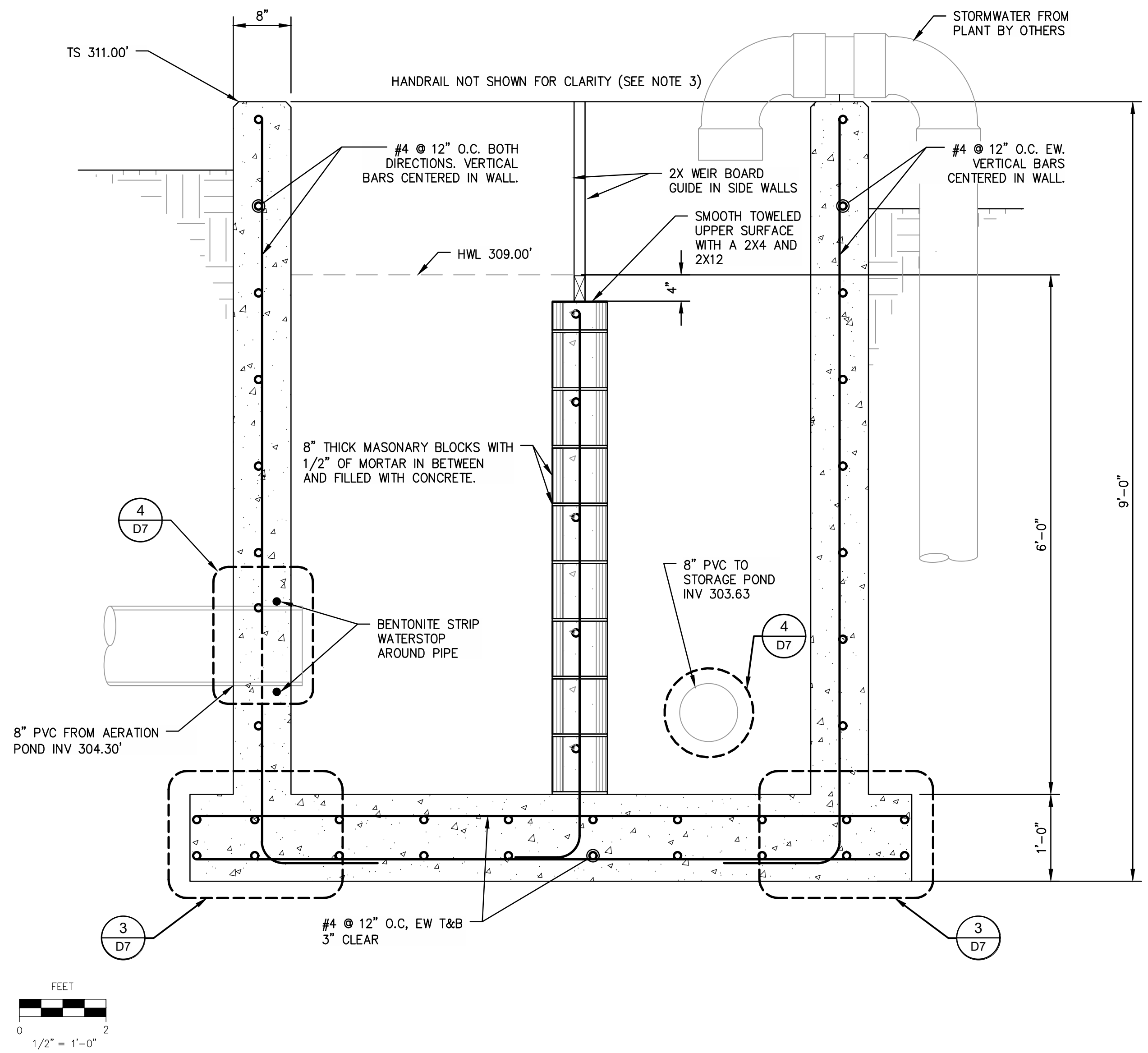
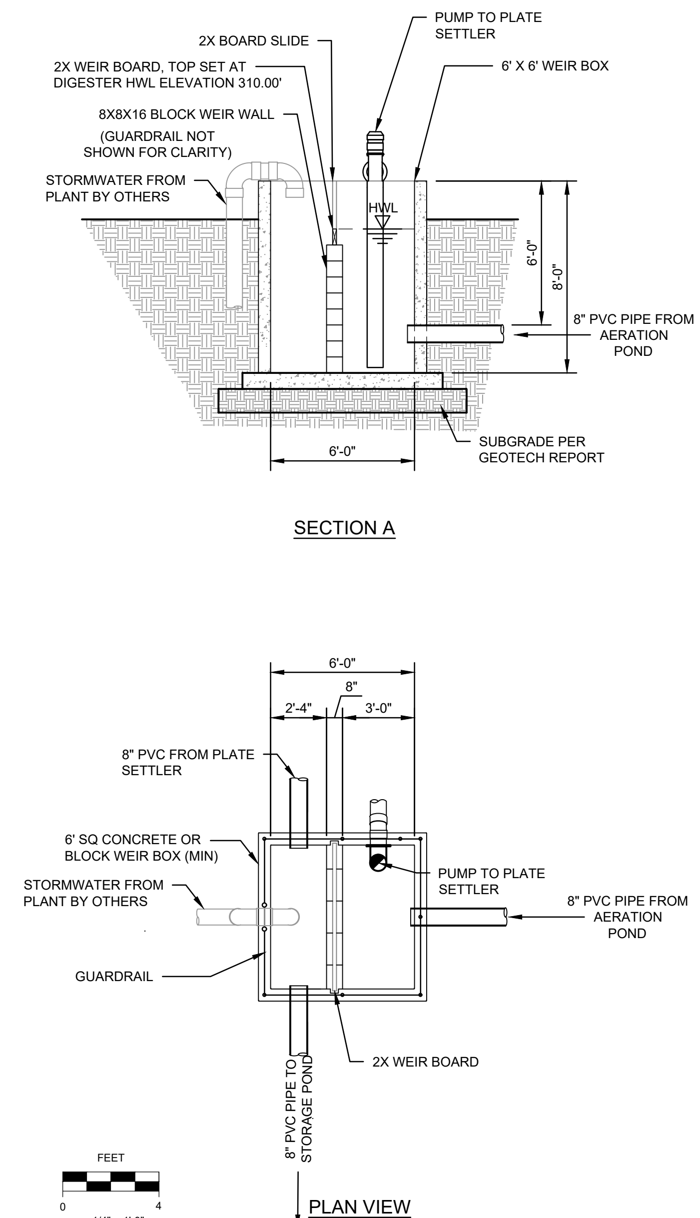
SHEET D5

6/7/2023 11:46 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage lst\DWG\40_sheet sets\04_Civil_Details\TREATMENT PONDS\D5 DETAILS 4.dwg -Evan Freitas



1 D6 AERATION POND WEIR BOX STRUCTURE

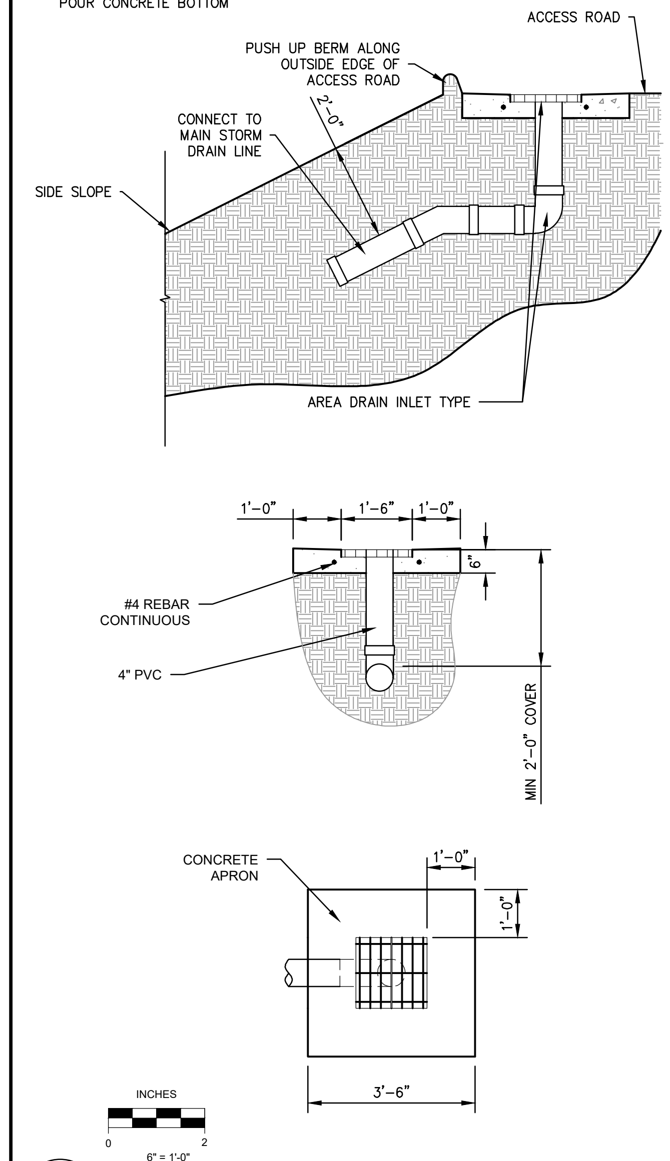


2 D6 AERATION POND WEIR BOX

LIBRARY FOLDER NAME

NOTES

1. CHOOSE EITHER AREA DRAIN INLET AS SHOWN OR CHRISTY OLD CASTLE V64-71C DRAIN BOX AND POUR CONCRETE BOTTOM



3 D6 AREA DRAIN

FOR CONSTRUCTION 6/7/2023

No.	REVISION	BY	DATE
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REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA

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WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
DETAILS

DETAILS 6

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DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
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PROJECT NO: 291219001
PHASE:

0 1"
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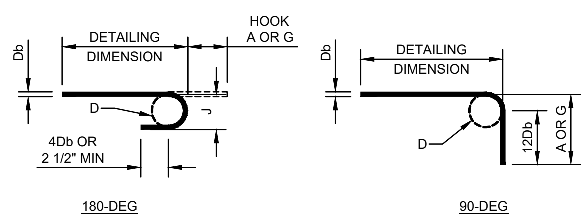
SHEET D6

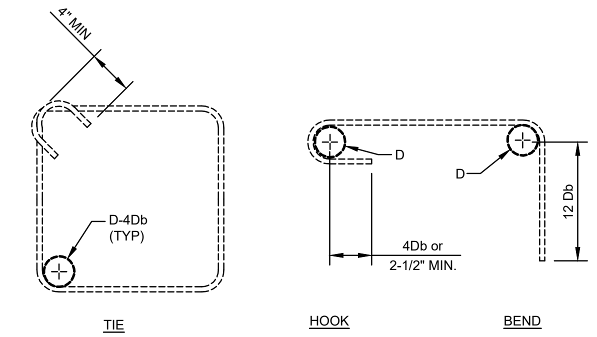
STRC



DIMENSION OF STANDARD 180° HOOKS, ALL GRADES				DIMENSION OF STANDARD 90° HOOKS, ALL GRADES	
SIZE	D	J	A OR G	D	A OR G
#3	2 1/4"	3"	5"	2 1/4"	6"
#4	3"	4"	6"	3"	8"
#5	3 3/4"	5"	7"	3 3/4"	10"
#6	4 1/2"	6"	8"	4 1/2"	12"
#7	5 1/4"	7"	10"	5 1/4"	14"
#8	6"	8"	11"	6"	16"
#9	9 1/2"	11 3/4"	15"	9 1/2"	19"
#10	10 3/4"	13 1/4"	17"	10 3/4"	22"
#11	12"	14 3/4"	19"	12"	24"
#14	18 1/4"	21 3/4"	27"	18 1/4"	31"
#18	24"	28 1/2"	36"	24"	41"

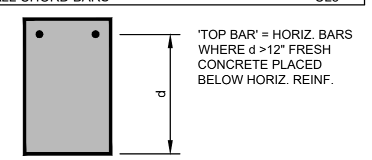
NOTES

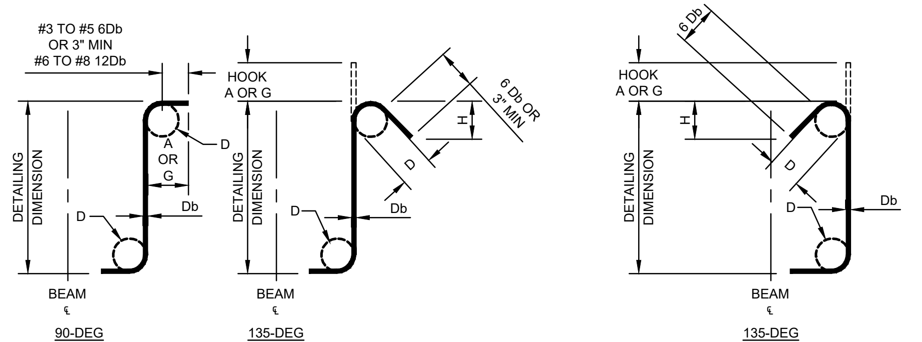
1. SPLICES SHOWN ARE NORMALWEIGHT CONCRETE, UNCOATED SPLICE fy=60ksi f'c=4ksi CALCULATED PER ACI 318-14 SECTION 25.4.2.2. SEE CHART 1 FOR DIFFERENT CONCRETE STRENGTHS.
2. Db = (1) BAR DIAMETER
   D = FINISHED INSIDE BEND DIA.
   D = 6Db FOR #3-#8
   D = 8Db FOR #9-#11
   D = 10Db FOR #14 AND #18



REINFORCEMENT BENDS

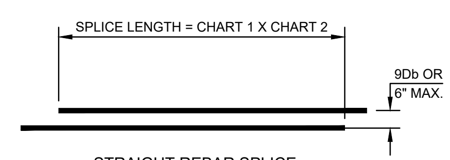
CHART 2		
BAR SIZE	CL1	CL2
#4	0.5	0.65
#5	0.63	0.81
#6	0.75	0.98
#7	0.875	1.14
#8	1.0	1.3
#9	1.28	1.47
CONCRETE BAR TYPES		LAP TYPE
FOOTING BARS (OTHER THAN TOP BARS)		CL1
HORIZ. WALL BARS		CL2
FOOTING 'TOP BARS'		CL2
WALL CHORD BARS		CL3





STIRRUP HOOKS
(TIE BENDS SIMILAR)

SEISMIC STIRRUP/TIE



STRAIGHT REBAR SPLICE

	90°		135°	
SIZE	D	A OR G	A OR G	ARROX. H
#3	1 1/2"	4"	4"	2 1/2"
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	12"	8"	4 1/2"
#7	5 1/4"	14"	9"	5 1/4"
#8	6"	16"	10 1/2"	6"

135° SEISMIC HOOK			
SIZE	D	A OR G	ARROX. H
#3	1 1/2"	4"	2 1/2"
#4	2"	4 1/2"	3"
#5	2 1/2"	5 1/2"	3 3/4"
#6	4 1/2"	8"	4 1/2"
#7	5 1/4"	9"	5 1/4"
#8	6"	10 1/2"	6"

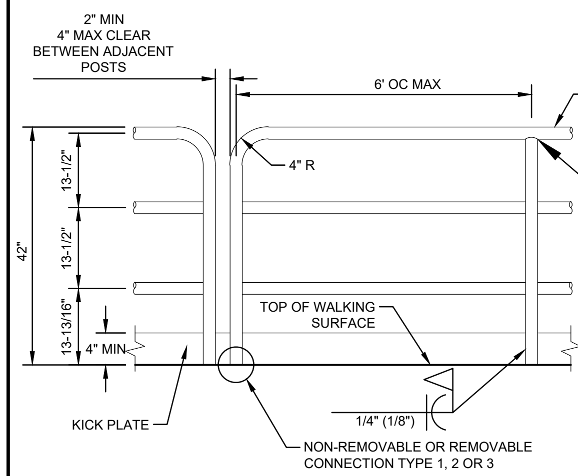
CHART 1					
	CONCRETE STRENGTH (PSI)				
	2500	3000	3500	4000	5000
#6 AND SMALLER	63	57	53	50	45
#7-#11	78	72	66	62	56

NOT TO SCALE

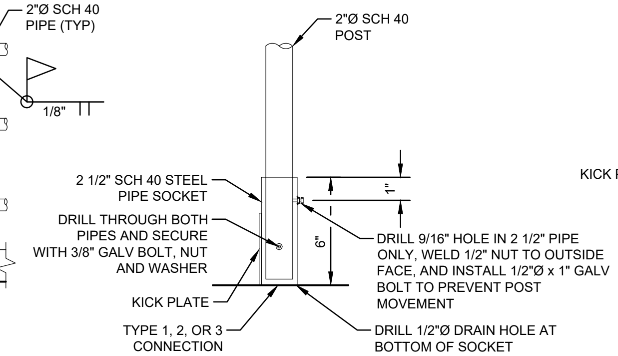
1
D7

REINFORCEMENT BENDS & SPLICES

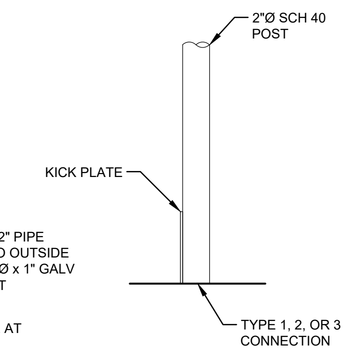
STRC



TYPICAL GUARDRAILING DETAIL



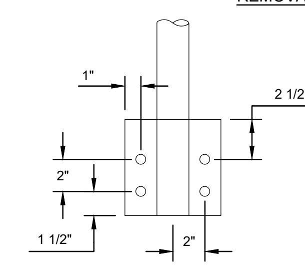
REMOVABLE POST



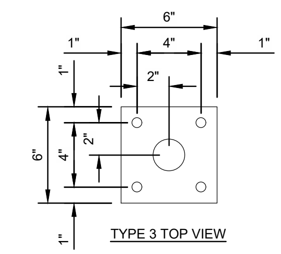
NON-REMOVABLE POST

NOTES

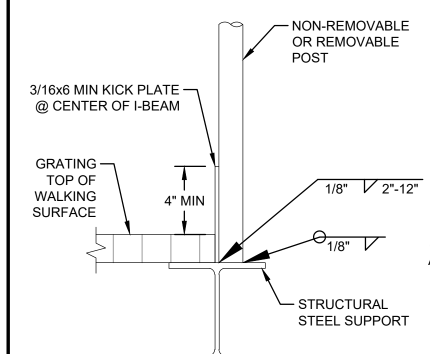
1. ALL RAILING SHALL BE HOT-DIPPED GALVANIZED STEEL. ALL HARDWARE SHALL BE TYPE 304 SS.
2. A LARGER PLATE MAY BE USED TO MOUNT ADJACENT POSTS/SOCKETS TO SAME PLATE



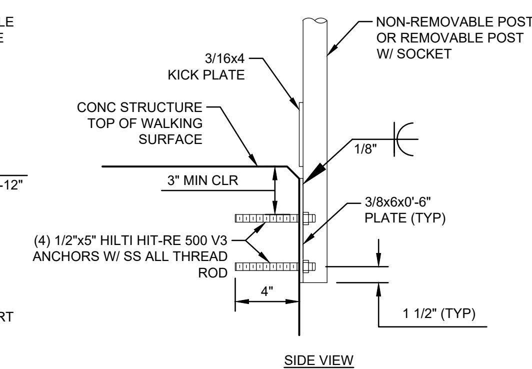
TYPE 2 FRONT VIEW



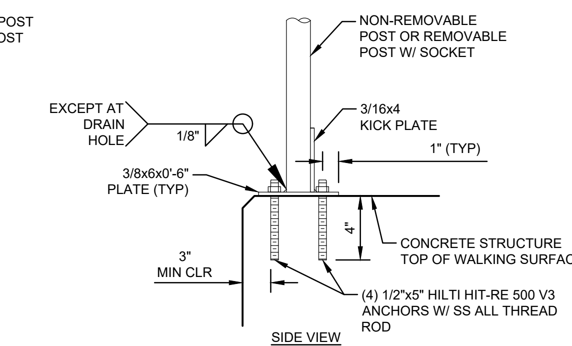
TYPE 3 TOP VIEW



TYPE 1 - WELDED CONNECTION



TYPE 2 - SIDE BOLTED CONNECTION



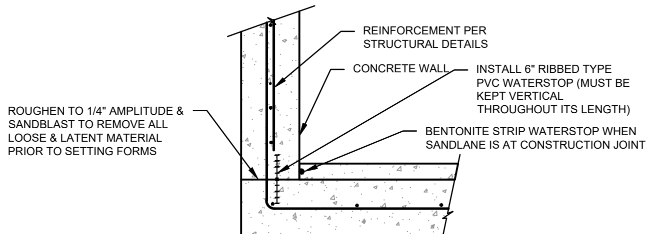
TYPE 3 - TOP BOLTED CONNECTION

NOT TO SCALE

2
D7

GUARDRAIL

STRC



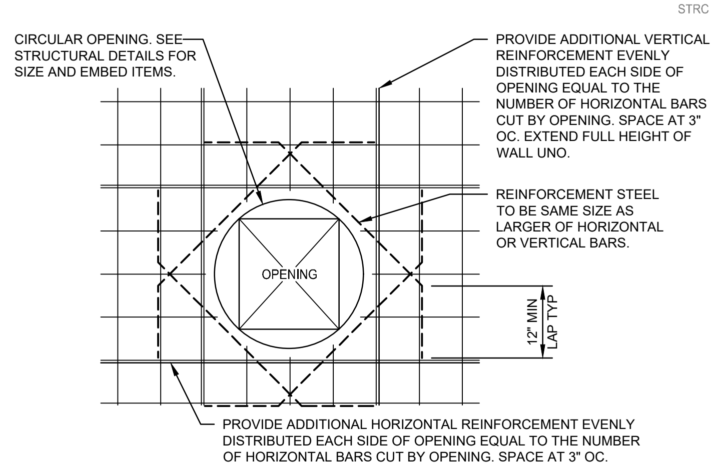
NOTE
ALL FLOOR TO WALL CONSTRUCTION JOINTS SHALL HAVE PVC WATERSTOPS IN WATER CONDITIONS

NOT TO SCALE

3
D7

CONCRETE CONSTRUCTION JOINT

STRC



NOTE
THIS DETAIL APPLIES TO ALL OPENINGS IN WALLS AND SLABS THAT DO RETAIN LIQUID OR SOIL

4
D7

CONCRETE OPENING REINFORCEMENT WITH LIQUID OR SOIL

FOR CONSTRUCTION
6/7/2023

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WASTEWATER TREATMENT AND STORAGE SYSTEM
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EARLIMART, CA
DETAILS

DETAILS 7

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PHASE:

0 1"
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SHEET D7

Appendix B

Storage Capacity

Storage Capacity Design Calculations

A. Precipitation, Evaporation, and Runoff Coefficients

Precipitation Station: Delano
CIMIS Zone: 12
Precipitation Factor: Return Period of 100 Years

Month	100 Year Return Period (in.)	Evaporation ETpan (in.)	Runoff Coefficients	
			Unsurfaced (%)	Surfaced (%)
October	0.74	5.31	18%	40%
November	1.80	2.57	11%	47%
December	2.02	1.33	20%	42%
January	2.93	1.77	13%	42%
February	2.76	2.80	19%	44%
March	2.69	4.87	13%	34%
April	1.59	7.14	10%	41%

B. Surface Areas

Areas	Ft^2		Acres	
Unsurfaced	64,570		1.5	
Surfaced (sum of below)	434,600		10.0	
Roofed		434,600		10.0
Concrete		0		0.0
Rainfall (sum of below)	170,330		3.9	
Storage		130,480		3.0
Treatment		39,850		0.9
Evaporation (sum of below)	133,458		3.1	
Storage		93,610		2.1
Treatment		39,848		0.9
Total	669,500		15.4	

C. New Storage Pond

Pond ID	Earthen Length (ft)	Earthen Width (ft)	Earthen Depth (ft)	Slope (H:V)
Storage	466	280	27.0	2.0

Pond ID	Freeboard Level (ft from rim)	25yr/24hr Level (ft from rim)	Unusable Level (ft from rim)	Max Liquid Vol * (ft^3)
Storage	2.0	2.0	26.5	2,285,230

* Maximum liquid volume includes freeboard level to floor

Storage Capacity Design Calculations (cont.)

D. Selection of Storage Period

	Storage Period days	Needed Vol ft^3	% of Available Storage Vol
X	120	2,261,760	100%
	150	2,740,340	82%
	180	3,292,280	68%
	210	3,775,620	60%

The storage period is approximately November 01 through March 01

E. Volumes Sent to Storage for Storage Period

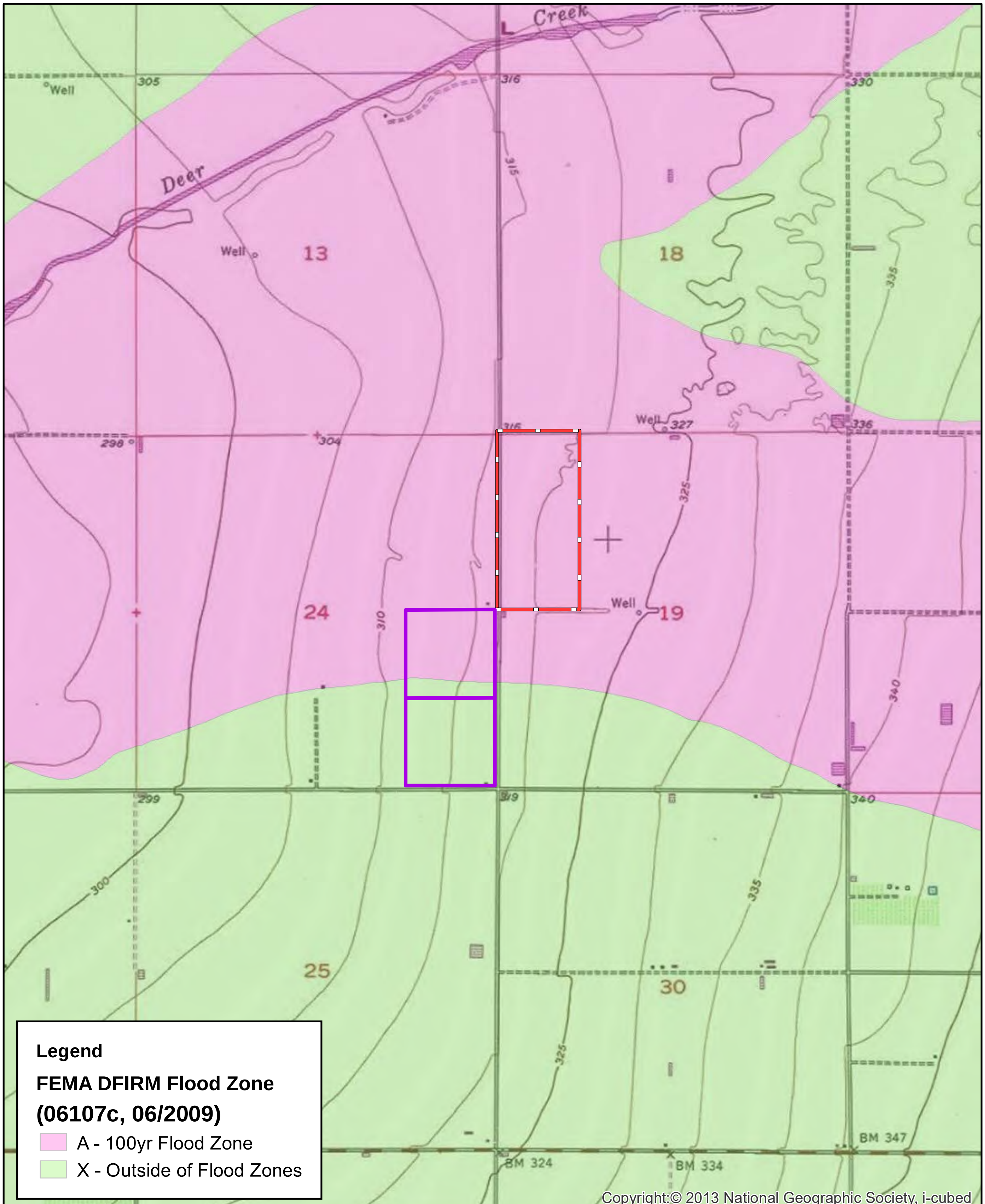
Type	Volume (ft^3)
Plant Water Generation	2,062,960
Runoff - Surfaced	149,920
Runoff - Unsurfaced	8,110
Rainfall onto Ponds	134,980
Evaporation from Ponds	-94,210
Total	2,261,760

G. Final Pond Storage Volumes

Type	Volume ft^3	Percent of Total Volume
Earthen	2,540,000	111%
Total Liquid	2,285,000	100%
Useable	2,254,000	99%
Unusable	31,000	1%

Appendix C

FEMA Flood Zones Map



PROVOST & PRITCHARD CONSULTING GROUP
EST. 1968
An Employee Owned Company

N

0 500 1,000 1,500
Feet

Legend
Project Area
New Parcels

Treehouse Almonds
FEMA Flood Zone Map
FIRM Panel No.
06107C1950E
Job # 2912-19001

12/13/2022: \\ppeng.com\pzdata\clients\Treehouse CA Almonds-2912\291219001-Treatmt-Storage LD\GIS\Map\FEMA Flood Map New Parcels.mxd

Appendix D

Geotechnical Investigation Report

3629 W Gettysburg Ave , Fresno, CA 93722
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GEOTECHNICAL ENGINEERING INVESTIGATION
TREEHOUSE CALIFORNIA ALMOND
6914 ROAD 160
EARLIMART, CALIFORNIA

Prepared for:
Mr. Steven Bommelje
Provost & Pritchard Consulting Group
400 E. Main Street, Suite 300
Visalia, CA 93291

Prepared by:
ASR Engineering, Inc.
3629 W. Gettysburg Ave.
Fresno, California 93722

Project No. 12-22108
January 19, 2023

GEOTECHNICAL ENVIRONMENTAL
ASR Engineering, Inc.
MATERIAL TESTING

3629 W Gettysburg Ave , Fresno, CA 93722
Phone: (559) 271-5260 Fax: (559) 271-5267
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January 19, 2023 Job No. 12-22108

Steven Bommelje
Provost & Pritchard Consulting Group
400 E. Main Street, Suite 300
Visalia, CA 93291

Subject: Geotechnical Engineering Investigation
Treehouse California Almond
6914 Road 160
Earlimart, CA 93219

Dear Mr. Bommelje:

At your request and authorization, ASR Engineering, Inc. (ASR), has performed a Geotechnical Engineering Investigation for the proposed ponds to be constructed at 6914 Road 160 in Earlimart, CA 93219.

The accompanying report contains the results of our investigation. If you have questions or require further information, please contact the undersigned at (559) 271-5260.

Respectfully submitted,
ASR Engineering, Inc.

A. Saboor Rahim, Ph.D., C.E., G.E.
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
A. SABOOR RAHIM
No. 2073
Exp 6-30-23
GEOTECHNICAL
STATE OF CALIFORNIA

Re: \\10.1.10.46\share1\Geotechnical\Geo-2022\12-22108 Treehouse California Almonds

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GEOTECHNICAL ENGINEERING INVESTIGATION
TREEHOUSE CALIFORNIA ALMOND
6914 ROAD 160
EARLIMART, CALIFORNIA 93219

1.0 INTRODUCTION

This report presents the results of our Geotechnical Engineering Investigation for the site of two (2) anaerobic ponds, one (1) aeration pond, and one (1) storage pond located at 6914 Road 160 in Earlimart, CA 93219. (See Figure 1, Vicinity Map).

The investigation included a field exploration program of performing seven (7) test borings, the collection of bulk sample, and a variety of laboratory tests to supplement the field data. The findings of the investigation and our recommendations are presented in this report. The site layout, including the location of the test borings, is shown on Figure 2, Test Boring Location Plan.

The results of the field exploration are included in Appendix "A." Laboratory test data are presented in Appendix "B."

2.0 SITE AND PROJECT DESCRIPTION

Based on the information provided by Steven Bommelje with Provost and Pritchard Consulting Group (P&P), it is planned to construct two (2) anaerobic ponds, one (1) aeration pond, and one (1) storage pond within the Treehouse California Almond property, located at 6914 Road 160 in Earlimart, CA 93219.

Reportedly, each of the two anaerobic ponds would be about 88 feet long, 88 feet wide, and 18 feet deep and would be provided with side slope of 1.75 to 1 (horizontal to vertical). One of the anaerobic ponds will be about 6 feet above grade, and other will be 5 feet above grade. The aeration pond would be about 160 feet long, 68 feet wide and 12 feet deep. A side slope of 1.75 to 1 is also considered for this pond. The storage pond would be 480 feet long, 274 feet width, and 27 feet deep. The storage pond embankment will be about 4-5 feet above the existing grade. The storage pond would have side slope of 2 to 1 and would be provided with double liner.

It should be noted that after preparation of the initial site plan, which was used for developing the field exploration program, the locations and configuration of the pods were revised.

3.0 PURPOSE AND SCOPE

The purpose of this investigation is to evaluate the subsurface soil and groundwater conditions and provide Geotechnical Engineering recommendations and specifications for construction of the proposed storage pond, anaerobic ponds, and aeration pond. Services provided in conjunction with the preparation of the Geotechnical Engineering Investigation Report included field exploration and soil sampling, laboratory testing, engineering evaluation, and report preparation.

4.0 FIELD EXPLORATION

The field exploration consisted of site surface reconnaissance and subsurface exploration. Seven (7) exploratory test borings (B-1 through B-7) were advanced at the subject site at the approximate locations shown on Figure 2, Test Boring Location Plan. One (1) test boring was advanced to a depth of about 50 feet below surface grade (bsg), two (2) test borings were advanced to a depth of about 30 bsg, each, and three (3) test borings were advanced to a depth of about 20 bsg, each. The test borings were drilled on December 15, 2022. The test borings were advanced with a 6-inch diameter hollow-stem auger rotated a truck-mounted CME-75 drilling rig.

The materials encountered in the test borings were visually classified in the field, and logs were recorded at the time of drilling. Visual classification of the materials encountered in the test borings was generally made in accordance with the Unified Soil Classification System (ASTM D 2488). A soil classification chart and key to sampling is presented on the Unified Soil Classification Chart, Figure A-1 in Appendix "A.” The logs of the test borings are presented on Figures A-2 and A-8 in Appendix "A.”

Subsurface soil samples from the test borings were obtained by driving a Modified California split-spoon sampler. Penetration resistance blow counts were obtained by dropping a 140-pound hammer through a 30-inch free fall to drive the sampler to a maximum depth of 18 inches. The number of blows required to drive the last 12 inches is recorded as Penetration Resistance (blows/foot) on the logs of borings.

Soil samples were obtained from the test borings at the depths shown on the boring logs. The samples were recovered and capped at both ends to preserve the samples natural moisture content. At the completion of drilling and sampling, the test borings were backfilled with auger cuttings.

5.0 LABORATORY TESTING

Laboratory tests were performed on selected soil samples to evaluate their physical characteristics and engineering properties. The laboratory-testing program included evaluation of natural moisture content, density, particle size distribution, permeability, compaction characteristics, consolidation, recompacted shear, and shear strength. In addition, chemical tests were performed to evaluate the corrosivity potential of the soils to buried concrete and metal. Details of the laboratory testing program and the results of laboratory tests are summarized in Appendix "B." This information, along with the field observations was used to prepare the final boring logs in Appendix "A."

6.0 GEOLOGIC CONSIDERATIONS

6.1 Soil and Groundwater Conditions

Subsurface soils, to the maximum explored depth of about 50 feet bsg, predominantly comprise alternating layers of medium dense to very dense silty sand and sandy silt containing clay lenses, dense to very dense sand, and very stiff clayey silt. The soils were classified in the field during the drilling and sampling operations. The stratification lines were approximated on the basis of observations made at the time of field exploration. The actual boundaries between different soil types may be gradual and soil conditions may vary. For a detailed description of the materials encountered, the Boring Logs (Figures A-2 and A-8 in Appendix "A") should be consulted. The Boring Logs include the soil type, color, moisture content, dry density, and the applicable Unified Soil Classification System Symbol.

Groundwater was not encountered to the maximum explored depth of approximately 50 feet bsg. It should be recognized that water table elevations might fluctuate with time, being dependent upon seasonal precipitation, irrigation, land use, and climatic conditions as well as other factors. Therefore, water level observations at the time of the field investigation may vary from those encountered during the construction phase of the project. The evaluation of such factors is beyond the scope of this report.

6.2 Geologic Setting

The subject property is located within the central portion of San Joaquin Valley. The San Joaquin Valley is a northwest-southeast trending structural basin within the Great Valley geomorphic province. The Sierra Nevada to the east, the Coast Ranges to the west, and the Tehachapi Mountains to the south borders the San Joaquin Valley.

The basement, or structural floor, of the San Joaquin Valley is asymmetrical, sloping westward to its greatest depth near the western valley margin. Almost continuous deposition in the basin since the Cretaceous Period has resulted in deposits comprising a thick and mainly conformable section of strata. Dominantly, marine sediments were deposited until about the middle of the Tertiary Period. Since that time the proportion of non-marine sediments has gradually increased. The maximum thickness of sedimentary rocks occurs at the southern end of the valley below the Buena Vista Lakebeds, where over 20,000 feet of Cretaceous, Tertiary and Pleistocene age sediments overlie a plutonic and metamorphic basement complex.

Review of the Regulatory Maps maintained by the California Department of Conservation reveals that no Earthquake Fault Zones are located on or near the project site.

6.3 Soil Liquefaction

Soil liquefaction is a state of soil particles suspension caused by a complete loss of strength when the effective stress drops to zero. Liquefaction normally occurs in saturated soils such as sand in which the strength is purely frictional. However, liquefaction has occurred in soils other than clean sand. Liquefaction usually occurs under vibratory conditions such as those induced by a seismic event.

To evaluate the liquefaction potential of the site, the following items were evaluated:

1) Groundwater depth
2) Soil type
3) Relative density
4) Initial confining pressure
5) Intensity and duration of ground shaking

Subsurface soils, to the maximum explored depth of about 50 feet bsg, predominantly comprise alternating layers of medium dense to very dense silty sand and sandy silt containing clay lenses, dense to very dense sand, and very stiff clayey silt. The cohesive clayey soils have low liquefaction potential. However, the non-cohesive sandy soils have liquefaction potential, but due to absence of groundwater within the explored depth 50 feet bsg and the denseness of these soils, their liquefaction potential is low. Furthermore, the site is not located within a known liquefaction zone based on the review of the Regulatory Maps maintained by the California Department of Conservation. Therefore, liquefaction is not considered a likely geologic hazard at the site.

6.4 Seismic Settlement

One of the most common phenomena during seismic shaking, accompanying any earthquake, is the induced settlement of loose unconsolidated soils. Based on the relatively low seismicity of the region and the presence of medium dense to very dense silty sand, sandy silt, and very stiff clayey silt beneath the site, we would not expect seismic settlement to represent a significant geologic hazard to the sites, provided that the recommendations presented in subsequent sections of this report are implemented.

6.5 Seismic Design Criteria

The following are the seismic design parameters for the subject site per the 2019 California Building Code:

Seismic Design Parameter	Value
Site Class	D
Latitude	35.90972°N
Longitude	-119.21676°W
Site Class D, 5%-damped, 0.2-second spectral acceleration (S_S)	0.65
Site Class D, 5%-damped, 1-second spectral acceleration (S_1)	0.24
Short Period Site Coefficient (F_a)	1.27
Long Period Site Coefficient (F_v)	1.93
0.2-second Period, Maximum Considered Earthquake Spectral Response Acceleration Adjusted for Site Effects (S_{MS})	0.8
1-second Period, Maximum Considered Earthquake Spectral Response Acceleration Adjusted for Site Effects (S_{M1})	0.48
0.2-second Period, Design Earthquake Spectral Response Acceleration (S_{DS})	0.5

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon the data collected during this investigation, and from a geotechnical engineering standpoint, it is our opinion that the site is suitable for construction of the proposed ponds.

Detailed geotechnical engineering recommendations are presented in the remaining portions of the report. The recommendations are based on the properties of the materials identified during our investigation.

7.1 Site and Subsurface Conditions

The site of the proposed ponds is located at 6914 Road 160 in Earlimart, California. At the time of field exploration, the subject site was vacant field, and was surrounded by flat crop land.

Subsurface soils, to the maximum explored depth of about 50 feet bsg, predominantly comprise alternating layers of medium dense to very dense silty sand and sandy silt containing clay lenses, dense to very dense sand, and very stiff clayey silt. These soils exhibited low settlement/collapse and low expansion potential when subjected to moisture fluctuation under load.

During our field investigation, groundwater was not encountered to the maximum explored depth of approximately 50 feet below surface grade. It is not anticipated that groundwater will rise within the zone of structural influence or affect the construction of proposed ponds. However, if earthwork is performed during or soon after periods of precipitation, the subgrade soils may become saturated, pump or not respond to densification techniques. Typical remedial measures include; discing and aerating the soil during dry weather; mixing the soil with dryer materials; removing and replacing the soil with an approved fill material; or mixing the soil with an approved lime or cement product. Our firm should be consulted prior to implementing remedial measures to observe the unstable subgrade conditions and provide appropriate recommendations.

7.2 Structures Area Preparation

7.2.1 Auxiliary Structures Area Preparation

If it is planned to construct structures in conjunction with the operation of the ponds, it is recommended that the upper 2 to 4 inches of soils, containing vegetation, and other organic matter, should be removed from such structures' areas and at least five (5) feet outside their perimeter. Soils containing organic materials will not be suitable for use as backfill material. However, stripped topsoil may be stockpiled and reused in landscape or non-structural areas.

Following stripping operations, the exposed surfaces in these areas should be scarified to a minimum depth of eight (8) inches, moisture conditioned to near optimum and compacted to achieve at least 90 percent of the maximum dry density as determined by test method ASTM D1557. Fill, required to bring the pads for such structures to the design grade, should be placed and compacted in accordance with the procedures included in Section 7.3, below.

The structures pads should be kept in a moist condition prior to placement of slab concrete.

7.2.2 Ponds Area Preparation

The upper 2 to 4 inches of the soils containing vegetation, roots and other objectionable organic matter should be stripped and removed from the pond areas. Within these areas excavation should extend to their designed depths. The exposed surfaces within the pond areas should be proof rolled to detect loose and soft spots, which should be excavated to firm ground to prepare it for liner placement. Soils containing clods or cemented particles larger than 3/8 inch should be broken or pulverized prior to placement of the liner. The liner base area may be inspected by the Geotechnical Engineer or the project design consultants to assess its suitability for liner placement. Undesired soils detected during the inspection should be excavated from the liner base area and the area should be backfilled with the excavated sandy silt or clayey silt. Backfilling may be performed by placing soil in 8-inch lifts, moisture conditioned to near optimum and compacted to at least 90 percent of the maximum dry density as determined by ASTM Method D1557. The liner base should be kept in a moist condition prior to placement of the liner.

7.2.3 Embankment Area Preparation

Where applicable, the upper 2 to 4 inches of the soils containing vegetation, roots and other objectionable organic matter should be stripped and removed from the embankment areas. The exposed surfaces in these areas should be scarified to a minimum depth of eight (8) inches, moisture conditioned to near optimum and compacted to achieve at least 90 percent of the maximum dry density as determined by test method ASTM D1557. Fill required to bring the embankments to their design grade should be placed and compacted in accordance with the procedures included in Section 7.3, below.

7.2.4 Additional Site Grading Considerations

The upper soils, during wet winter months, may become very moist due to the absorption characteristics of the soil. Earthwork operations performed during winter months may encounter very moist unstable soils, which may require removal of soil to stable soil. Project site winterization consisting of placement of aggregate base and protection of exposed soils during construction should be performed.

All excavations, depressions, or soft and pliant areas extending below planned finished subgrade levels should be cleaned to firm, undisturbed soil and backfilled with Engineered Fill. Any buried structures, if discovered during construction activities, should be properly removed and backfilled. In general, any septic tanks, debris pits, cesspools, or similar structures should be entirely removed. Any other buried structures should be removed in accordance with the recommendations of the Geotechnical Engineer. Resulting excavations should be properly backfilled.

A representative of our firm should be present during all site clearing and grading operations to test and observe earthwork construction. This testing and observations are an integral part of our service as acceptance of earthwork construction is dependent upon compaction of the material and the stability of the material. Further recommendations of this report are predicated upon the assumption that earthwork construction will conform to recommendations set forth in this section.

Fill soils should be placed in lifts approximately 8 inches thick, moisture-conditioned to near optimum and compacted to achieve at least 90 percent of the maximum dry density as determined by ASTM D 1557. Additional lifts should not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable.

If applicable, within parking and driveway areas, the upper 12 inches of subgrade soils should be compacted to at least 95 percent of the maximum dry density as determined by ASTM Test Method D 1557.

If sand is encountered within the slope, it should be over excavated to stable ground. Following excavation operation, if applicable, the exposed surfaces in these areas should be scarified to a depth of about 8 inches, moisture conditioned to near optimum condition and compact to at least 90 percent of the maximum dry density indicated above. The excavated soil and the additional fill material, required to bring the site to the design grade, should be placed and compacted in accordance with the procedures established in Section 7.3, below.

7.3 Filling and Compaction

The on-site soils predominantly comprise medium dense to very dense silty sand, sandy silt containing clay lenses, sand, and very stiff clayey silt. These soils will be suitable for raising the structural areas to their design grades. The excavated clayey and silty soils may be used for constructing the embankment area to the design grade, provided they are cleansed of excessive organics, cemented particles larger than 3 inches, and debris. Project site winterization and protection of exposed soils during the construction phase should be the sole responsibility of the Contractor, who has complete control of the project site at that time.

Imported non-expansive fill, needed for embankment and other structures construction, should consist of silty fine sand, clayey silt, or sandy silt, with relatively impervious characteristics when compacted. The fill material should be approved by the Geotechnical Engineer prior to use.

Fill soils should be placed in lifts approximately 8 inches thick, moisture-conditioned to near optimum and compacted to achieve at least 90 percent of the maximum dry density as determined by ASTM D1557. Additional lifts should not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable. If applicable, within the access road, parking, and driveway areas, the upper 12 inches of subgrade soils should be compacted to at least 95 percent of the maximum dry density specified above.

7.4 Pond Slope Stability Assessment

As indicated in Section 2.0, above, the storage pond will be 27 feet deep and will be provided with a side slope of 2 to 1 (horizontal to vertical). The anaerobic and aeration ponds will be, respectively, 18 feet and 12 feet in depth and each will be provided with side slopes of 1.75 to 1. The safety factors are calculated based on average shear strength parameters of the subsurface site soils.

Lagoon Depth	Factor of Safety		Maximum Slope (horizontal to vertical)
	Static	Pseudo-static	
27 feet	6.0	3.58	2 to 1
18 feet	7.6	4.58	1.75 to 1
12 feet	9.5	6.18	1.75 to 1

With consideration of the subsurface soil conditions, we recommend a minimum factor of safety of 1.5 for static loading condition and a minimum factor of safety of 1.2 for pseudo-static loading condition. As indicated in the above table, for the designed slopes of 2 to 1 and 1.75 to 1, the factors of safety far exceed the minimum factor of safety requirements for the indicated loading conditions. However, the slope steepness is controlled by erosion and lagoon liner construction. With the consideration of these factors, the designer may decide of the appropriate slope steepness. The contractor is responsible for providing safe working conditions with respect to slope stability.

For the slopes indicated, a minimum setback of 4 feet is recommended if the equipment tracks are parallel to the slope. However, if the equipment tracks are perpendicular to the slope, no setback is recommended. Placement of buildings and structures on or adjacent to slopes steeper that 3 to 1 should be in accordance with Section 1808.7 of the Building Code.

7.5 Liner Preparation Specification

7.5.1 Liner Base Area Preparation

The liner base area should be prepared as indicated in Section 7.2.2, above. The soils below the bottom of the ponds indicated coefficients of permeability in the range of $1.39X10^{-8}$cm/sec and $8.78X10^{-8}$cm/sec in their natural conditions. These values of coefficients of permeability are significantly lower than the recommended coefficient of permeability of $1.0X10^{-6}$cm/sec.

The ponds side slopes should be excavated to the proposed slope finished grade and the area should be visually inspected by the Geotechnical Engineer to confirm the presence of a firm and unyielding surface. Loose sandy soils, if encountered during preparation of the slopes, should be over-excavated, backfilled and compacted as described in Section 7.3, above.

7.5.2 Pond Backfill Compliance Testing

A representative of our firm shall provide continuous observation of the pond backfill moisture conditioning and compaction. The following schedule of tests shall be performed during the pond backfill operation. The frequency relates to the square footage of the basin or cubic yards of soil used.

Test	Minimum Frequency
Maximum Dry Density / Optimum Moisture (ASTM D 1557)	**1 per 5,000 yd^3**
Compaction Test (ASTM D 6938/2937)	**3 per acre**
In-place Moisture (ASTM D 6938/2937)	**3 per acre**
Nuclear Gauge Moisture Standardization (Oven)	**Daily per nuclear gauge**
Nuclear Gage Density Standardization (Drive Cylinder)	**2 per week per nuclear gauge**

7.5.3 Side Slopes Compliance Inspection

A representative of our firm shall provide visual inspection of the finished grade basin side slopes to confirm the presence of a firm and unyielding surface.

7.5.4 Anchor Trench

As indicated above, installation of liner is planned for the ponds. The anchor trench for the liner should be a minimum of 18 inches deep, 18 inches wide and located about 3 feet away from the top of the slope of the basin. Subsequent to placement of the liner in the anchor trench, the trench should be backfilled with compacted soil. The soil within the anchor trench should be moisture conditioned to near optimum and compacted to at least 90 percent of the maximum dry density as determined by ASTM Test Method D 1557. A friction angle of 30 degrees may be considered in the design of the anchor trench.

7.6 Structure Foundations

If applicable, wall footings for the structures constructed in the vicinity of the basins area should be continuous with a minimum width of 12 inches and extend to a minimum depth of 18 inches below the lowest adjacent grade. Isolated column footings should have a minimum width of 18 inches and extend to a minimum depth of 18 inches below the lowest adjacent grade.

7.7 Bearing Capacity and Settlement

Foundations for structures, constructed as recommended in Section 7.6, above, may be designed with the maximum bearing capacity of 2,500 pounds per square foot (psf). Isolated column footings, constructed as recommended in Section 7.5, above, may be designed for a maximum bearing capacity of 3,000 psf. These values are for dead and sustained live loads and may be increased by one-third (1/3) to include wind and seismic effects.

For design purposes, total settlement of about 1/2 to 3/4 of an inch may be assumed anticipated. Differential settlement on the order of 1/4 to 1/2 inch should be anticipated. Most of the settlement is expected to occur during construction as the loads are applied. However, additional post-construction settlement may occur if the foundation soils are flooded or saturated.

7.8 Lateral Earth Pressures and Frictional Resistance

Active, at-rest and passive unit lateral earth pressures against footings and walls are presented below:

Lateral Pressure Conditions	Equivalent Fluid Pressure, pcf
Active Pressure, Drained	**27**
At-Rest Pressure, Drained	**36**
Passive Pressure	**612**
Seismic Component of Earth Pressure	**9.62H***

*H is the height of the wall in feet and considering an average unit weight of 114.6 pound per cubic foot for the native soil and compacted native and imported soil.

Active pressure applies to walls, which are free to rotate. At-rest pressure applies to walls, which are restrained against rotation.

The preceding lateral earth pressures assume sufficient drainage behind retaining walls to prevent the build-up of hydrostatic pressure. The top foot of adjacent subgrade should be deleted from the passive pressure computation. A coefficient of friction of 0.60 may be used between soil subgrade and footings or slabs.

The foregoing values of lateral earth pressures and frictional coefficients represent ultimate soil values and a safety factor consistent with the design conditions should be included in their usage. For stability against lateral sliding, which is resisted solely by the passive pressure, we recommend a minimum safety factor of 1.5. For stability against lateral sliding, which is resisted by the combined passive and frictional resistance, a minimum safety factor of 2.0 is recommended. For lateral stability against seismic loading conditions, we recommend a minimum safety factor of 1.1.

7.9 Utility Pipes Bedding and Backfilling

Proper bedding and envelope should be provided for utility pipes. Imported or native granular material, 100 percent passing the No. 4 Sieve and not more than eight (8) percent passing the No. 200 Sieve, should be used as bedding and pipe envelope. The envelope should extend a minimum of 6 inches above top of pipe. Pipe backfill material should be compacted as recommended herein. Due to space limitations, a hand compactor may be required. The required fill should be brought to near optimum moisture content, placed in loose lifts not more than eight (8) inches in thickness, and compacted to achieve at least 90 percent of maximum dry density as determined by ASTM Test Method D1557. The excavated site soils may be used as backfill over the pipes and compacted as specified above provided they do not contain rock fragments and cemented particles of 3 inches in the greatest dimension. Additional lifts should not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable. Within parking and driveway areas, the upper 8 inches of subgrade soils should be compacted to at least 95 percent of the maximum dry density as determined by ASTM Test Method D-1557.

7.10 Soil-Borne Salt Protection

A soil sample from the project site was tested for the evaluation of the potential for concrete deterioration and steel corrosion due to attack by soil-borne soluble salts. The water-soluble sulfate concentration in the saturation extract from the soil sample tested was 96 mg/L. This concentration is indicative of slight corrosion potential. Normally formulated concrete mixes have been shown to adequately resist this level of soil sulfate concentration.

The water-soluble chloride concentrations detected in saturation extract from the soil sample test was 18 mg/L. This concentration is indicative of slight corrosion potential. The electrical conductance of the soil sample measured is 782 micromhos/cm, which is indicative of heavy corrosion potential. Therefore, we recommend that buried steel pipe or conduit be protected from salt attack.

8.0 PLAN REVIEW, CONSTRUCTION OBSERVATIONS AND TESTING

We recommend that ASR complete a review of plans and specifications with regard to foundations and earthwork, prior to construction bidding.

ASR should be present at the site during site preparation to observe site clearing, preparation of exposed surfaces after clearing, and placement and compaction of fill material. ASR's observations should be supplemented with periodic compaction tests to establish substantial conformance with these recommendations. Moisture content of the prepared pads (footings and slab subgrade) should be tested immediately prior to concrete placement. ASR should observe foundation excavations prior to placement of reinforcing steel or concrete to assess whether the actual bearing conditions are compatible with the conditions anticipated during the preparation of this report. ASR should also observe placement of foundation and slab concrete.

9.0 CHANGED CONDITIONS

The analyses and recommendations submitted in this report are based upon the data obtained from the seven (7) test borings made at the approximate locations shown on Figure 2, Test Boring Location Plan. The report does not reflect variations, which may occur away from the borings.

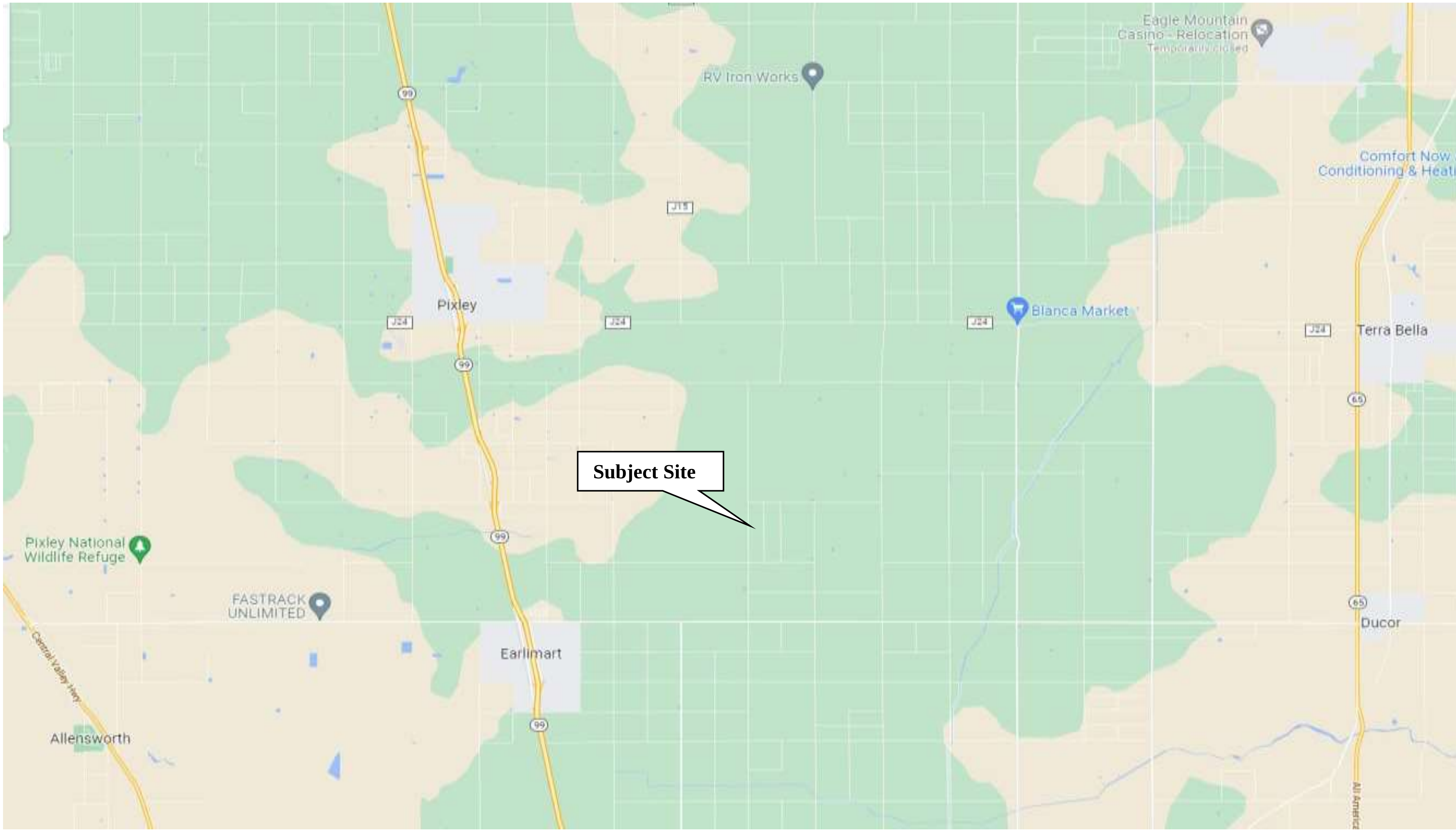
The findings and recommendations presented in this report are valid as of the present and for the proposed construction. If site conditions change due to natural processes or human intervention on the property or adjacent to the site, or changes occur in the nature or design of the project, or if there is a substantial time lapse between the submission of this report and the start of the work at the site, the conclusions and recommendations contained in our report will not be considered valid unless the changes are reviewed by ASR and the conclusions of our report are modified or verified in writing.

The validity of the recommendations contained in this report is also dependent upon an adequate testing and observations program during the construction phase. Our firm assumes no responsibility for construction compliance with the design concepts or recommendations unless we have been retained to perform the on-site testing and review during construction.

ASR has prepared this report for the exclusive use of the owner and project design consultants. The report has been prepared in accordance with generally accepted geotechnical engineering practices in the area. No other warranties, either expressed or implied, are made as to the professional advice provided under the terms of our agreement and included in this report.

FIGURES

Job No. 12-22108
January 2023
Figure 1



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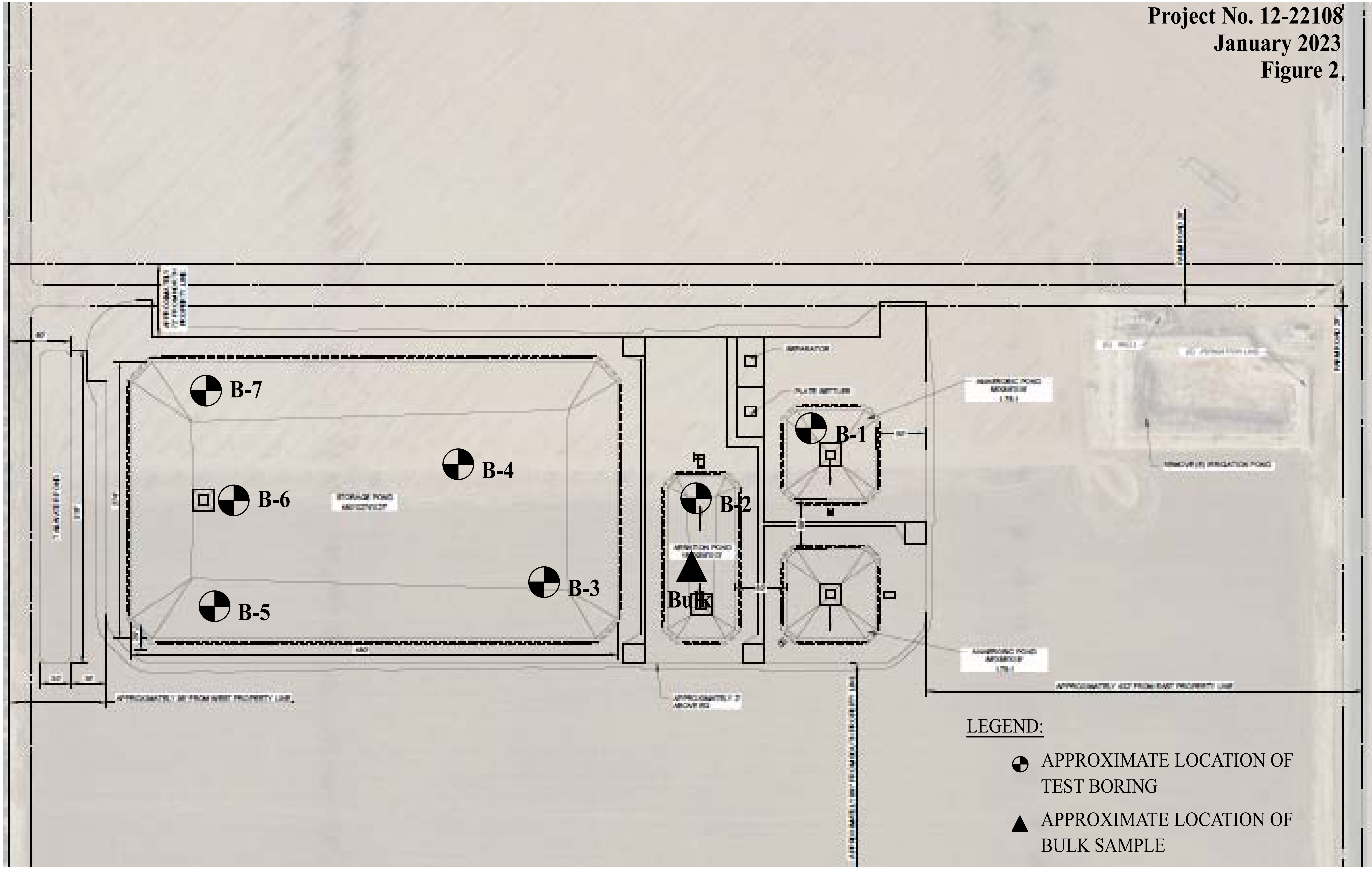
NORTH

Vicinity Map
Treehouse California Almond
6914 Rd 160
Earlimart, CA 93219

Project No. 12-22108
January 2023
Figure 2



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GEOTECHNICAL • ENVIRONMENTAL • CONSTRUCTION TESTING
3629 West Gettysburg Avenue, Fresno, California 93722

NORTH
NOT SCALE

TEST BORING LOCATION PLAN
TREEHOUSE CALIFORNIA ALMOND
6914 Road 160
EARLIMART, CALIFORNIA 93219

APPENDIX "A"

APPENDIX "A"
FIELD EXPLORATION

A.1 Test Boring Drilling

Seven (7) exploratory test borings (B-1 through B-7) were drilled on December 15, 2022. One (1) test boring was advanced to depths of about 50 feet below surface grade (bsg), two (2) test borings were advanced to depths of about 30 feet bsg and four (4) test borings was advanced to depths of about 20 feet bsg. The test borings were advanced with a 6-inch diameter hollow-stem auger rotated a truck-mounted CME-75 drilling rig. The test borings were made at the approximate locations shown on Figure 2, Test Boring Location Plan.

A continuous log of the soils encountered in the test boring was recorded at the time of the exploration. The Test Boring Logs, shown on Figures A-2 and A-8, should be consulted for more detail concerning subsurface conditions.

Subsurface soil samples were obtained by driving a Modified California or a SPT sampler with a 140-pound hammer through a 30-inch drop. Penetration resistance determinations were made and are recorded on the logs of borings. At the completion of the field exploration, the test borings were backfilled with auger cuttings.

Unified Soil Classification System

Major Divisions			Letter	Symbol	Description
Coarse-grained Soils More than 1/2 retained on the No. 200 Sieve	**Gravels** More than 1/2 coarse fraction retained on the No. 4 Sieve	Clean Gravels	GW		Well-graded gravels and gravel-sand mixtures, little or no fines.
			GP		Poorly-graded gravels and gravel-sand mixtures, little or no fines.
		Gravels with Fines	GM		Silty gravels, gravel-sand-silt mixtures.
			GC		Clayey gravels, gravel-sand-clay mixtures.
	Sands More than 1/2 passing through the No. 200 Sieve	Clean Sands	SW		Well-graded sands and gravelly sands, little or no fines.
			SP		Poorly-graded sands and gravelly sands, little or no fines.
		Sands with Fines	SM		Silty sands, sand-silt mixture.
			SC		Clayey sands, sandy-clay mixture.
Coarse-grained Soils More than 1/2 passing through the No. 200 Sieve	**Silts and Clays** Liquid Limit less than 50%		ML		Inorganic silts, very fine sands, rock flour, silty or clayey fine sands.
			CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL		Organic clays of medium to high plasticity.
	Silts and Clays Liquid Limit greater than 50%		MH		Inorganic silts, micaceous or diatomaceous fines sands or silts, elastic silts.
			CH		Inorganic clays of high plasticity, fat clays.
			OH		Organic clays of medium to high plasticity.
Highly Organic Soils			PT		Peat, muck and other highly organic soils.

Consistency Classification					
Granular Soils			***Cohesive Soils***		
Description	**Blows per Food (Corrected)**		**Description**	**Blows per Food (Corrected)**	
	MCS	SPT		MCS	SPT
Very loose	< 5	< 4	Very soft	< 3	< 2
Loose	5 – 15	4 – 10	Soft	3 – 5	2 – 4
Medium dense	16 – 40	11 – 30	Firm	6 – 10	5 – 8
Dense	41 – 65	31 – 50	Stiff	11 – 20	9 – 15
Very Dense	> 65	> 50	Very stiff	21 – 40	16 – 30
			Hard	> 40	> 30
MCS = Modified California Sampler			SPT = Standard Penetration Test Sampler		

Figure: A-2

Project No: 12-22108

Project: Treehouse Almonds

Client: Provost & Pritchard

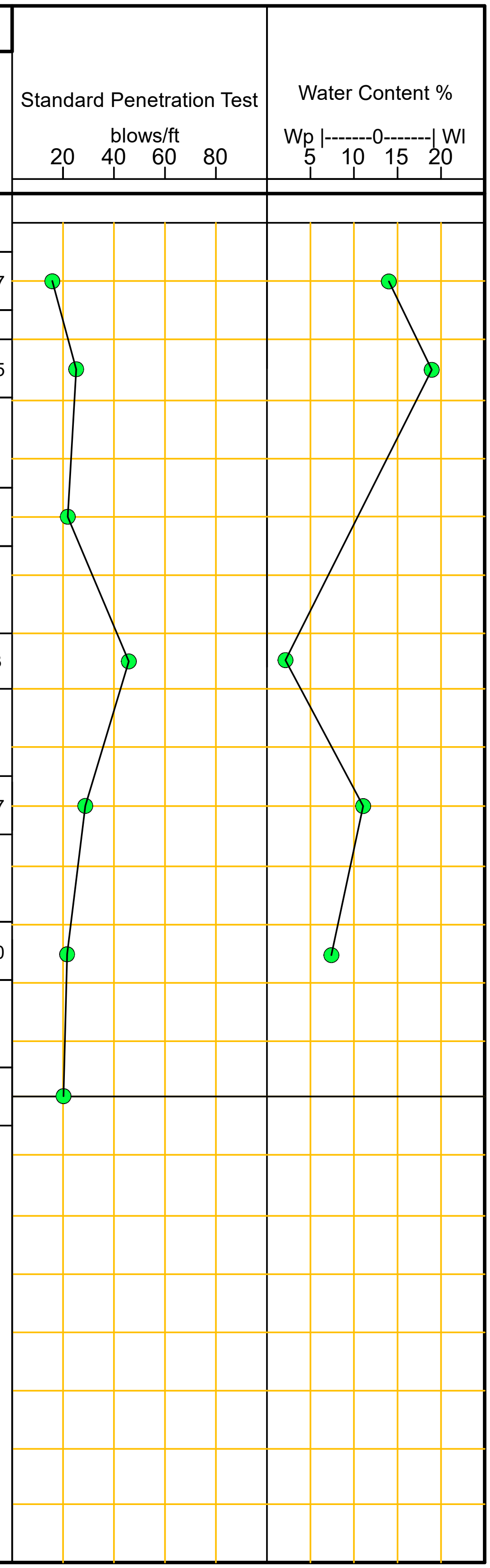
Location: Earlimart, CA

Log of Borehole: B-1

Logged by: S.P.

Company: ASR Engineering, Inc.

SUBSURFACE PROFILE				SAMPLE			
Depth	Symbol	Description	Notes	Number	Moisture %	Blows/ft	Density
0		Ground Surface					
0–5		***Silty Sand (SM)*** Light brown, coarse, medium dense		1	14.5	18	102.7
5–15		***Poorly Graded Sand (SP)*** Coarse, medium dense		2	17.3	24	105.5
				3	-	21	-
15–20		***Silty Sand (SM)*** Light brown, medium dense		4	2.2	44	110.3
20–25		***Sandy Silt (ML)*** Light brown, coarse, medium dense		5	11.1	29	116.7
25–30		***Clayey Silt (ML)*** Light brown, coarse, medium dense		6	7.7	22	119.0
30		End of Borehole		7	-	20	-



Drill Method: CME-45: Hollow Stem Auger

Drill Date: 12/15/22

Hole Size: 6"

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Fresno, CA 93722
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Fax: (559) 271-5267
E-mail: asrengineering@sbcglobal.net

Drilled by: Salem

Checked by: ASR

Figure: A-3

Log of Borehole: B-2

Project No: 12-22108

Project: Treehouse Almonds

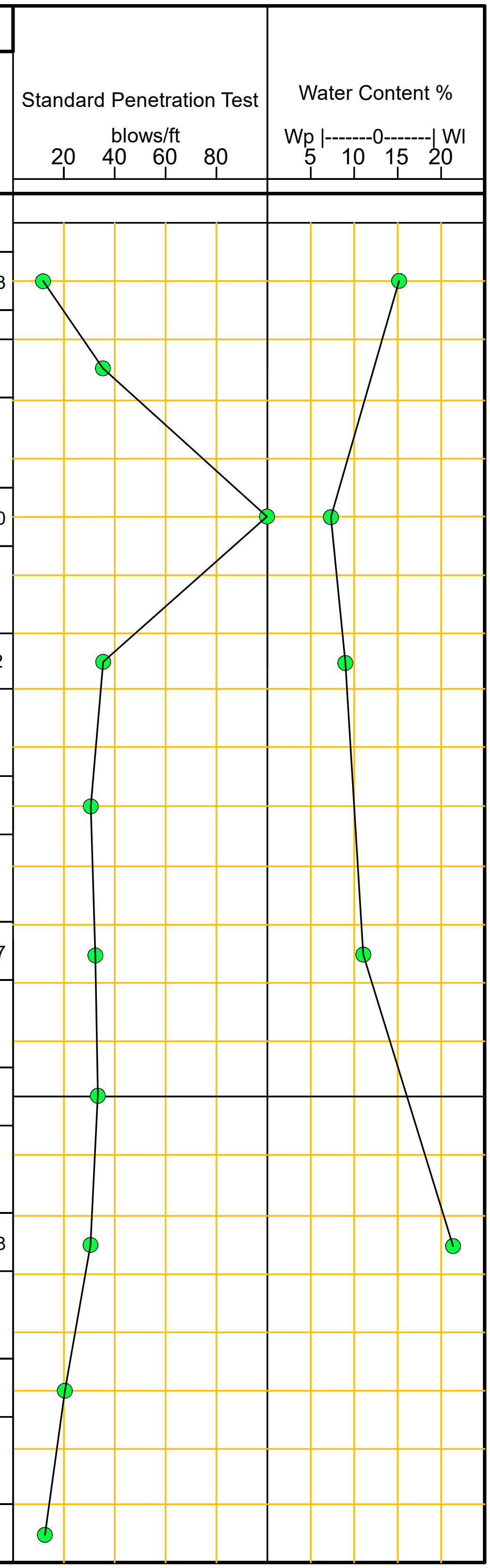
Client: Provost & Pritchard

Location: Earlimart, CA

Logged by: S.P.

Company: ASR Engineering, Inc.

SUBSURFACE PROFILE				SAMPLE			
Depth	Symbol	Description	Notes	Number	Moisture %	Blows/ft	Density
0		Ground Surface					
0–25		***Silty Sand (SM)*** Light brown, coarse, moist, loose		1	15.1	12	104.3
				2	-	37	-
				3	8.4	50-4"	123.0
				4	9.5	36	126.2
				5	-	30	-
25–35		***Sandy Silt (ML)*** Light brown, very fine grain, medium dense		6	11.3	33	121.7
				7	-	32	-
35–45		***Poorly Graded Sands (SP)*** Gray, coarse, medium dense		8	22.7	29	106.8
				9	-	21	-
				10	-	14	-



Drill Method: CME-45: Hollow Stem Auger

Drill Date: 12/15/22

Hole Size: 6"

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E-mail: asrengineering@sbcglobal.net

Drilled by: Salem

Checked by: ASR

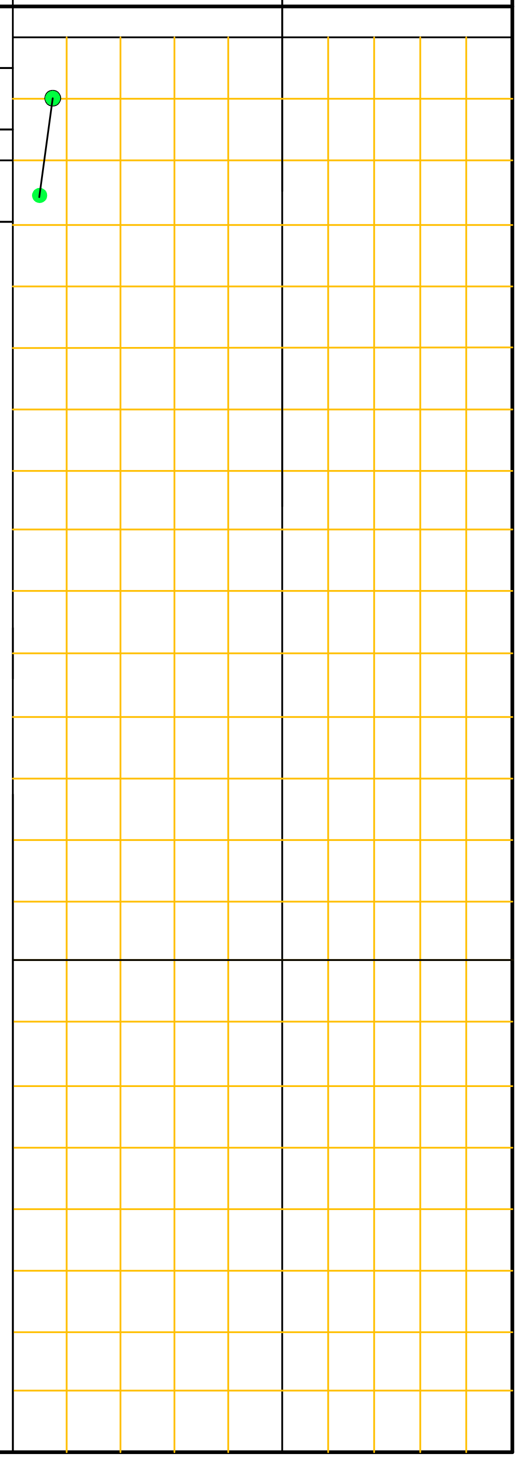
Sheet: 1 of 1

Figure: A-3

Project No:	12-22108		
Project:	Treehouse Almonds		
Client:	Provost & Pritchard	**Logged by:**	S.P.
Location:	Earlimart, CA	**Company:**	ASR Engineering, Inc.

Log of Borehole: B-2

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Notes	Number	Moisture %	Blows/ft	Density	Standard Penetration Test blows/ft 20 40 60 80	Water Content % Wp |-------0-------| Wl 5 10 15 20
		Ground Surface							
45		***Sandy Silt (ML)*** Light brown, moist, fine grain, loose							
				11	-	14	-		
				12	-	13	-		
50		End of Borehole							



Drill Method: CME-45: Hollow Stem Auger	ASR Engineering, Inc. 3629 W. Gettysburg Ave. Fresno, CA 93722 Phone: (559) 271-5260 Fax: (559) 271-5267 E-mail: asrengineering@sbcglobal.net	**Drilled by:** Salem
Drill Date: 12/15/22		**Checked by:** ASR
Hole Size: 6"		**Sheet: 2 of 2**

Figure: A-4

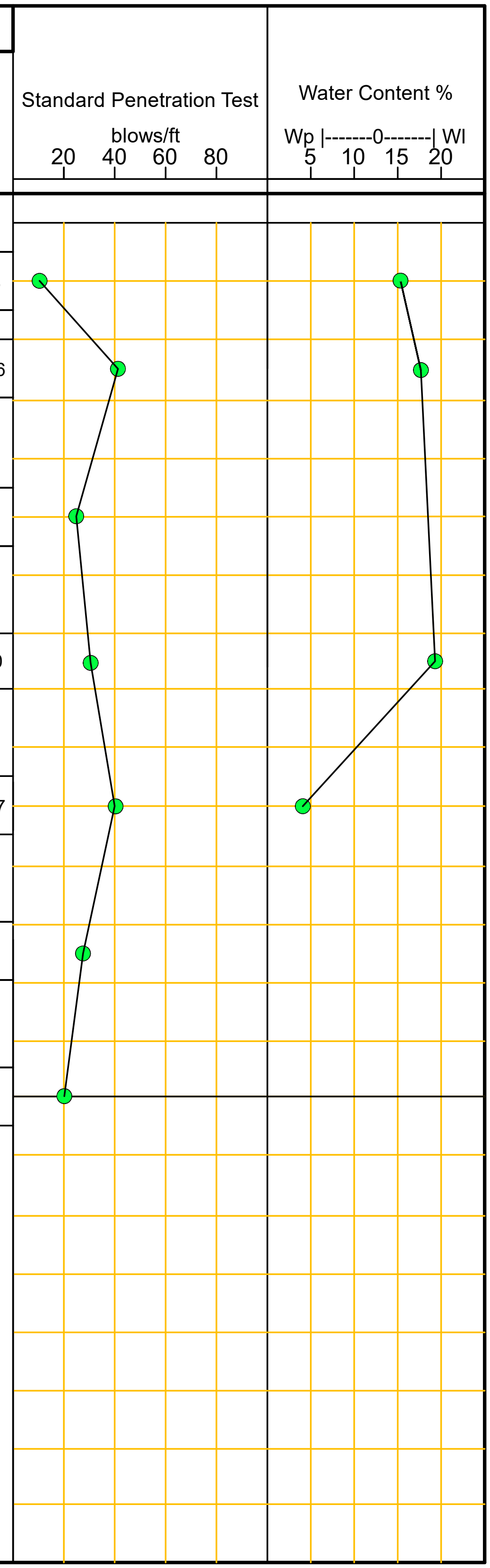
Project No:	12-22108
Project:	Treehouse Almonds
Client:	Provost & Pritchard
Location:	Earlimart, CA

Log of Borehole: B-3

Logged by: S.P.

Company: ASR Engineering, Inc.

Depth (ft)	Description	Notes	Sample Number	Moisture %	Blows/ft	Density
0	Ground Surface					
0–5	***Silty Sand (SM)*** Light brown, coarse, medium dense		1	15.6	10	97.8
5–10	***Sandy Silt (ML)*** Light brown, coarse, medium dense		2	17.2	42	112.6
10–15	***Silty Sand (SM)*** Light brown, moist, coarse, medium dense		3	-	24	-
15–20	***Poorly Graded Sand (SP)*** Light brown, coarse, medium dense		4	19.2	29	114.0
20–30	***Sandy Silt (ML)*** Light brown, coarse, medium dense		5	4.3	42	113.7
			6	-	28	-
			7	-	20	-
30	End of Borehole					



Drill Method: CME-45: Hollow Stem Auger

Drill Date: 12/15/22

Hole Size: 6"

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Drilled by: Salem

Checked by: ASR

Figure: A-5

Log of Borehole: B-4

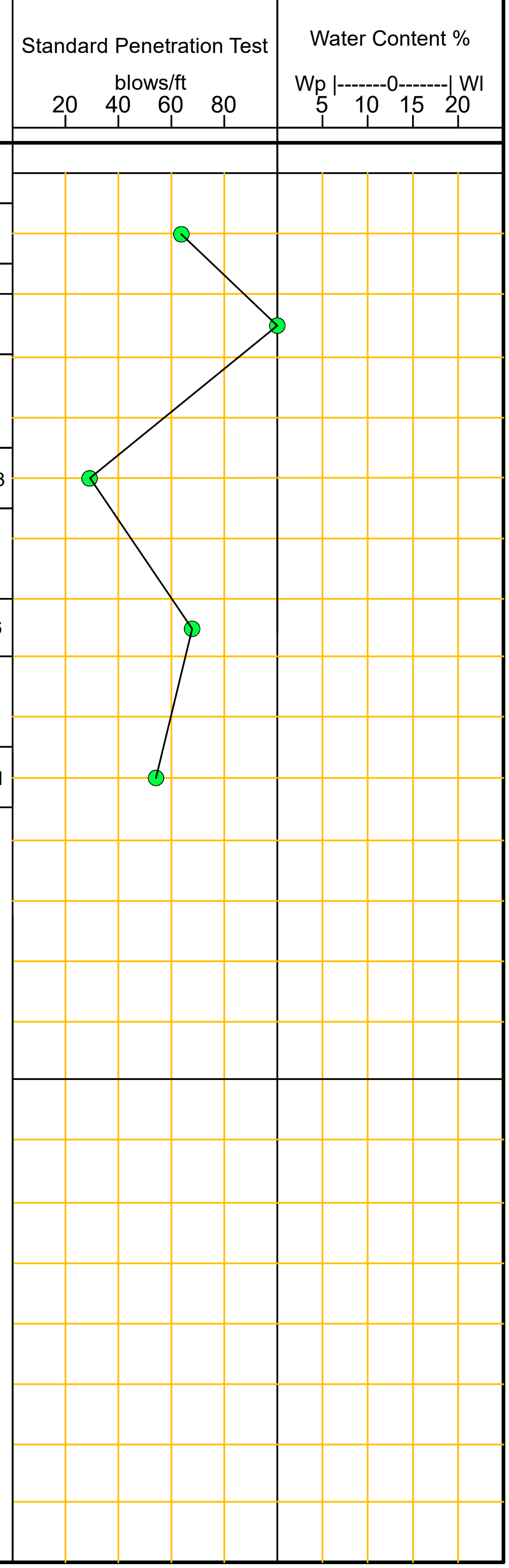
Project No: 12-22108
Project: Treehouse Almonds
Client: Provost & Pritchard
Location: Earlimart, CA
Logged by: S.P.
Company: ASR Engineering, Inc.

SUBSURFACE PROFILE

Depth (ft)	Description	Notes
0	Ground Surface	
0–15	***Silty Sand (SM)*** Light brown, moist, fine grain, dense	
15–20	***Poorly Graded Sand (SP)*** Light brown, coarse, dense	
20	End of Borehole	

SAMPLE

Number	Moisture %	Blows/ft	Density
1	-	63	-
2	17.2	50-5"	89.1
3	19.3	28	103.3
4	13.2	68	123.6
5	5.7	53	117.1



Drill Method: CME-45: Hollow Stem Auger	ASR Engineering, Inc.	**Drilled by:** Salem
Drill Date: 12/15/22	3629 W. Gettysburg Ave.	**Checked by:** ASR
Hole Size: 6"	Fresno, CA 93722	**Sheet: 1 of 1**

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Fax: (559) 271-5267
E-mail: asrengineering@sbcglobal.net

Figure: A-6

Project No: 12-22108

Project: Treehouse Almonds

Client: Provost & Pritchard

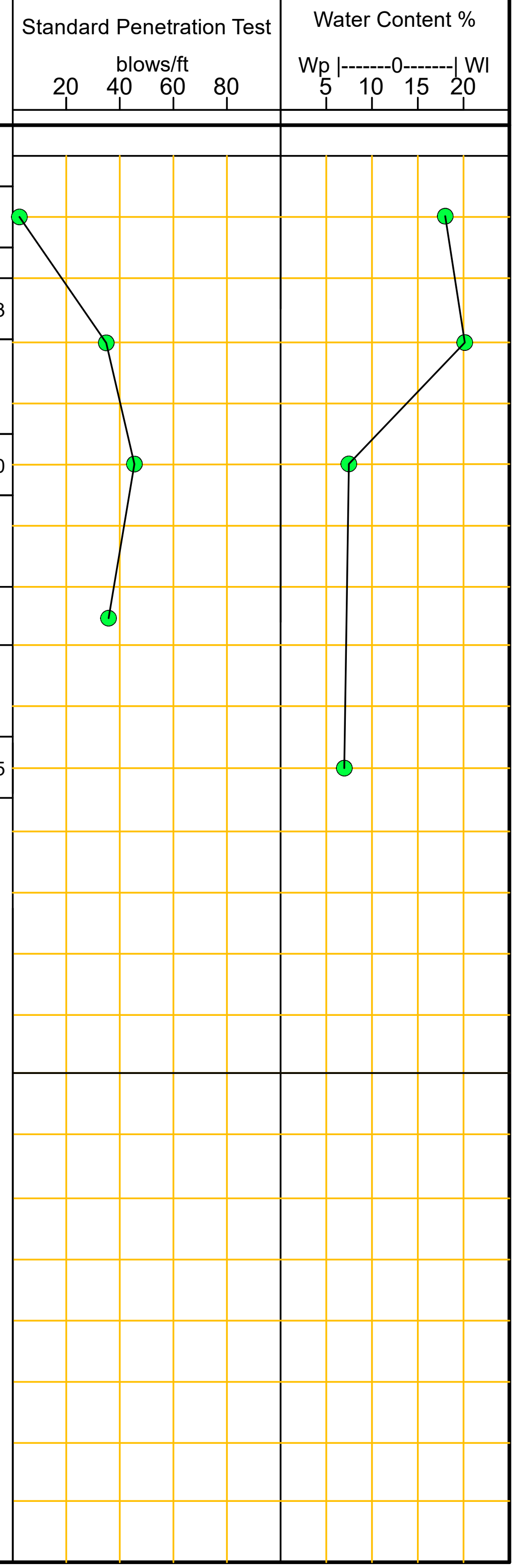
Location: Earlimart, CA

Log of Borehole: B-5

Logged by: S.P.

Company: ASR Engineering, Inc.

Depth	Symbol	Description	Notes	Number	Moisture %	Blows/ft	Density
0		Ground Surface					
0–20		***Silty Sand (SM)*** Light brown, moist, fine grain, very loose		1	17.2	2	89.1
				2	19.3	34	103.3
				3	8.8	45	129.0
				4	-	36	-
20		End of Borehole		5	8.7	-	139.5



Drill Method: CME-45: Hollow Stem Auger

Drill Date: 12/15/22

Hole Size: 6"

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E-mail: asrengineering@sbcglobal.net

Drilled by: Salem

Checked by: ASR

Figure: A-7

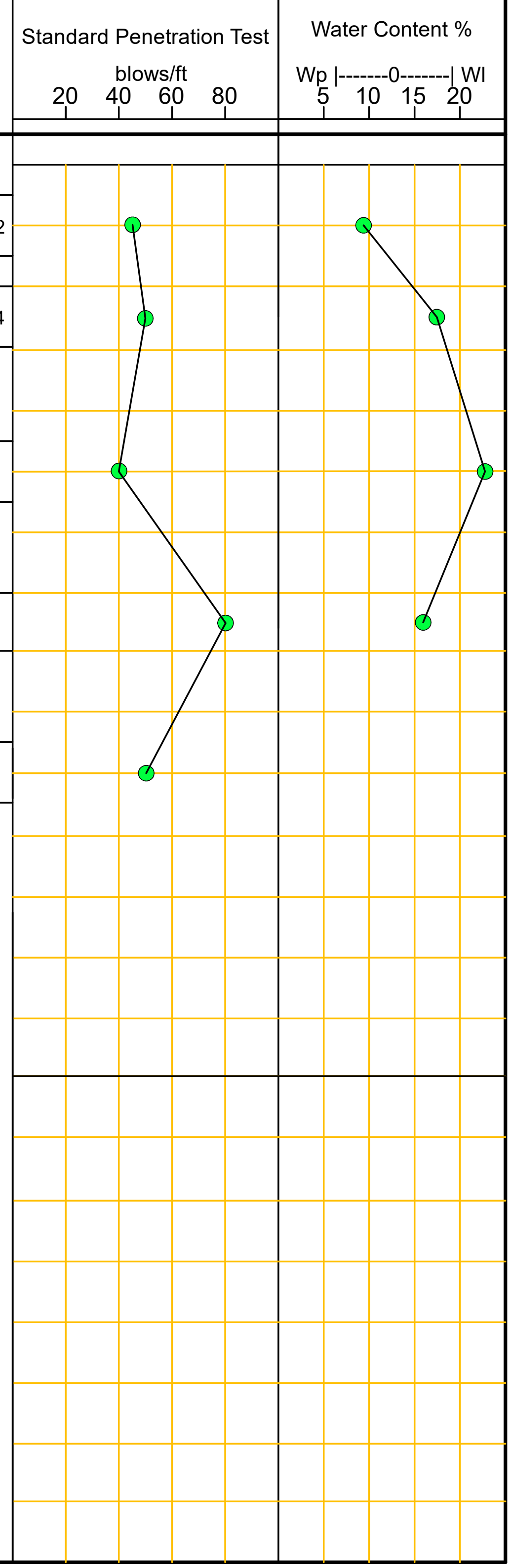
Project No:	12-22108
Project:	Treehouse Almonds
Client:	Provost & Pritchard
Location:	Earlimart, CA

Log of Borehole: B-6

Logged by: S.P.

Company: ASR Engineering, Inc.

Depth	Symbol	Description	Notes	Number	Moisture %	Blows/ft	Density
0		Ground Surface					
0–20		***Silty Sand (SM)*** Light brown, moist, coarse, dense		1	9.3	45	120.2
5				2	17.4	49	112.4
10				3	23.1	40	96.9
15				4	16.6	81	99.6
20		End of Borehole		5	-	50	-



Drill Method: CME-45: Hollow Stem Auger

Drill Date: 12/15/22

Hole Size: 6"

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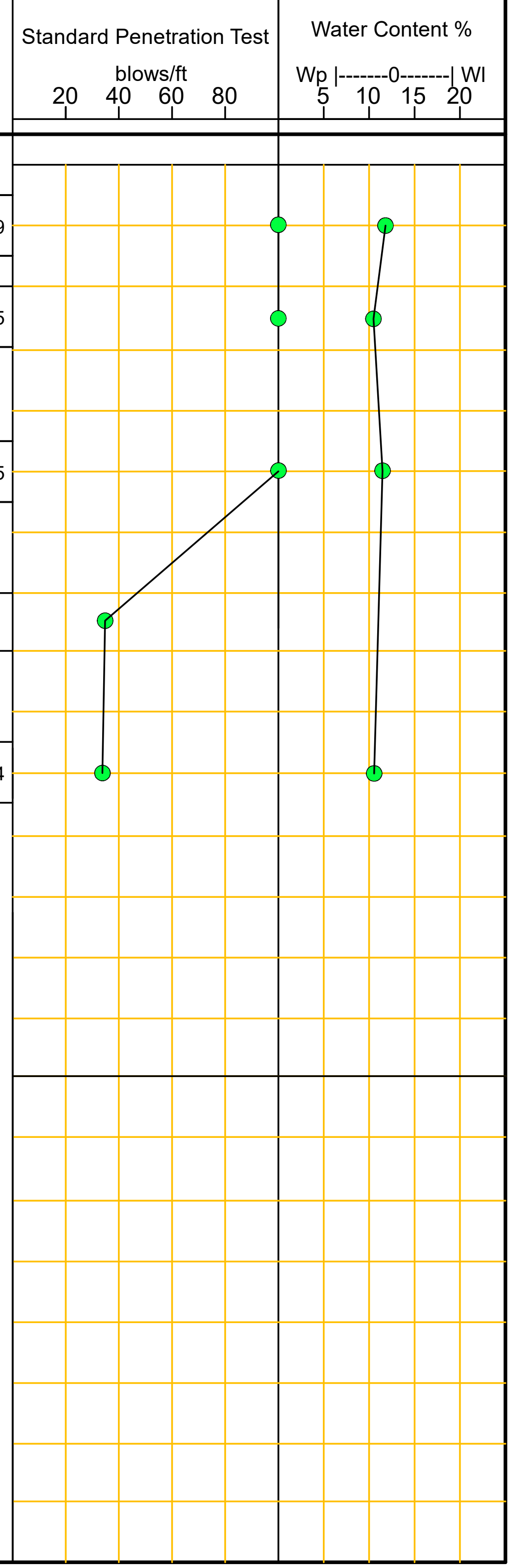
Sheet: 1 of 1

Figure: A-8

Project No:	12-22108		
Project:	Treehouse Almonds		
Client:	Provost & Pritchard	**Logged by:**	S.P.
Location:	Earlimart, CA	**Company:**	ASR Engineering, Inc.

Log of Borehole: B-7

Depth	Symbol	Description	Notes	Number	Moisture %	Blows/ft	Density
0		Ground Surface					
0–20	SM	***Silty Sand (SM)*** Light brown, moist, fine grain, very dense		1	12.4	50-5"	112.9
				2	11.2	50-5"	115.5
				3	12.3	50-5"	115.5
				4	-	35	-
20				5	11.1	34	115.4
		End of Borehole					



Drill Method: CME-45: Hollow Stem Auger	ASR Engineering, Inc.	**Drilled by:** Salem
Drill Date: 12/15/22	3629 W. Gettysburg Ave.	**Checked by:** ASR
Hole Size: 6"	Fresno, CA 93722	**Sheet: 1 of 1**

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APPENDIX "B"

APPENDIX "B"
LABORATORY TESTING

B.1 Moisture-Density Tests

The field moisture content, as a percentage of dry weight of the soils, was determined by weighing samples before and after drying. Dry densities, in pounds per cubic foot, were also determined for undisturbed core samples. The results of these determinations are shown in Table B-1.

TABLE B-1
SUMMARY OF MOISTURE-DENSITY TEST RESULTS

Test Boring	Depth, ft. bsg	Moisture %	Dry Density, pcf.
B-1	2	14.5	102.7
B-1	5	17.3	105.5
B-1	15	2.2	110.3
B-1	20	11.1	116.7
B-1	25	7.7	119.0
B-2	2	15.1	104.0
B-2	10	8.4	123.0
B-2	15	9.5	126.2
B-2	20	10.8	119.7
B-2	25	11.3	121.7
B-2	35	22.7	106.8
B-3	2	15.6	97.8
B-3	5	17.2	112.6
B-3	15	19.2	114.0
B-3	20	4.3	113.7
B-4	5	12.3	93.3
B-4	10	19.7	111.5
B-4	15	13.2	123.6
B-4	20	5.7	117.7
B-5	2	17.2	89.1
B-5	5	19.3	103.3
B-5	10	8.8	129.0
B-5	20	8.7	139.5

TABLE B-1 SUMMARY OF MOISTURE-DENSITY TEST RESULTS			
Test Boring	**Depth, ft. bsg**	**Moisture %**	**Dry Density, pcf.**
B-6	**2**	**9.3**	**120.2**
B-6	**5**	**17.4**	**112.4**
B-6	**10**	**23.1**	**96.9**
B-6	**15**	**16.6**	**99.6**
B-7	**2**	**12.4**	**112.9**
B-7	**5**	**11.2**	**115.5**
B-7	**10**	**12.3**	**115.5**
B-7	**20**	**11.1**	**120.5**
Recompacted	**2-15**	**15.9**	**115.4**

B.2 Consolidation Test

Two (2) consolidation tests were performed on soil sample collected from the respective depth of 15 feet and 5 feet bsg from the location of Test Borings B-5 and B-7. Result of the consolidation tests are shown on Figure B-1 & B-2 in Appendix "B."

B.3 Direct Shear Test

Four (4) direct shear tests were performed on soil samples collected from the respective depths of 20 feet, 15 feet, 10 feet, 5 feet below surface grade from the locations of Test Borings B-2, B-3, B-4, and B-6. In addition, one shear test was performed on a composite of site soils from the depths in the range of 2 to 15 feet. The test was conducted on the composite soil compacted to 90 percent of the maximum dry density as determined by Test Method ASTM D 1557. Results of the direct shear tests are shown on Figure B-3 through B-7 in Appendix "B."

B.4 Particle Size Analyses

Two Particle size distribution tests were conducted on a soil sample collected from the respective depth of 30 feet and 15 feet bsg from the location of Test Boring B-2 and Test Boring B-7. The tests were performed by ASTM Test Method D 422. Particle Size Distribution Diagrams are shown on Figure B-8 and B-9 in Appendix "B."

B.5 Permeability Tests

Permeability tests were performed on intact soil samples from a depth of 30 feet from the location of Test Boring B-2 and from a depth of 15 feet from the location of Test Boring B-7.

Results of Permeability tests are presented in Table B-2.

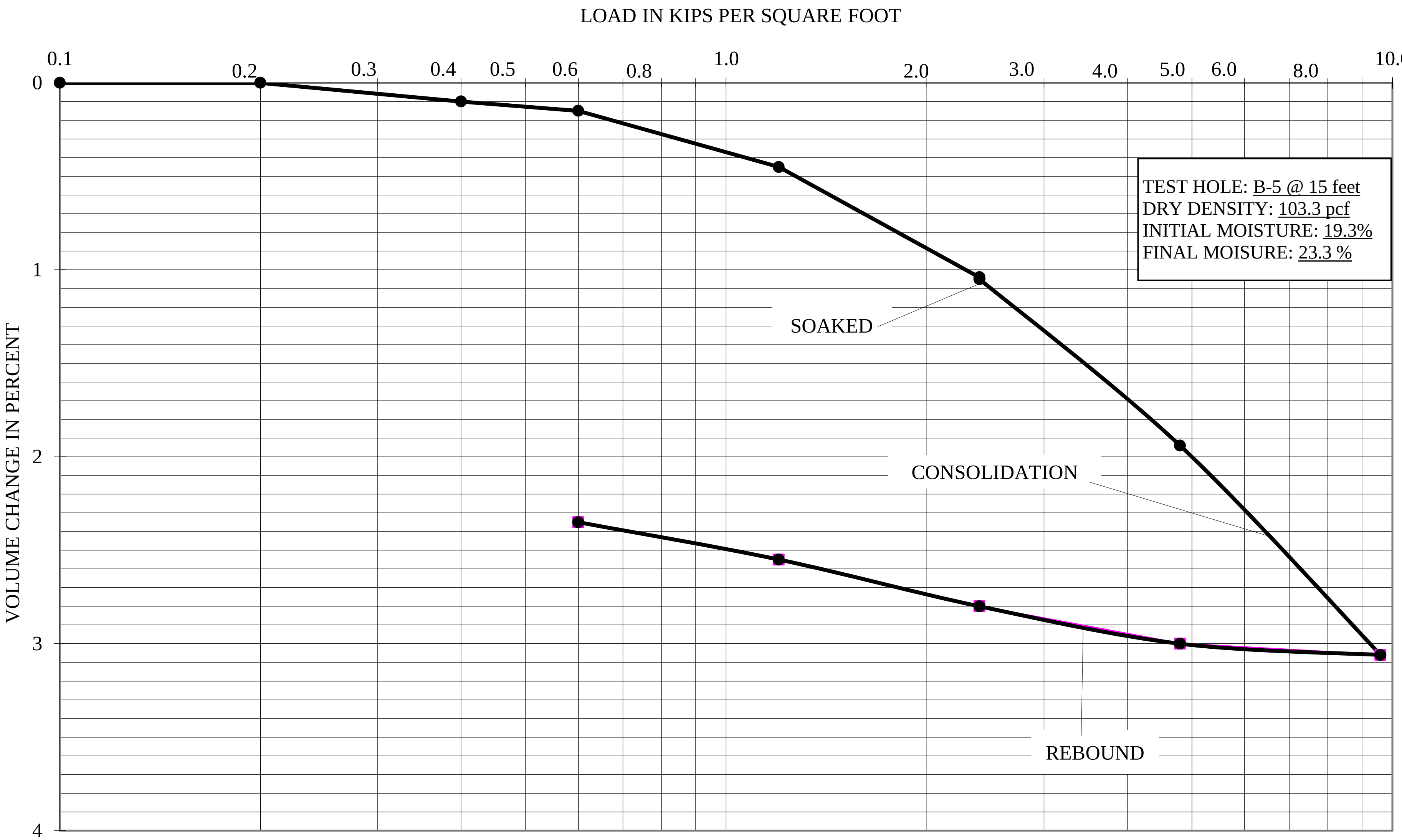
TABLE B-2 SUMMARY OF PERMEABILITY TEST RESULTS			
Sample Location	**Soil Type**	**Test Type**	**Coefficient of Permeability, k, cm/sec**
B-2@30	ML, traces of Clay	Constant Head	$8.78X10^{-8}$
B-7@15	SM, traces of Clay	Constant Head	$1.39X10^{-8}$

B.6 Soil Chemical Analyses

Results of chemical analyses performed on a soil sample obtained from Test Boring are presented in Table B-3:

TABLE B-3 SUMMARY OF CHEMICAL TEST RESULTS	
Test Designation	**Sample**
	B-3@2'
pH level	8.17
Electrical Conductance, µS/cm	782
Sulfate, mg/L	96
Chloride, mg/L	18

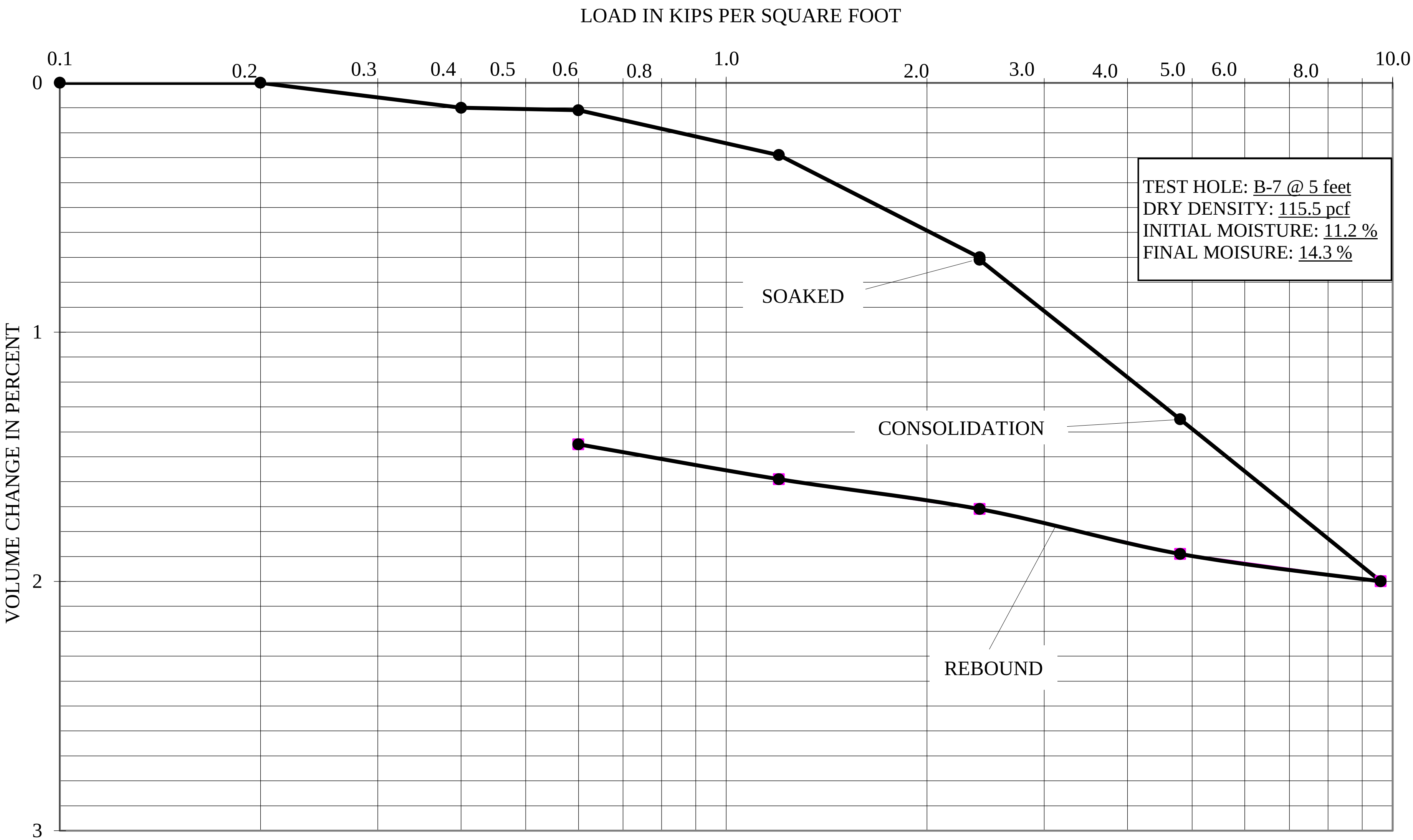
Job No. 12-22108
January 2023
Figure B-1



CONSOLIDATION - PRESSURE TEST DATA

ASR Engineering, Inc.

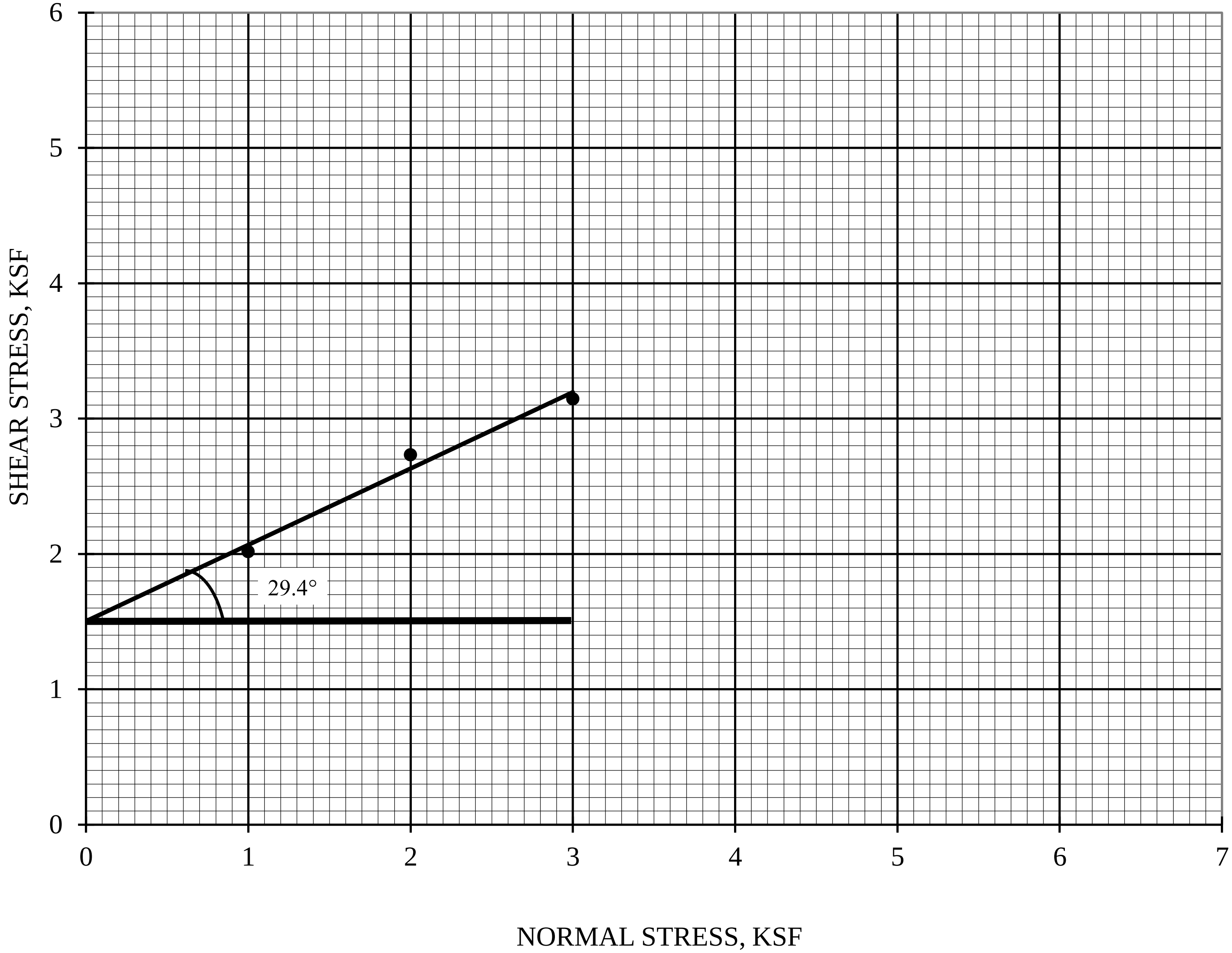
Job No. 12-22108
January 2023
Figure B-2



CONSOLIDATION - PRESSURE TEST DATA

ASR Engineering, Inc.

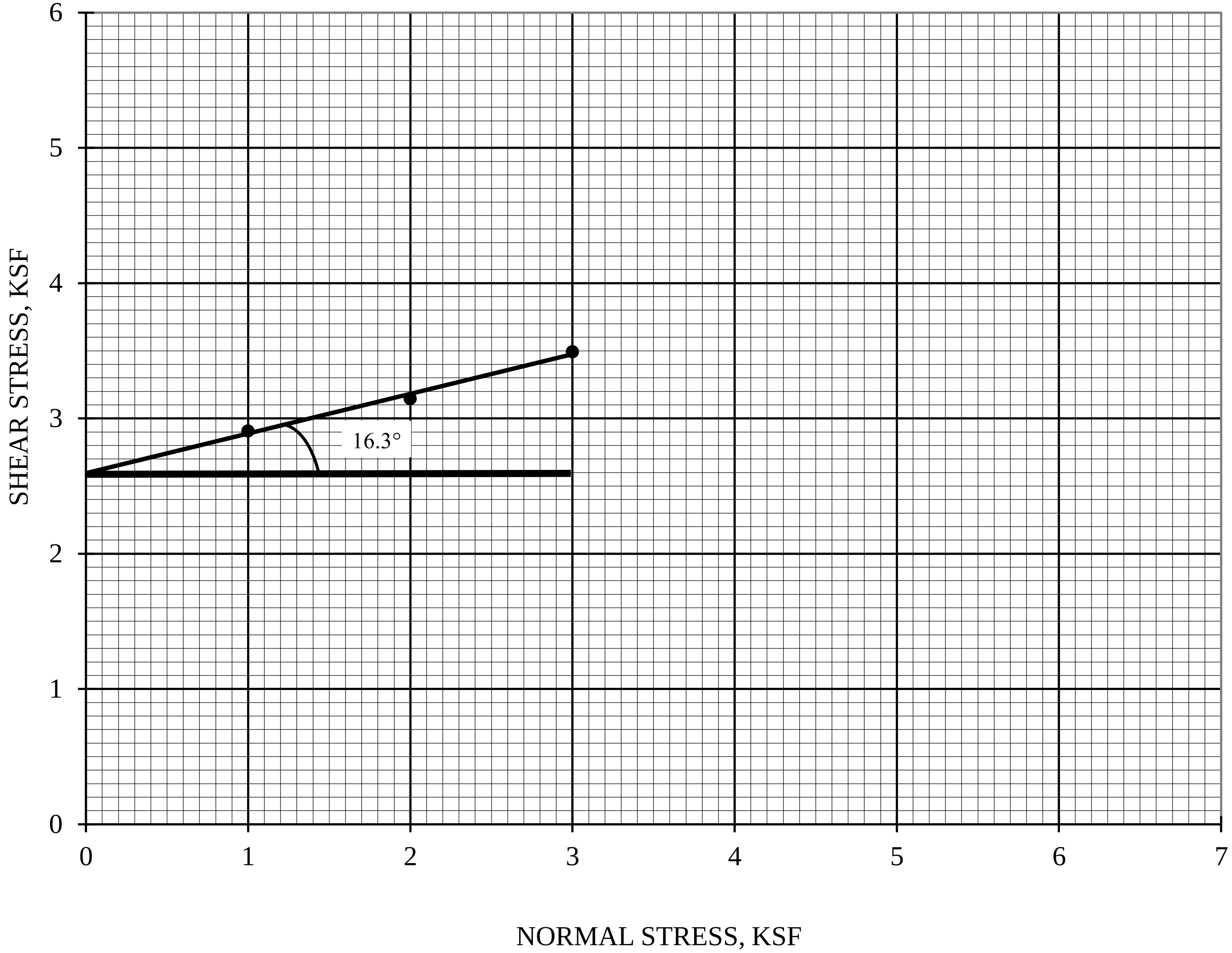
SHEAR STRENGTH DIAGRAM
(DIRECT SHEAR)



Test Boring B-2 @20'
Dry Density = 119.7 pcf
Moisture = 10.8 %
Cohesion = 1503.8 psf
Friction Angle = 29.4°

ASR Engineering

SHEAR STRENGTH DIAGRAM
(DIRECT SHEAR)

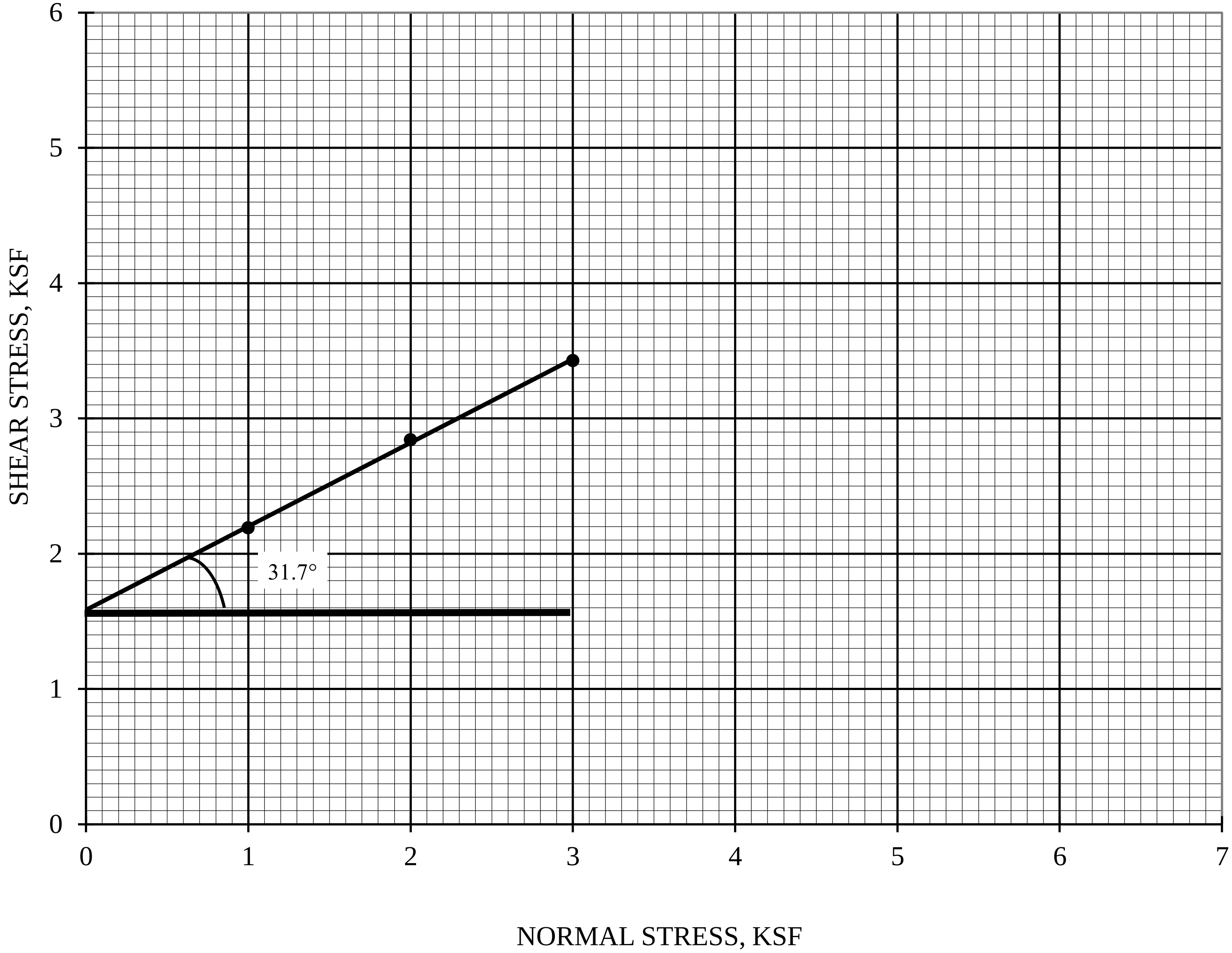


Test Boring B-3 @15'
Dry Density = 114.0 pcf
Moisture = 19.2 %
Cohesion = 2595.6 psf
Friction Angle = 16.3°

ASR Engineering

Job 12-22108
January 2023
Figure B-5

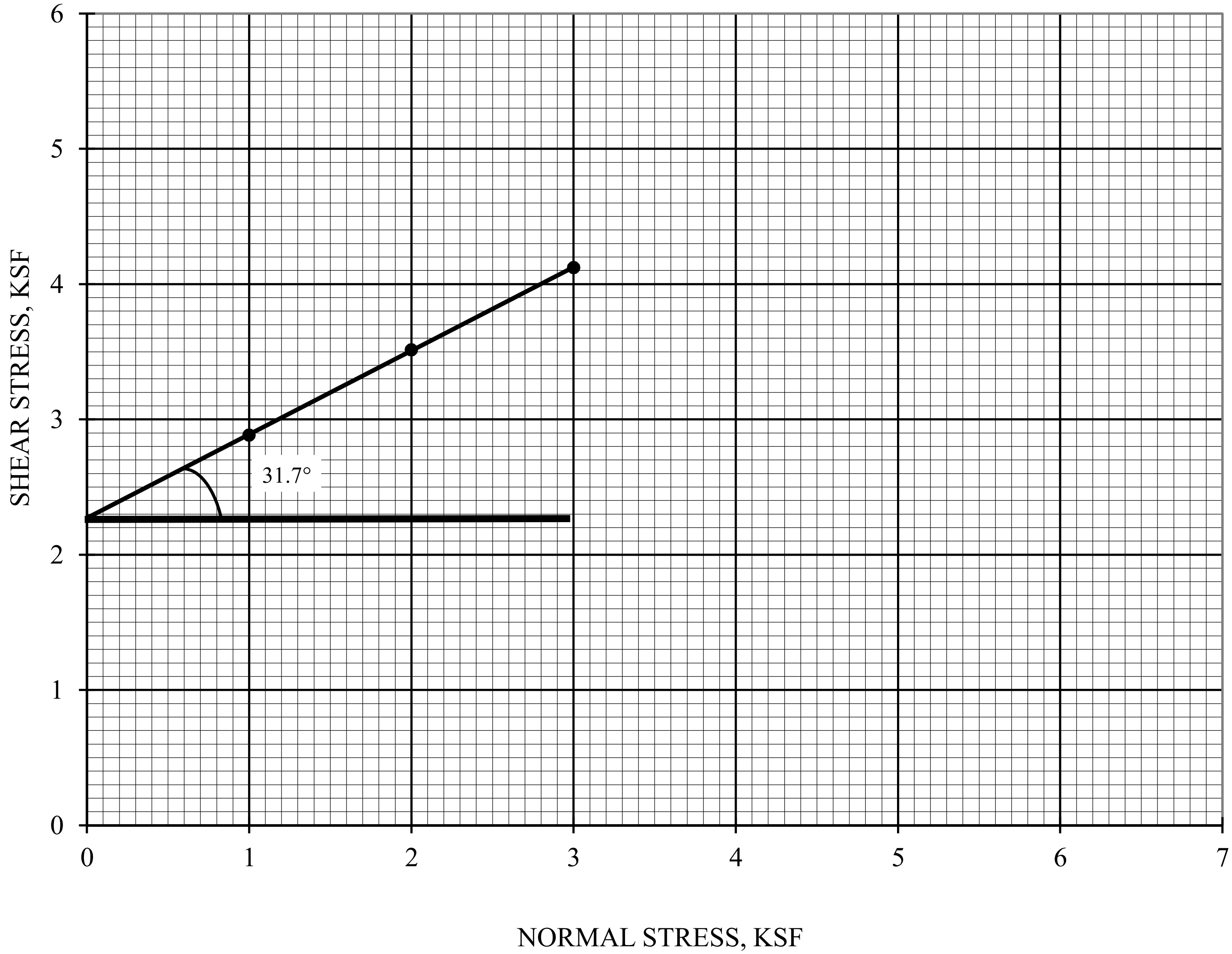
SHEAR STRENGTH DIAGRAM
(DIRECT SHEAR)



Test Boring B-4 @10'
Dry Density = 111.5 pcf
Moisture = 19.7 %
Cohesion = 1583.4 psf
Friction Angle = 31.7°

ASR Engineering

SHEAR STRENGTH DIAGRAM
(DIRECT SHEAR)

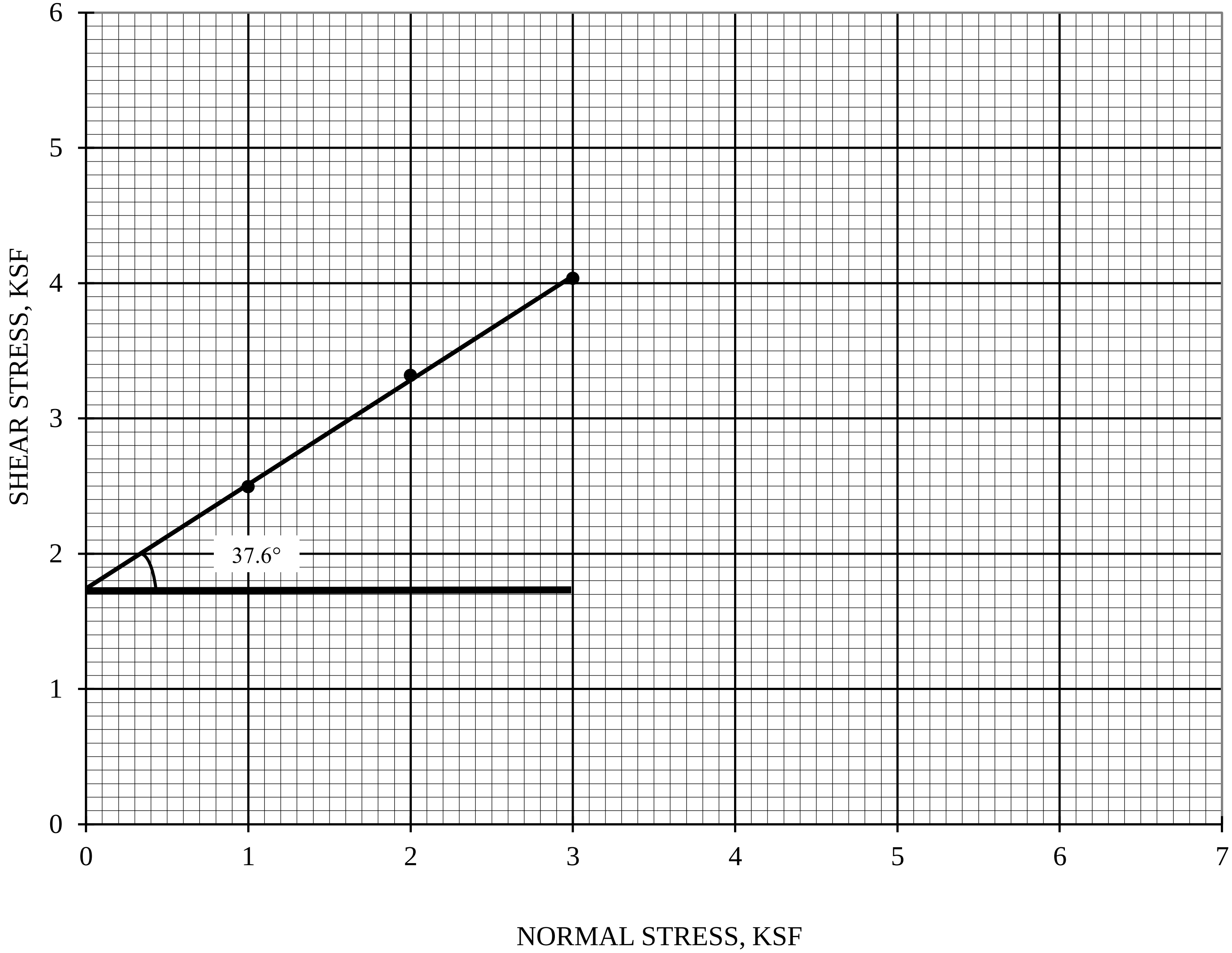


Test Boring B-6 @5'
Dry Density = 112.4 pcf
Moisture = 17.4 %
Cohesion = 2270.2 psf
Friction Angle = 31.7°

ASR Engineering

Job 12-22108
January 2023
Figure B-7

SHEAR STRENGTH DIAGRAM
(DIRECT SHEAR)



Test Boring Bulk Sample
Dry Density = 115.4 pcf
Moisture = 15.9 %
Cohesion = 1742.4 psf
Friction Angle = 37.6°

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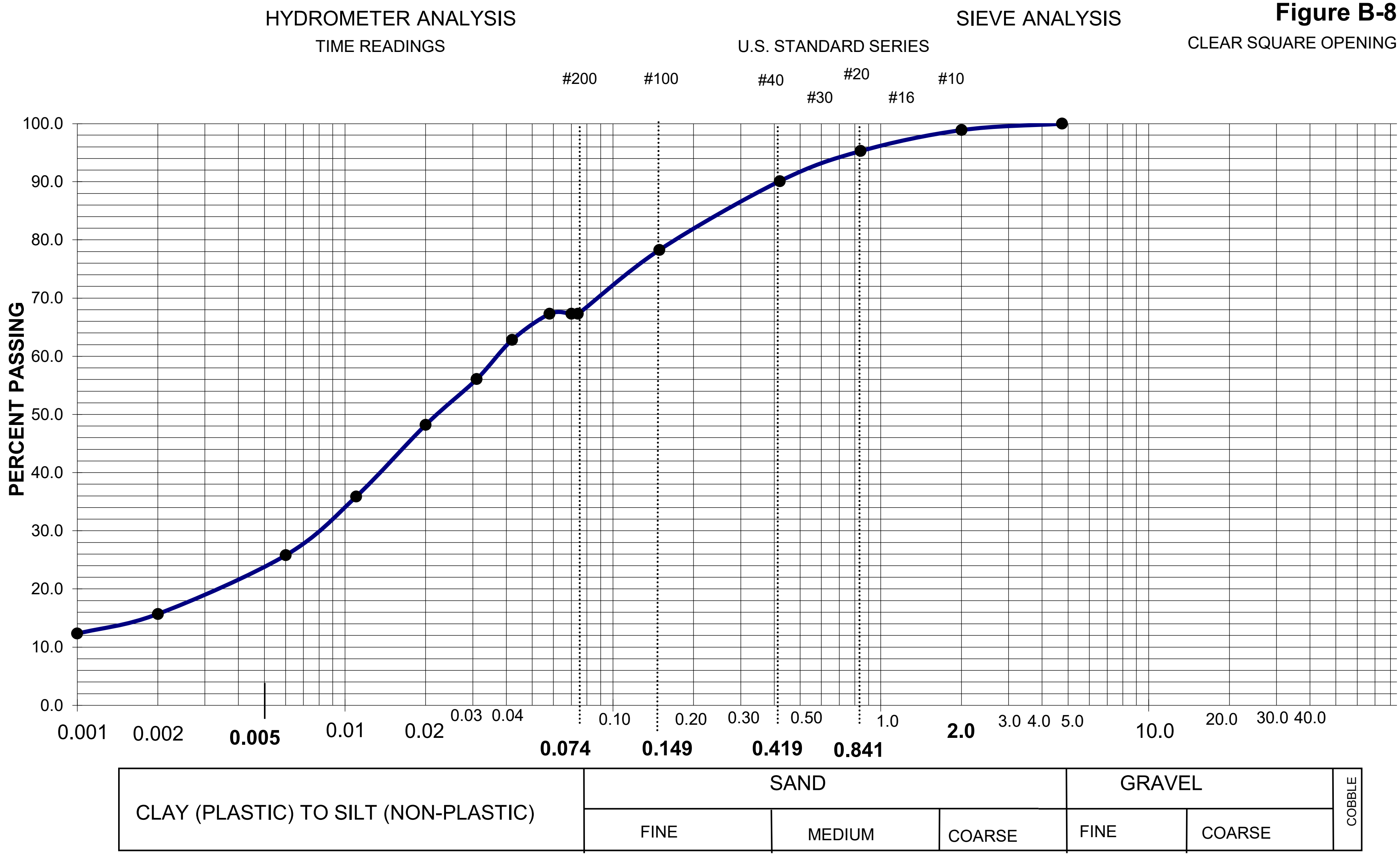
Project No. 12-22108
January 2023
Figure B-8

(B-2 @30')



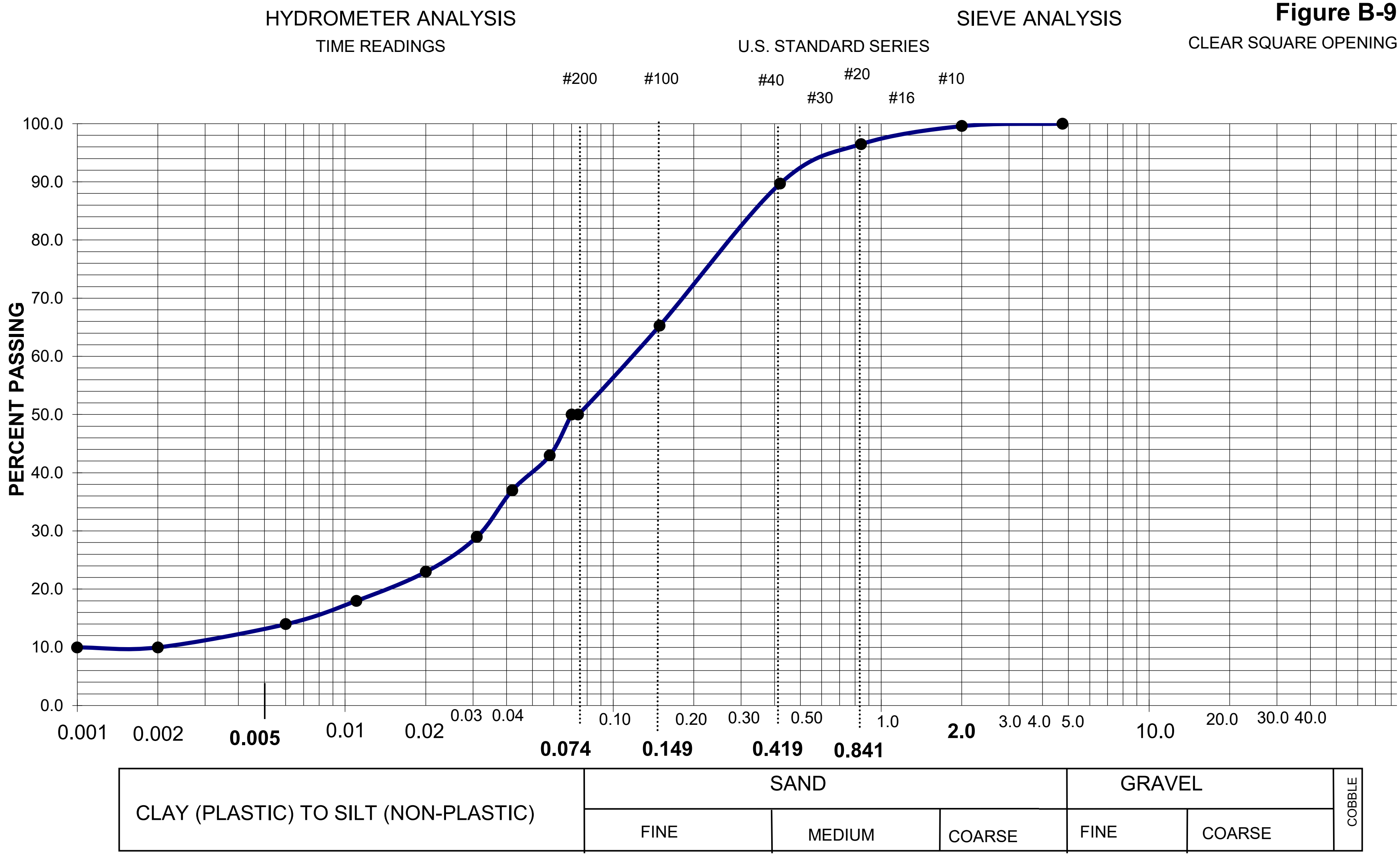
PARTICLE SIZE DISTRIBUTION DIAGRAM

% GRAVEL	% SAND	% SILT	% CLAY
0	33	41	26

ASR Engineering, Inc.

Project No. 12-22108
January 2022
Figure B-9

(B-7 @15')



PARTICLE SIZE DISTRIBUTION DIAGRAM

% GRAVEL	% SAND	% SILT	% CLAY
0	50	36	14

ASR Engineering, Inc.

Appendix E

Seepage Design Calculations

Treehouse Almonds - Anaerobic

Lagoon Design Report - Appendix E
Tier 1 Lagoon Liner
Seepage Design Calculations

Inputs

81	ft	Nominal liquid length (along drainage trench)
81	ft	Nominal liquid width (across drainage trench)
17.0	ft	Nominal liquid depth (measured at center of length)
1.8	H:1V	Side slope
1		Number of defects per 4,000 m^2
1.08E-05	m^2	Area of defect
2.0		LCRS Factor of Safety

Calculations

Potential Leakage Area

610	m^2	Considered geomembrane surface area
0.2	acres	

Leakage per defect q=0.6*a*sqrt(2*g*h)

5.18	m	Hydraulic head on liner
6.51E-05	m^3/s	Leakage per defect
7.01E-04	ft^3/s	
0.34	gpm	

Total Potential Leakage

1		Potential defects in cell
6.51E-05	m^3/s	Potential leakage per cell
0.3	gpm	
1.30E-04	m^3/s	Minimum design flow capability for cell
0.7	gpm	

Treehouse Almonds - Aeration

Lagoon Design Report - Appendix E
Tier 1 Lagoon Liner
Seepage Design Calculations

Inputs

273	ft	Nominal liquid length (along drainage trench)
80	ft	Nominal liquid width (across drainage trench)
11.0	ft	Nominal liquid depth (measured at center of length)
1.8	H:1V	Side slope
1		Number of defects per 4,000 m^2
1.08E-05	m^2	Area of defect
2.0		LCRS Factor of Safety

Calculations

Potential Leakage Area

2,029	m^2	Considered geomembrane surface area
0.5	acres	

Leakage per defect q=0.6*a*sqrt(2*g*h)

3.35	m	Hydraulic head on liner
5.24E-05	m^3/s	Leakage per defect
5.64E-04	ft^3/s	
0.28	gpm	

Total Potential Leakage

1		Potential defects in cell
5.24E-05	m^3/s	Potential leakage per cell
0.3	gpm	
1.05E-04	m^3/s	Minimum design flow capability for cell
0.6	gpm	

Treehouse Almonds - Storage

Lagoon Design Report - Appendix E
Tier 1 Lagoon Liner
Seepage Design Calculations

Inputs

472	ft	Nominal liquid length (along drainage trench)
266	ft	Nominal liquid width (across drainage trench)
25.0	ft	Nominal liquid depth (measured at center of length)
2.0	H:1V	Side slope
1		Number of defects per 4,000 m^2
1.08E-05	m^2	Area of defect
2.0		LCRS Factor of Safety

Calculations

Potential Leakage Area

11,664	m^2	Considered geomembrane surface area
2.9	acres	

Leakage per defect q=0.6*a*sqrt(2*g*h)

7.62	m	Hydraulic head on liner
7.90E-05	m^3/s	Leakage per defect
8.50E-04	ft^3/s	
0.42	gpm	

Total Potential Leakage

3		Potential defects in cell
2.37E-04	m^3/s	Potential leakage per cell
1.2	gpm	
4.74E-04	m^3/s	Minimum design flow capability for cell
2.5	gpm	

APPENDIX F

Anchor Trench and Geomembrane Material Strength Calculations

Treehouse Almonds - Anaerobic

Lagoon Design Report - Appendix F
Tier 1 Lagoon Liner
Geosynthetic Liner Material Strength and Anchor Trench Calculations

Project Properties

Soil Properties *(from geotech report)*

Density	112	lb/ft^3
Friction angle	30	deg

Liner Properties *(from material supplier)*

Thickness - liners	60	mil each (nominal)
Thickness - geonet	225	mil (nominal)
Thickness - cover	80	mil (nominal)
Yield strength - liner	126	lb/in
Density - liner	58.7	lb/ft^3

Design Method

The tensile strength of the anchor trench is based on the methods presented by Koerner, *Designing with Geosynthetics, 6th Edition, 2012*

Anchor Trench Geometry

For anchor trench geometry, see Figures 1 & 2
Anchor trench backfill will be per Geotechnical Report guidance

Results

When there is a cover, there are 3 potential angles of the cover influencing the load onto the anchor trench.
These could be down slope by weighted ballast, horizontal in-between ballasts, or in a ballooned condition.
For the case of a cover, all the results are presented. Otherwise just the down slope condition is presented.

	Down Slope (plf)	Horizontal (plf)	Ballooned (plf)
Loading on the Primary liner*	27		
Anchor trench provides	3,475		
Resulting Safety Factor	128.7	No Cover	No Cover

Anchor trench being 3.0 ft wide
4.0 ft deep
0 *plf maximum load applied to primary layer by the cover included

Conclusion

The anchor trench is sufficient for the loadings used in the calculations

Check Liner Material Strength to Down Slope Loads

Material Strength	1,512	plf
Anchor Trench Hold	3,475	plf
Liner Loading	27	plf

Load Equations for Anchor Trench *(see Figures 1 & 2)*

$\sum F_x = 0$ (equation 5.27)

$T_{all}\cos\alpha = F_{u\sigma} + F_{L\sigma} + F_{LT} - P_a + P_p$

where:

B	is load of geomembrane layers (secondary, geonet, & primary) on side slope
C	is load of cover liner provided by installer
β	is the side slope angle
Δ	is the angle of attachment of the cover to the primary liner
T	is resultant tension of B and C
T_x	is the horizontal component of T
T_y	is the vertical component of T
α	α is angle of the resultant tension of T
T_{all}	is allowable resistance force provided by the anchor trench
$F_{U\sigma}$	is the shear force above geomembrane due to cover soil
$F_{L\sigma}$	is the shear force below geomembrane due to cover soil
F_{LT}	is shear force below geomembrane due to vertical component of B and C
P_A	is active earth pressure against the backfill side of the anchor trench
P_P	is passive earth pressure against the in-situ side of the anchor trench

$F_{U\sigma}=\sigma_n\tan\delta_U(L_{RO})$

$F_{L\sigma}=\sigma_n\tan\delta_L(L_{RO})$

$F_{LT}=T_{all}\sin\alpha\tan\delta_L$

$P_A=0.5\gamma_{AT}D_{AT}^2K_A$

$P_P=0.5\gamma_{AT}D_{AT}^2K_P$

$T_{all} = (F_{u\sigma} + F_{L\sigma} - P_a + P_p)/(\cos\alpha - \sin\alpha\tan\delta_L)$

where:

γ_{AT}	is unit weight of soil in anchor trench
D_{AT}	is depth of anchor trench
L_{RO}	is width of anchor trench
σ_n	is applied normal stress from cover soil = $\gamma_{AT}D_{AT}$
δ	is angle of shearing resistance between geomembrane and adjacent material
K_A	is coefficient of active earth pressure = $\tan^2(45-\phi/2)$
K_P	is coefficient of passive earth pressure = $\tan^2(45+\phi/2)$
ϕ	is angle of shearing resistance of respective soil

Inputs for Anchor Trench Equations

C	0	plf	load of cover liner (maximum calculated to achieve 1.5 Factor of Safety)
d	19.0	ft	Pond Depth
s	1.8	H:1V	Side Slope
β	29.7	deg	Side Slope
$\Delta 1$	29.7	deg	angle of cover at weighted pipe ballasts
$\Delta 2$	0.0	deg	angle of cover midway between weighted pipe ballasts
$\Delta 3$	19.0	deg	angle of cover that is allowed to balloon
γ_{AT}	112	lb/ft^3	unit weight of soil in anchor trench
D_{AT}	4.0	ft	depth of anchor trench
L_{RO}	3.0	ft	width of anchor trench
δ_U	18		friction angle between membrane and soil (Table 5.6, *Designing with Geosynthetics*)
δ_L	18		friction angle between membrane and soil (Table 5.6, *Designing with Geosynthetics*)
ϕ	30	deg	friction angle of soil

Calculations from Anchor Trench Equations

l	38	ft	average length of sloped pond side (pond varies in depth)
B_S	11	plf	loading due to the weight of the secondary liner (weight of material x slope length)
B_G	4	plf	loading due to the weight of the geonet liner (weight of material x slope length)
B_P	11	plf	loading due to the weight of the primary liner (weight of material x slope length)
B	27	plf	loading due to the weight of the geomembrane layers
σ_n	448	plf^2	normal stress
$F_{U\sigma}$	437	plf	is the shear force above geomembrane due to cover soil
$F_{L\sigma}$	437	plf	is the shear force below geomembrane due to cover soil
K_A	0.3		is coefficient of active earth pressure
K_P	3.0		is coefficient of passive earth pressure
P_A	299	plf	is active earth pressure against the backfill side of the anchor trench; and
P_P	2,688	plf	is passive earth pressure against the in-situ side of the anchor trench.
AT	1,344	plf	is weight of anchor trench

Calculations for T and α for different cover configurations

	Δ1: (Δ = β)	**Δ2: (Δ = 0)**	**Δ3: (Δ = 19 deg)**
T	27 plf	27 plf	27 plf
α	29.7 deg	29.7 deg	-29.7 deg
T_{all}	3475 plf	3475 plf	3475 plf
$T \leq T_{all}$	OK	OK	OK

Check Anchor Trench will resist vertical force of T for different cover configurations

	Δ1: (Δ = β)	**Δ2: (Δ = 0)**	**Δ3: (Δ = 19 deg)**
T_x	3017 plf	3017 plf	3017 plf
T_y	0 plf*	0 plf*	-1724 plf
AT	1,344	1,344	1344 plf
$T_y \leq AT$	OK	OK	OK

*Assume vertical component dissipates over the distance between top of bank and anchor trench

Figure 1 Anchor Trench Components

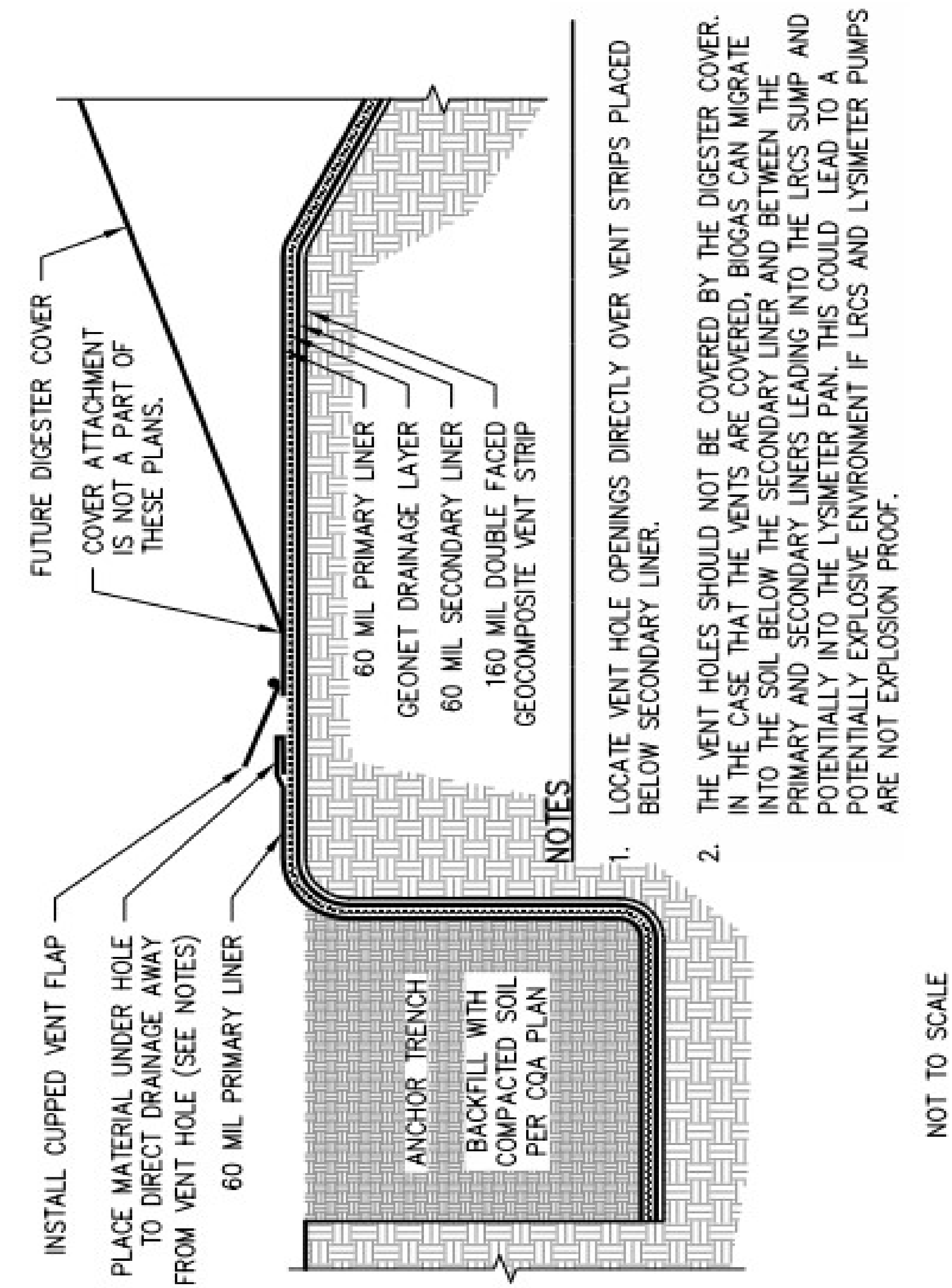
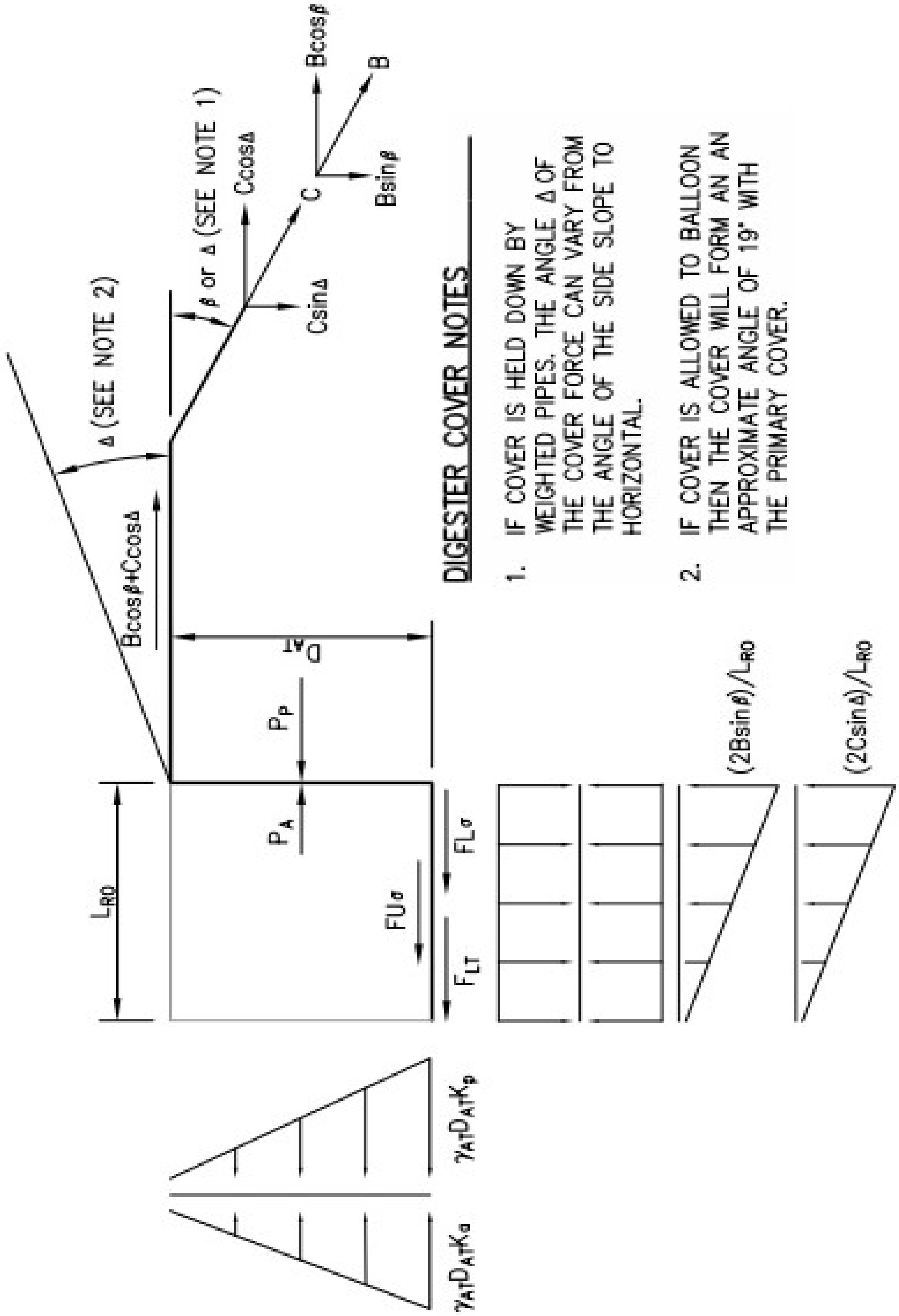


Figure 2 Anchor Trench Loads



Treehouse Almonds - Aeration

Lagoon Design Report - Appendix F
Tier 1 Lagoon Liner
Geosynthetic Liner Material Strength and Anchor Trench Calculations

Project Properties

Soil Properties *(from geotech report)*

Density	112	lb/ft^3
Friction angle	30	deg

Liner Properties *(from material supplier)*

Thickness - liners	60	mil each (nominal)
Thickness - geonet	175	mil (nominal)
Thickness - cover	80	mil (nominal)
Yield strength - liner	126	lb/in
Density - liner	58.7	lb/ft^3

Design Method

The tensile strength of the anchor trench is based on the methods presented by Koerner, *Designing with Geosynthetics, 6th Edition, 2012*

Anchor Trench Geometry

For anchor trench geometry, see Figures 1 & 2
Anchor trench backfill will be per Geotechnical Report guidance

Results

When there is a cover, there are 3 potential angles of the cover influencing the load onto the anchor trench. These could be down slope by weighted ballast, horizontal in-between ballasts, or in a ballooned condition. For the case of a cover, all the results are presented. Otherwise just the down slope condition is presented.

	Down Slope (plf)	Horizontal (plf)	Ballooned (plf)
Loading on the Primary liner*	19		
Anchor trench provides	532		
Resulting Safety Factor	28.0	No Cover	No Cover

Anchor trench being 1.5 ft wide
1.5 ft deep
0 *plf maximum load applied to primary layer by the cover included

Conclusion

The anchor trench is sufficient for the loadings used in the calculations

Check Liner Material Strength to Down Slope Loads

Material Strength	1,512	plf
Anchor Trench Hold	532	plf
Liner Loading	19	plf

Load Equations for Anchor Trench *(see Figures 1 & 2)*

$\sum F_x = 0$ (equation 5.27)

$T_{all}\cos\alpha = F_{u\sigma} + F_{L\sigma} + F_{LT} - P_a + P_p$

where:

B	is load of geomembrane layers (secondary, geonet, & primary) on side slope
C	is load of cover liner provided by installer
β	is the side slope angle
Δ	is the angle of attachment of the cover to the primary liner
T	is resultant tension of B and C
T_x	is the horizontal component of T
T_y	is the vertical component of T
α	α is angle of the resultant tension of T
T_{all}	is allowable resistance force provided by the anchor trench
$F_{U\sigma}$	is the shear force above geomembrane due to cover soil
$F_{L\sigma}$	is the shear force below geomembrane due to cover soil
F_{LT}	is shear force below geomembrane due to vertical component of B and C
P_A	is active earth pressure against the backfill side of the anchor trench
P_P	is passive earth pressure against the in-situ side of the anchor trench

$F_{U\sigma}=\sigma_n\tan\delta_U(L_{RO})$

$F_{L\sigma}=\sigma_n\tan\delta_L(L_{RO})$

$F_{LT}=T_{all}\sin\alpha\tan\delta_L$

$P_A=0.5\gamma_{AT}D_{AT}^2K_A$

$P_P=0.5\gamma_{AT}D_{AT}^2K_P$

$T_{all} = (F_{u\sigma} + F_{L\sigma} - P_a + P_p)/(\cos\alpha - \sin\alpha\tan\delta_L)$

where:

γ_{AT}	is unit weight of soil in anchor trench
D_{AT}	is depth of anchor trench
L_{RO}	is width of anchor trench
σ_n	is applied normal stress from cover soil = $\gamma_{AT}D_{AT}$
δ	is angle of shearing resistance between geomembrane and adjacent material
K_A	is coefficient of active earth pressure = $\tan^2(45-\phi/2)$
K_P	is coefficient of passive earth pressure = $\tan^2(45+\phi/2)$
ϕ	is angle of shearing resistance of respective soil

Inputs for Anchor Trench Equations

C	0	plf	load of cover liner (maximum calculated to achieve 1.5 Factor of Safety)
d	13.0	ft	Pond Depth
s	1.8	H:1V	Side Slope
β	29.7	deg	Side Slope
Δ1	29.7	deg	angle of cover at weighted pipe ballasts
Δ2	0.0	deg	angle of cover midway between weighted pipe ballasts
Δ3	19.0	deg	angle of cover that is allowed to balloon
γ_{AT}	112	lb/ft^3	unit weight of soil in anchor trench
D_{AT}	1.5	ft	depth of anchor trench
L_{RO}	1.5	ft	width of anchor trench
δ_U	18		friction angle between membrane and soil (Table 5.6, *Designing with Geosynthetics*)
δ_L	18		friction angle between membrane and soil (Table 5.6, *Designing with Geosynthetics*)
ϕ	30	deg	friction angle of soil

Calculations from Anchor Trench Equations

l	26 ft	average length of sloped pond side (pond varies in depth)
B_S	8 plf	loading due to the weight of the secondary liner (weight of material x slope length)
B_G	3 plf	loading due to the weight of the geonet liner (weight of material x slope length)
B_P	8 plf	loading due to the weight of the primary liner (weight of material x slope length)
B	19 plf	loading due to the weight of the geomembrane layers
σ_n	168 plf^2	normal stress
$F_{U\sigma}$	82 plf	is the shear force above geomembrane due to cover soil
$F_{L\sigma}$	82 plf	is the shear force below geomembrane due to cover soil
K_A	0.3	is coefficient of active earth pressure
K_P	3.0	is coefficient of passive earth pressure
P_A	42 plf	is active earth pressure against the backfill side of the anchor trench; and
P_P	378 plf	is passive earth pressure against the in-situ side of the anchor trench.
AT	252 plf	is weight of anchor trench

Calculations for T and α for different cover configurations

	Δ1: (Δ = β)	**Δ2: (Δ = 0)**	**Δ3: (Δ = 19 deg)**
T	19 plf	19 plf	19 plf
α	29.7 deg	29.7 deg	-29.7 deg
T_{all}	532 plf	532 plf	532 plf
$T \le T_{all}$	OK	OK	OK

Check Anchor Trench will resist vertical force of T for different cover configurations

	Δ1: (Δ = β)	**Δ2: (Δ = 0)**	**Δ3: (Δ = 19 deg)**
T_x	462 plf	462 plf	462 plf
T_y	0 plf*	0 plf*	-264 plf
AT	252	252	252 plf
$T_y \le AT$	OK	OK	OK

*Assume vertical component dissipates over the distance between top of bank and anchor trench

Figure 1 Anchor Trench Components

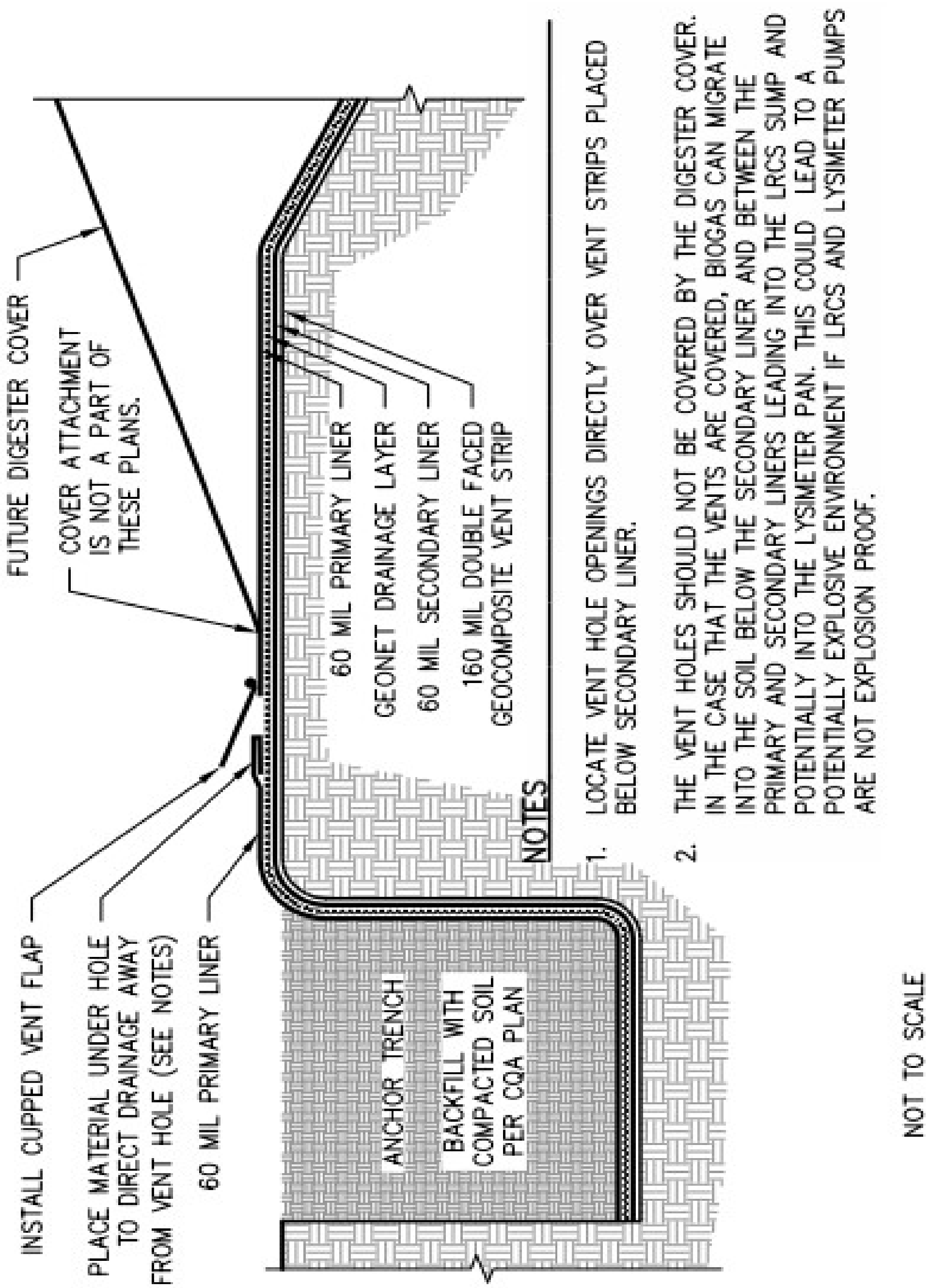
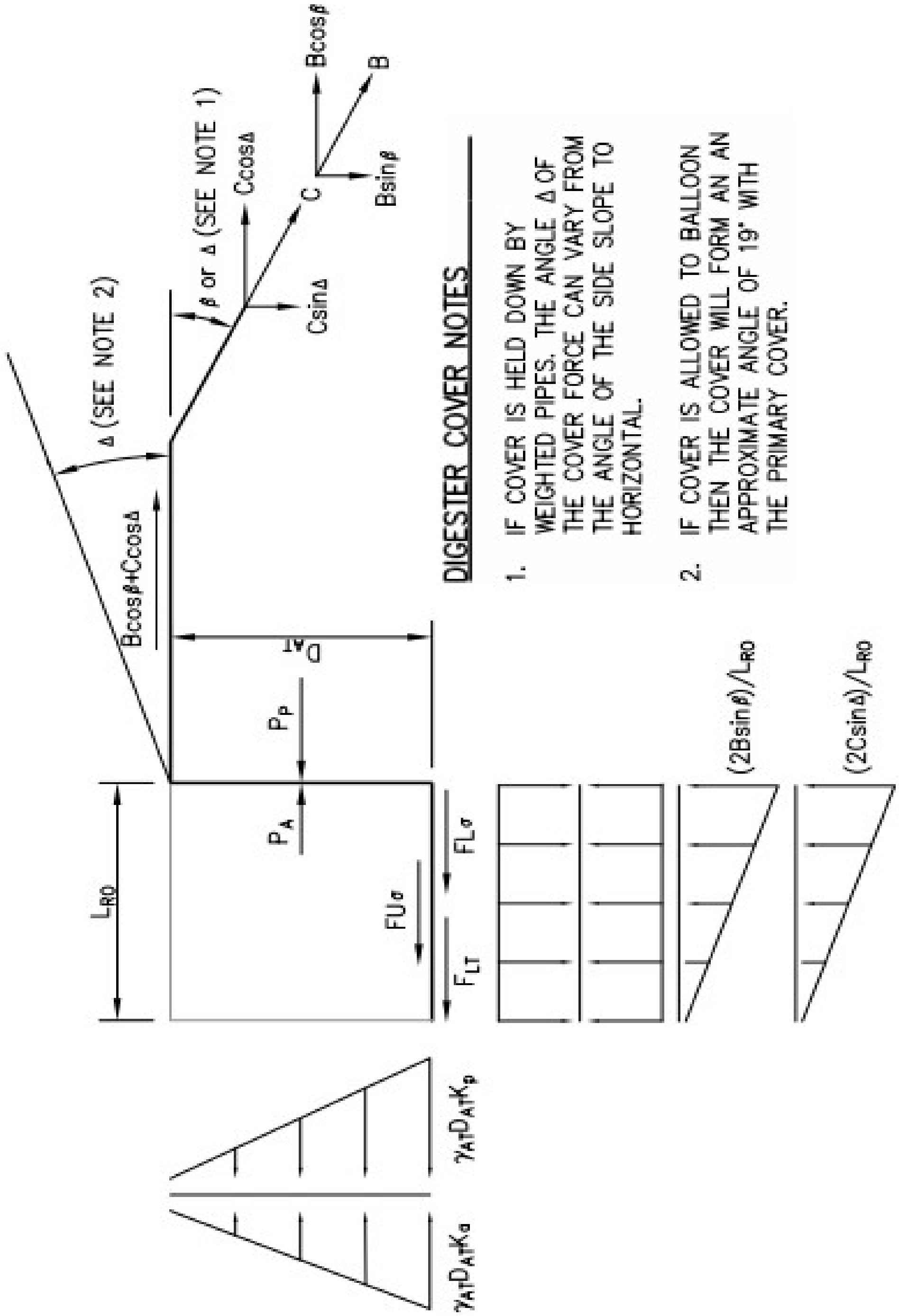


Figure 2 Anchor Trench Loads



Treehouse Almonds - Storage

Lagoon Design Report - Appendix F
Tier 1 Lagoon Liner
Geosynthetic Liner Material Strength and Anchor Trench Calculations

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Project Properties

Soil Properties *(from geotech report)*

Density	112	lb/ft^3
Friction angle	30	deg

Liner Properties *(from material supplier)*

Thickness - liners	60	mil each (nominal)
Thickness - geonet	175	mil (nominal)
Thickness - cover	80	mil (nominal)
Yield strength - liner	126	lb/in
Density - liner	58.7	lb/ft^3

Design Method

The tensile strength of the anchor trench is based on the methods presented by Koerner, *Designing with Geosynthetics, 6th Edition, 2012*

Anchor Trench Geometry

For anchor trench geometry, see Figures 1 & 2
Anchor trench backfill will be per Geotechnical Report guidance

Results

When there is a cover, there are 3 potential angles of the cover influencing the load onto the anchor trench. These could be down slope by weighted ballast, horizontal in-between ballasts, or in a ballooned condition. For the case of a cover, all the results are presented. Otherwise just the down slope condition is presented.

	Down Slope (plf)	Horizontal (plf)	Ballooned (plf)
Loading on the Primary liner*	43		
Anchor trench provides	525		
Resulting Safety Factor	12.2	No Cover	No Cover

Anchor trench being 1.5 ft wide
1.5 ft deep
0 *plf maximum load applied to primary layer by the cover included

Conclusion

The anchor trench is sufficient for the loadings used in the calculations

Check Liner Material Strength to Down Slope Loads

Material Strength	1,512	plf
Anchor Trench Hold	525	plf
Liner Loading	43	plf

Load Equations for Anchor Trench *(see Figures 1 & 2)*

$\sum F_x = 0$ (equation 5.27)

$T_{all}\cos\alpha = F_{u\sigma} + F_{L\sigma} + F_{LT} - P_a + P_p$

where:

B	is load of geomembrane layers (secondary, geonet, & primary) on side slope
C	is load of cover liner provided by installer
β	is the side slope angle
Δ	is the angle of attachment of the cover to the primary liner
T	is resultant tension of B and C
T_x	is the horizontal component of T
T_y	is the vertical component of T
α	α is angle of the resultant tension of T
T_{all}	is allowable resistance force provided by the anchor trench
$F_{U\sigma}$	is the shear force above geomembrane due to cover soil
$F_{L\sigma}$	is the shear force below geomembrane due to cover soil
F_{LT}	is shear force below geomembrane due to vertical component of B and C
P_A	is active earth pressure against the backfill side of the anchor trench
P_P	is passive earth pressure against the in-situ side of the anchor trench

$F_{U\sigma}=\sigma_n \tan\delta_U (L_{RO})$

$F_{L\sigma}=\sigma_n \tan\delta_L (L_{RO})$

$F_{LT}=T_{all}\sin\alpha\tan\delta_L$

$P_A=0.5\gamma_{AT}D_{AT}^2K_A$

$P_P=0.5\gamma_{AT}D_{AT}^2K_P$

$T_{all} = (F_{u\sigma} + F_{L\sigma} - P_a + P_p)/(\cos\alpha - \sin\alpha\tan\delta_L)$

where:

γ_{AT}	is unit weight of soil in anchor trench
D_{AT}	is depth of anchor trench
L_{RO}	is width of anchor trench
σ_n	is applied normal stress from cover soil = $\gamma_{AT}D_{AT}$
δ	is angle of shearing resistance between geomembrane and adjacent material
K_A	is coefficient of active earth pressure = $\tan^2(45-\phi/2)$
K_P	is coefficient of passive earth pressure = $\tan^2(45+\phi/2)$
ϕ	is angle of shearing resistance of respective soil

Inputs for Anchor Trench Equations

C	0	plf	load of cover liner (maximum calculated to achieve 1.5 Factor of Safety)
d	27.0	ft	Pond Depth
s	2.0	H:1V	Side Slope
β	26.6	deg	Side Slope
Δ1	26.6	deg	angle of cover at weighted pipe ballasts
Δ2	0.0	deg	angle of cover midway between weighted pipe ballasts
Δ3	19.0	deg	angle of cover that is allowed to balloon
γ_{AT}	112	lb/ft^3	unit weight of soil in anchor trench
D_{AT}	1.5	ft	depth of anchor trench
L_{RO}	1.5	ft	width of anchor trench
δ_U	18		friction angle between membrane and soil (Table 5.6, *Designing with Geosynthetics*)
δ_L	18		friction angle between membrane and soil (Table 5.6, *Designing with Geosynthetics*)
ϕ	30	deg	friction angle of soil

Calculations from Anchor Trench Equations

l	60	ft	average length of sloped pond side (pond varies in depth)
B_S	18	plf	loading due to the weight of the secondary liner (weight of material x slope length)
B_G	7	plf	loading due to the weight of the geonet liner (weight of material x slope length)
B_P	18	plf	loading due to the weight of the primary liner (weight of material x slope length)
B	43	plf	loading due to the weight of the geomembrane layers
σ_n	168	plf^2	normal stress
$F_{U\sigma}$	82	plf	is the shear force above geomembrane due to cover soil
$F_{L\sigma}$	82	plf	is the shear force below geomembrane due to cover soil
K_A	0.3		is coefficient of active earth pressure
K_P	3.0		is coefficient of passive earth pressure
P_A	42	plf	is active earth pressure against the backfill side of the anchor trench; and
P_P	378	plf	is passive earth pressure against the in-situ side of the anchor trench.
AT	252	plf	is weight of anchor trench

Calculations for T and α for different cover configurations

	Δ1: (Δ = β)		**Δ2: (Δ = 0)**		**Δ3: (Δ = 19 deg)**	
T	43	plf	43	plf	43	plf
α	26.6	deg	26.6	deg	-26.6	deg
T_{all}	525	plf	525	plf	525	plf
$T \le T_{all}$	OK		OK		OK	

Check Anchor Trench will resist vertical force of T for different cover configurations

	Δ1: (Δ = β)		**Δ2: (Δ = 0)**		**Δ3: (Δ = 19 deg)**	
T_x	470	plf	470	plf	470	plf
T_y	0	plf*	0	plf*	-235	plf
AT	252		252		252	plf
$T_y \le AT$	OK		OK		OK	

*Assume vertical component dissipates over the distance between top of bank and anchor trench

Figure 1 Anchor Trench Components

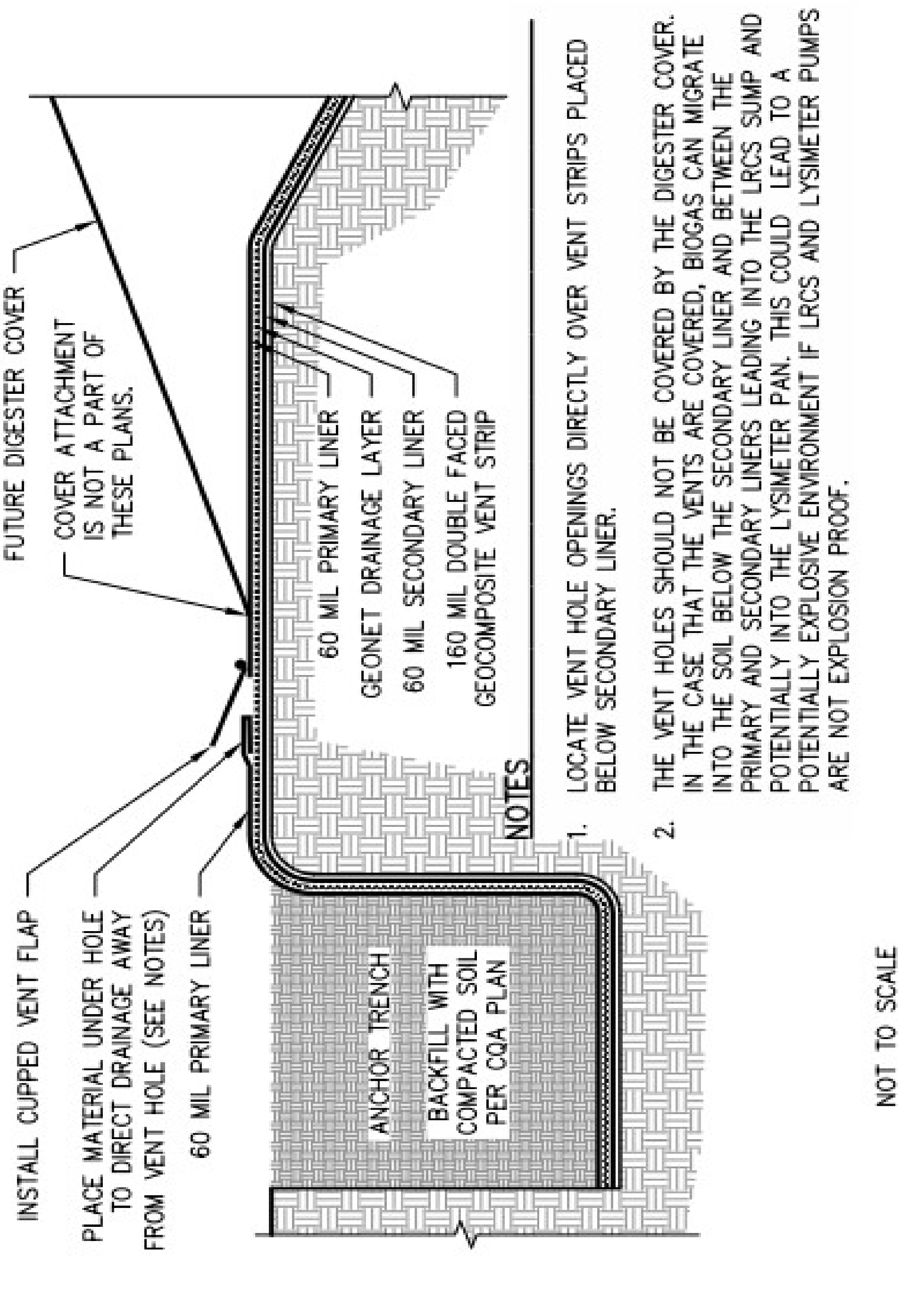
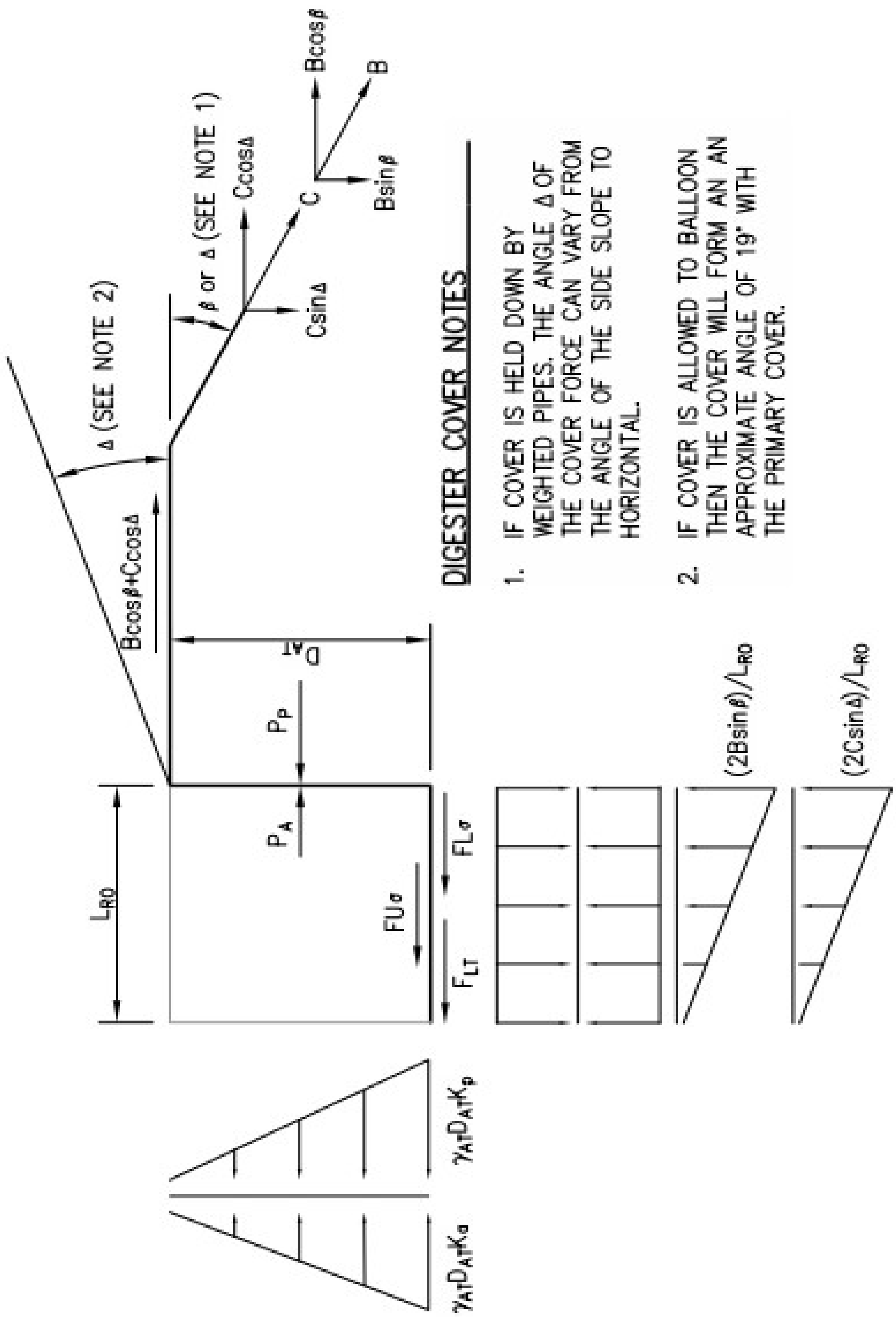


Figure 2 Anchor Trench Loads



Appendix G

Construction Quality Assurance Plan

Earthwork Specifications

Geomembrane Liner Specifications

Double Liner Earthwork Specification
For Construction of Dairy and Food Processing Ponds
In the Central Valley, RWQCB Region 5

Revision 8

Treehouse Almonds

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1.0 General

1.1 Scope

This specification defines the minimum requirements for the preparation of the earthen basin for this project. This specification along with the project drawings are approved by the Regional Water Quality Control Board (RWQCB) for this project.

Any deviation from the approved drawings and specifications must be approved by the ENGINEER prior to performing.

The CONTRACTOR shall provide labor, materials, and equipment and perform operations necessary to prepare the basin and subgrade shown on the drawings, or as directed by the ENGINEER, GEOTECH TECH, or CQA OFFICER.

1.2 Responsibilities

Description	Role/Responsibility
OWNER	The owner or representative of the site that the pond will be constructed on
ENGINEER	The individual or firm responsible for the design and preparation of the project's plans and specifications. The ENGINEER may also serve as the CQA OFFICER
GEOTECH ENGR	The engineer responsible for confirming that the earthwork performed meets the requirements identified within the Geotechnical Investigation Report he has prepared
GEOTECH TECH	The field technician working under the supervision of the Geotechnical Engineer
CONTRACTOR	The party responsible for preparing the earthwork as outlined here

CQA OFFICER	The party responsible for observing and documenting activities relating to quality assurance that the construction is accomplished in accordance with the intent of the plans and specifications
CQA CONSULTANT	The party working under the responsible charge of the CQA OFFICER. Can oversee items identified as CQA OFFICER in this specification on-site in place of the CQA OFFICER
INSTALLER	The party responsible for installing the geomembrane. During the installation of the liner, a crew chief will be the on-site contact person

1.3 Reference Standards & Codes

Latest editions of published Codes & Standards, including any other standards referenced here for on-site testing, shall apply as of the date of issue of this Specification.

ASTM C136	Standard Test Methods for Sieve Analysis of Fine and Coarse Aggregates
ASTM D422	Standard Test Methods for Particle Size Analysis of Soils
ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort
ASTM D2216	Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D2248	Standard Practice for Description and Identification of Soils (Visual Manual Procedure)
ASTM D2937	Standard Test Method for Density of Soil in Place by the Drive-Cylinder Method
ASTM D6938	Standard Test Method for IN-Place Density and Water Content of Soil-Aggregate by Nuclear Methods (Shallow Depth)

1.4 Quality System Requirements

The GEOTECH TECH and/or CQA OFFICER reserves the right to inspect the materials and workmanship at any time. Materials or workmanship found not conforming to this specification may be rejected during the execution of the work. The CONTRACTOR shall be responsible for the removal and replacement of any work that is rejected, including any other work damaged as a result.

2.0 Preconstruction Preparation

2.1 Soil Fill Materials

The GEOTECH TECH shall identify suitable fill materials and prepare compaction curves prior to the start of earthwork according to Earthwork CQA Table 1.

2.2 GPS Model

Final surface grading of the basin, minus the LCRS, needs to be accomplished by GPS controlled equipment.

The ENGINEER shall provide to the CONTRACTOR the CAD model of the grading for this project to configure to the software of his grading equipment in sufficient time prior to commencing grading work.

The ENGINEER's survey will place GPS control points at 4 outside corners minimum and provide their location data to the CONTRACTOR. These control points need to remain in place through construction.

Stakes will be placed by the ENGINEER's survey locating a north/south orientation line and an east/west orientation line (typically a corner of the upper rim) such that the CONTRACTOR can verify the software conversion to his equipment and site positioning.

2.3 Earthwork Preconstruction Meeting

An earthwork preconstruction meeting shall be held at the site prior to the commencement of earthwork.

The main purpose of this meeting is to coordinate work between the CONTRACTOR and GEOTECH TECH and to identify location of suitable fill materials and location of stockpiling excess materials.

The general timeframe and stages of the project should be discussed as to when other project tasks may occur.

At a minimum the meeting shall be attended by the CQA OFFICER, CQA CONSULTANT, CONTRACTOR, and GEOTECH TECH. Others that could be included are – OWNER, ENGINEER, GEOTECH ENGR, INSTALLER, concrete contractor, plumbing contractor, NRCS representative (if a cost-share project) and RWQCB engineer.

3.0 Basin Excavation

Note: Items identified in this specification are typical general earthwork practices along with specific items taken from the Geotechnical Report prepared for this project. If a conflict is identified, the Geotechnical Report shall supersede.

3.1 Area Preparation

The OWNER should remove remaining items from the area of the basin to be excavated. The CONTRACTOR should remove identified items in demolition sheet(s) of the drawing package.

Where applicable, the upper few inches of soil (2 to 4 inches) containing vegetation and organic matter should be stripped and removed from the basin area extending at least 5 feet outside of the project area. If organic matter is encountered to deeper depths, remove as needed.

Soils containing organic materials will not be suitable for use as borrow material of the basin or embankments.

3.2 Excavation

Excavate the basin as depicted in the drawings and to the GPS model. Maintain sufficient moisture conditions to reduce dust and needed compaction.

Over excavate floor area by 12 inches, scarify 8 inches, and replace with suitable soils as directed by the GEOTECH TECH or CQA OFFICER to GPS model depth. Side slopes remain excavated at final contours with inspection by GEOTECH ENGINEER, GEOTECH TECH, or CQA OFFICER to confirm presence of a firm and unyielding surface.

Any organic material encountered near final grade shall be removed to a depth of 3 feet on the side slopes and 5 feet on the bottom. Consult with the CQA OFFICER and GEOTECH TECH on the extent if organic material persists or if limited to near final grade.

Any sand pockets encountered near final grade shall be removed to a depth of 3 feet on the side slopes and 1 foot on the bottom or as directed by the GEOTECH TECH or CQA OFFICER.

Any soil fill material shall be from suitable materials as identified by the GEOTECH TECH, placed in uniform lifts, moisture conditioned, and compacted as identified in Earthwork CQA Table 2.

Any additional lifts should not be placed if the previous lift did not meet the required moisture and compaction. Rework the area as necessary, then continue.

3.3 Embankments

Following stripping, except for the basin area to be cut,

- if the exposed surfaces are firm then they should be scarified to a depth identified in Earthwork CQA Table 2.
- if the exposed surfaces are determined by the GEOTECH TECH or CQA OFFICER to be loose, they should be over excavated to the depth identified in Earthwork CQA Table 2, then scarify per Earthwork CQA Table 2.
- if the exposed surfaces were an active agricultural field, over excavate to the depth identified in Earthwork CQA Table 2, then scarify per Earthwork CQA Table 2.

Grade surfaces as depicted in the drawings and to the GPS model.

Any soil fill material shall be from suitable materials as identified by the GEOTECH TECH, placed in uniform lifts, moisture conditioned, and compacted as identified in Earthwork CQA Table 2.

GEOTECH TECH shall verify lifts per Earthwork CQA Table 2. Any additional lifts should not be placed if the previous lift did not meet the required moisture and compaction. Rework the area as necessary, then continue.

Final grade surfaces shall be checked by the GEOTECH ENGR, GEOTECH TECH, or CQA OFFICER for acceptance per Earthwork Table 3.

3.4 Concrete Pads

If concrete pads are part of the design, place as shown in the drawings. Receive the HDPE T-Lock from the INSTALLER and embed while placing concrete. Concrete must be vibrated when placing the T-Lock.

3.5 LCRS Center Trench and Sump

Excavate the LCRS center trench and LCRS sump as shown in the drawings. Also excavate the trench for the LCRS pipes to lay on the side slope.

> *NOTE: Take care not to drive equipment onto the liner materials.*
> *Shovels or other sharp objects are not to come into contact with the liner.*
> *Notify the INSTALLER of any observed damage to the liner material.*

In coordination with the INSTALLER continue with the construction of the LCRS system.

Once the liner and fabric are placed in the center trench, fill the trench with the stainless-steel cable, Multi-Flow pipe, and gravel to the level of the floor as shown in the drawings.

Once the bottom Lysimeter pan and fabric to the LCRS are placed, place the first sump pipe on the side slope and partially fill the sump with gravel as shown in the drawings. Backfill the side slope pipe with soil as shown in the drawings. Sandbags should be placed at the transition between gravel and soil at the toe of slope.

Once the secondary pan and fabric to the LCRS are placed and liner & geonet are installed on the side slope pipe trench, place the second sump pipe on the side slope. Run the stainless-steel cable from the center trench through the LCRS sump and alongside this second pipe and out of the basin. Completely fill the sump to floor level with gravel as shown in the drawings. Backfill the side slope pipe with soil as shown in the drawings. Sandbags should be placed at the transition between gravel and soil at the toe of slope.

Remove all unused gravel from the basin. Clean-up the working area and verify that no stones are left behind.

3.6 Pipe Penetrations

Install all pipe penetrations identified in the drawings. Backfill the pipe trenches before cutting the anchor trench in that area.

For bootless pipe penetrations, provide to the INSTALLER the section of HDPE pipe in plenty of time to install the plate. Once the plate is attached, install the assembly.

3.7 Final Surface

The final basin surface shall be smoothed by rolling or similar method to the satisfaction of the INSTALLER and CQA OFFICER. The surface shall be smooth and free of projections per Earthwork Table 3 that could damage the liner.

3.8 Adverse Weather Conditions

In the times of the year that has a potential for rain events, the CONTRACTOR should be prepared to support with pumps the removal of rainwater from the basin. Once the surface has been lined, pumping of rainwater shall be the responsibility of the INSTALLER in order to continue with liner installation. If the soil liner layer is partially complete, both parties will work together to remove rainwater and minimize the effect on the installed liner and soil surface.

3.9 Anchor Trench

When all equipment work internal to the basin is complete, cut the anchor trench to the size shown in the drawings.

Blade down the cuttings and compact so that the perimeter around the basin can be used by the INSTALLER's equipment.

4.0 Surface Acceptance

4.1 Daily Inspection

The CQA OFFICER and INSTALLER shall inspect the earthen area planned to be lined each day for acceptance. The CONTRACTOR will be responsible for repairing needed surfaces. The INSTALLER and CQA OFFICER, shall accept the soil surface, after completion of re-work if needed, on which the geomembrane will be installed that day.

4.2 Anchor Trench Fill

When lining operations are complete, the CQA OFFICER will notify the CONTRACTOR to backfill the anchor trench.

Puncture a hole in the liner on the floor of the anchor trench approximately every 20 ft with a piece of rebar or equivalent.

Backfill the anchor trench, in reasonable lifts for trenches deeper than 2 feet to begin, with uniform moisture and compact. GEOTECH TECH shall verify compaction of the anchor trench for lagoons that are to be covered.

Be very careful not to touch the lining material with equipment. If material is torn, notify the INSTALLER immediately.

4.3 All Surfaces Outside of Lagoon

Touch up the final grade of all surfaces outside of the lagoon after the anchor trench is filled.

4.4 Subgrade Report

The GEOTECH TECH shall provide observations and testing data to the GEOTECH ENGR to prepare the Subgrade Report. When complete the GEOTECH ENGR shall provide to the CQA OFFICER this report to be incorporated into the Construction Quality Assurance (CQA) Report.

Earthwork Table 1 - Soil Fill Materials[1] Evaluation

Test Parameter	Test Method	Frequency	Criteria Required
Compaction Curves	D1557	Min. 1 per 5,000 yds, 2 min. per selected area	N/A
All Fill Areas Except for Liner Layer of Single HDPE Liner	C136	Min. 1 per 500 yds	Min. 30% passing #200 sieve
Liner Layer of Single HDPE Liner	D422 (Sieve & Hydrometer)	Min. 1 per 500 yds	Min. 100% passing 3/8" sieve Min. 60% passing #200 sieve Min. 30% passing 5 micron sieve
Stone Size	Visual	Continous	Max. 3/8"
Stone Angularity	Visual	Continous	Angularity of stones that would be retained on the #10 sieve, either rounded or subrounded as defined in ASTM D2488

Notes

1 Suitable soil to be used for fill should be identified, checked, and stockpiled for use later

Double Liner Earthwork Specification
For Construction of Dairy and Food Processing Ponds
RWQCB Region 5, Revision 8

Earthwork Table 2 - Grading

Test Parameter	Test Method	Frequency	Criteria Required
Over Excavate and Prepare			
Scarify			8 inches min., moisture and compact
Over Excavate for New Embankments			
Firm area	Visual		Scarify
Loose area	Geotech or CQA Officer		Over excavate 1 foot by 2 ft out, then scarify
Agricultural field	Visual		Over excavate 3 ft by 5 ft out, then scarify
Over Excavate Floor Area			Over excavate 1 foot then scarify
Lifts/Fill			
Lift Thickness	Visual	Continous	8 inches loose, 6 inches compacted
Moisture Content			Near optimum and uniform through lift
Verify Compaction		Per lift	(see below)
In-Place Moisture and Dry Density[1,2]			
Dry Density	D6938 (Nuclear Gauge)	3 per acre min.	Min. 90% of max. dry density
			Min. 95% for driveways, roads
Moisture Content			Within 2% of optimum moisture content
Nuclear Gauge Standardization			
Standardization Method	D2216 (Oven)	Daily per Nuclear Gauge	Moisture Content in footprint of gauge within 2% of nuclear test result
Standardization Method	D2937 (Drive Cylinder)	2 per wk per Nuclear Gauge	Density in footprint of gauge within 3.5 pcf of nuclear test result

Notes

1 Not required for Double HDPE liner below grade side slopes, except for repair areas

2 Single HDPE liner applies to side slope of Liner Layer

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Earthwork Table 3 - Final Grade

Test Parameter	Test Method	Frequency	Criteria Required
Soil Texture			
All Fill Areas Except for Liner Layer of Single HDPE Liner	From Acceptable Stockpile	Finished Grade	As outlined in Earthwork Table 1
Liner Layer of Single HDPE Liner	From Acceptable Stockpile	Finished Grade	As outlined in Earthwork Table 1
Below Grade Non-Fill Surface Grade Single and Double HDPE[1]	Geotechnical Engr/Tech or CQA Officer visually inspect for firm and unyielding subgrade	Finished Grade	Side Slopes: All soils that are not amendable to a firm and unyielding subgrade shall be removed 3 ft min. and replaced with fill material
			Pond Bottom: Any soils that are not amendable to a firm and unyielding subgrade or meeting in-place density and moisture reqts, shall be removed 1 ft min. and replaced with fill material
Anchor Trench			
Cut Anchor Trench			Grade down tailings
Fill Anchor Trench with Tailings			Moisture condition and compact to 90%
Final Subgrade and Acceptance			
Rolled or Smoothed		Finished Grade	Maximum protusion height of 1/2 inch
Daily Liner Area Acceptance	Visual	Finished Grade	Liner Installer and CQA Officer accept area to be lined daily, Contractor to repair as needed

Notes
1 For side slopes of 2:1 or flatter. Steeper than 2:1 use All Fill Areas

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Double Liner Geomembrane Specification
For Construction of Dairy and Food Processing Ponds
In the Central Valley, RWQCB Region 5

Revision 16

Treehouse Almonds

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1.0 General

1.1 Scope

This specification is adapted from the *International Association of Geosynthetic Installers (IAGI) HDPE and LLDPE Geomembrane Installation Specification* for construction of double lined ponds in the Central Valley for dairies and food processors.

This specification defines the minimum requirements for the supply, installation, and testing of the geomembrane liner for this project. This specification along with the project drawings are approved by the Regional Water Quality Control Board (RWQCB) for this project.

Any deviation from the approved drawings and specifications must be approved by the ENGINEER prior to performing.

Any deviation from the approved drawings and specifications that could affect ground water quality must also be reviewed and approved by the RWQCB, as such changes could invalidate staff approval.

The INSTALLER shall provide labor, materials, and equipment and perform operations necessary to install the geomembrane liner as specified, shown on the drawings, or as directed by the ENGINEER or CQA OFFICER.

1.2 Responsibilities

Description	Role/Responsibility
OWNER	The owner or representative of the site that the pond will be constructed on

ENGINEER	The individual or firm responsible for the design and preparation of the project's plans and specifications. The ENGINEER may also serve as the CQA OFFICER
MANUFACTURER	The party responsible for manufacturing the geomembrane
INSTALLER	The party responsible for installing the geomembrane. During the installation of the liner, a crew chief will be the on-site contact person
CONTRACTOR	The party responsible for preparing the earthwork
CQA OFFICER	The party responsible for observing and documenting activities relating to quality assurance that the construction is accomplished in accordance with the intent of the plans and specifications
CQA CONSULTANT	The party working under the responsible charge of the CQA OFFICER. Can oversee items identified as CQA OFFICER in this specification on -site in place of the CQA OFFICER

1.3 Reference Standards & Codes

Latest editions of published Codes & Standards, including any other standards referenced here for on-site testing, shall apply as of the date of issue of this Specification.

ASTM D5641	Standard Practice for Geomembrane Seam Evaluation by Vacuum Chamber
ASTM D5820	Standard Practice for Pressurized Air Channel Evaluation of Dual Seamed Geomembranes
ASTM D6365	Standard Practice for the Nondestructive Testing of Geomembrane Seams Using the Spark Test
ASTM D7002	Standard Practice for Leak Location of Exposed Geomembranes Using the Water Puddle System (Water Puddle Test)
ASTM D7007	Standard Practices for Electrical Methods for Locating Leaks in Geomembranes Covered with Water of Earth Materials (Dipole Test)
ASTM D7240	Standard Practice for Leak Location Using Geomembranes with an Insulating Layer in Intimate Contact with a Conductive Layer via Electrical Capacitance Technique (Conductive Geomembrane Spark Test)
GRI GM13	Test Methods, Test Properties, and Testing Frequency for High Density Polyethylene (HDPE) Smooth and Textured Geomembranes

GRI GM19a Standard Specification for Seam Strength and Related Properties of Thermally Bonded Polyolefin Geomembranes

1.4 Qualifications

1.4.1 Manufacturer Qualifications

Materials to be used must meet or exceed the Geosynthetic Research Institute's (GRI) GM13 specifications.

The geomembrane suppliers that are approved by the ENGINEER for this project are Solmax (Solmax-GSE) and Agru America.

Other manufacturers may be considered by the ENGINEER upon submittal of project data sheets and verified to meet the GRI GM13 specifications.

1.4.2 Installer Qualifications

If an INSTALLER has not previously worked with Provost & Pritchard, the following information shall be provided to the ENGINEER.

- List of completed installations of geomembrane in the last year, including name, location, and purpose of the facility
- Thickness and quantity of the installed geomembrane
- Name and contact information of the OWNER and ENGINEER of the listed projects

1.5 Quality System Requirements

The ENGINEER and/or CQA OFFICER reserves the right to inspect the materials and workmanship at any time. Materials or workmanship found not conforming to this specification may be rejected during the execution of the work. The INSTALLER shall be responsible for the removal and replacement of any work that is rejected, including any other work damaged as a result.

The INSTALLER shall have on his crew a person assigned to quality data collection, testing, and recording. These records, or a copy of them, when the project is complete shall be turned over to the CQA OFFICER.

1.6 Warranty

The MANUFACTURER shall furnish a written geomembrane warranty, which warrants the geomembrane material for a minimum of five (5) years from the date of installation.

The INSTALLER shall furnish a written warranty of the geomembrane installation against defect in the installation and workmanship for one (1) year, commencing with the date of final acceptance of the geomembrane.

The INSTALLER shall provide warranties for the geomembrane manufacturing and geomembrane installation to the OWNER.

2.0 Preconstruction Submittals

2.1 Panel Layout

The INSTALLER shall prepare a planned installation panel layout for each liner layer and provide to the ENGINEER. The panel layout may be varied in the field from what is prepared.

The panel layout seams shall be oriented perpendicular to the side slopes. Horizontal seams should not be located on the slope to within 5 feet of the toe of slope. Corner panels should connect at a 45-degree angle down the center of the corner, minimizing horizontal seam direction as much as practical.

For designs with a center drainage trench, the secondary layer shall have a panel(s) running the length of the trench offset to one side. This will allow the equipment filling the trench with gravel not to drive over liner and fill from the side with the least amount of liner.

Geonet orientation and vent strip layouts are provided in the drawings by the ENGINEER.

Installation details provided by the ENGINEER in his drawings shall take precedent over INSTALLERS drawings, except as approved by the ENGINEER.

2.1 Planned Materials

The INSTALLER shall provide to the ENGINEER the MANUFACTURER's material technical data sheets of the planned materials for this project. These are to include at minimum the geomembrane, geonet, and geocomposite as identified in the ENGINEER's drawings.

The ENGINEER shall notify the INSTALLER approval of the planned geomembrane, geonet, and geocomposite materials.

2.2 Selected Materials

The MANUFACTURER shall provide to the INSTALLER signed Manufacture's Quality Control (MQC) test results per roll of the geomembrane selected for this project. The material shall meet or exceed the properties identified in Liner CQA Table 1.

The MANUFACTURER shall provide to the INSTALLER signed Manufacture's Quality Control (MQC) test results per roll of the geonet selected for this project. The material shall meet or exceed the properties identified in Liner CQA Table 2.

The INSTALLER shall provide to the ENGINEER the MANUFACTURER's MQC test results received of the geomembrane and geonet for approval prior to shipment to the site.

2.3 Conformance Testing

The RWQCB has waived independent laboratory testing of representative samples of the selected geomembrane and geonet materials prior to shipment to the site. This was confirmed to P&P as of December 2019.

3.0 Liner Installation

3.1 Material Receiving and Storage

Rolls of geomembrane, geonet, and geocomposite will be prepared to ship by appropriate means to prevent damage to the material during transit.

Rolls of geomembrane, geonet, and geocomposite received shall be placed at a convenient location at the project site and stored in a manner to prevent damage.

The CQA OFFICER shall perform an inventory of received material comparing it to the MQC documentation. Damaged materials from handling shall be identified and brought to the INSTALLER's attention.

3.2 Liner Preconstruction Meeting

A liner preconstruction meeting shall be held at the site prior to the installation of the geomembrane. This should be done in a timeframe of nearing completion of the earthwork and an anticipated completion timeframe is relatively known.

The main purpose of this meeting is to coordinate work between the CONTRACTOR completing the earthwork tasks and the INSTALLER preparing to begin liner work.

At a minimum the meeting shall be attended by the CQA OFFICER, CQA CONSULTANT, CONTRACTOR, and INSTALLER. Others that could be included are –

OWNER, ENGINEER, geotechnical technician, concrete contractor, plumbing contractor, NRCS representative (if a cost-share project) and RWQCB engineer.

3.3 Subgrade Acceptance

The CQA OFFICER and INSTALLER shall inspect the earthen area planned to be lined each day for acceptance. The CONTRACTOR will be responsible for repairing needed surfaces. The INSTALLER and CQA OFFICER, shall accept the soil surface, after completion of re-work if needed, on which the geomembrane will be installed that day. This will be recorded on a *Certificate of Acceptance of Soil Subgrade Surface* memorandum supplied by the CQA OFFICER.

In the times of the year that has a potential for rain events, the CONTRACTOR should be prepared to support with pumps the removal of rainwater from the basin. Once the surface has been lined, pumping of rainwater shall be the responsibility of the INSTALLER in order to continue with liner installation. If the soil liner layer is partially complete, both parties will work together to remove rainwater and minimize the effect on the installed liner and soil surface.

If a rain event is eminent and partial subgrade is still exposed, the INSTALLER shall devote all resources possible to “black-out” the surface prior to the rain event.

3.4 Adverse Weather Conditions

Geomembrane deployment shall proceed between ambient temperatures of 32 and 104 degrees F measured 1 foot above the liner. Placement and seaming can proceed outside those limits after it has been verified by the INSTALLER and CQA OFFICER that satisfactory trial welds can be seamed.

Geomembrane deployment shall not be done during precipitation events or in the presence of excessive moisture (fog, dew) such that the seaming area cannot be dried prior to seaming. Seaming can proceed after it has been verified by the INSTALLER and CQA OFFICER that satisfactory trial welds can be seamed.

Geomembrane deployment shall not be done during the presence of excessive winds, as determined by the INSTALLER.

3.5 General Installation of Liner Material

A member of the INSTALLER’s crew shall be assigned to document the following minimum items as they occur. Data sheets are provided in this specification if the INSTALLER does not have equivalent data sheets.

- Trial welds including date, time, operator id, machine id, temp, speed, peel and shear results
- Panel number, map of location, and the roll number of the panel
- Wedge weld seams including date, time, panels id, operator id, machine id, temp, and speed
- Air channel test of wedge seams including date, panels id, start time & pressure, stop time & pressure, results
- Destruct samples including sample id, panels id, machine id, operator id, peel and shear results
- Repair/Patch seams including date, repair id, panels id, operator id, machine id, repair type (seam corner patch, repair patch, extrusion bead repair, cap strip)
- Vacuum test of repairs/patches including date, repair id, results

Vent strips shall be placed as presented by the construction drawings prepared by the ENGINEER prior to geomembrane deployment covering soil. Lay out these strips as to what is anticipated to be covered by liner material in a day, for they easily move with wind. Mark the backside of the anchor trench as to the location of these strips.

Geomembrane shall be rolled out into location and seamed to adjoining panels with 4 to 6 inches of overlap. Either end of the panel or both shall be allowed to expand and contract, through sandbags, etc. at least one day/night thermal cycle prior to a final tie-in or permanent anchoring. Panels seamed together that are perpendicular to other seamed panels such as a side and corners, shall have the tie-in seam left open through a thermal cycle and shall be seamed in the cool of a morning when the material is most contracted.

As the geomembrane is rolled out and cut into a panel, the panel number and roll number shall be identified in a visible location to be recorded and mapped.

For a conductive layer, electrically connect panel to panel by placing a piece of conductive liner with the conductive layer facing up underneath crossing a seam. If the electrically connecting piece is placed on a slope such as a corner area, place piece at a corner patch and heat bond in place so that it does not dislodge.

Un-seamed edges during period of work stoppage, such as end of shift or an un-worked end, shall be sufficiently sand bagged to prevent uplift from winds.

In the cool of a morning, observation for “trampolining”, where the liner is not in contact with the surface below, shall be repaired if found so that the liner makes contact.

Geonet shall be deployed in an orientation presented by the construction drawings prepared by the ENGINEER. These shall be zip-tied together with about 4 to 6 inches minimum of overlap. Zip-ties shall be spaced approximately 5 feet on the sides and approximately 1 foot on the ends. Zip-tie ends shall lay flat on the geonet.

Personnel working on the geosynthetic materials shall not smoke or wear damaging shoes.

No vehicular traffic will be allowed on the geomembrane, except for rubber tired ATV's if the wheel contact pressure is less than 8 psi.

3.6 Seaming

Trial welds of each machine to be used shall be satisfactorily completed at the beginning of a work period prior to welding any panels or repair/patches.

Welding shall be done with a double hot wedge welder producing an air gap channel in-between the pressure rollers wherever possible. Extrusion welding shall be done where fusion welding is not possible or practicable.

The seam contact areas need to be clean and dry prior to seaming.

Liner that is on soil surface needs to be seamed with a temporary pull-along liner barrier between the soil surface and the liner material to be seamed.

Panel end seams shall be avoided within 5 feet from toe of slope. Horizontal seaming shall also be avoided on the side slopes and with as much vertical pitch as practical in the corner areas.

Seams shall be marked on the liner as to seam date, start and stop time, operator, machine, temp, and speed to record this information later in the data sheets.

3.7 LCRS Center Trench and Sump

The CONTRACTOR will excavate the center trench, LCRS sump and the trench for the LCRS pipes to lay on the side slope.

In coordination with the CONTRACTOR continue with the construction of the LCRS system.

When ready with the center trench, install short vent strips laid out per the drawing perpendicular the center trench and then place the secondary liner into the center trench and then the fabric per the drawings. The CONTRACTOR will then fill the center trench. Wrap the fabric over the gravel when complete.

When ready with the LCRS sump, install the Lysimeter Pan. Seam and vacuum test this pan, then place the fabric. The CONTRACTOR will fill the Lysimeter Pan with gravel.

When ready to continue with the LCRS sump, place fabric over the gravel. Install the secondary layer into the sump and up the side slope. Seam and vacuum test this pan, then place the fabric. Also place the geonet on the side slope pipe trench. Place fabric over the gravel when the CONTRACTOR is complete.

3.8 Pipe Penetration Boots

Pipe boots will wrap the pipe with liner material and connect to the liner as shown in the ENGINEER's drawings. At the base of the boot and along any seam that can't be vacuum tested, a wire shall be installed prior to extrusion welding to be tested after welding by a spark test, ASTM D6365. All seams shall be extrusion welded after heat bonding the seams and lightly grinding. Vacuum test all available seams.

3.9 Bootless Pipe Penetration Assembly

The CONTRACTOR is to provide to the INSTALLER the HDPE section of pipe for this penetration. The INSTALLER will provide the HDPE plate.

The HDPE plate is to be cut and fitted to the HDPE pipe section at the correct slope and location on the pipe as shown in the ENGINEER's drawings. At the base connecting joint, both sides, install a wire prior to extrusion welding to be tested after welding by a spark test, ASTM D6365. Lightly grind and extrusion weld the pipe and plate together.

The CONTRACTOR will install this assembly when ready.

3.10 HDPE Joints to Liner

HDPE plate for bootless pipe penetrations, HDPE T-lock embedded into concrete, or other uses of HDPE joining to liner mechanisms, the area of joining needs to have the liner heat bonded to the joint, lightly ground, and then an extrusion bead applied all around. The joint area is to be vacuum tested when complete.

For the primary layer following the extrusion welding and vacuum test, install a cap over the joint, extrusion weld, and vacuum test.

3.11 Panel Corner Patches

Fusion welded seam end points to a panel are to be covered with a patch after the seam air channel testing is completed. The patch is to be heat bonded to the liner, edges lightly ground, then an extrusion bead applied all around. The patch is to be vacuum tested when complete.

Corner patches shall be marked on the liner as to their sequential number to be recorded in the data sheets.

For the primary layer, panel corner patches following the extrusion welding and vacuum testing of the patch, install a second patch over the first, extrusion weld, and vacuum test.

4.0 Testing

4.1 Trial Welds

Sample seams shall be approximately 10 feet long for fusion welding and approximately 3 feet long for extrusion welding.

4 specimens shall be cut from each end of the test seams. 2 specimens shall be used to test for shear and 2 specimens for peel. Each specimen shall be 1-inch wide and tested per standard protocols (ASTM D6392) and test equipment on site. All the specimens shall pass the criteria identified in Liner CQA Table 3 (GRI GM19a).

If a trial seam fails, the equipment shall not be used until the deficiencies are corrected and a successful trial weld is achieved.

Trial welds shall be recorded in data sheets.

4.2 Air Channel Test

Wedge weld seams shall be air channel tested per ASTM D5820. 25 to 30 psi of pressure shall be held for a minimum of 5 minutes. The opposite side to the pressurizing side should be used to deflate the air channel – validating that pressure was applied for the whole length.

If the seam fails to hold pressure, locate the faulty area and successfully test to either side of the failed point. The faulty area needs to be identified and recorded for repairs in the data sheets.

The liner shall be marked at the pressurizing side as to the test date, start time & pressure, stop time & pressure, and results. This information is to be recorded in the data sheets.

4.3 Vacuum Test

Extrusion seams shall be vacuum tested per ASTM D5641. Sufficient soapy solution shall be applied to the area being tested. Vacuum shall be achieved for 5 to 10 seconds.

If air bubbles are seen that seam area has failed. The faulty area needs to be identified and recorded for repairs in the data sheets.

The liner area is to be marked with the test date and results. This information is to be recorded in the data sheets.

4.4 Destruct Test

Destruct samples shall be taken from finished seams at approximately 500-foot intervals per machine. Floor area or anchor trench are preferred areas. Side slopes should be avoided especially within 20% of length near toe of slope since that is where wrinkles tend to form on the slope. INSTALLER and CQA OFFICER shall together decide on appropriate locations.

The 500-foot length determines potential rework length, in BOTH directions, if a destruct fails. So, it is best to not overdue the interval. And for length intervals under 500 feet, a patch repair is not as robust of a seam as the wedge weld, so too short of an interval should be minimized as well.

A 2 foot long by 1 foot wide sample shall be taken with the seam central in the width. The destruct number shall be marked on the liner adjacent to the removed section. The repair needed shall be recorded in the data sheets. On the sample taken, the center foot shall be marked with the sample id, panels id, machine id, and operator id.

The outer 2 sides of the entire 6-inches (5 samples each side) shall be tested on site in the same manner as the trial welds. Test results shall be recorded in the data sheet. If the seams pass, the remaining center section shall be sent by the CQA OFFICER to an independent lab for controlled environment testing using ASTM D6392.

4.4.1 If Destruct Sample Fails

The INSTALLER shall stop the use of that machine immediately. The machine needs to be inspected and repaired for the discrepancy. It can be used again, after passing trial welds.

The installed seam by that machine needs to be investigated in BOTH directions to the next destruct sample that passed. The INSTALLER and CQA OFFICER need to determine appropriate locations to take more destruct samples and test in the same manner as outlined prior. Samples should not be taken at less than 10 feet from the failed destruct sample.

Once the further destruct samples are found to be good, the portion of failing seam length needs to be cap stripped, or cap strip all failing seam length to minimize the number of destruct samples taken in the investigation process.

4.5 Panel Leak Check of Finished Layer

4.5.1 Secondary Layer

For dairy and food processors ponds within RWQCB Region 5 it is accepted as sufficient practice to perform visual observation for defects of each panel meets the intent of the panel leak check of the secondary layer.

4.5.2 Primary Layer

A bare geomembrane integrity survey in accordance with ASTM D7240 will be performed by the INSTALLER and observed by the CQA OFFICER.

The panels are the target of this test for the seams have already passed testing by either air channel or vacuum box. False indications can occur at seams due to the electrical field disruption cause by gaps in the conductive layer.

If “hits” are found by the electrical survey equipment, verify/confirm by vacuum box testing. If a leak is confirmed, the liner in the area of the leak needs to be marked and recorded for repairs.

5.0 Liner Defects, Patches, and Repairs

5.1 Visual Inspections

All seams and non-seam areas of the geomembrane shall be inspected by the CQA OFFICER for defects, holes, blisters, and any sign of contamination by foreign matter. Any discrepancy noted shall be brought to the attention of the INSTALLER to be marked and recorded for repairs in the data sheets.

5.2 Wrinkles

Wrinkles that can fold over and do not contract sufficiently in cool temperature, shall be repaired by cutting out the excess material and fusion seaming or cap stripping. This condition shall be marked on the liner and recorded for repairs in the data sheets.

5.3 Small Repairs

An extrusion bead repair is acceptable for visual discrepancies, defects, or tears of 0.5 inches or less in diameter or length. The area is to be lightly grinded to facilitate bonding prior to applying the extrusion bead.

5.4 Repair Patches

Defects or tears that are greater than 0.5 inches in diameter or length, require a patch covering the area. The patch is to be heat bonded to the liner, edges lightly ground, then an extrusion bead applied all around. The patch is to be vacuum tested when complete.

Repair patches shall be marked on the liner as to their sequential number to be recorded in the data sheets.

For the primary layer, repair patches following the extrusion welding and vacuum testing of the patch, install a second patch over the first and vacuum test.

5.6 Cap Strip

This is a long patch covering areas too short to wedge weld or a test failure area of a wedge weld seam, found either by air channel test or destruct test. Placement of the cap and testing is the same as a repair patch.

Cap strips shall be marked on the liner as to their sequential number to be recorded in the data sheets.

For the primary layer, cap strips following the extrusion welding and vacuum testing of the cap, install a second cap strip over the first, extrusion weld, and vacuum test.

Alternatively, for the case of a failed destruct seam area and the cap is to be placed between good destruct sample end points. After consulting with the CQA OFFICER and if the air channel test passed, the upper flap of a wedge weld seam can be extrusion welded to the liner along the entire length of a suspect seam area. This weld provides the seam strength around the wedge seam, while the leakage issued is eliminated by the air test of the wedge seam passing.

6.0 Acceptance

6.1 Data Sheets Provided

The INSTALLER shall provide to the CQA OFFICER copies of all data sheets and maps created during the installation process soon after completion.

6.2 Construction Quality Assurance (CQA) Report

The CQA OFFICER will prepare a CQA Report and the ENGINEER will review and stamp the report. The report will identify the project, participants in the construction, dates and sequence of construction, summary of material selection and testing, summary of earthwork performed, summary of liner installation, deviations from the work plan, and a certification statement from the ENGINEER.

The CQA report shall be submitted to the RWQCB for review. After review and approval, the RWQCB shall issue a letter of acceptance and authorize the use of the pond with wastewater.

The CQA report will also include the following:

- Design drawings submitted with the Lagoon Design Report
- CQA Plan submitted with the Lagoon Design Report
- Material Data Sheets of the selected materials – liner and geonet
- MQC test data of the rolls delivered to the project
- Subgrade report from the Geotech Engineer
- Subgrade Acceptance Forms
- Destruct testing results
- Drawings of Record – updated design drawings included changes
- Construction photos
- Data sheets and maps prepared by the INSTALLER

Double Liner Geomembrane Specification
For Construction of Dairy and Food Processing Ponds
RWQCB Region 5, Revision 16

Liner Table 1 - Geomembrane

Properties[1]	Test Method	60 mils Smooth	60 mils Textured	80 mils Smooth
Thickness (avg) - mils	D5199/D5994	nom.	57 - 60	nom.
Lowest individual for 8 of 10 values			54	
Lowest individual of 10 values		54	51	72
Asperity height (min avg) - mils	D7466		16	
Density (min avg) - g/cc	D1505/D792	0.940	0.940	0.940
Tensile properties (min avg)	D6693			
Yield strength - lb/in		126	126	168
Yield elongation - %		12	12	12
Break strength - lb/in		228	90	304
Break elongation - %		700	100	700
Tear resistance (min avg) - lb	D1004	42	42	56
Puncture resistance (min avg) - lb	D4833	108	90	144
Carbon black content - %	D4218	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0
Carbon black dispersion	D5596	Note 2	Note 2	Note 2

Notes

1 Methods and values taken from GRI GM13 Standard Specification - *Test Methods, Test Properties and Testing Frequency for High Density Polyethylene (HDPE Smooth and Textured Geomembranes*. If there is conflict with this Table and GM13, the GM13 values shall be used.

2 For 10 different views - min of 9 in Categories 1 or 2 and 1 allowed in Category 3

Liner Table 2 - Geonet

Properties	Test Method	Selected Thickness
Thickness (avg) - mils	D5199	nom.
Density (min avg) - g/cc	D1505	0.940
Tensile strength - lb/in	D7179	> 40
Carbon black content - %	D4218	2.0 - 3.0

Double LIner Geomembrane Specification
For Construction of Dairy and Food Processing Ponds
RWQCB Region 5, Revision 16

Liner Table 3 - Testing

Test Parameter	Test Method	Frequency	60 mils Smooth	60 mils Textured	80 mils Smooth
Nondestructive Seam Test					
Air channel	D5820	Continuous	25 to 30 psi, hold for 5 min		
Vacuum box	D5641	Continuous	Vacuum hold for 5 to 10 sec		
Spark	D6365	Continuous	No spark		
Dual Hot Wedge Seam Test					
Shear strength - lb/in	GRI GM 19a	Trial welds & destruct samples	120	120	160
Shear elongation at break[1] - %	GRI GM 19a	Trial welds & destruct samples	50	50	50
Peel strength - lb/in	GRI GM 19a	Trial welds & destruct samples	91	91	121
Peel separation - %	GRI GM 19a	Trial welds & destruct samples	25	25	25
Extrusion Fillet Seam Test					
Shear strength - lb/in	GRI GM 19a	Trial welds & destruct samples	120	120	160
Shear elongation at break[1] - %	GRI GM 19a	Trial welds & destruct samples	50	50	50
Peel strength - lb/in	GRI GM 19a	Trial welds & destruct samples	91	91	121
Peel separation - %	GRI GM 19a	Trial welds & destruct samples	25	25	25
Panel Test					
Exposed surface (water puddle)	D7002	Non-conductive liner	Calibrate equipment to 1 mm diameter test hole		
Exposed surface (spark test)	D7240	Conductive liner	Calibrate equipment to 1 mm diameter test hole		
Covered surface (water or soil)	D7007	Both conductive and non-conductive	Calibrate equipment to 6 mm diameter test hole		

Notes
1 Elongation measurements should be omitted for field testing

Trial Weld Log

Project Name ______________________

Layer ______________________

Material ______________________

Date	Time	Operator	Machine			Peel					Sheer				
			#	Temp	Speed	Results					Results				

Panel Log

Project Name ________________________

Layer ________________________

Material ________________________

Date	Panel #	Roll #	Location

Date	Panel #	Roll #	Location

Wedge Seam Weld & Air Test Log

Project Name ______________________

Layer ______________________

Material ______________________

Seam	Panel	Seam	Start	Operator	Machine			Air Test	Start		Stop		Results	Notes
Date	#s	Length	Time		#	Temp	Speed	Date	Time	Pressure	Time	Pressure	(P - F)	(Record DS #)

Extrusion Seam Weld & Test Log

Project Name ______________________________

Layer ______________________________

Material ______________________________

Seam Date	Repair #	Panel #s	Repair Type	Operator	Machine #	Test Date	Vac or Spark	Test Date	Primary Air	Notes

Patch/Repair Type

CP Seam corner patch
PB Pipe boot
RP Repair patch
EB Extrusion bead repair
CS Cap strip repair

Destruct Sample Log

Project Name ______________________

Layer ______________________

Material ______________________

Date	DS #	Panel #s	Machine #	Peel Results					Sheer Results					Results (P - F)

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Appendix D – Pond O&M Plan

TIER I

DOUBLE LINED PONDS

OPERATIONS & MAINTENANCE PLAN

Prepared for

Treehouse California Almonds LLC

6914 Road 160
Earlimart, CA 93219

Tulare County

June 5, 2023

Prepared by:

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2912-19-001

ENGINEERING CERTIFICATION

I have reviewed this document and certify that this was prepared by me or under my responsible charge, as a registered Civil Engineer who is registered to practice in California pursuant to California law.

Signature:

Print: Edward J Caminata

Date: June 5, 2023

Limitations

Provost & Pritchard performs its services in a manner consistent with the standards of care and skill ordinarily exercised by members of the profession practicing under similar conditions in the geographic vicinity. This report was prepared in accordance with generally accepted engineering practices which existed at the time it was written. No warranty, expressed or implied, is made. This report is based on information provided to Provost & Pritchard by materials suppliers and other project subcontractors. Provost & Pritchard is not responsible for misinformation or product use, misuse or defects, and cannot warranty any work conducted by others. If any changes are implemented that materially alter the project, additional engineering services and/or Regional Water Quality Control Board approval may be required, along with revisions to the recommendations given herein.

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Scope

This Tier 1 Double Lined Ponds Operations and Maintenance (O&M) Plan has been prepared to provide specific technical details to properly operate and maintain the integrity of the liner of the ponds on both a daily and design life basis.

Revision Record

This O&M Plan issued to this facility are the current practices at the time. If changes become necessary, the O&M Plan for this facility will be updated as appropriate. This record will serve as a basis to record those changes.

Revision	Date	Item #	Section	General Description
New	06/05/23	All	All	P&P - Tier 1 O&M Plan, Revision 10

I. INTRODUCTION

This Ponds Operation and Maintenance (O&M) Plan was prepared for the new ponds lined with a geomembrane liner for this facility. A properly operated pond is a valuable asset. The service life of a liner can be assured and possibly extended by developing and carrying out a good operations and maintenance program.

The operator of this facility will be responsible for all monitoring and maintenance after construction is completed. Regularly scheduled inspections and timely maintenance by personnel will be required. If desired, Provost & Pritchard can be contacted to perform the monitoring tasks.

If the owner or operator of this facility changes, the current owner and operator are responsible for transferring this O&M Plan to the new owner or operator. Reporting of the ongoing monitoring is required to be submitted with the annual reports.

Repairs to liners will need to be completed by personnel experienced with installation and repair of geosynthetic material. Failure could potentially affect public safety and cause environmental degradation. The following are recommended components of a maintenance program.

II. LINER SYSTEM

The liner system installed is identified as a “Tier 1” or a “Double Liner”. It is actually three layers of material. These layers are comprised of two layers of High Density Polyethylene (HDPE) geomembrane with a geonet drainage mesh sandwiched between those two layers. This drainage mesh allows any potential leakage from the liner in contact with the pond water to drain and collect into a Leak Collection / Return System (LCRS) located under the pond floor.

There is also a vent system beneath the layers of liner material to allow for gases to escape without causing a bubble or “whale” to the liner. These vents are at the upper perimeter of the ponds at equal intervals.

III. TERMINOLOGY

The following terms are used throughout this text:

- The **Primary Liner** is the top layer of geomembrane or the liner in contact with the wastewater.

- The **Secondary Liner** is a lower layer of geomembrane installed beneath the primary liner & geonet mesh and is in contact with the soil.

- The **Leakage Collection / Return System** (**LCRS**) technically includes the geonet mesh between the primary & secondary liners but usually refers to the sump area beneath the pond floor that collects any potential leakage from the primary liner. There is a conduit pipe installed from this sump area up to the top of the pond to provide access for pumping and/or testing equipment.

- The **Pan Lysimeter** (or, **"Lysimeter**") is a sump located beneath the LCRS sump that is provided to monitor for potential leakage through the liner at the LCRS sump. If the secondary liner were to leak, it would most likely occur where leakage is pooled (in the LCRS) so therefore this sump provides for that check. It also has a conduit pipe installed from this sump area up to the top of the pond to provide access for pumping and/or testing equipment.

- The **Potential Leakage Rate** is the liner leakage rate based on undetectable potential defects in the liner material during installation testing. Leakage rates below this rate could be expected to occur. However, leakage rates above this rate needs to have further investigation and evaluation.

IV. OPERATION OF THE PONDS

A. Treatment and Storage Ponds

Anaerobic Ponds

After mechanical screening, water will gravity flow through two anaerobic ponds in series. Water enters a pond near the floor and exits near the surface. These ponds will always remain full. Weir boxes at the outlets will maintain water level at 2 feet of freeboard.

Near the floor of the second anaerobic pond (south pond) is a suction pipe for a mixing system. Mixing water will be distributed into both ponds also near the floor to activate the heavy particles aiding in digestion of the material. Mixing will be continuous. The mixing pump discharge has a valve and blind flange to be used for pond water removal/cleaning.

The first anaerobic pond (north pond) has a suction pipe from near the floor and emerges at the surface at the outside of the perimeter road with a blind flange. This is to be used for pond water removal/cleaning.

Aeration Pond

Water from the second anaerobic pond will gravity flow into the aeration pond. This pond will also always remain full.

This pond will be mechanically aerated by blowers and a main duct pipe along the side of the pond to individual lines in the pond and fine bubble diffusers located near the floor.

A weir box at the outlet will allow for outflow to the storage pond if water rises above the 2-foot freeboard. A pump is placed in this weir box to pump water to the clarifier. The clarifier will send clarified water to the storage pond while the heavy particles from the clarifier will be returned to the aeration pond for 45 minutes per hour or to the first anaerobic pond for 15 minutes per hour.

Water level of the weir box will be monitored by instrumentation. When the plant is not operating and providing new wastewater, the aeration pond water level will go down. When it reaches a trigger level (minus 6 inches), a valve at the clarifier will shift to stop sending water to the storage pond and divert the water back to the aeration pond. When the aeration pond water level returns to normal operating level (minus 2 inches from weir overflow), the valve will shift back, sending water to the storage pond.

Storage Pond

Water from the clarifier will gravity drain into the storage pond. Water is stored in the pond until it is delivered to the fields via a floating pump connected to the irrigation system at a standpipe. There is sufficient capacity in the pond for the water produced and rainfall for the non-irrigation periods identified in the Nutrient Management Plan.

A Depth Gauge (see **Appendix A**) is located on the side of the pond (welded to the HDPE liner) to indicate the water level in the storage pond and freeboard level.

B. LCRS Monitoring

The initial fill of the ponds requires close monitoring of the LCRS sumps. See **Section V - LCRS Operating Procedure**. Also, during normal operation this leakage detection system must be monitored at appropriate intervals.

C. Freeboard Level

At no time should the water level be allowed to rise above the 2-foot freeboard level of a pond.

The treatment ponds have weir boxes that will overflow at the 2-foot freeboard level. The 2x4 board on top of the weir wall allows for flushing the lines between ponds by lifting the board. This flushing should be done periodically to keep the pipes between the ponds clean of any sediments.

The storage pond has adequate storage capacity to handle non-irrigation periods and rainfall. If the water level begins to near the freeboard level, irrigations must be performed to maintain or reduce the water level. Contact your agronomist for any issues relating to additional irrigations.

If water level neared the vent ports, perform an inspection of the vent ports of the liner for indications that the water level reached them. If there is evidence that water entered the vents, corrective action will be required under the guidance of a California Registered Civil Engineer.

V. LCRS OPERATING PROCEDURE

A. General

The LCRS system is designed to (1) drain water that might leak through defects in the primary liner and route towards the LCRS sump, (2) contain leakage water in the LCRS and by that making no hydraulic head pressure through any defects in the secondary liner causing the secondary liner to be essentially "leak free", and (3) accommodate removal of accumulated water by providing a means of pumping it from the LCRS sump.

P&P recommends a *Little Giant Effluent Pump C1 Series, Model No. 20C1-05P4-2W115*. This is a ½ hp pump with a 1-¼ inch discharge that can deliver about 20 gpm at the depths of most ponds. 1-inch red "milk barn" hose is a good durable hose to use for this task.

With 1 foot of freeboard due to the center trench entering the sump, the LCRS volume is approximately 534 ft^3 and lysimeter volume is approximately 160 ft^3. Both are filled with gravel. The void area around gravel is approximately 30% of the volume, therefore the water containing capacity of the LCRS is approximately 1,200 gallons and the lysimeter is approximately 360 gallons.

During liner installation, the liner area is tested to find defects down to a hole size of approximately 1 mm (1/32"). There is an assumption made that there is one defect per 4,000 m^2 (1 acre) just under this size that cannot be detected by the testing equipment. By the size of the liner area and the summation of undetectable defects at a full pond level, the pond has a potential leakage rate that repairs may not find because they could be smaller than the ability of the testing equipment. Regulatory standards require that the LCRS pump must be able to pump at twice this potential leakage rate. The potential leakage rate and pump rate for these ponds has been determined to be the following.

Pond Id	Potential Leakage Rate (gpm)	Minimum LCRS Pump Rate (gpm)
Anaerobic	0.3	0.7
Aerobic	0.3	0.6
Storage	1.2	2.5

Periodic pumping of any wastewater at rates and frequencies sufficient to prevent water from rising above the rim of the LCRS sump will be required while wastewater is in the pond.

Settled solids in wastewater tends to plug the "undetectable" holes such that little to no leakage is typically observed. Or over time little leakage stops. However, if there is a hole that can be found by test equipment (larger than 1 mm, 1/32 inch) leakage will not likely diminish.

If the pond was constructed during a rain event and the inner layer was exposed to rainfall, there will be trapped water in the LCRS system. This takes a lot of time to drip drain to the LCRS. Also, if an electrical leak check is performed and the inner layer is filled with water to conduct the test, this too will take much time to remove, up to months. In this period of time decerning between a leak and residual is difficult, and time and repeat checking is needed.

B. Differentiate Condensate vs. Wastewater

During construction, rainwater or moisture from the air may be trapped within the LCRS and as it cools may collect within the sump. This water typically will have an electrical conductivity much different than wastewater. This will be used to determine if any leakage found in the sump is condensate or an actual leak within the liner system. However, dust and dirt from construction mixed with water can have elevated levels as well.

Electrical conductivity of the source water that would be contained during construction typically has electrical conductivity ranging between **200 and 900 µmhos/cm**. If water found in the LCRS sump has an electrical conductivity in this range or less, it will be assumed to be condensation or rainwater.

If electrical conductivity of the source water is found to be **above 900 µmhos/cm**, then it will be assumed to be a wastewater leak and the appropriate action needs to be taken as defined in the next two sections.

C. Initial Pond Fill

Provost & Pritchard will routinely monitor the LCRS during initial fill. The LCRS sump needs be monitored regularly for water while the pond is being filled. These intervals need to be distinct enough that if water is found in the sump, an estimate of the location of where the leak could be, can be determined. Once the floor is covered, the new exposed liner area underwater becomes much less for a given time interval and checks can become less frequent.

If water is found in the sump during initial fill:

- The removed water should be tested for electrical conductivity to determine if it is condensate or wastewater. If a rain event occurred during construction, clear water could be found in the sump.

- The amount of leakage needs to be determined. Halting filling or continuing to fill needs to be evaluated. If there is leakage above the allowed rate, investigation into the source needs to be conducted.

- Fines in the water can plug small holes and leakage can stop on its own. So, for small amounts of leakage, waiting for a period to see what develops as the pond continues to fill can be beneficial.

Once the initial fill is complete, the LCRS should be checked and then wait 1-week and check again. If the LCRS has no leakage or an acceptable amount of leakage, the engineer will submit a letter to the RWQCB verifying that the leakage rate is within acceptable amounts.

If there is some leakage, the engineer will determine if less than a monthly monitoring interval is needed or recommend installing a permanent pump. A monthly interval is planned to start, however a LCRS monitoring interval is needed such that the LCRS contains the leakage – see **E. Ongoing LCRS Monitoring** section.

D. Procedure to Determine Leakage Rate

When leakage is pumped out of a sump for the first time, there is no discernable way to know from the quantity pumped a leakage rate without knowing the amount of time the leakage has been occurring.

The sump needs to be pumped down and allowed some time to refill. Upon return after a known interval of time, the sump is pumped down again recording the time elapsed between pumping events and quantity pumped. By dividing the gallons pumped by the interval of time, a gallons per minute flow rate can be determined.

To determine the quantity pumped out of the sump there are 2 basic options.

- If there is little leakage. Pump the leakage into a 5-gallon bucket. Dump buckets quickly to minimize the loss of measuring during the dumping. Count the number of buckets.
- If there is more significant leakage. Pump the leakage into a 5-gallon bucket measuring the time to fill. Dump quickly and repeat several times to determine an average. Time both full duration to drain the sump and the time to fill individual buckets. From the bucket timing, a gallons per minute rating of the pump can be determined. Once the pump rate is determined, the full-time duration of pumping the sump down is used to find the leakage rate.

E. Ongoing LCRS Monitoring

The LCRS will need to be checked monthly for at least the first 6 months of operation. If 6 or more months of monitoring events show that the monitoring frequency can be reduced and still maintain sufficient capacity in the LCRS, a lessor frequency can be proposed to the RWQCB. Any proposal to revise the monitoring frequency must be at least semi-annual.

When facing the pipes and the pond, the LCRS will be the pipe on the right. Measure depth of water in the LCRS and record in **Appendix B – LCRS Leakage Log**.

Collected leakage needs to be maintained at a volume of less than 90% of LCRS capacity which is approximately 1,080 gallons. If the volume is nearing this amount, perform the procedure to determine the leakage rate and notify the engineer. Based on the rate determined, the engineer may need to alter the monitoring interval.

If, at any point during operation of the pond, total leakage exceeds the potential leakage rate on an ongoing basis, a California Registered Civil Engineer will need to be retained to oversee the investigation and repairs to restore primary liner integrity and/or LCRS performance such that the LCRS system can remove at least twice the actual leakage rate.

VI. LYSIMETER MONITORING

The Lysimeter sump is directly below the LCRS sump and is there to monitor if there is leakage out of the LCRS sump. It does not monitor the lining of the pond. Monitoring of the pan lysimeter will be performed at the same interval as the LCRS.

If 6 or more months of monitoring events show that the monitoring frequency can be reduced and still maintain sufficient capacity in the Lysimeter, a lessor frequency in conjunction with the LCRS interval can be proposed to the RWQCB. Any proposal to revise the monitoring frequency must be at least semi-annual.

When facing the pipes and pond the Lysimeter will be the pipe on the left. Measure depth of water in the Lysimeter and record in **Appendix C – Lysimeter Leakage Log**.

The Lysimeter will need to be pumped out before it reaches a volume of less than 90% of Lysimeter capacity which is approximately 325 gallons. If the volume is nearing this amount, perform the procedure to determine the leakage rate and notify the engineer. Based on the rate determined, the engineer may need to alter the monitoring interval.

If leakage is found in the Lysimeter, then investigation into this leakage will need to be undertaken by a California Registered Civil Engineer.

VII. GENERAL MAINTENANCE

The facility operator will be responsible for all maintenance after the wastewater storage ponds have been constructed. Regularly scheduled inspections and timely maintenance by personnel will be required.

Repairs to liners will need to be completed by personnel experienced with installation and repair of geosynthetic material. Failure could potentially affect public safety and cause environmental degradation.

The WDR for this facility has monitoring and reporting requirements that include items for the ponds. The following are components of a maintenance program specifically concerning the liner.

A. Visual Inspections of the Liner

Monthly visual inspections of the ponds should be performed.

1. Pond sides and surface areas for items such as: weeds, algae, animal holes, and erosion.
2. Drainage and swales are free from obstructions, ponding, and erosion.
3. Drainage inlets and piping are free from obstructions and are flowing.
4. Valves are operating and lubricated.
5. Document inspections in **Appendix D – Visual Inspection Log**.

B. Electrical Leak Detection

Normally the LCRS and Lysimeter sumps will provide the means necessary to detect leakage in a Tier 1 liner system.

After cleaning that equipment was placed in a pond, a leak detection test should be performed to verify that the liner was not damaged during the cleaning process, although the LCRS will monitor for leakage. The two anaerobic ponds have pipes to clean/remove without equipment going into the ponds and an electrical leak check is not necessary.

An electrical leak detection survey using ASTM Test Method D 7007 (Standard Practices for Electrical Methods for Locating Leaks in Geomembranes Covered with Water or Earth Materials) may be performed with a full or nearly full wastewater storage pond. Note – only the portion covered by water will be tested.

Electrical leak location surveying is performed by:

Leak Location Services, Inc.
16124 University Oak
San Antonio, TX 78249
(210) 408-1241

Document surveys in **Appendix E – Electrical Leak Detection Log**.

C. Repair Procedures for the Liner

During the routine inspections, if any portion of the liner exhibits a significant defect, it shall be repaired. This would include items such as tears, cuts or cracks in the liner. Any slope failures, excessive embankment settlement, eroded banks and management of burrowing animals shall require detailed evaluation for repairs.

Repairs are to be completed by personnel experienced with installation and repair of geosynthetic material.

Document repairs in **Appendix F – Synthetic Liner Repair Record**. The following procedures will ensure proper repair:

1. The water level will be lowered to below the leak elevation to dry the area of the leak.

2. The leak will be patched and tested in accordance with the Construction Quality Assurance Plan contained in the Pond Design Report prepared for the pond.

D. Emergency Procedures for Liner Damage

In the case of a bank breach or there is a broken or plugged pipeline running through the sides of the pond causing spillage, perform the following:

1. Contain all spillage that is possible by creating an earthen dam using a loader or similar equipment. Do not use dry manure to contain spillage.

2. Pump down the pond (to other pond), if possible to reduce spillage.

3. Notify the RWQCB by phone about spills **within 24 hours**. Submit a written follow up notification **within 2 weeks**. Contact information is located in (**Appendix G – Discharge Report**).

VIII. SOLIDS REMOVAL & DISPOSAL

Disposal of the removed solids should be planned and incorporated into the annual update to the Nutrient Management Plan (NMP) of this facility prior to performing cleaning operations. If the solids are to be delivered to a third party, a **Manure/Process Wastewater Tracking Manifest**, (**Appendix H**) should be prepared prior to performing cleaning operations, consistent with the facility's Monitoring and Reporting Provisions.

The following steps should be undertaken to ensure that the synthetic liner does not become damaged during the cleaning process:

1. Using the drawings, determine and mark the location of the toe of the side slopes on the rim of the pond to locate the actual floor of the pond. Also identify the location of any pipes or other items that may be hidden from view.

2. Ensure that the equipment that enters the pond is placed and removed in such a manner that it does not cause any damage to the synthetic lining. Water may need to be added during the cleaning process for the removal of equipment at the completion of cleaning.

3. Determine/verify the floor depth and the depth of the sludge material to be removed.

4. Clean primarily over the floor area of the pond avoiding the side slopes. Sludge should continue to slide down the slopes to the floor area during cleaning.

5. Verify/ensure that the cleaning equipment does not come into contact with the synthetic liner while performing the actual cleaning operations. Observe water level changes to verify clearances are adequate.

6. Document all solid removal operations in **Appendix I - Solids Removal Log**.

7. Document all off-site transfers of wastewater or solids using the manifest form in **Appendix H - Manure/Process Wastewater Tracking Manifest**.

8. Perform the leak detection survey identified in **Section VII.B – Electrical Leak Detection** of this document when cleaning is completed.

IX. SAFETY RECOMMENDATIONS

A pond can present a serious safety hazard due to a potentially slippery surface, which can make it difficult or impossible to climb. The following safety features should be considered at the owner's discretion:

1. Fencing and gates should be secured to limit access around the entire pond area (a minimum of 20 feet clear of the edges of any ponds for Mosquito Abatement

District access) to prevent damage from vandals, livestock, vehicles, or farm equipment.

2. Warning signs should be posted in languages understood by all personnel entering the area.

3. Life rings, lifelines, poles, ropes, boats, or ladders may be provided to aid in getting out of the pond if someone or something falls in.

X. RECORDKEEPING REQUIREMENTS

All records identified by this plan will be kept at the facility for a period of 5 years. The owner/operator shall perform the inspections or assign personnel to be responsible for completing the inspections when required. Assigned personnel shall be instructed in all the requirements identified within this Plan.

If this Operations and Maintenance Plan is revised, the previous version will be kept on site and available for inspection for a period of 5 years.

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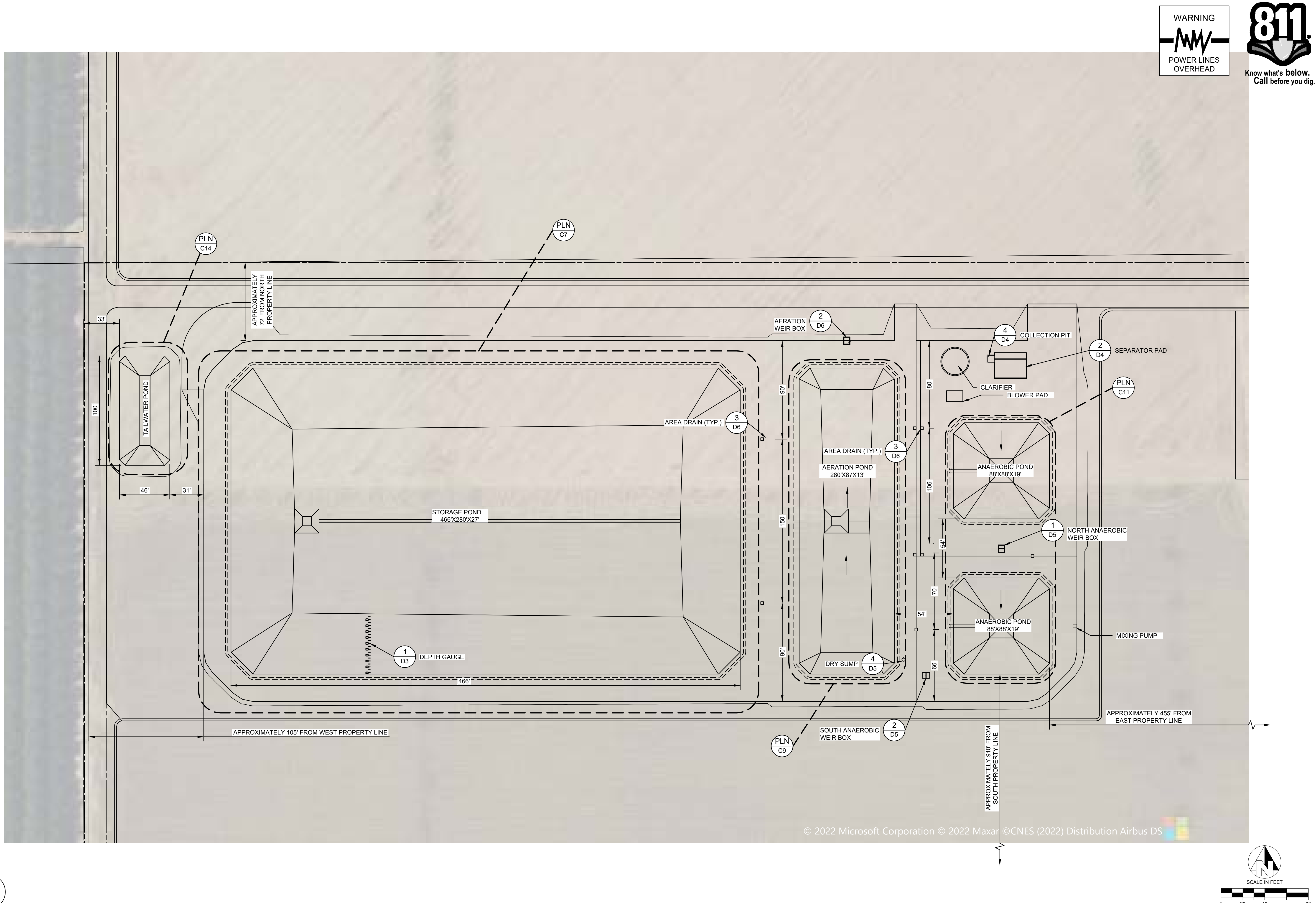
Appendix A

Drawings

Sheet	Description
C4	Proposed Ponds
C7	Plan View – Storage Pond
C8	Section View – Storage Pond
C9	Plan View – Aeration Pond
C10	Section View – Aeration Pond
C11	Plan View – Anaerobic Ponds
C12	Section View – Anaerobic Ponds
P2	Proposed Plumbing Plans
P3	Mixing System Plan
D2	LCRS and Lysimeter



PLN
C4

No.	REVISION	BY	DATE

FOR REVIEW
6/7/2023

FOR REVIEW ONLY

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

CIVIL

PROPOSED PONDS

PROVOST & PRITCHARD
EST. 1968
CONSULTING GROUP
An Employee Owned Company

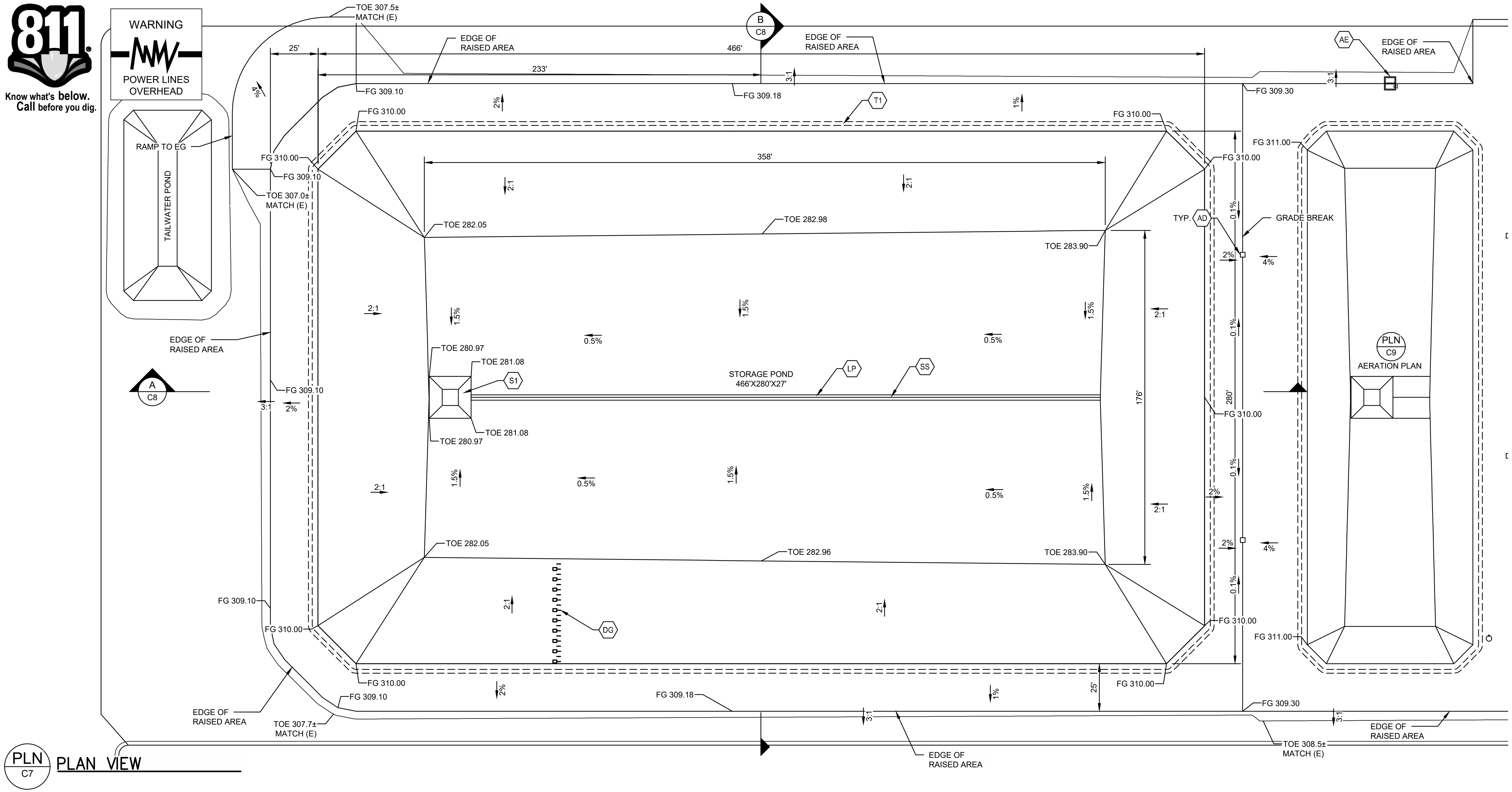
DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

DRAFTED BY:	CHECKED BY:
NPA	SCB

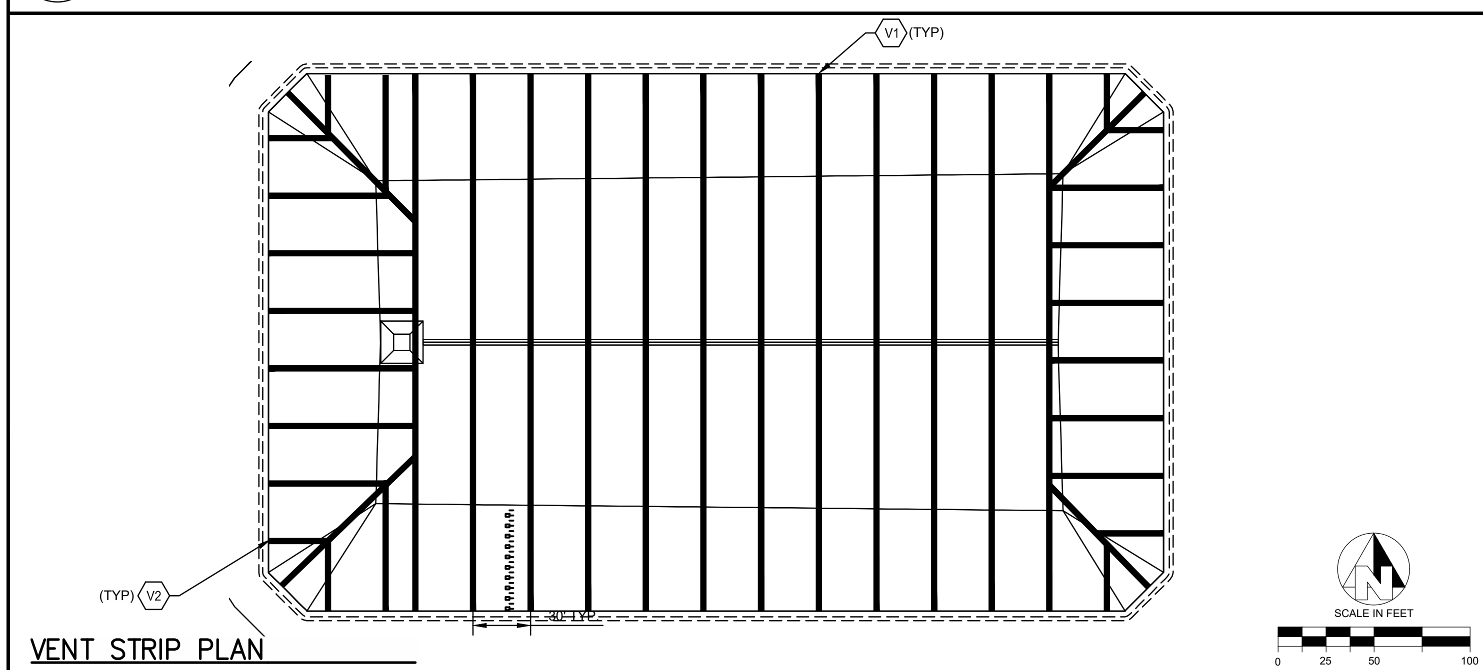
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

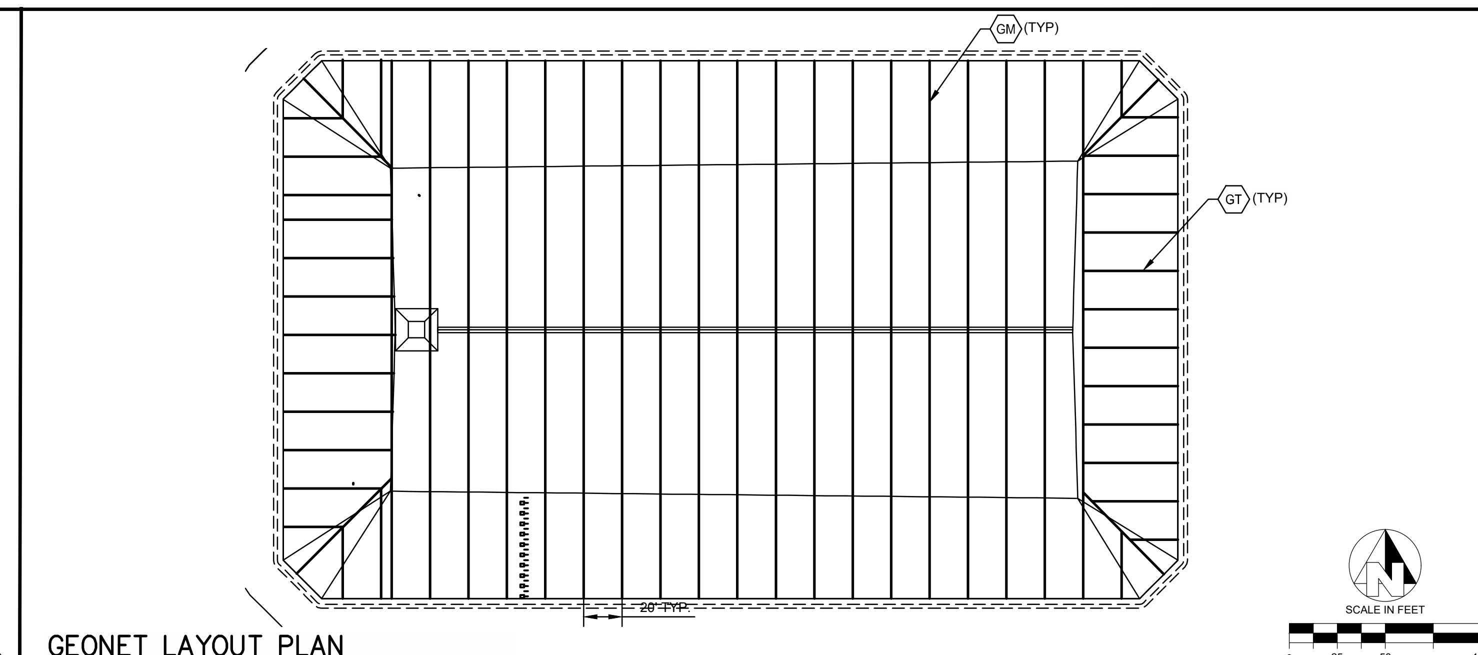
SHEET C4
7 OF 36



PLN C7 PLAN VIEW



VENT STRIP PLAN



GEONET LAYOUT PLAN

NOTES

1. POND SUBGRADE AND LINER SHALL BE INSTALLED IN ACCORDANCE WITH THE POND DESIGN WORK PLAN THAT HAS BEEN APPROVED BY THE REGIONAL WATER QUALITY CONTROL BOARD.
2. HIGH WATER LINE (HWL) IS THE FREEBOARD LEVEL.
3. POINTS WILL BE GIVEN FOR GPS LOCATION OF GRADING EQUIPMENT.
4. CONSTRUCT LAGOON UPPER PERIMETER SURFACE TO THE INSIDE ELEVATION CALLED OUT. WHEN FILLING THE ANCHOR TRENCH, POST LINING INSTALLATION, ADJUST OUTER SURFACE TO THE LOWER ELEVATION CALLED OUT.
5. VENT STRIPS REQUIRE 30' SPACING WITH GAS ROUTE TO FLOOR. ADJUSTMENTS TO WHAT IS SHOWN CAN OCCUR DURING INSTALLATION.

CONSTRUCTION LEGEND

AD	AREA DRAIN	3/D6
AE	AERATION WEIR BOX	1/D6
DG	DEPTH GAUGE	1/D3
GM	OVERLAP GEONET EDGES A MINIMUM OF 3 INCHES. INSTALL PLASTIC CABLE TIES EVERY 5 FEET.	
GT	OVERLAP GEONET ENDS OR END TO EDGE WITH MATERIALS SHINGLED DOWN A MINIMUM 5 FEET FROM THE TOE OF POND IN THE DIRECTION OF THE SLOPE A MINIMUM OF 12 INCHES. INSTALL PLASTIC CABLE TIES EVERY 12 INCHES.	
LP	LEAKAGE PIPE AT CENTER OF POND TO SUMP-DOUBLE LINER	
S1	LCRS/LYSIMETER SUMPS	6/D2
SS	1/8" STAINLESS STEEL CABLE LOCATED IN CENTER TRENCH AND EXITS AT SURFACE.	
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3/D1
V1	VENT ORIFICE	5/D1
V2	2' WIDE DOUBLE FACED 160ML MINIMUM GEOCOMPOSITE DRAINAGE VENT STRIPS. (MATERIAL TO BE APPROVED BY ENGINEER)	

FOR CONSTRUCTION
6/7/2023

No.	DRAWINGS ISSUED / REVISION	BY	DATE
0		SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL
STORAGE PLAN VIEW

PROVOST & PRITCHARD CONSULTING GROUP
EST. 1968
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

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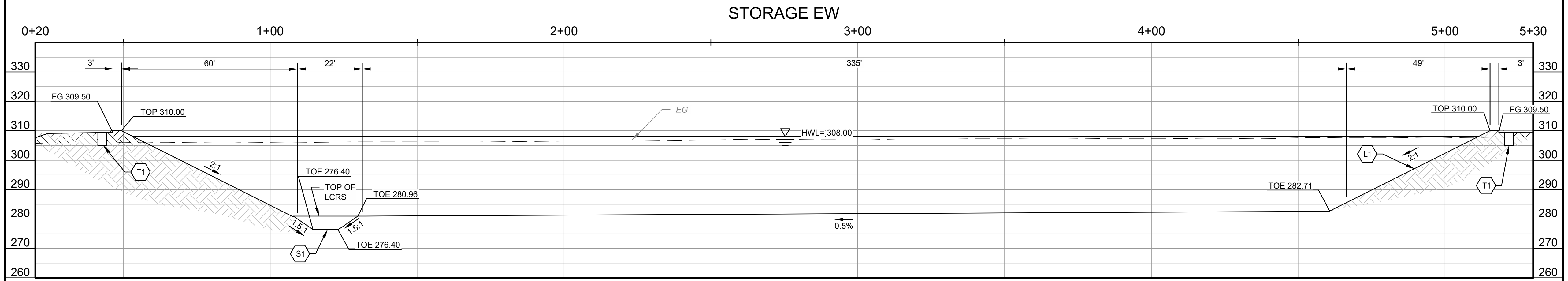
SHEET C7

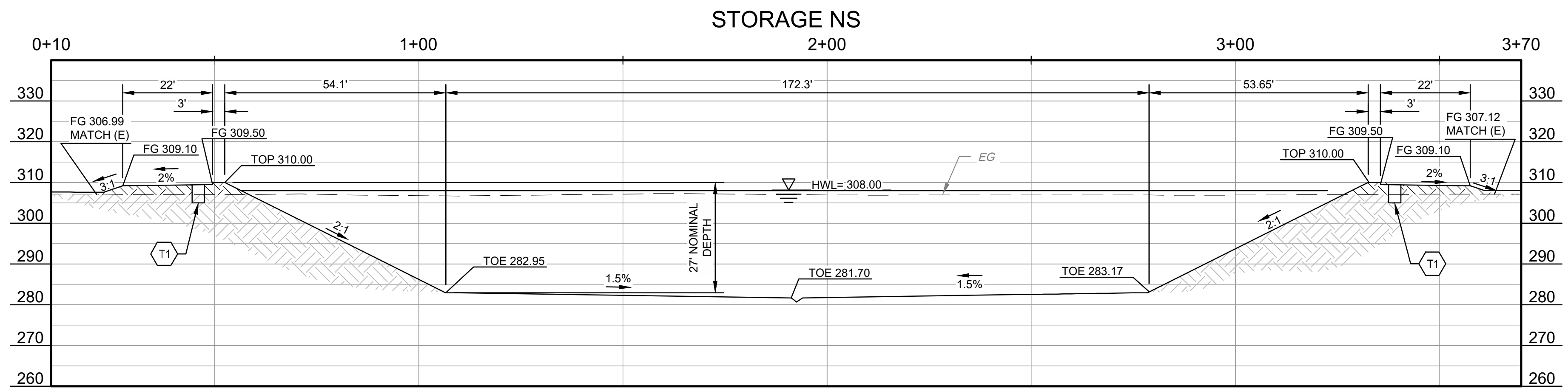
STORAGE EW



A C8

POND PROFILE VIEW

STORAGE NS



B C8

POND CROSS SECTION VIEW

WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.

CONSTRUCTION LEGEND

L1	DOUBLE LINER LAYERING	1/D1
S1	LCRS/LYSIMETER SUMPS	6/D2
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3/D1

HATCH LEGEND

[hatch]	EXISTING EARTH
[hatch]	FINISHED EARTH

FOR CONSTRUCTION
6/7/2023

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WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
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STORAGE SECTION VIEW

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PHASE:

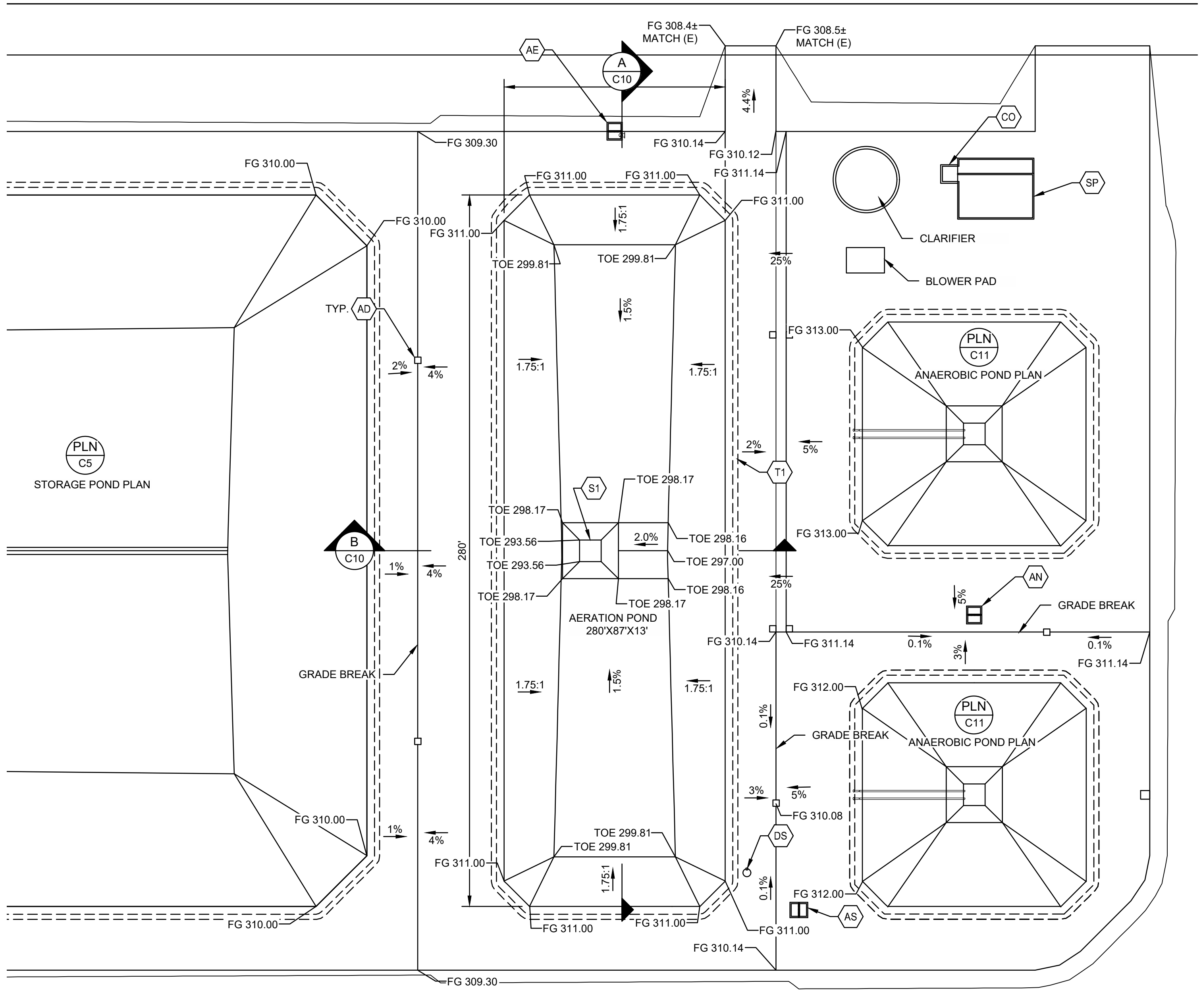
SCALE IN FEET
0 10 20 40

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C8

811 Know what's below. Call before you dig.

WARNING
POWER LINES OVERHEAD



PLN C9 PLAN VIEW

SCALE IN FEET
0 15 30 60

NOTES

1. LINER S... ED ... THE PO... APPRO... ITY CO...

2. ... IS THE FRE... LEVEL.

3. ... FOR ... GRADING EQUIPMENT.

4. CONSTRUCT LAGOON UPPER PERIMETER SURFACE TO THE INSIDE ELEVATION CALLED OUT. WHEN FILLING THE ANCHOR TRENCH, POST LINING INSTALLATION, ADJUST OUTER SURFACE TO THE LOWER ELEVATION CALLED OUT.

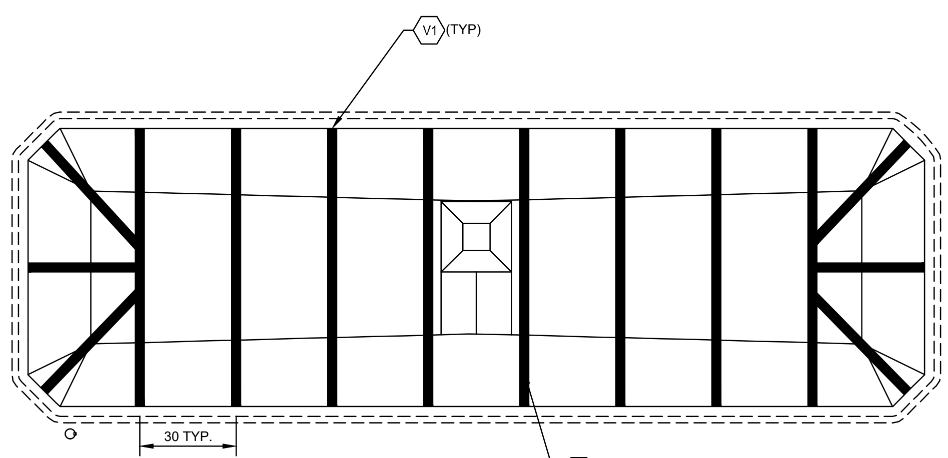
5. VENT STRIPS REQUIRE 30' SPACING WITH GAS ROUTE TO FLOOR. ADJUSTMENTS TO WHAT IS SHOWN CAN OCCUR DURING INSTALLATION.

WARNING
POWER LINES OVERHEAD

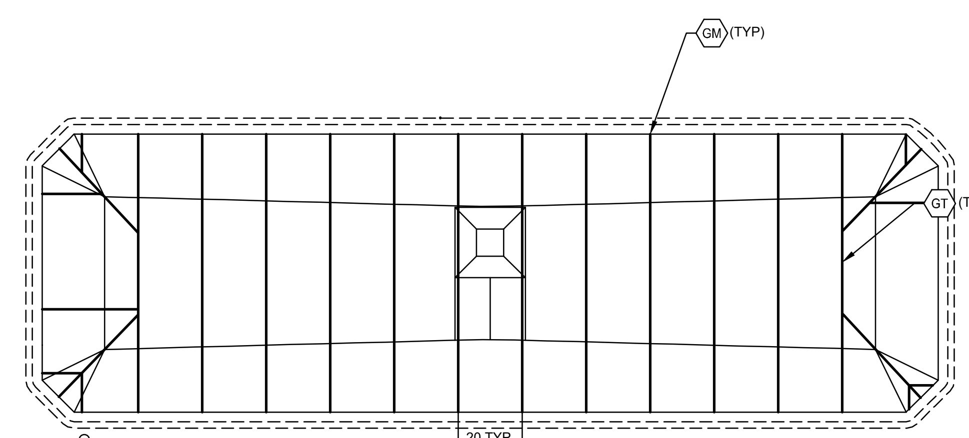
811 Know what's below. Call before you dig.

CONSTRUCTION LEGEND

AD	AREA DRAIN	3 / D6
AE	AERATION WEIR BOX	1 / D6
AN	NORTH ANAEROBIC WEIR BOX	1 / D5
AS	SOUTH ANAEROBIC WEIR BOX	2 / D5
CO	COLLECTION PIT	4 / D4
DS	DRY SUMP	4 / D5
GM	OVERLAP GEONET EDGES A MINIMUM OF 3 INCHES. INSTALL PLASTIC CABLE TIES EVERY 5 FEET.	
GT	OVERLAP GEONET ENDS OR END TO EDGE WITH MATERIALS SHINGLED DOWN A MINIMUM 5 FEET FROM THE TOE OF POND IN THE DIRECTION OF THE SLOPE A MINIMUM OF 12 INCHES. INSTALL PLASTIC CABLE TIES EVERY 12 INCHES.	
S1	LCRS/LYSIMETER SUMPS	6 / D2
SP	SEPARATOR PAD	2 / D4
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1
V1	VENT ORIFICE	5 / D1
V2	2' WIDE DOUBLE FACED 160ML MINIMUM GEOCOMPOSITE DRAINAGE VENT STRIPS. (MATERIAL TO BE APPROVED BY ENGINEER)	



VENT STRIP PLAN



GEONET LAYOUT PLAN

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

FOR CONSTRUCTION 6/7/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL
AERATION PLAN VIEW

EST. 1968 PROVOST & PRITCHARD CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
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DATE: 06/07/2023
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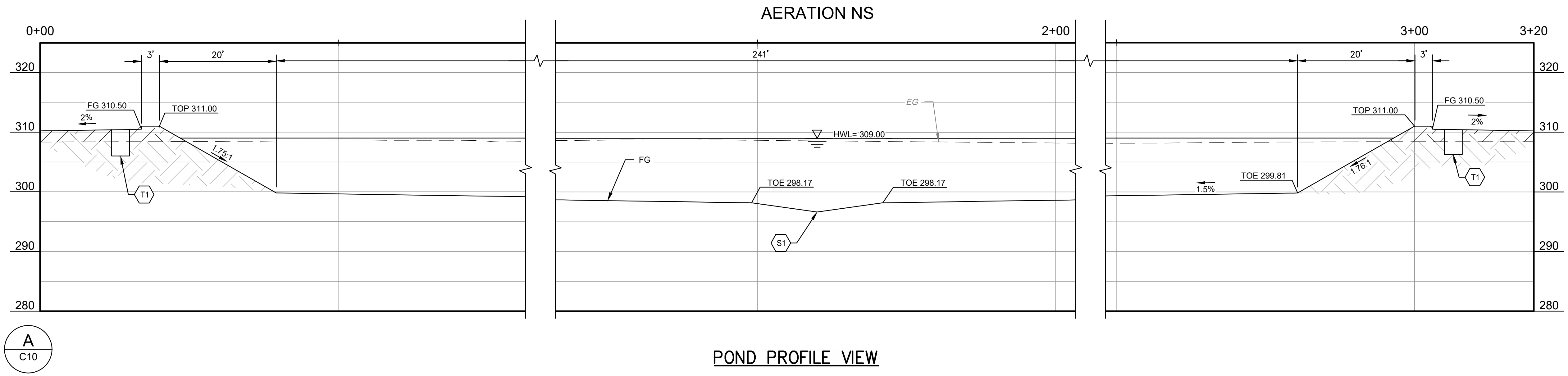
PROJECT NO: 291219001
PHASE:

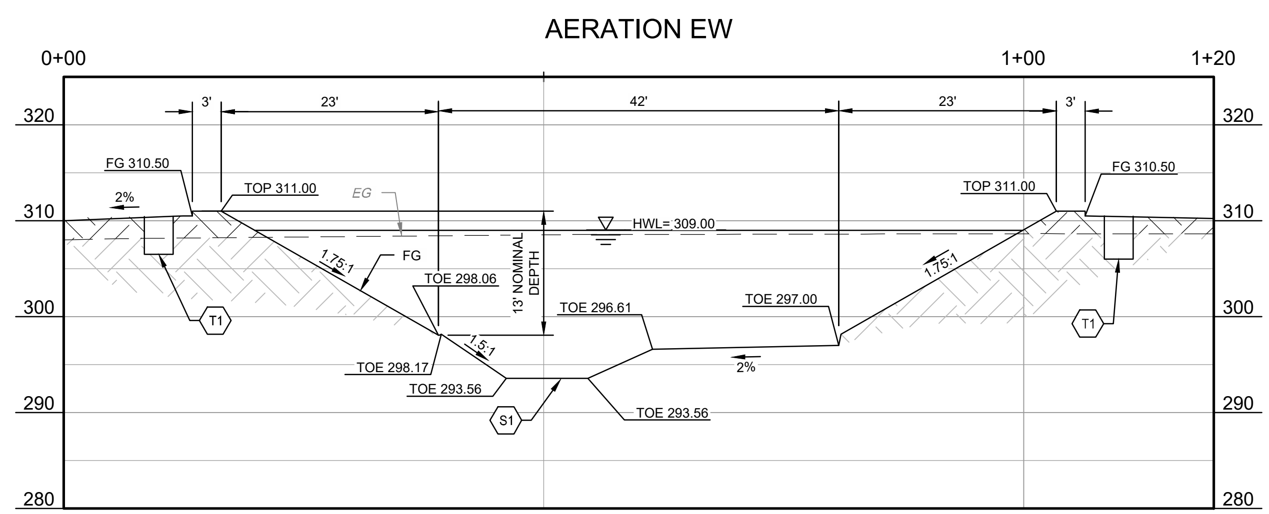
0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C9

6/7/2023 11:39 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C9 AERATION PLAN VIEW.dwg -Evan Freitas



POND PROFILE VIEW



POND CROSS SECTION VIEW

WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.

CONSTRUCTION LEGEND

L1	DOUBLE LINER LAYERING	1 / D1
S1	LCRS/LYSIMETER SUMPS	6 / D2
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1

HATCH LEGEND

	EXISTING EARTH
	FINISHED EARTH

SCALE IN FEET
0 5 10 20

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
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STATE OF CALIFORNIA
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WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
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AERATION SECTION VIEW

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PROJECT NO: 291219001
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0 1"
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SHEET C10

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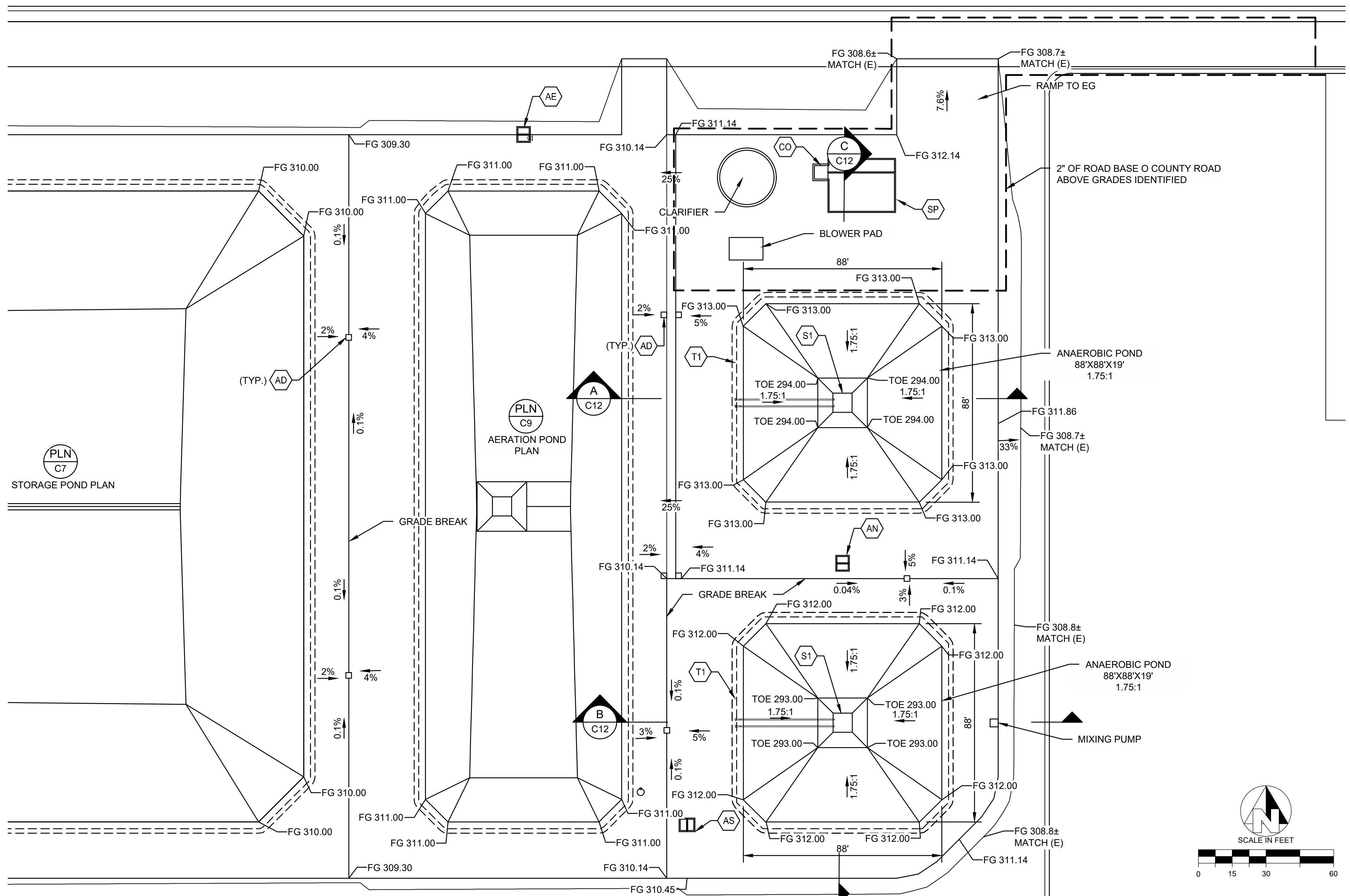
811 Know what's below. Call before you dig.

WARNING
POWER LINES OVERHEAD



PLN C11 PLAN VIEW

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CONSTRUCTION LEGEND

Symbol	Description	Detail
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AE	AERATION WEIR BOX	1/D6
AN	NORTH ANAEROBIC WEIR BOX	1/D5
AS	SOUTH ANAEROBIC WEIR BOX	2/D5
CO	COLLECTION PIT	4/D4
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GM	OVERLAP GEONET EDGES A MINIMUM OF 3 INCHES. INSTALL PLASTIC CABLE TIES EVERY 5 FEET.	
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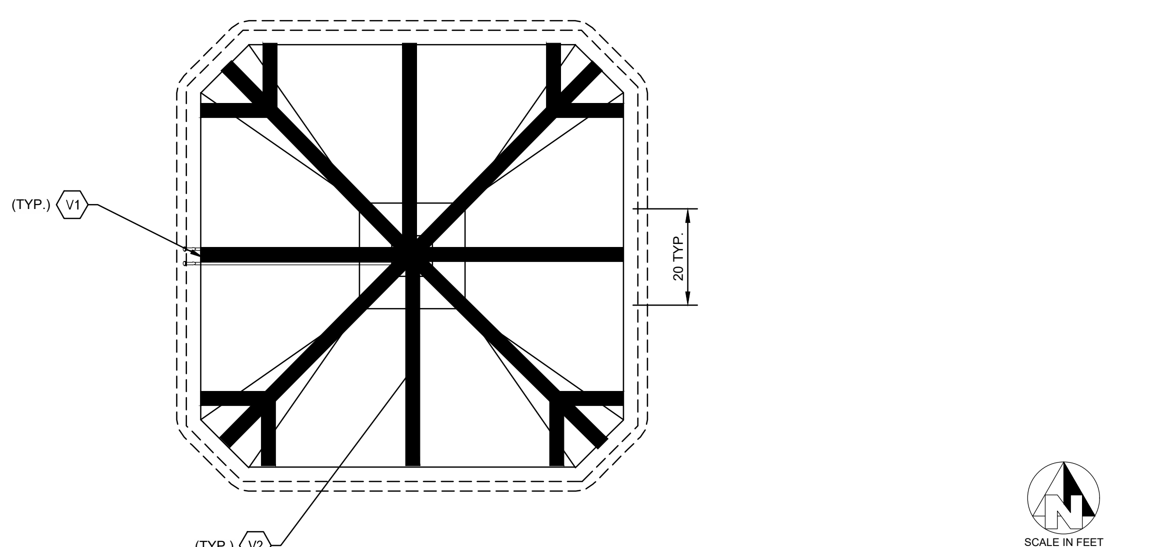
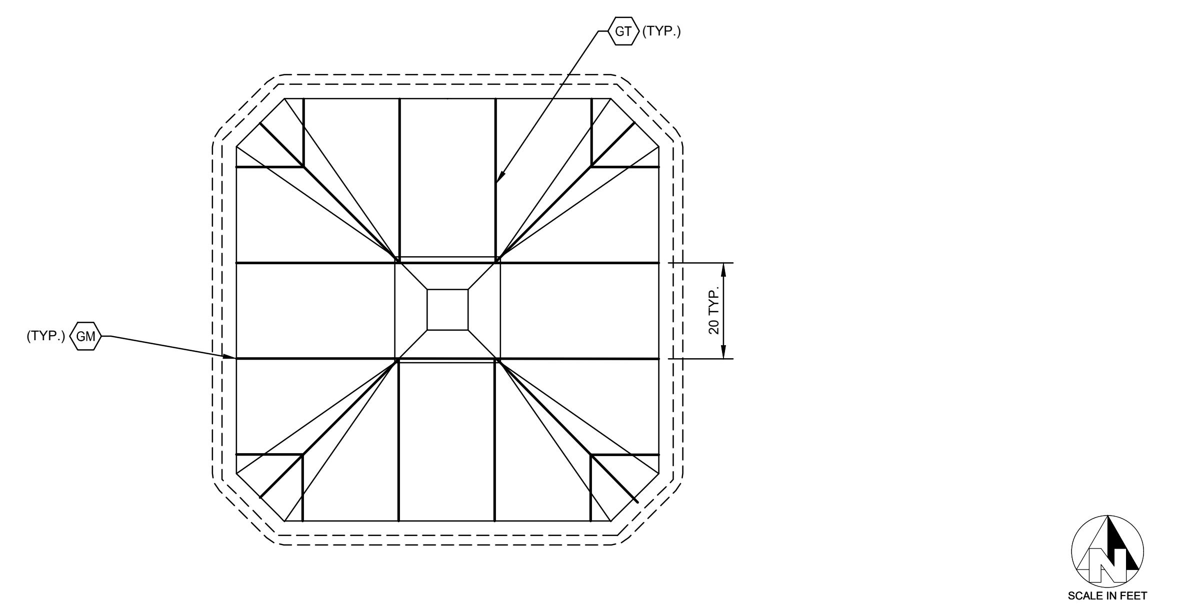
SP	SEPARATOR PAD	2/D4
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3/D1
V1	VENT ORIFICE	5/D1
V2	2' WIDE DOUBLE FACED 160ML MINIMUM GEOCOMPOSITE DRAINAGE VENT STRIPS. (MATERIAL TO BE APPROVED BY ENGINEER)	



VENT STRIP PLAN



GEONET LAYOUT PLAN

FOR CONSTRUCTION 6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER E. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL

ANAEROBIC PLAN VIEW

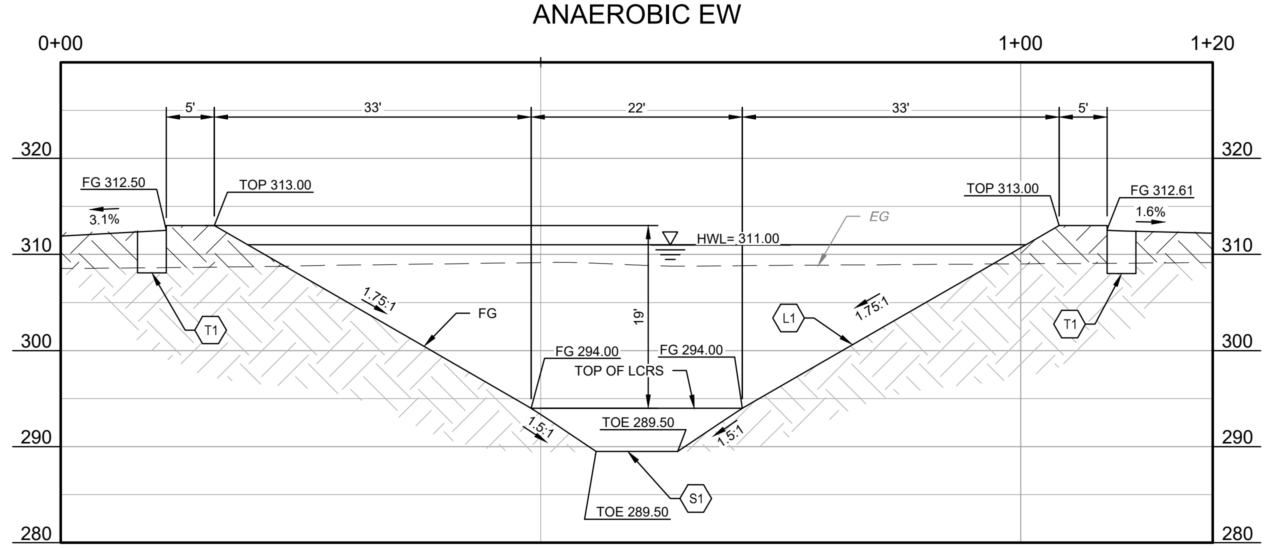
PROVOST & PRITCHARD CONSULTING GROUP EST. 1968
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C11

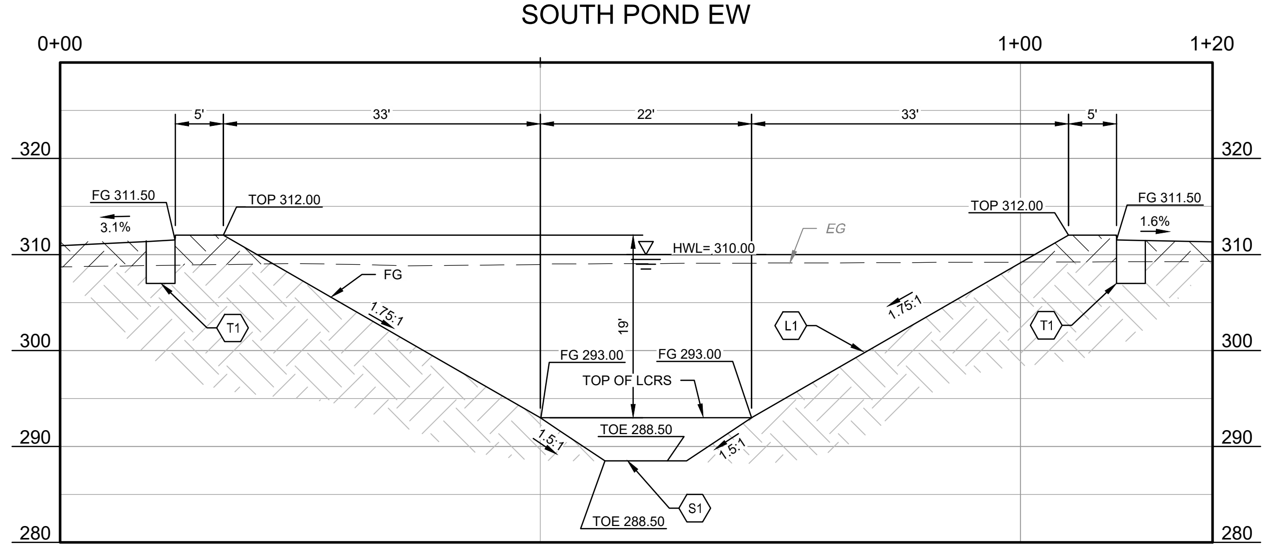
ANAEROBIC EW



A
C12

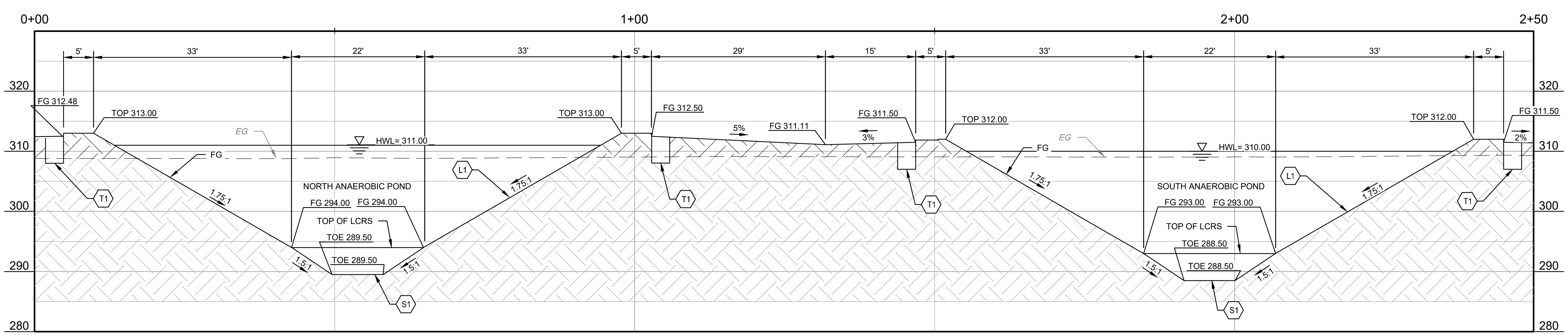
NORTH POND CROSS SECTION VIEW

SOUTH POND EW



B
C12

SOUTH POND CROSS SECTION VIEW



C
C12

POND PROFILE VIEW

WARNING
POWER LINES OVERHEAD

811
Know what's below.
Call before you dig.

CONSTRUCTION LEGEND

L1	DOUBLE LINER LAYERING	1/D1
S1	LCRS/LYSIMETER SUMPS	6/D2
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3/D1

HATCH LEGEND

EXISTING EARTH

FINISHED EARTH

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL

ANAEROBIC SECTION VIEW

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SCALE IN FEET
0 5 10 20

SHEET C12
15 OF 36

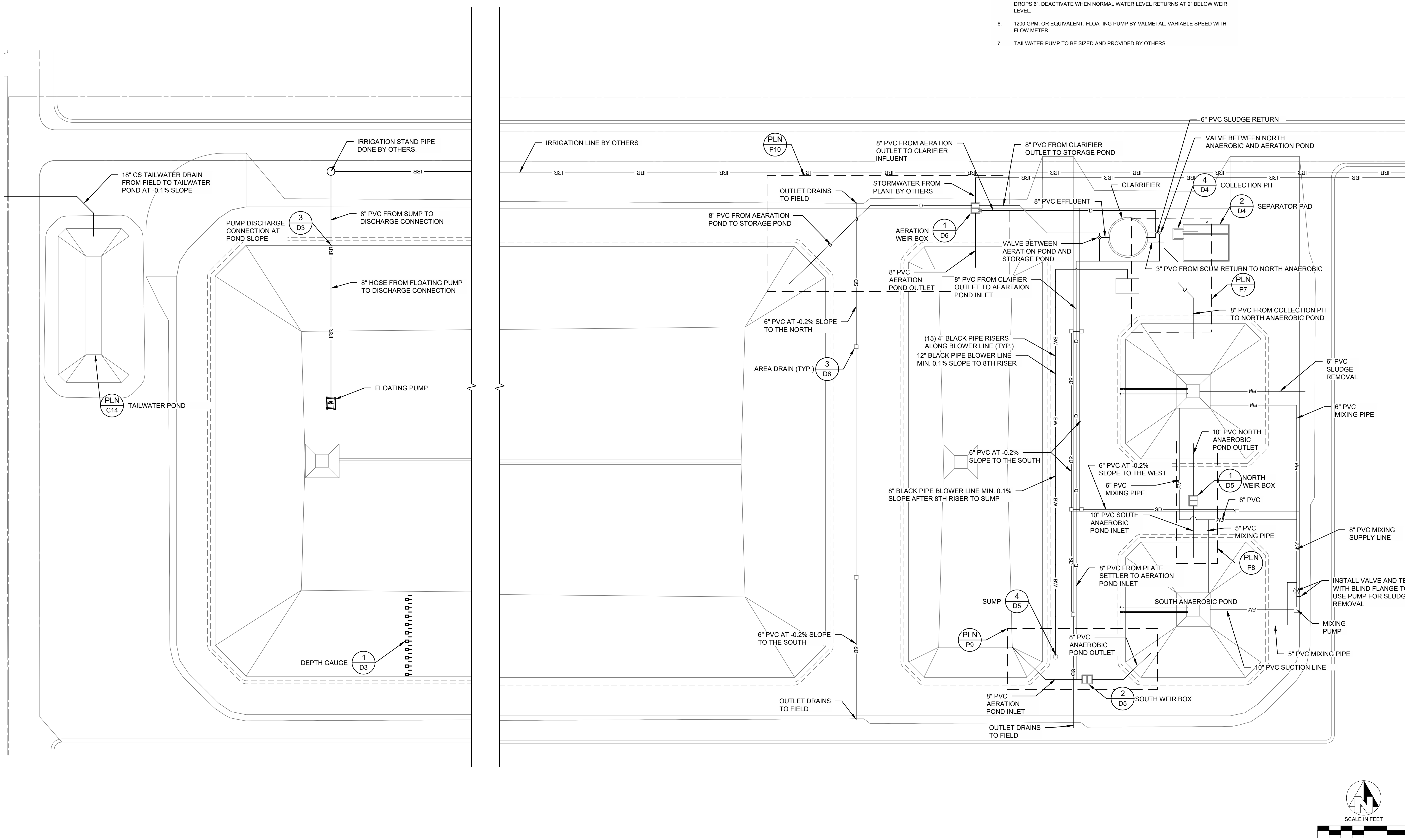
6/7/2023 11:40 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage\02_Plans_Maps\TREATMENT PONDS\C12 ANAEROBIC SECTION VIEW.dwg Evan Freitas

NOTES:

1. PIPES PENETRATING LINER WILL BE INSTALLED AFTER EXCAVATION AND PRIOR TO LINER INSTALLATION, TEMPORARILY CAPPED AND BACKFILLED. ONCE LINER INSTALLATION IS COMPLETE, REMAINDER OF THE PIPE ROUTES CAN BE INSTALLED.
2. ANAEROBIC MIXING PUMP - 10 HP, 1,000 GPM.
3. AERATION POND WEIR PUMP - 225 GPM
4. CLARIFIER SELECTION VALVE - SLUDGE RETURN. NORMALLY OPEN TO AERATION POND. ACTIVATE VALVE TO COLLECTION PIT FOR 15 MINUTES EVERY HOUR.
5. CLARIFIER SELECTION VALVE - CLARIFIED WATER. NORMALLY OPEN TO STORAGE POND. ACTIVATE VALVE TO AERATION POND WHEN AERATION POND WATER LEVEL DROPS 6", DEACTIVATE WHEN NORMAL WATER LEVEL RETURNS AT 2" BELOW WEIR LEVEL.
6. 1200 GPM, OR EQUIVALENT, FLOATING PUMP BY VALMETAL. VARIABLE SPEED WITH FLOW METER.
7. TAILWATER PUMP TO BE SIZED AND PROVIDED BY OTHERS.

WARNING
POWER LINES OVERHEAD

Know what's below. Call before you dig.



FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

PLUMBING

PROPOSED PLUMBING

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559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

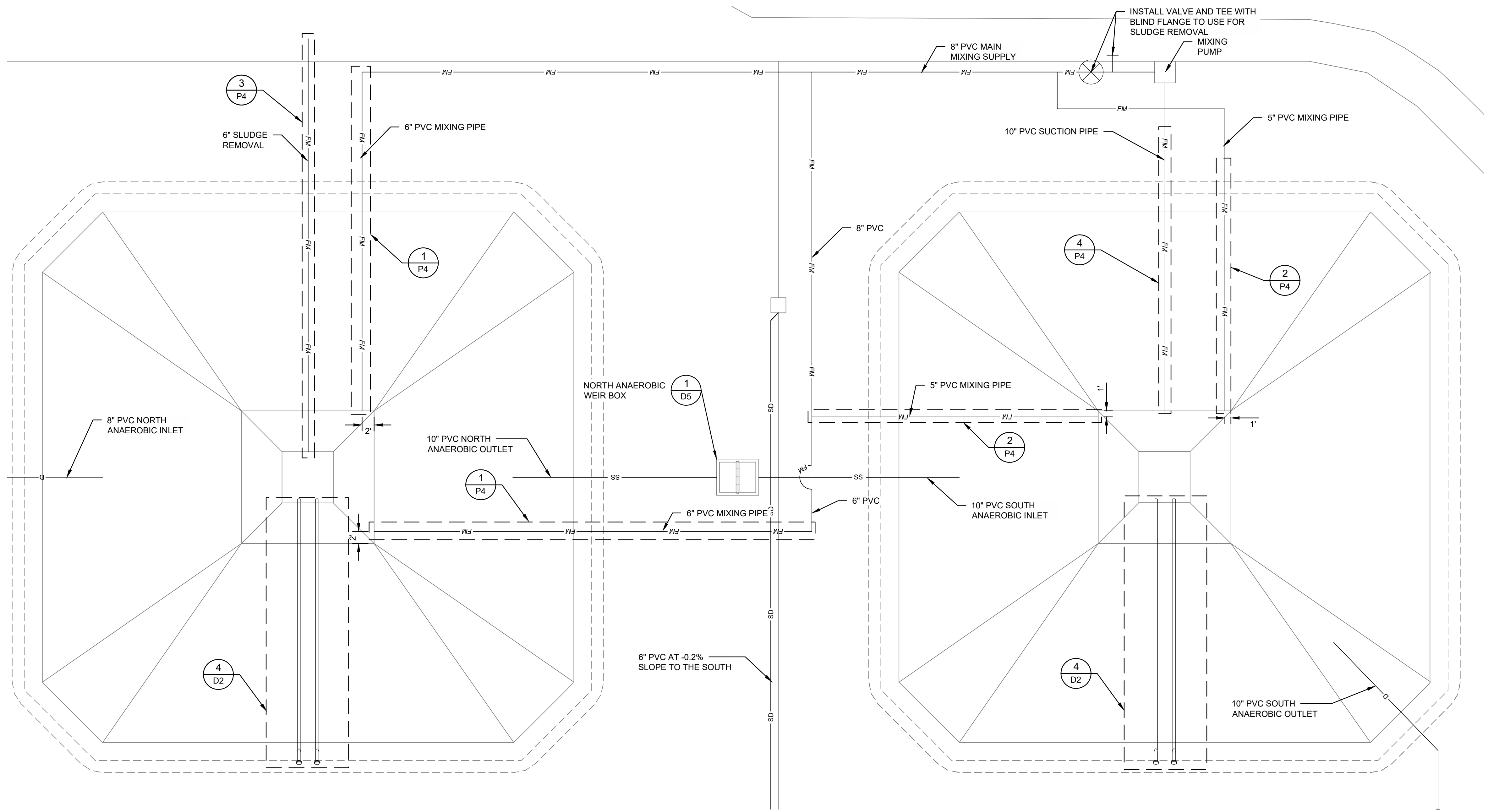
DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

WARNING
POWER LINES OVERHEAD

Know what's **below.**
Call before you dig.



FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

PLUMBING

MIXING SYSTEM PLAN

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559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

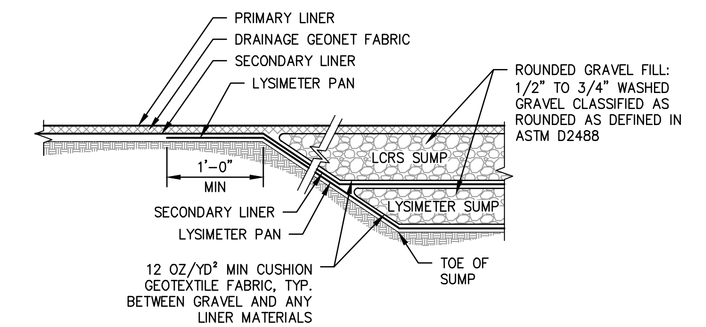
DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET P3
22 OF 36

6/7/2023 11:42 AM g:\treehouse ca almonds-2912\291219001-treatmt+storage ts\DWG\40_sheet sets\07_Utilities\TREATMENT PONDS\P3 MIXING SYSTEM PLAN.dwg Evan Freitas

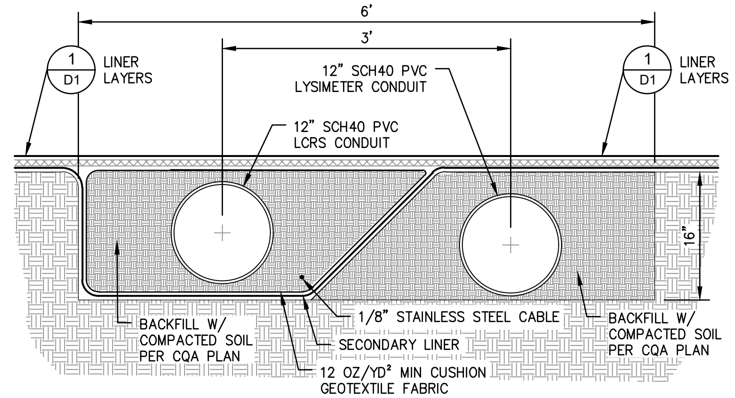


NOT TO SCALE

1
D2
TYPICAL LINER LAYERS AT SUMP

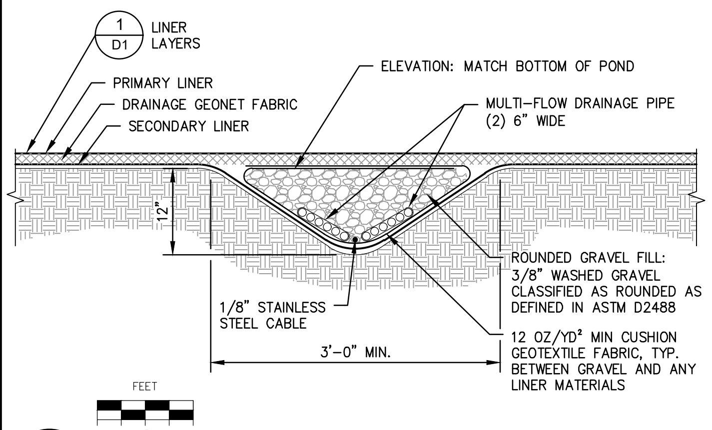
NOTES

1. 12" SCH 40 CAN BE SUBSTITUTED W/ CLASS 125



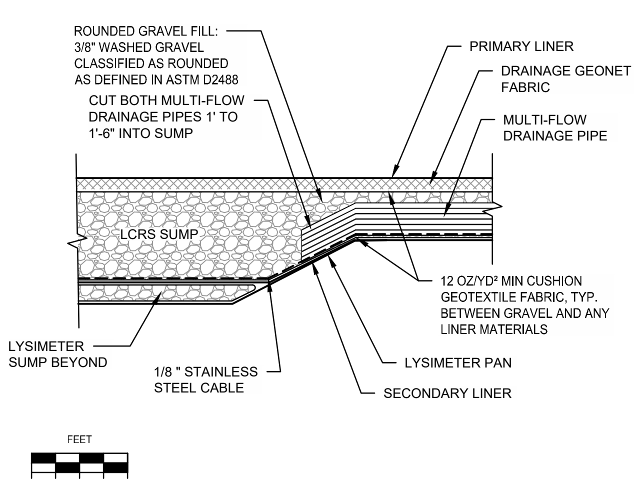
NOT TO SCALE

4
D2
LINER LAYERS AT LCRS & LYSIMETER PIPES



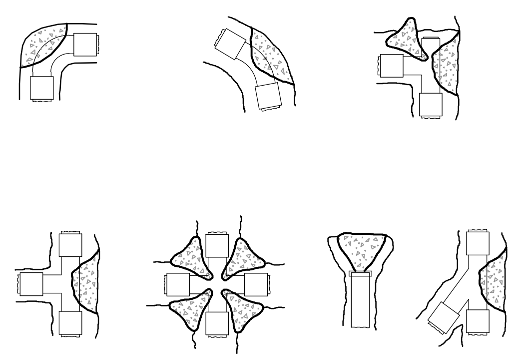
2
D2
LEAKAGE PIPE-DOUBLE LINER

LIBRARY FOLDER NAME



3
D2
TRENCH CROSS SECTION

PPNG



MAX INTERNAL PRESSURE (PSI)	50
SOIL BEARING PRESSURE (PSF)	1500
SAFETY FACTOR	1.5

MINIMUM BEARING AREA (SF)

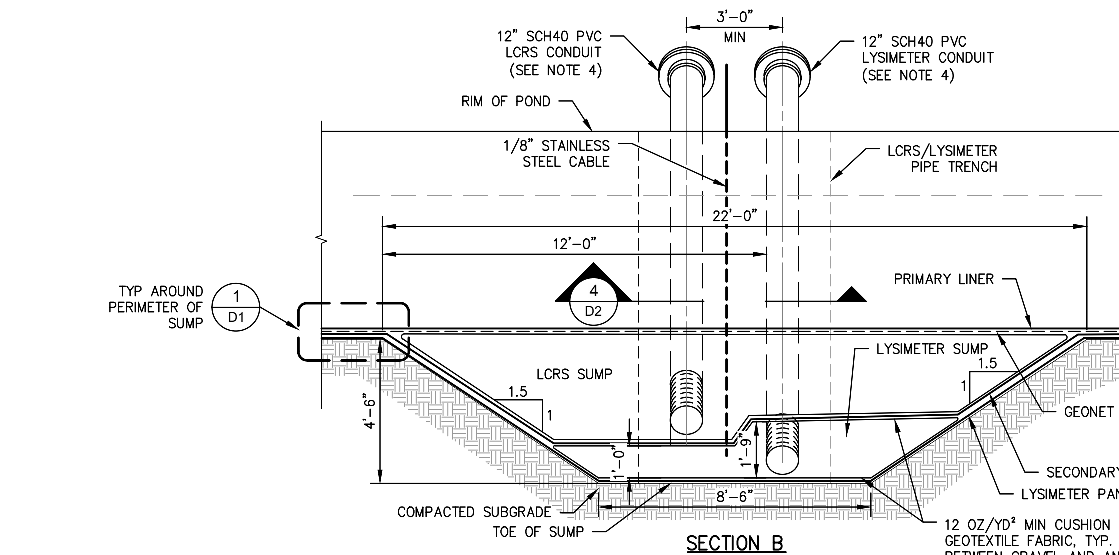
PIPE SIZE	DEAD END OR TEE	90° BEND	45° BEND	22.5° BEND	11.25° BEND
3	0.4	0.5	0.3	0.1	0.1
4	0.6	0.9	0.5	0.2	0.1
6	1.4	2.0	1.1	0.6	0.3
8	2.5	3.6	1.9	1.0	0.5
10	3.9	5.6	3.0	1.5	0.8
12	5.7	8.0	4.3	2.2	1.1
16	10.1	14.2	7.7	3.9	2.0
18	12.7	18.0	9.7	5.0	2.5
20	15.7	22.2	12.0	6.1	3.1
24	22.6	32.0	17.3	8.8	4.4
30	35.3	50.0	27.1	13.8	6.9
36	50.9	72.0	39.0	19.9	10.0
42	69.3	98.0	53.0	27.0	13.6
48	90.5	128.0	69.2	35.3	17.7

NOTES

1. ALL FITTINGS TO BE WRAPPED IN 4 MIL VISQUEEN.
2. CONCRETE SHALL NOT ENCROACH ON END FITTINGS.
3. CONCRETE SHALL BEAR AGAINST UNDISTURBED SOIL.
4. CONCRETE TO HAVE ULTIMATE STRENGTH OF 3000 PSI @ 28 DAYS.
5. THRUST BLOCK DATA FOR VERTICAL PIPE BENDS MAY REQUIRE ENGINEERING NOT INCLUDED IN THIS DETAIL.

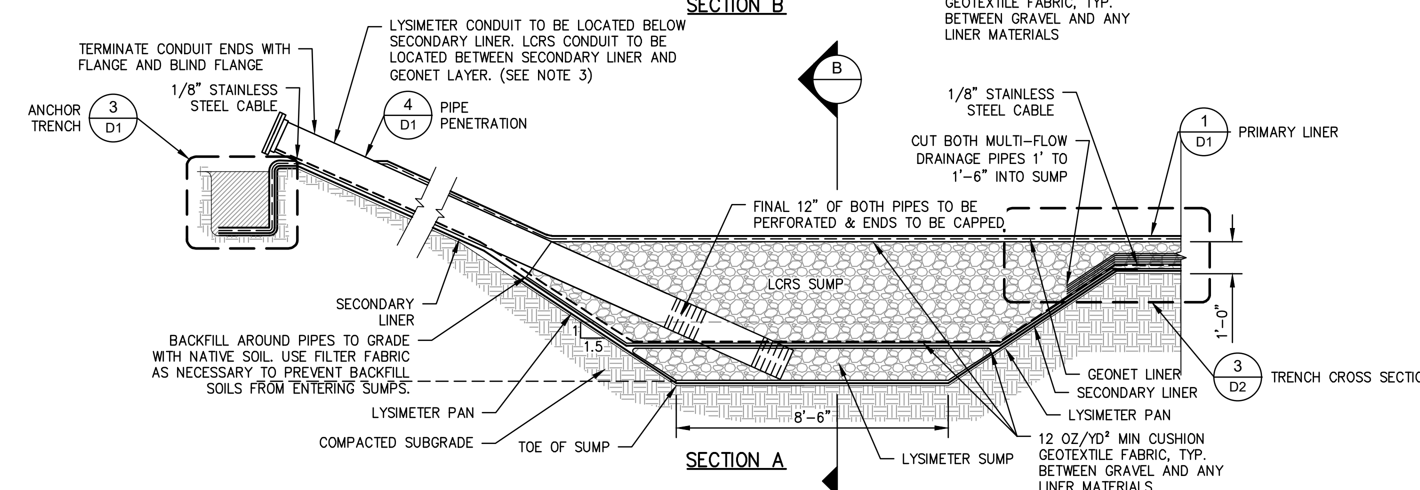
5
D2
THRUST BLOCKS

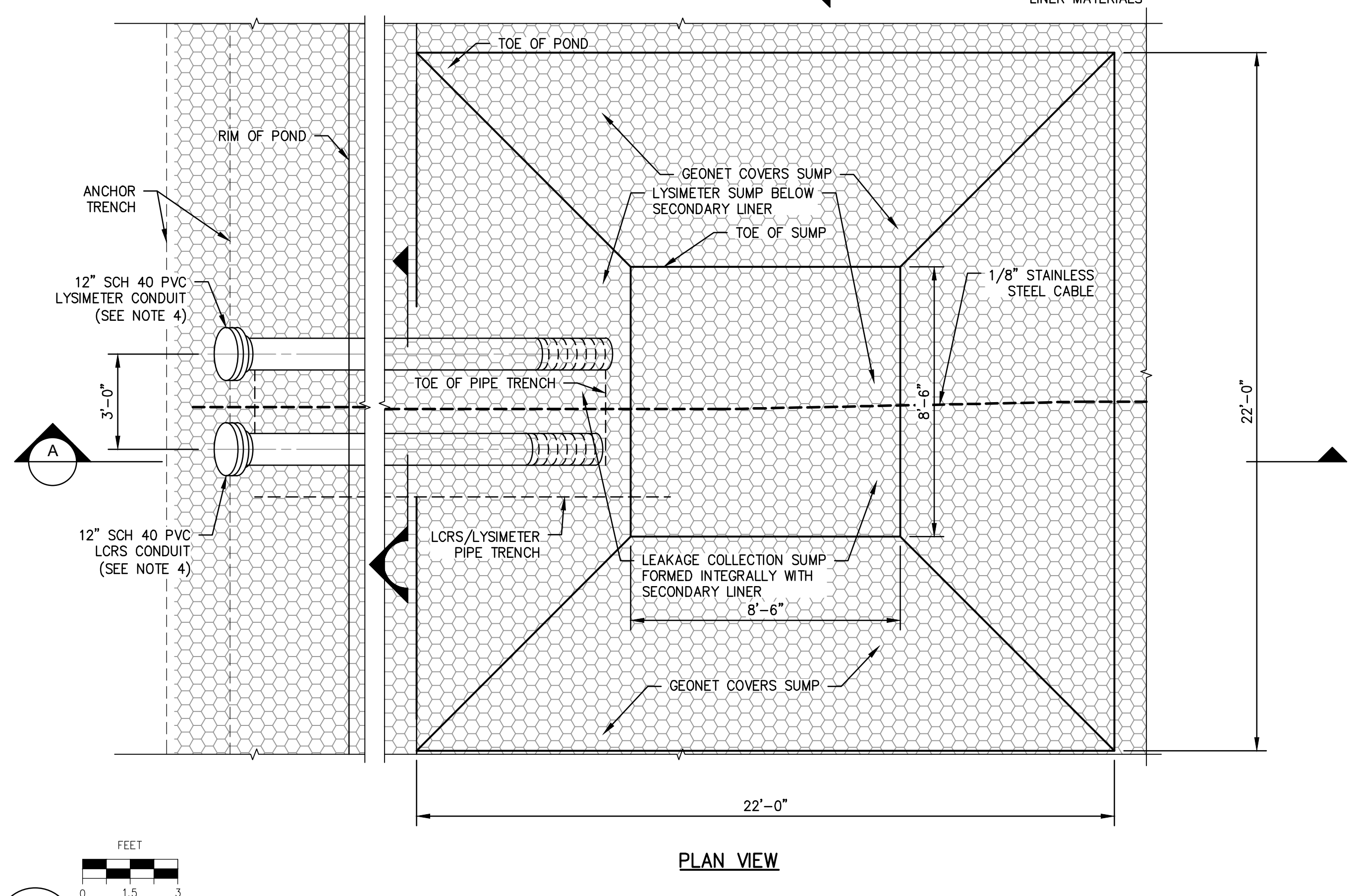
PC-0403



NOTES

1. FILL BOTH LYSIMETER AND LCRS SUMPS WITH ROUNDED GRAVEL. 1/2" TO 3/4" WASHED GRAVEL CLASSIFIED AS ROUNDED AS DEFINED IN ASTM D2488.
2. DURING CONSTRUCTION GEOTEXTILE FABRIC SHALL EXTEND 2 FT BEYOND EDGE OF LINER.
3. LCRS/LYSIMETER PIPE LAYOUT IS NOT TO SCALE DUE TO ANGLE OF PIPE INTRUSION INTO THE SUMP. DIMENSIONS MAY VARY. WHEN LOOKING DOWN AT THE SUMP FROM THE RIM, LYSIMETER WILL BE ON THE LEFT AND LCRS WILL BE ON THE RIGHT.
4. 12" SCH 40 CAN BE SUBSTITUTED WITH CLASS 125.
5. WHEN INSTALLING LINER BOOTS ON THE LCRS/LYSIMETER PIPES, CONTINUE BOOTS TO FLANGES
6. CONTRACTOR TO SUPPLY OWNER A SUMP PUMP (RECOMMENDED LITTLE GIANT WE10G05P4-21 OR ENGINEER APPROVED) PREPARED WITH HOSE AND CORD TO REACH SUMP.





6
D2
LCRS & LYSIMETER DRAINAGE SUMPS

FOR CONSTRUCTION
6/7/2023

0	DRAWINGS ISSUED	SCB	06/07/2023
No.	REVISION	BY	DATE

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
DETAILS
DETAILS 2

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CONSULTING GROUP
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DESIGN ENGINEER:
E. CAMINATA
LICENSE NO:
88473

DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET
D2

Appendix B

Storage Pond

LCRS Leakage Log

Date	Wet/Dry	Quantity Pumped (gal)	Pump Time (min)	Leak Rate (gpm)

Appendix B

Aeration Pond

LCRS Leakage Log

Date	Wet/Dry	Quantity Pumped (gal)	Pump Time (min)	Leak Rate (gpm)

Appendix B

Anaerobic Pond 1 (North)

LCRS Leakage Log

Date	Wet/Dry	Quantity Pumped (gal)	Pump Time (min)	Leak Rate (gpm)

Appendix B

Anaerobic Pond 2 (South)

LCRS Leakage Log

Date	Wet/Dry	Quantity Pumped (gal)	Pump Time (min)	Leak Rate (gpm)

Appendix C

Storage Pond

Lysimeter Leakage Log

Date	Wet/Dry	Quantity Pumped (gal)	Pump Time (min)	Leak Rate (gpm)

Appendix C

Aeration Pond

Lysimeter Leakage Log

Date	Wet/Dry	Quantity Pumped (gal)	Pump Time (min)	Leak Rate (gpm)

Appendix C

Anaerobic Pond 1 (North)

Lysimeter Leakage Log

Date	Wet/Dry	Quantity Pumped (gal)	Pump Time (min)	Leak Rate (gpm)

Appendix C

Anaerobic Pond 2 (South)

Lysimeter Leakage Log

Date	Wet/Dry	Quantity Pumped (gal)	Pump Time (min)	Leak Rate (gpm)

Appendix D

Storage Pond

Visual Inspection Log

Date	Drainage & Swales	Drainage Inlets & Piping	Valves	Corrective Action

Appendix D

Aeration Pond

Visual Inspection Log

Date	Drainage & Swales	Drainage Inlets & Piping	Valves	Corrective Action

Appendix D

Anaerobic Pond 1 (North)

Visual Inspection Log

Date	Drainage & Swales	Drainage Inlets & Piping	Valves	Corrective Action

Appendix D

Anaerobic Pond 2 (South)

Visual Inspection Log

Date	Drainage & Swales	Drainage Inlets & Piping	Valves	Corrective Action

Appendix E

Storage Pond

Electrical Leak Detection Log

Date	Signature	Identified Location of Leak (Mark Drawing in Appendix A)	Corrective Action

Appendix E

Aeration Pond

Electrical Leak Detection Log

Date	Signature	Identified Location of Leak (Mark Drawing in Appendix A)	Corrective Action

Appendix E

Anaerobic Pond 1 (North)

Electrical Leak Detection Log

Date	Signature	Identified Location of Leak (Mark Drawing in Appendix A)	Corrective Action

Appendix E

Anaerobic Pond 2 (South)

Electrical Leak Detection Log

Date	Signature	Identified Location of Leak (Mark Drawing in Appendix A)	Corrective Action

Appendix F

Storage Pond

Synthetic Liner Repair Record

Date	Signature	Identified Location of Leak (Mark Drawing in Appendix A)	Corrective Action

Appendix F

Aeration Pond

Synthetic Liner Repair Record

Date	Signature	Identified Location of Leak (Mark Drawing in Appendix A)	Corrective Action

Appendix F

Anaerobic Pond 1 (North)

Synthetic Liner Repair Record

Date	Signature	Identified Location of Leak (Mark Drawing in Appendix A)	Corrective Action

Appendix F

Anaerobic Pond 2 (South)

Synthetic Liner Repair Record

Date	Signature	Identified Location of Leak (Mark Drawing in Appendix A)	Corrective Action

Appendix G

Discharge Report

DISCHARGE REPORTING FORM

Reporting Year: ______________________

Dairy Name: ____

Dairy Address: ____

Response is required within 24 hours of becoming aware of the occurrence. Information and the report generated **must be submitted** in the Annual Report of the year of the occurrence. Notify California Regional Water Quality Control Board, Local Environmental Health Department and California Office of Emergency Services (24/7) within 24 hours of Land Discharges, Non-15. Contact Information is as follows:

A. Information Needed for Notifications:

Date: ____________________ Time: _________________________

Location of Discharge: ____

Destination of Discharge: _______________________________________

Approximant Volume: ____

Check Type of Discharge:

_____Manure or process wastewater from production area to surface water or land areas not according to NMP.

_____Storm water form production area to surface water.

_____Any discharge from land application area receiving manure to surface water.

B. Notify the following 3 agencies within 24 hours of becoming aware of the occurrence:

1. California Regional Water Quality Control Board

Rancho Cordova Office: (916) 464-3291
(Merced, Stanislaus, Tuolomne Counties only)
Back-up email to: daniel.gamon@waterboards.ca.gov

Fresno Office: (559) 445-5116
(Fresno, Kern, Kings, Madera, Mariposa, and Tulare Counties only)
Back-up email to: dale.harvey@waterboards.ca.gov

2. Contact Local Environmental Health and Human Services

Fresno County Environmental Health
1221 Fulton Mall, Third Floor
P. O. Box 11867
Fresno, CA 93775
(559) 445–3357 FAX (559) 445–3379

Kern County Environmental Health Services
2700 M Street, Suite 300
Bakersfield, CA 93301
(661) 862–8700 FAX (661) 862–8701

Kings County Environmental Health Services
300 Campus Drive
Hanford, CA 93230
(559) 584–1411 FAX (559) 584–6040

Madera County Department of Environmental Health
2037 West Cleveland Avenue MS–E
Madera, CA 93637
(559) 675–7823 FAX (559) 675–7919

Merced County Health Department
Division of Environmental Health
777 West 22nd Street
Merced, CA 95340
(209) 381–1100 FAX (209) 384–1593

Tulare County Environmental Health Department
5957 South Mooney Boulevard
Visalia, CA 93277
(559) 733–6441

3. Contact California Office of Emergency Services (24/7)

3650 Schriever Ave, Mather, CA 95655
Main Number (916) 845-8510
Website www.oes.ca.gov

C. Sampling and Written Reports Needed:

Detailed requirements outlined in Priority Reporting of Significant Events, pages MRP 10 through MRP 11 of the General Order.

Notifications Completed by: ______________________________

Date ___________

Appendix H

Manure/Process Wastewater Tracking Manifest

Manure/Process Wastewater Tracking Manifest

Instructions:

1. Complete one manifest for each hauling event, for each destination. A hauling event may last for several days, as long as the manure is being hauled to the same destination.
2. If there are multiple destinations, complete a separate form for each destination.
3. The operator must obtain the signature of the hauler upon completion of each manure-hauling event.
4. The operator shall submit copies of manure/process wastewater tracking manifest(s) with the Annual Monitoring Report.

Dairy Information:

Name of Dairy

Owner/Operator

Address City Zip Code

Contact Person: Phone Number

Solid Manure Hauler Information:

Name of Hauling Company/Person:

Address City Zip Code

Contact Person: Phone Number

Destination Information:

Name of Composting Facility / Broker / Farmer / Other (please identify which)

Address City Zip Code

Contact Person: Phone Number

APN's

Manure/Process Wastewater Tracking Manifest
(Continued)

Solid Manure:

Start Date: ____________________ End Date: ____________________

Amount Hauled:

OR	________________	Tons @	________________	% Moisture
	________________	Yds^3 @	________________	Density (lb/ft^3)

Method used to determine amount: ____

____

Process Wastewater:

A signed Third Party Wastewater Agreement is required. Dairy Operator to sign acknowledging this requirement.

Operator's Signature: __________________________ Date: ___________________

Start Date: ____________________ End Date: ____________________

Amount Pumped:

OR	________________	Gallons
	________________	Acre-inches

Method used to determine amount: ____

____

Certification:

I declare under the penalty of law that I personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Operator's Signature: __________________________ Date: ___________________

Hauler's Signature: __________________________ Date: ___________________

Appendix I

Storage Pond

Solids Removal Log

Date	Signature	Cleaning Operator

Appendix I

Aeration Pond

Solids Removal Log

Date	Signature	Cleaning Operator

Appendix I

Anaerobic Pond 1 (North)

Solids Removal Log

Date	Signature	Cleaning Operator

Appendix I

Anaerobic Pond 2 (South)

Solids Removal Log

Date	Signature	Cleaning Operator

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Appendix E – Soil Water Balances and Loading Rates

Appendix E1. Generalized Land Application Area soil-water balance - Corn-wheat rotation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	66		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	--
Total Yield (tons/acre):	25	32	--
Annual Crop N Removed (lbs):	33,228		

STORAGE POND INFORMATION		
Est. Pond Surface Area:	3.02	acres
	131,520	ft^2
Est. Total Usable Pond Volume:	**17.202**	MG
	52.811	acre-feet
	2,299,627	ft^3
Oct 1 Carryover:	0	MG
--	--	--
--	--	--

EFFLUENT STORAGE POND: PUMPS AND FLOW RATE INFORMATION		
# of Pond Eff Pumps:	1	
Pump 1 Flow Rate:	1,500	gpm
Pump 2 Flow Rate:	--	gpm
Total Effluent Flow:	1,500	gpm
Max Daily (24-hour)	2,160,000	GPD
	2.16	MGD
Max Depth to LAA:	1.21	in/day
--	--	--

IRRIGATION AND SOIL INFORMATION		
Irrigation System:	Surface - Border Check	
Assumed Distribution Uniformity (DU):	0.80	
Assumed Surface Runoff and Soil/Spray Evap:	30%	
Generalized Avg Irrigation Efficiency Factor:	70%	
Predominant Soil Series & Phase:	Crosscreek-Kai assoc	
Assumed Root Zone:	60	inches
Root Zone Soil AWHC: [1]	**8.1**	**inches**
Mgmt Allow. Depletion (MAD):	70%	of AWHC
Max Soil Moisture Depletion (SMD):	5.6	inches
October 1 Soil Water Content: [1]	100%	of AWHC
	8.1	inches

MONTH	WEEK #	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	ACRES	INFLUENT FLOW	------- STORAGE [3] -------			---- I N P U T S ---- Gross Hydraulic Loading 5						Net Hydraulic Loading [6]				--- O U T P U T S --- Evapotranspiration [7]		Actual SMD (Soil Water) [8]	Estimated Deep Percolation [9]	SOIL WATER ÷ AWHC [10]
								Volumes: Total Input	Total Output	End	Precip [4]	Storage Effluent Irrigation		Fresh Irrigation		Total	Effective Precip [4]	Effluent Irrigation	Fresh Irrigation	Total Input	Potential ETc	Estimated ETc			
							MG	MG	MG	MG	inches	MG	inches	MG	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	%
OCTOBER	1	10/1	Corn	Dry corn & field for harvest	NO	66	0.150	0.154	0.010	0.143	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.14	7.9	0.0	98%
	1	10/2	Corn	Dry corn & field for harvest	NO	66	0.150	0.154	0.010	0.287	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.14	7.8	0.0	97%
	1	10/3	Corn	Dry corn & field for harvest	NO	66	0.000	0.004	0.010	0.280	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.14	7.7	0.0	95%
	1	10/4	Corn	Dry corn & field for harvest	NO	66	0.150	0.154	0.010	0.424	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.14	7.5	0.0	93%
	1	10/5	Corn	Dry corn & field for harvest	NO	66	0.150	0.154	0.010	0.567	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.14	7.4	0.0	92%
	1	10/6	Corn	Dry corn & field for harvest	NO	66	0.150	0.154	0.010	0.711	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.14	7.3	0.0	90%
	1	10/7	Corn	Dry corn & field for harvest	NO	66	0.150	0.154	0.010	0.854	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.14	7.1	0.0	89%
	2	10/8	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	66	0.150	0.154	0.010	0.998	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.14	7.0	0.0	87%
	2	10/9	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	66	0.150	0.154	0.010	1.141	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.13	6.9	0.0	85%
	2	10/10	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	66	0.000	0.004	0.010	1.134	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.13	6.7	0.0	84%
	2	10/11	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	66	0.150	0.154	0.010	1.278	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.13	6.6	0.0	82%
	2	10/12	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	66	0.150	0.154	0.010	1.421	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.13	6.5	0.0	80%
	2	10/13	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	66	0.150	0.154	0.010	1.565	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.13	6.4	0.0	79%
	2	10/14	Corn	Disc & Incorporate WF Stubble 2x	NO	66	0.150	0.154	0.010	1.708	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.13	6.2	0.0	77%
	3	10/15	Corn	Disc & Incorporate WF Stubble 2x	NO	66	0.150	0.154	0.010	1.852	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.13	6.1	0.0	76%
	3	10/16	Fallow	Finish Disc (2x)	NO	66	0.150	0.154	0.010	1.995	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.1	0.0	75%
	3	10/17	Fallow	Finish Disc (2x)	NO	66	0.000	0.004	0.010	1.989	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.1	0.0	75%
	3	10/18	Fallow	Collect fall soil samples for analysis	NO	66	0.150	0.154	0.010	2.132	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.1	0.0	75%
	3	10/19	Fallow	Collect fall soil samples for analysis	NO	66	0.150	0.154	0.010	2.276	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.0	0.0	75%
	3	10/20	Fallow	Form Border Check Borders (~100' wide)	NO	66	0.150	0.154	0.010	2.419	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.0	0.0	75%
	3	10/21	Fallow	Form Border Check Borders (~100' wide)	NO	66	0.150	0.154	0.010	2.562	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.0	0.0	75%
	4	10/22	Fallow	Preirrigation Event (~8")	--	66	0.150	0.154	0.756	1.960	0.0	0.396	0.2	0.0		0.2	0.0	0.2	0.0	0.2	0.02	0.02	6.2	0.0	76%
	4	10/23	Fallow	Preirrigation Event (~8")	--	66	0.150	0.154	0.756	1.357	0.0	0.396	0.2	0.0		0.2	0.0	0.2	0.0	0.2	0.02	0.02	6.3	0.0	78%
	4	10/24	Fallow	Preirrigation Event (~8")	--	66	0.000	0.004	0.756	0.605	0.0	0.396	0.2	0.0		0.2	0.0	0.2	0.0	0.2	0.02	0.02	6.5	0.0	80%
	4	10/25	Fallow	Preirrigation Event (~8")	--	66	0.150	0.154	0.758	0.000	0.0	0.398	0.2	0.0		0.2	0.0	0.2	0.0	0.2	0.02	0.02	6.6	0.0	82%
	4	10/26	Fallow	Field Drying for Planting	NO	66	0.150	0.154	0.010	0.144	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.6	0.0	82%
	4	10/27	Fallow	|	NO	66	0.150	0.154	0.010	0.287	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.6	0.0	82%
	4	10/28	Fallow	|	NO	66	0.150	0.154	0.010	0.431	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.6	0.0	81%
	5	10/29	Fallow	|	NO	66	0.150	0.154	0.010	0.574	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.6	0.0	81%
	5	10/30	Fallow	|	NO	66	0.150	0.154	0.010	0.717	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.5	0.0	81%
	5	10/31	Fallow	|	NO	66	0.000	0.004	0.010	0.711	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.5	0.0	81%

Appendix E1. Generalized Land Application Area soil-water balance - Corn-wheat rotation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	66		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	--
Total Yield (tons/acre):	25	32	--
Annual Crop N Removed (lbs):	33,228		

STORAGE POND INFORMATION		
Est. Pond Surface Area:	3.02	acres
	131,520	ft^2
Est. Total Usable Pond Volume:	**17.202**	MG
	52.811	acre-feet
	2,299,627	ft^3
Oct 1 Carryover:	0	MG
--	--	--
--	--	--

EFFLUENT STORAGE POND: PUMPS AND FLOW RATE INFORMATION		
# of Pond Eff Pumps:	1	
Pump 1 Flow Rate:	1,500	gpm
Pump 2 Flow Rate:	--	gpm
Total Effluent Flow:	1,500	gpm
Max Daily (24-hour)	2,160,000	GPD
	2.16	MGD
Max Depth to LAA:	1.21	in/day
--	--	--

IRRIGATION AND SOIL INFORMATION		
Irrigation System:	Surface - Border Check	
Assumed Distribution Uniformity (DU):	0.80	
Assumed Surface Runoff and Soil/Spray Evap:	30%	
Generalized Avg Irrigation Efficiency Factor:	70%	
Predominant Soil Series & Phase:	Crosscreek-Kai assoc	
Assumed Root Zone:	60	inches
Root Zone Soil AWHC: [1]	**8.1**	**inches**
Mgmt Allow. Depletion (MAD):	70%	of AWHC
Max Soil Moisture Depletion (SMD):	5.6	inches
October 1 Soil Water Content: [1]	100%	of AWHC
	8.1	inches

MONTH	WEEK #	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	ACRES	INFLUENT FLOW	STORAGE [3] – Volumes: Total Input	Total Output	End	INPUTS – Gross Hydraulic Loading 5: Precip [4]	Storage Effluent Irrigation		Fresh Irrigation		Total	Net Hydraulic Loading [6]: Effective Precip [4]	Effluent Irrigation	Fresh Irrigation	Total Input	OUTPUTS – Evapotranspiration [7]: Potential ETc	Estimated ETc	Actual SMD (Soil Water) [8]	Estimated Deep Percolation [9]	SOIL WATER ÷ AWHC [10]
							MG	MG	MG	MG	inches	MG	inches	MG	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	%
NOVEMBER	5	11/1	WF	Plant Winter Forage	NO	66	0.150	0.158	0.005	0.864	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.04	6.5	0.0	81%
	5	11/2	WF	Plant Winter Forage	NO	66	0.150	0.158	0.005	1.017	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.04	6.5	0.0	81%
	5	11/3	WF	Plant Winter Forage	NO	66	0.150	0.158	0.005	1.170	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.04	6.5	0.0	81%
	5	11/4	WF	Plant Winter Forage	NO	66	0.150	0.158	0.005	1.323	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.04	6.5	0.0	81%
	6	11/5	WF	Winter Forage Growing	--	66	0.150	0.158	0.205	1.276	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	6.6	0.0	82%
	6	11/6	WF	|	--	66	0.150	0.158	0.205	1.229	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	6.7	0.0	83%
	6	11/7	WF	|	--	66	0.000	0.008	0.205	1.032	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	6.8	0.0	84%
	6	11/8	WF	|	--	66	0.150	0.158	0.205	0.985	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	6.9	0.0	85%
	6	11/9	WF	|	--	66	0.150	0.158	0.205	0.939	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	7.0	0.0	86%
	6	11/10	WF	|	--	66	0.150	0.158	0.205	0.892	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	7.0	0.0	87%
	6	11/11	WF	|	--	66	0.150	0.158	0.205	0.845	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	7.1	0.0	88%
	7	11/12	WF	|	--	66	0.150	0.158	0.205	0.798	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	7.2	0.0	90%
	7	11/13	WF	|	--	66	0.150	0.158	0.205	0.751	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	7.3	0.0	91%
	7	11/14	WF	|	--	66	0.000	0.008	0.205	0.554	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	7.4	0.0	92%
	7	11/15	WF	|	--	66	0.150	0.158	0.205	0.507	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	7.5	0.0	93%
	7	11/16	WF	|	--	66	0.150	0.158	0.205	0.460	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.01	0.01	7.6	0.0	94%
	7	11/17	WF	|	--	66	0.150	0.158	0.205	0.413	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.01	0.01	7.7	0.0	95%
	7	11/18	WF	|	--	66	0.150	0.158	0.005	0.566	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	7.7	0.0	96%
	8	11/19	WF	|	--	66	0.150	0.158	0.005	0.719	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	7.7	0.0	96%
	8	11/20	WF	|	--	66	0.150	0.158	0.005	0.872	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	7.8	0.0	96%
	8	11/21	WF	|	--	66	0.000	0.008	0.005	0.875	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	7.8	0.0	97%
	8	11/22	WF	|	--	66	0.150	0.158	0.005	1.029	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	7.8	0.0	97%
	8	11/23	WF	|	--	66	0.150	0.158	0.005	1.182	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	7.9	0.0	98%
	8	11/24	WF	|	--	66	0.150	0.158	0.005	1.335	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	7.9	0.0	98%
	8	11/25	WF	|	--	66	0.150	0.158	0.005	1.488	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	7.9	0.0	98%
	9	11/26	WF	|	--	66	0.150	0.158	0.005	1.641	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	8.0	0.0	99%
	9	11/27	WF	|	--	66	0.150	0.158	0.005	1.794	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	8.0	0.0	99%
	9	11/28	WF	|	--	66	0.000	0.008	0.005	1.797	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	8.0	0.0	99%
	9	11/29	WF	|	--	66	0.150	0.158	0.005	1.950	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	8.0	0.0	100%
	9	11/30	WF	|	--	66	0.150	0.158	0.005	2.103	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	8.1	0.0	100%
DECEMBER	9	12/1	WF	|	--	66	0.150	0.160	0.003	2.261	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	9	12/2	WF	|	--	66	0.150	0.160	0.003	2.419	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	10	12/3	WF	|	--	66	0.150	0.160	0.003	2.576	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	10	12/4	WF	|	--	66	0.150	0.160	0.003	2.734	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	10	12/5	WF	|	--	66	0.000	0.010	0.003	2.742	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	10	12/6	WF	|	--	66	0.150	0.160	0.003	2.899	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	10	12/7	WF	|	--	66	0.150	0.160	0.003	3.057	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	10	12/8	WF	|	--	66	0.150	0.160	0.003	3.215	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	10	12/9	WF	|	--	66	0.150	0.160	0.003	3.373	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	11	12/10	WF	|	--	66	0.150	0.160	0.003	3.530	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	11	12/11	WF	|	--	66	0.150	0.160	0.003	3.688	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	11	12/12	WF	|	--	66	0.000	0.010	0.003	3.696	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	11	12/13	WF	|	--	66	0.150	0.160	0.003	3.854	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	11	12/14	WF	|	--	66	0.150	0.160	0.003	4.011	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	11	12/15	WF	|	--	66	0.150	0.160	0.003	4.169	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	11	12/16	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	4.327	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	12	12/17	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	4.485	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	12	12/18	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	4.642	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	12	12/19	WF	Winter Soil Salinity Leaching	--	66	0.000	0.010	0.003	4.650	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	12	12/20	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	4.808	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	12	12/21	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	4.965	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	12	12/22	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	5.123	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	12	12/23	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	5.281	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	13	12/24	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	5.439	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	13	12/25	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	5.596	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	13	12/26	WF	Winter Soil Salinity Leaching	--	66	0.000	0.010	0.003	5.604	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	13	12/27	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	5.762	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	13	12/28	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	5.920	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	13	12/29	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	6.077	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	13	12/30	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	6.235	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	14	12/31	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	6.393	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%

Appendix E1. Generalized Land Application Area soil-water balance - Corn-wheat rotation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	66		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	--
Total Yield (tons/acre):	25	32	--
Annual Crop N Removed (lbs):	33,228		

STORAGE POND INFORMATION		
Est. Pond Surface Area:	3.02	acres
	131,520	ft^2
Est. Total Usable Pond Volume:	**17.202**	MG
	52.811	acre-feet
	2,299,627	ft^3
Oct 1 Carryover:	0	MG
--	--	--
--	--	--

EFFLUENT STORAGE POND: PUMPS AND FLOW RATE INFORMATION		
# of Pond Eff Pumps:	1	
Pump 1 Flow Rate:	1,500	gpm
Pump 2 Flow Rate:	--	gpm
Total Effluent Flow:	1,500	gpm
Max Daily (24-hour)	2,160,000	GPD
	2.16	MGD
Max Depth to LAA:	1.21	in/day
--	--	--

IRRIGATION AND SOIL INFORMATION		
Irrigation System:	Surface - Border Check	
Assumed Distribution Uniformity (DU):	0.80	
Assumed Surface Runoff and Soil/Spray Evap:	30%	
Generalized Avg Irrigation Efficiency Factor:	70%	
Predominant Soil Series & Phase:	Crosscreek-Kai assoc	
Assumed Root Zone:	60	inches
Root Zone Soil AWHC: [1]	**8.1**	**inches**
Mgmt Allow. Depletion (MAD):	70%	of AWHC
Max Soil Moisture Depletion (SMD):	5.6	inches
October 1 Soil Water Content: [1]	100%	of AWHC
	8.1	inches

MONTH	WEEK #	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	ACRES	INFLUENT FLOW (MG)	STORAGE [3] Volumes: Total Input (MG)	Total Output (MG)	End (MG)	INPUTS — Gross Hydraulic Loading 5: Precip [4] (inches)	Storage Effluent Irrigation (MG)	Storage Effluent Irrigation (inches)	Fresh Irrigation (MG)	Fresh Irrigation (inches)	Total (inches)	Net Hydraulic Loading [6]: Effective Precip [4] (inches)	Effluent Irrigation (inches)	Fresh Irrigation (inches)	Total Input (inches)	OUTPUTS — Evapotranspiration [7]: Potential ETc (inches)	Estimated ETc (inches)	Actual SMD (Soil Water) [8] (inches)	Estimated Deep Percolation [9] (inches)	SOIL WATER ÷ AWHC [10] (%)
JANUARY	14	1/1	WF	Winter Soil Salinity Leaching	--	66	0.150	0.756	0.003	7.145	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	14	1/2	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	7.301	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	14	1/3	WF	Winter Soil Salinity Leaching	--	66	0.000	0.010	0.003	7.308	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	14	1/4	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	7.464	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	14	1/5	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	7.621	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	14	1/6	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	7.777	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	15	1/7	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	7.934	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	15	1/8	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	8.090	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	15	1/9	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	8.246	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	15	1/10	WF	Winter Soil Salinity Leaching	--	66	0.000	0.010	0.003	8.253	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	15	1/11	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	8.409	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	15	1/12	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	8.566	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	15	1/13	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	8.722	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	16	1/14	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	8.878	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	16	1/15	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	9.035	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	16	1/16	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	9.191	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	16	1/17	WF	Winter Soil Salinity Leaching	--	66	0.000	0.010	0.003	9.198	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	16	1/18	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	9.354	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	16	1/19	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	9.510	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	16	1/20	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	9.667	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	17	1/21	WF	Post-Emergent Herbicide Application	NO	66	0.150	0.160	0.003	9.823	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	17	1/22	WF	Post-Emergent Herbicide Application	NO	66	0.150	0.160	0.003	9.980	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	17	1/23	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	10.136	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	17	1/24	WF	Winter Soil Salinity Leaching	--	66	0.000	0.010	0.003	10.142	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	17	1/25	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	10.299	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	17	1/26	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	10.455	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	17	1/27	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	10.612	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	18	1/28	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	10.768	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	18	1/29	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	10.924	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	18	1/30	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	11.081	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	18	1/31	WF	Winter Soil Salinity Leaching	--	66	0.000	0.010	0.003	11.087	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
FEBRUARY	18	2/1	WF	Post-Emergent Herbicide Application	NO	66	0.150	0.160	0.006	11.241	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	18	2/2	WF	Post-Emergent Herbicide Application	NO	66	0.150	0.160	0.006	11.396	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	18	2/3	WF	Post-Emergent Herbicide Application	NO	66	0.150	0.160	0.006	11.550	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	19	2/4	WF	|	--	66	0.150	0.160	0.006	11.704	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	19	2/5	WF	|	--	66	0.150	0.160	0.006	11.859	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	19	2/6	WF	|	--	66	0.150	0.160	0.006	12.013	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	19	2/7	WF	|	--	66	0.000	0.010	0.006	12.017	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	19	2/8	WF	|	--	66	0.150	0.160	0.006	12.171	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	19	2/9	WF	|	--	66	0.150	0.160	0.006	12.326	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	19	2/10	WF	|	--	66	0.150	0.160	0.006	12.480	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	20	2/11	WF	|	--	66	0.150	0.160	0.006	12.634	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	20	2/12	WF	|	--	66	0.150	0.160	0.006	12.789	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	20	2/13	WF	|	--	66	0.150	0.160	0.006	12.943	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	20	2/14	WF	|	--	66	0.000	0.010	0.006	12.947	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	20	2/15	WF	|	--	66	0.150	0.160	0.006	13.101	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	8.0	0.0	100%
	20	2/16	WF	|	--	66	0.150	0.160	0.006	13.256	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	8.0	0.0	99%
	20	2/17	WF	|	--	66	0.150	0.160	0.006	13.410	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	8.0	0.0	99%
	21	2/18	WF	|	--	66	0.150	0.160	0.006	13.564	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	8.0	0.0	99%
	21	2/19	WF	|	--	66	0.150	0.160	0.006	13.718	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.9	0.0	99%
	21	2/20	WF	|	--	66	0.150	0.160	0.006	13.873	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.9	0.0	98%
	21	2/21	WF	|	--	66	0.000	0.010	0.006	13.877	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.9	0.0	98%
	21	2/22	WF	|	--	66	0.150	0.160	0.006	14.031	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.9	0.0	98%
	21	2/23	WF	|	--	66	0.150	0.160	0.006	14.186	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.8	0.0	97%
	21	2/24	WF	|	--	66	0.150	0.160	0.006	14.340	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.8	0.0	97%
	22	2/25	WF	|	--	66	0.150	0.160	0.006	14.494	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.8	0.0	97%
	22	2/26	WF	|	--	66	0.150	0.160	0.006	14.648	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.8	0.0	96%
	22	2/27	WF	|	--	66	0.150	0.160	0.006	14.803	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.8	0.0	96%
	22	2/28	WF	|	--	66	0.000	0.010	0.006	14.807	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.7	0.0	96%

Appendix E1. Generalized Land Application Area soil-water balance - Corn-wheat rotation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	66		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	--
Total Yield (tons/acre):	25	32	--
Annual Crop N Removed (lbs):	33,228		

STORAGE POND INFORMATION		
Est. Pond Surface Area:	3.02	acres
	131,520	ft^2
Est. Total Usable Pond Volume:	**17.202**	MG
	52.811	acre-feet
	2,299,627	ft^3
Oct 1 Carryover:	0	MG
--	--	--
--	--	--

EFFLUENT STORAGE POND: PUMPS AND FLOW RATE INFORMATION		
# of Pond Eff Pumps:	1	
Pump 1 Flow Rate:	1,500	gpm
Pump 2 Flow Rate:	--	gpm
Total Effluent Flow:	1,500	gpm
Max Daily (24-hour)	2,160,000	GPD
	2.16	MGD
Max Depth to LAA:	1.21	in/day
--	--	--

IRRIGATION AND SOIL INFORMATION		
Irrigation System:	Surface - Border Check	
Assumed Distribution Uniformity (DU):	0.80	
Assumed Surface Runoff and Soil/Spray Evap:	30%	
Generalized Avg Irrigation Efficiency Factor:	70%	
Predominant Soil Series & Phase:	Crosscreek-Kai assoc	
Assumed Root Zone:	60	inches
Root Zone Soil AWHC: [1]	**8.1**	**inches**
Mgmt Allow. Depletion (MAD):	70%	of AWHC
Max Soil Moisture Depletion (SMD):	5.6	inches
October 1 Soil Water Content: [1]	100%	of AWHC
	8.1	inches

MONTH	WEEK #	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	ACRES	INFLUENT FLOW	------- STORAGE [3] ------- Volumes			-- I N P U T S -- Gross Hydraulic Loading 5						Net Hydraulic Loading [6]				--- O U T P U T S --- Evapotranspiration [7]		Actual SMD (Soil Water) [8]	Estimated Deep Percolation [9]	SOIL WATER ÷ AWHC [10]
								Total Input	Total Output	End	Precip [4]	Storage Effluent Irrigation		Fresh Irrigation		Total	Effective Precip [4]	Effluent Irrigation	Fresh Irrigation	Total Input	Potential ETc	Estimated ETc			
							MG	MG			inches	MG	inches	MG	inches		inches						inches		%
MARCH	22	3/1	WF	I	--	66	0.150	0.159	0.219	14.746	0.1	0.210	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.13	0.12	7.8	0.0	96%
	22	3/2	WF	I	--	66	0.150	0.159	0.219	14.685	0.1	0.210	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.13	0.12	7.8	0.0	96%
	22	3/3	WF	I	--	66	0.150	0.159	0.219	14.624	0.1	0.210	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.13	0.12	7.8	0.0	97%
	23	3/4	WF	I	--	66	0.150	0.159	0.219	14.563	0.1	0.210	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.13	0.12	7.8	0.0	97%
	23	3/5	WF	I	--	66	0.150	0.159	0.219	14.503	0.1	0.210	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.13	0.12	7.9	0.0	97%
	23	3/6	WF	I	--	66	0.150	0.159	0.219	14.442	0.1	0.210	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.13	0.12	7.9	0.0	98%
	23	3/7	WF	I	--	66	0.000	0.009	0.219	14.231	0.1	0.210	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.13	0.12	7.9	0.0	98%
	23	3/8	WF	I	--	66	0.150	0.159	0.209	14.180	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.13	0.12	7.9	0.0	98%
	23	3/9	WF	I	--	66	0.150	0.159	0.209	14.129	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.13	0.12	7.9	0.0	99%
	23	3/10	WF	I	--	66	0.150	0.159	0.209	14.078	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.13	0.12	8.0	0.0	99%
	24	3/11	WF	I	--	66	0.150	0.159	0.209	14.027	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.13	0.13	8.0	0.0	99%
	24	3/12	WF	I	--	66	0.150	0.159	0.209	13.976	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.13	0.13	8.0	0.0	99%
	24	3/13	WF	I	--	66	0.150	0.159	0.209	13.925	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.13	0.13	8.0	0.0	100%
	24	3/14	WF	I	--	66	0.000	0.009	0.209	13.725	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.13	0.13	8.1	0.0	100%
	24	3/15	WF	I	--	66	0.150	0.159	0.209	13.674	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.13	0.13	8.1	0.0	100%
	24	3/16	WF	I	--	66	0.150	0.159	0.209	13.623	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.16	0.16	8.1	0.0	100%
	24	3/17	WF	I	--	66	0.150	0.159	0.209	13.572	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.16	0.16	8.0	0.0	100%
	25	3/18	WF	I	--	66	0.150	0.159	0.239	13.491	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.0	0.0	100%
	25	3/19	WF	I	--	66	0.150	0.159	0.239	13.410	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.0	0.0	100%
	25	3/20	WF	I	--	66	0.150	0.159	0.239	13.329	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	25	3/21	WF	I	--	66	0.000	0.009	0.239	13.098	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	25	3/22	WF	I	--	66	0.150	0.159	0.239	13.018	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	25	3/23	WF	I	--	66	0.150	0.159	0.239	12.937	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	25	3/24	WF	I	--	66	0.150	0.159	0.239	12.856	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	26	3/25	WF	I	--	66	0.150	0.159	0.239	12.775	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	26	3/26	WF	I	--	66	0.150	0.159	0.239	12.694	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	26	3/27	WF	I	--	66	0.150	0.159	0.239	12.613	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	26	3/28	WF	I	--	66	0.000	0.009	0.239	12.382	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	26	3/29	WF	I	--	66	0.150	0.159	0.239	12.301	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	26	3/30	WF	I	--	66	0.150	0.159	0.239	12.220	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	26	3/31	WF	I	--	66	0.150	0.159	0.239	12.140	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
APRIL	27	4/1	WF	I	--	66	0.150	0.155	0.445	11.850	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	27	4/2	WF	I	--	66	0.150	0.155	0.445	11.561	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	27	4/3	WF	I	--	66	0.150	0.155	0.445	11.272	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	27	4/4	WF	I	--	66	0.000	0.005	0.445	10.833	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	27	4/5	WF	I	--	66	0.150	0.155	0.445	10.543	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	27	4/6	WF	I	--	66	0.150	0.155	0.445	10.254	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	27	4/7	WF	I	--	66	0.150	0.155	0.445	9.965	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	28	4/8	WF	I	--	66	0.150	0.155	0.445	9.676	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	28	4/9	WF	I	--	66	0.150	0.155	0.445	9.386	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	28	4/10	WF	I	--	66	0.150	0.155	0.445	9.097	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	28	4/11	WF	I	--	66	0.000	0.005	0.445	8.658	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	28	4/12	WF	I	--	66	0.150	0.155	0.445	8.369	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	28	4/13	WF	I	--	66	0.150	0.155	0.445	8.080	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	28	4/14	WF	I	--	66	0.150	0.155	0.445	7.790	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	29	4/15	WF	I	--	66	0.150	0.155	0.445	7.501	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	29	4/16	WF	I	--	66	0.150	0.155	0.565	7.092	0.1	0.550	0.3	0.0		0.4	0.0	0.2	0.0	0.3	0.24	0.24	8.1	0.0	100%
	29	4/17	WF	I	--	66	0.150	0.155	0.545	6.703	0.1	0.530	0.3	0.0		0.3	0.0	0.2	0.0	0.2	0.24	0.24	8.1	0.0	100%
	29	4/18	WF	I	--	66	0.000	0.005	0.545	6.163	0.1	0.530	0.3	0.0		0.3	0.0	0.2	0.0	0.2	0.24	0.24	8.1	0.0	100%
	29	4/19	WF	I	--	66	0.150	0.155	0.545	5.774	0.1	0.530	0.3	0.0		0.3	0.0	0.2	0.0	0.2	0.24	0.24	8.1	0.0	100%
	29	4/20	WF	I	--	66	0.150	0.155	0.545	5.385	0.1	0.530	0.3	0.0		0.3	0.0	0.2	0.0	0.2	0.24	0.24	8.1	0.0	100%
	29	4/21	WF	I	--	66	0.150	0.155	0.535	5.006	0.1	0.520	0.3	0.0		0.3	0.0	0.2	0.0	0.2	0.24	0.24	8.1	0.0	100%
	30	4/22	WF	Harvest/Chop/Haul WF	NO	66	0.150	0.155	0.015	5.146	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.24	0.24	7.9	0.0	97%
	30	4/23	WF	Harvest/Chop/Haul WF	NO	66	0.150	0.155	0.015	5.287	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.24	0.24	7.7	0.0	95%
	30	4/24	WF	Harvest/Chop/Haul WF	NO	66	0.150	0.155	0.015	5.428	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.24	0.24	7.5	0.0	92%
	30	4/25	WF	Harvest/Chop/Haul WF	NO	66	0.000	0.005	0.015	5.419	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.24	0.23	7.2	0.0	90%
	30	4/26	WF	Harvest/Chop/Haul WF	NO	66	0.150	0.155	0.015	5.559	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.24	0.23	7.0	0.0	87%
	30	4/27	WF	Harvest/Chop/Haul WF	NO	66	0.150	0.155	0.015	5.700	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.24	0.23	6.8	0.0	85%
	30	4/28	WF	Harvest/Chop/Haul WF	NO	66	0.150	0.155	0.015	5.841	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.24	0.22	6.6	0.0	82%
	31	4/29	WF	Collect spring soil samples for analysis	NO	66	0.150	0.155	0.015	5.982	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.24	0.22	6.4	0.0	80%
	31	4/30	WF	Collect spring soil samples for analysis	NO	66	0.150	0.155	0.015	6.123	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.24	0.22	6.2	0.0	77%

Appendix E1. Generalized Land Application Area soil-water balance - Corn-wheat rotation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	66		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	--
Total Yield (tons/acre):	25	32	--
Annual Crop N Removed (lbs):	33,228		

STORAGE POND INFORMATION		
Est. Pond Surface Area:	3.02	acres
	131,520	ft^2
Est. Total Usable Pond Volume:	**17.202**	MG
	52.811	acre-feet
	2,299,627	ft^3
Oct 1 Carryover:	0	MG
--	--	--
--	--	--

EFFLUENT STORAGE POND: PUMPS AND FLOW RATE INFORMATION		
# of Pond Eff Pumps:	1	
Pump 1 Flow Rate:	1,500	gpm
Pump 2 Flow Rate:	--	gpm
Total Effluent Flow:	1,500	gpm
Max Daily (24-hour)	2,160,000	GPD
	2.16	MGD
Max Depth to LAA:	1.21	in/day
--	--	--

IRRIGATION AND SOIL INFORMATION		
Irrigation System:	Surface - Border Check	
Assumed Distribution Uniformity (DU):	0.80	
Assumed Surface Runoff and Soil/Spray Evap:	30%	
Generalized Avg Irrigation Efficiency Factor:	70%	
Predominant Soil Series & Phase:	Crosscreek-Kai assoc	
Assumed Root Zone:	60	inches
Root Zone Soil AWHC: [1]	**8.1**	**inches**
Mgmt Allow. Depletion (MAD):	70%	of AWHC
Max Soil Moisture Depletion (SMD):	5.6	inches
October 1 Soil Water Content: [1]	100%	of AWHC
	8.1	inches

MONTH	WEEK #	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	ACRES	INFLUENT FLOW	STORAGE [3]: Volumes: Total Input	Total Output	End	INPUTS: Gross Hydraulic Loading 5: Precip [4]	Storage Effluent Irrigation		Fresh Irrigation		Total	Net Hydraulic Loading [6]: Effective Precip [4]	Effluent Irrigation	Fresh Irrigation	Total Input	OUTPUTS: Evapotranspiration [7]: Potential ETc	Estimated ETc	Actual SMD (Soil Water) [8]	Estimated Deep Percolation [9]	SOIL WATER ÷ AWHC [10]
							MG	MG	MG	MG	inches	MG	inches	MG	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	%
MAY	31	5/1	Fallow	Apply & Spread Solid Manure/Compost	NO	66	0.150	0.152	0.019	6.256	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.04	6.2	0.0	77%
	31	5/2	Fallow	Apply & Spread Solid Manure/Compost	NO	66	0.000	0.002	0.019	6.239	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.04	6.2	0.0	76%
	31	5/3	Fallow	Disc & Incorporate WF Stubble 2x	NO	66	0.150	0.152	0.019	6.372	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.04	6.1	0.0	76%
	31	5/4	Fallow	Disc & Incorporate WF Stubble 2x	NO	66	0.150	0.152	0.019	6.505	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.04	6.1	0.0	75%
	31	5/5	Fallow	Pull/Ridge/Shape Borders (~100 ft width)	NO	66	0.150	0.152	0.019	6.638	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.04	6.0	0.0	75%
	32	5/6	Fallow	Pull/Ridge/Shape Borders (~100 ft width)	NO	66	0.150	0.152	0.019	6.772	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.04	6.0	0.0	74%
	32	5/7	Fallow	Preirrigation Event (~8")	--	66	0.150	0.152	1.819	5.105	0.0	1.800	1.0	0.0		1.0	0.0	0.7	0.0	0.7	0.05	0.04	6.7	0.0	83%
	32	5/8	Fallow	Preirrigation Event (~8")	--	66	0.150	0.152	1.819	3.438	0.0	1.800	1.0	0.0		1.0	0.0	0.7	0.0	0.7	0.05	0.04	7.3	0.0	91%
	32	5/9	Fallow	Preirrigation Event (~8")	--	66	0.000	0.002	1.819	1.621	0.0	1.800	1.0	0.0		1.0	0.0	0.7	0.0	0.7	0.05	0.05	8.0	0.0	99%
	32	5/10	Fallow	Field Drying	NO	66	0.150	0.152	0.019	1.754	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.05	8.0	0.0	99%
	32	5/11	Fallow	Knockdown Borders	NO	66	0.150	0.152	0.019	1.887	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.05	7.9	0.0	98%
	32	5/12	Fallow	Finish/Offset Disc to Prepare Seedbed (2x)	NO	66	0.150	0.152	0.019	2.021	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.05	7.9	0.0	98%
	33	5/13	Fallow	Finish/Offset Disc to Prepare Seedbed (2x)	NO	66	0.150	0.152	0.019	2.154	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.05	7.8	0.0	97%
	33	5/14	Fallow	Finish/Offset Disc to Prepare Seedbed (2x)	NO	66	0.150	0.152	0.019	2.287	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.05	7.8	0.0	97%
	33	5/15	Fallow	Plant Corn Silage w/ insecticide+fertilizer	NO	66	0.150	0.152	0.019	2.420	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.05	7.8	0.0	96%
	33	5/16	Corn	Plant Corn Silage w/ insecticide+fertilizer	NO	66	0.000	0.002	0.019	2.403	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.12	0.12	7.7	0.0	95%
	33	5/17	Corn	Plant Corn Silage w/ insecticide+fertilizer	NO	66	0.150	0.152	0.019	2.536	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.12	0.12	7.6	0.0	94%
	33	5/18	Corn	Plant Corn Silage w/ insecticide+fertilizer	NO	66	0.150	0.152	0.019	2.669	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.12	0.11	7.4	0.0	92%
	33	5/19	Corn	Plant Corn Silage w/ insecticide+fertilizer	NO	66	0.150	0.152	0.019	2.803	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.12	0.11	7.3	0.0	91%
	34	5/20	Corn	Corn Silage Growing	--	66	0.150	0.152	0.119	2.836	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	7.3	0.0	90%
	34	5/21	Corn	|	--	66	0.150	0.152	0.119	2.869	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	7.2	0.0	89%
	34	5/22	Corn	|	--	66	0.150	0.152	0.119	2.902	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	7.1	0.0	88%
	34	5/23	Corn	|	--	66	0.000	0.002	0.119	2.785	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	7.1	0.0	88%
	34	5/24	Corn	|	--	66	0.150	0.152	0.119	2.818	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	7.0	0.0	87%
	34	5/25	Corn	|	--	66	0.150	0.152	0.119	2.852	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	6.9	0.0	86%
	34	5/26	Corn	|	--	66	0.150	0.152	0.119	2.885	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	6.9	0.0	85%
	35	5/27	Corn	|	--	66	0.150	0.152	0.119	2.918	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	6.8	0.0	84%
	35	5/28	Corn	|	--	66	0.150	0.152	0.119	2.951	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	6.7	0.0	83%
	35	5/29	Corn	|	--	66	0.150	0.152	0.119	2.984	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	6.6	0.0	82%
	35	5/30	Corn	|	--	66	0.000	0.002	0.119	2.867	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	6.6	0.0	82%
	35	5/31	Corn	|	--	66	0.150	0.152	0.119	2.901	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	6.5	0.0	81%
JUNE	35	6/1	Corn	Irrigation #1	--	66	0.150	0.150	0.122	2.929	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.03	6.5	0.0	81%
	35	6/2	Corn	|	--	66	0.150	0.150	0.122	2.957	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.03	6.5	0.0	81%
	36	6/3	Corn	Herbicide Application: Roundup	NO	66	0.150	0.150	0.022	3.085	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.04	0.03	6.5	0.0	80%
	36	6/4	Corn	Insecticide Application: Comite for spider mites	NO	66	0.150	0.150	0.022	3.213	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.04	0.03	6.4	0.0	80%
	36	6/5	Corn	|	--	66	0.150	0.150	0.122	3.241	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.03	6.4	0.0	80%
	36	6/6	Corn	|	--	66	0.000	0.000	0.122	3.119	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.03	6.4	0.0	80%
	36	6/7	Corn	|	--	66	0.150	0.150	0.122	3.147	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.03	6.4	0.0	80%
	36	6/8	Corn	|	--	66	0.150	0.150	0.122	3.176	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.03	6.4	0.0	80%
	36	6/9	Corn	|	--	66	0.150	0.150	0.122	3.204	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.03	6.4	0.0	80%
	37	6/10	Corn	|	--	66	0.150	0.150	0.122	3.232	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.03	6.4	0.0	80%
	37	6/11	Corn	Cultivated for weeds/furrowed	NO	66	0.150	0.150	0.022	3.360	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.04	0.03	6.4	0.0	80%
	37	6/12	Corn	Cultivated for weeds/furrowed	NO	66	0.150	0.150	0.022	3.488	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.04	0.03	6.4	0.0	79%
	37	6/13	Corn	Cultivated for weeds/furrowed	NO	66	0.000	0.000	0.022	3.466	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.04	0.03	6.3	0.0	79%
	37	6/14	Corn	Cultivated for weeds/furrowed	NO	66	0.150	0.150	0.022	3.594	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.04	0.03	6.3	0.0	78%
	37	6/15	Corn	Corn Silage Growing	--	66	0.150	0.150	0.122	3.622	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.03	6.3	0.0	78%
	37	6/16	Corn	|	--	66	0.150	0.150	0.122	3.650	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.3	0.0	78%
	38	6/17	Corn	|	--	66	0.150	0.150	0.122	3.679	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.2	0.0	77%
	38	6/18	Corn	|	--	66	0.150	0.150	0.122	3.707	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.2	0.0	77%
	38	6/19	Corn	|	--	66	0.150	0.150	0.122	3.735	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.2	0.0	77%
	38	6/20	Corn	|	--	66	0.000	0.000	0.122	3.613	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.1	0.0	76%
	38	6/21	Corn	|	--	66	0.150	0.150	0.122	3.641	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.1	0.0	76%
	38	6/22	Corn	|	--	66	0.150	0.150	0.122	3.669	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.1	0.0	75%
	38	6/23	Corn	|	--	66	0.150	0.150	0.122	3.697	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.0	0.0	75%
	39	6/24	Corn	|	--	66	0.150	0.150	0.122	3.725	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.0	0.0	75%
	39	6/25	Corn	|	--	66	0.150	0.150	0.122	3.753	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.0	0.0	74%
	39	6/26	Corn	|	--	66	0.150	0.150	0.122	3.781	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.0	0.0	74%
	39	6/27	Corn	|	--	66	0.000	0.000	0.122	3.660	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	5.9	0.0	73%
	39	6/28	Corn	|	--	66	0.150	0.150	0.122	3.688	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	5.9	0.0	73%
	39	6/29	Corn	|	--	66	0.150	0.150	0.122	3.716	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	5.9	0.0	73%
	39	6/30	Corn	|	--	66	0.150	0.150	0.122	3.744	0.0	0.100	0.1	0.9	0.50	0.6	0.0	0.0	0.4	0.4	0.07	0.06	6.2	0.0	77%

Appendix E1. Generalized Land Application Area soil-water balance - Corn-wheat rotation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	66		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	--
Total Yield (tons/acre):	25	32	--
Annual Crop N Removed (lbs):	33,228		

STORAGE POND INFORMATION		
Est. Pond Surface Area:	3.02	acres
	131,520	ft^2
Est. Total Usable Pond Volume:	**17.202**	MG
	52.811	acre-feet
	2,299,627	ft^3
Oct 1 Carryover:	0	MG
--	--	--
--	--	--

EFFLUENT STORAGE POND: PUMPS AND FLOW RATE INFORMATION		
# of Pond Eff Pumps:	1	
Pump 1 Flow Rate:	1,500	gpm
Pump 2 Flow Rate:	--	gpm
Total Effluent Flow:	1,500	gpm
Max Daily (24-hour)	2,160,000	GPD
	2.16	MGD
Max Depth to LAA:	1.21	in/day
--	--	--

IRRIGATION AND SOIL INFORMATION		
Irrigation System:	Surface - Border Check	
Assumed Distribution Uniformity (DU):	0.80	
Assumed Surface Runoff and Soil/Spray Evap:	30%	
Generalized Avg Irrigation Efficiency Factor:	70%	
Predominant Soil Series & Phase:	Crosscreek-Kai assoc	
Assumed Root Zone:	60	inches
Root Zone Soil AWHC: [1]	**8.1**	**inches**
Mgmt Allow. Depletion (MAD):	70%	of AWHC
Max Soil Moisture Depletion (SMD):	5.6	inches
October 1 Soil Water Content: [1]	100%	of AWHC
	8.1	inches

MONTH	WEEK #	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	ACRES	INFLUENT FLOW	------- STORAGE [3] ------- Volumes: Total Input	Total Output	End	INPUTS — Gross Hydraulic Loading 5: Precip [4]	Storage Effluent Irrigation		Fresh Irrigation		Total	Net Hydraulic Loading [6]: Effective Precip [4]	Effluent Irrigation	Fresh Irrigation	Total Input	OUTPUTS — Evapotranspiration [7]: Potential ETc	Estimated ETc	Actual SMD (Soil Water) [8]	Estimated Deep Percolation [9]	SOIL WATER ÷ AWHC [10]
							MG	MG	MG	MG	inches	MG	inches	MG	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	%
JULY	40	7/1	Corn	Herbicide Application: Clarity	NO	66	0.150	0.150	0.022	3.872	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.16	0.14	6.0	0.0	75%
	40	7/2	Corn	Herbicide Application: Clarity	NO	66	0.150	0.150	0.022	3.999	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.16	0.14	5.8	0.0	73%
	40	7/3	Corn	Corn Silage Growing	--	66	0.150	0.150	0.202	3.947	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.16	0.14	6.1	0.0	76%
	40	7/4	Corn	|	--	66	0.000	0.000	0.202	3.744	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.16	0.14	6.0	0.0	75%
	40	7/5	Corn	|	--	66	0.150	0.150	0.202	3.692	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.16	0.14	5.9	0.0	73%
	40	7/6	Corn	|	--	66	0.150	0.150	0.202	3.640	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.16	0.14	5.8	0.0	72%
	40	7/7	Corn	|	--	66	0.150	0.150	0.202	3.587	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.16	0.14	5.7	0.0	71%
	41	7/8	Corn	|	--	66	0.150	0.150	0.202	3.535	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.16	0.14	6.0	0.0	74%
	41	7/9	Corn	|	--	66	0.150	0.150	0.202	3.482	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.16	0.14	5.9	0.0	73%
	41	7/10	Corn	|	--	66	0.150	0.150	0.202	3.430	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.16	0.14	5.8	0.0	72%
	41	7/11	Corn	|	--	66	0.000	0.000	0.202	3.228	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.16	0.14	5.7	0.0	71%
	41	7/12	Corn	|	--	66	0.150	0.150	0.202	3.175	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.16	0.14	6.0	0.0	74%
	41	7/13	Corn	|	--	66	0.150	0.150	0.202	3.123	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.16	0.14	5.9	0.0	73%
	41	7/14	Corn	|	--	66	0.150	0.150	0.202	3.071	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.16	0.14	5.8	0.0	72%
	42	7/15	Corn	|	--	66	0.150	0.150	0.202	3.018	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.16	0.14	6.1	0.0	75%
	42	7/16	Corn	|	--	66	0.150	0.150	0.202	2.966	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.23	5.9	0.0	73%
	42	7/17	Corn	|	--	66	0.150	0.150	0.202	2.913	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	74%
	42	7/18	Corn	|	--	66	0.000	0.000	0.202	2.711	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.23	5.8	0.0	72%
	42	7/19	Corn	|	--	66	0.150	0.150	0.202	2.659	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	74%
	42	7/20	Corn	|	--	66	0.150	0.150	0.202	2.606	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.23	5.8	0.0	71%
	42	7/21	Corn	|	--	66	0.150	0.150	0.202	2.554	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	5.9	0.0	73%
	43	7/22	Corn	|	--	66	0.150	0.150	0.202	2.501	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	75%
	43	7/23	Corn	|	--	66	0.150	0.150	0.202	2.449	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.23	5.8	0.0	73%
	43	7/24	Corn	|	--	66	0.150	0.150	0.202	2.397	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	74%
	43	7/25	Corn	|	--	66	0.000	0.000	0.202	2.194	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.23	5.8	0.0	72%
	43	7/26	Corn	|	--	66	0.150	0.150	0.202	2.142	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	5.9	0.0	74%
	43	7/27	Corn	|	--	66	0.150	0.150	0.202	2.090	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.23	5.7	0.0	71%
	43	7/28	Corn	|	--	66	0.150	0.150	0.202	2.037	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	5.9	0.0	73%
	44	7/29	Corn	|	--	66	0.150	0.150	0.202	1.985	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	75%
	44	7/30	Corn	|	--	66	0.150	0.150	0.202	1.932	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.23	5.8	0.0	73%
	44	7/31	Corn	|	--	66	0.150	0.150	0.202	1.880	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	74%
AUGUST	44	8/1	Corn	|	--	66	0.000	0.000	0.160	1.720	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	6.1	0.0	76%
	44	8/2	Corn	|	--	66	0.150	0.150	0.160	1.711	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.31	0.27	5.8	0.0	72%
	44	8/3	Corn	|	--	66	0.150	0.150	0.160	1.701	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	5.9	0.0	73%
	44	8/4	Corn	|	--	66	0.150	0.150	0.160	1.691	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	6.0	0.0	75%
	45	8/5	Corn	|	--	66	0.150	0.150	0.160	1.681	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	6.1	0.0	76%
	45	8/6	Corn	|	--	66	0.150	0.150	0.160	1.672	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.31	0.27	5.8	0.0	72%
	45	8/7	Corn	|	--	66	0.150	0.150	0.160	1.662	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	5.9	0.0	74%
	45	8/8	Corn	|	--	66	0.000	0.000	0.160	1.502	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	6.0	0.0	75%
	45	8/9	Corn	|	--	66	0.150	0.150	0.160	1.492	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.31	0.27	5.8	0.0	71%
	45	8/10	Corn	|	--	66	0.150	0.150	0.160	1.483	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	5.8	0.0	73%
	45	8/11	Corn	|	--	66	0.150	0.150	0.160	1.473	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	5.9	0.0	74%
	46	8/12	Corn	|	--	66	0.150	0.150	0.160	1.463	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	6.0	0.0	75%
	46	8/13	Corn	|	--	66	0.150	0.150	0.160	1.453	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.31	0.27	5.8	0.0	72%
	46	8/14	Corn	|	--	66	0.150	0.150	0.160	1.444	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	5.9	0.0	73%
	46	8/15	Corn	|	--	66	0.000	0.000	0.160	1.284	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	5.9	0.0	74%
	46	8/16	Corn	|	--	66	0.150	0.150	0.160	1.274	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.1	0.0	75%
	46	8/17	Corn	|	--	66	0.150	0.150	0.160	1.264	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.24	5.9	0.0	73%
	46	8/18	Corn	|	--	66	0.150	0.150	0.160	1.255	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	74%
	47	8/19	Corn	|	--	66	0.150	0.150	0.160	1.245	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.24	5.8	0.0	72%
	47	8/20	Corn	|	--	66	0.150	0.150	0.160	1.235	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	5.9	0.0	73%
	47	8/21	Corn	|	--	66	0.150	0.150	0.160	1.226	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	75%
	47	8/22	Corn	|	--	66	0.000	0.000	0.160	1.066	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.24	5.8	0.0	72%
	47	8/23	Corn	|	--	66	0.150	0.150	0.160	1.056	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	5.9	0.0	74%
	47	8/24	Corn	|	--	66	0.150	0.150	0.160	1.046	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.1	0.0	75%
	47	8/25	Corn	|	--	66	0.150	0.150	0.160	1.037	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.24	5.9	0.0	73%
	48	8/26	Corn	|	--	66	0.150	0.150	0.160	1.027	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	74%
	48	8/27	Corn	|	--	66	0.150	0.150	0.160	1.017	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.24	5.8	0.0	72%
	48	8/28	Corn	|	--	66	0.150	0.150	0.160	1.007	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	5.9	0.0	73%
	48	8/29	Corn	|	--	66	0.000	0.000	0.160	0.848	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	75%
	48	8/30	Corn	|	--	66	0.150	0.150	0.160	0.838	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.24	5.8	0.0	72%
	48	8/31	Corn	|	--	66	0.150	0.150	0.160	0.828	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	5.9	0.0	74%

Appendix E1. Generalized Land Application Area soil-water balance - Corn-wheat rotation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	66		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	--
Total Yield (tons/acre):	25	32	--
Annual Crop N Removed (lbs):	33,228		

STORAGE POND INFORMATION		
Est. Pond Surface Area:	3.02	acres
	131,520	ft^2
Est. Total Usable Pond Volume:	**17.202**	MG
	52.811	acre-feet
	2,299,627	ft^3
Oct 1 Carryover:	0	MG
--	--	--
--	--	--

EFFLUENT STORAGE POND: PUMPS AND FLOW RATE INFORMATION		
# of Pond Eff Pumps:	1	
Pump 1 Flow Rate:	1,500	gpm
Pump 2 Flow Rate:	--	gpm
Total Effluent Flow:	1,500	gpm
Max Daily (24-hour)	2,160,000	GPD
	2.16	MGD
Max Depth to LAA:	1.21	in/day
--	--	--

IRRIGATION AND SOIL INFORMATION		
Irrigation System:	Surface - Border Check	
Assumed Distribution Uniformity (DU):	0.80	
Assumed Surface Runoff and Soil/Spray Evap:	30%	
Generalized Avg Irrigation Efficiency Factor:	70%	
Predominant Soil Series & Phase:	Crosscreek-Kai assoc	
Assumed Root Zone:	60	inches
Root Zone Soil AWHC: [1]	**8.1**	**inches**
Mgmt Allow. Depletion (MAD):	70%	of AWHC
Max Soil Moisture Depletion (SMD):	5.6	inches
October 1 Soil Water Content: [1]	100%	of AWHC
	8.1	inches

MONTH	WEEK #	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	ACRES	INFLUENT FLOW	STORAGE [3] Volumes: Total Input	Total Output	End	INPUTS – Gross Hydraulic Loading 5: Precip [4]	Storage Effluent Irrigation		Fresh Irrigation		Total	Net Hydraulic Loading [6]: Effective Precip [4]	Effluent Irrigation	Fresh Irrigation	Total Input	OUTPUTS – Evapotranspiration [7]: Potential ETc	Estimated ETc	Actual SMD (Soil Water) [8]	Estimated Deep Percolation [9]	SOIL WATER ÷ AWHC [10]
							MG	MG			inches	MG	inches	MG	inches		inches						inches		%
SEPTEMBER	48	9/1	Corn	I	--	66	0.150	0.151	0.155	0.824	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.25	0.21	6.1	0.0	76%
	49	9/2	Corn	I	--	66	0.150	0.151	0.155	0.819	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.25	0.22	5.9	0.0	73%
	49	9/3	Corn	I	--	66	0.150	0.151	0.155	0.815	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.25	0.21	6.1	0.0	75%
	49	9/4	Corn	I	--	66	0.150	0.151	0.155	0.811	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.25	0.22	5.9	0.0	73%
	49	9/5	Corn	I	--	66	0.000	0.001	0.155	0.656	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.25	0.21	6.0	0.0	75%
	49	9/6	Corn	I	--	66	0.150	0.151	0.155	0.652	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.25	0.21	5.8	0.0	72%
	49	9/7	Corn	I	--	66	0.150	0.151	0.155	0.648	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.25	0.21	6.0	0.0	74%
	49	9/8	Corn	I	--	66	0.150	0.151	0.155	0.643	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.25	0.21	5.8	0.0	72%
	50	9/9	Corn	I	--	66	0.150	0.151	0.155	0.639	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.25	0.21	6.0	0.0	74%
	50	9/10	Corn	I	--	66	0.150	0.151	0.155	0.635	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.25	0.21	6.1	0.0	76%
	50	9/11	Corn	I	--	66	0.150	0.151	0.155	0.630	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.25	0.22	5.9	0.0	74%
	50	9/12	Corn	I	--	66	0.000	0.001	0.155	0.476	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.25	0.21	6.1	0.0	76%
	50	9/13	Corn	I	--	66	0.150	0.151	0.155	0.471	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.25	0.22	5.9	0.0	73%
	50	9/14	Corn	I	--	66	0.150	0.151	0.155	0.467	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.25	0.21	6.1	0.0	75%
	50	9/15	Corn	I	--	66	0.150	0.151	0.155	0.463	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.25	0.21	5.9	0.0	73%
	51	9/16	Corn	I	--	66	0.150	0.151	0.155	0.458	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.19	0.16	6.1	0.0	75%
	51	9/17	Corn	I	--	66	0.150	0.151	0.155	0.454	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.19	0.17	5.9	0.0	74%
	51	9/18	Corn	I	--	66	0.150	0.151	0.155	0.450	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.19	0.16	5.8	0.0	72%
	51	9/19	Corn	I	--	66	0.000	0.001	0.155	0.295	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.19	0.16	6.0	0.0	75%
	51	9/20	Corn	I	--	66	0.150	0.151	0.155	0.291	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.19	0.16	5.9	0.0	73%
	51	9/21	Corn	I	--	66	0.150	0.151	0.155	0.287	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.19	0.16	6.1	0.0	76%
	51	9/22	Corn	I	--	66	0.150	0.151	0.155	0.282	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.19	0.17	6.0	0.0	74%
	52	9/23	Corn	I	--	66	0.150	0.151	0.155	0.278	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.19	0.16	5.8	0.0	72%
	52	9/24	Corn	I	--	66	0.150	0.151	0.155	0.273	0.0	0.140	0.1	1.3	0.70	0.8	0.0	0.1	0.5	0.5	0.19	0.16	6.2	0.0	77%
	52	9/25	Corn	I	--	66	0.150	0.151	0.155	0.269	0.0	0.140	0.1	1.3	0.70	0.8	0.0	0.1	0.5	0.5	0.19	0.17	6.5	0.0	81%
	52	9/26	Corn	I	--	66	0.000	0.001	0.155	0.115	0.0	0.140	0.1	1.3	0.70	0.8	0.0	0.1	0.5	0.5	0.19	0.17	6.9	0.0	85%
	52	9/27	Corn	I	--	66	0.150	0.151	0.155	0.110	0.0	0.140	0.1	1.3	0.70	0.8	0.0	0.1	0.5	0.5	0.19	0.18	7.2	0.0	90%
	52	9/28	Corn	I	--	66	0.150	0.151	0.155	0.106	0.0	0.140	0.1	1.3	0.70	0.8	0.0	0.1	0.5	0.5	0.19	0.18	7.6	0.0	94%
	52	9/29	Corn	I	--	66	0.150	0.151	0.155	0.102	0.0	0.140	0.1	1.1	0.60	0.7	0.0	0.1	0.4	0.5	0.19	0.19	7.9	0.0	98%
	53	9/30	Corn	I	--	66	0.150	0.151	0.155	0.097	0.0	0.140	0.1	1.1	0.62	0.7	0.0	0.1	0.4	0.5	0.19	0.19	8.1	0.1	100%
Total (inches)						--	--	--	--	--	15.7	--	24.1	--	27.7	67.6	11.5	16.9	19.4	47.8	44.9	41.1	--	2.9	--
Total MG						--	46.9	49.4	49.3	--	28.2	43.3	--	49.7	--	93.0	20.7	30.3	34.8	85.7	80.5	73.6	--	5.2	--

LEACHING VARIABLES					
Average Daily Effluent Flow:	**0.119**	**MGD**	**Leaching Fraction [9]**	**4.3%**	**percent**
Flow-weighted Effluent ECw:	**1,875**	**µmhos/cm**		2.9	inches
Rain Water ECr:	**50**	**µmhos/cm**		5.230	MG
Flow-weighted Supplemental Fresh Water ECw:	**500**	**µmhos/cm**	**Leaching Requirement [10]**	**6.3%**	**percent**
Target Soil ECe to Maintain Root Zone Salinity [10]:	**3,000**	**µmhos/cm**		4.2	inches
Flow-weighted Cumlative ECiw:	**887**	**µmhos/cm**		7.609	MG
Estimated Drainage Water EC:	**14,113**	**µmhos/cm**	--		

NOTES:

Abbreviations: AWHC = available water holding capacity; Effective Precip = effective precipitation; Est. = estimated; ETc = crop evapotranspiration; in/ac = inches per acre; LAA = land application area; MG = million gallons.

1 Soil Available Water Holding Capacity (AWHC) as reported by the USDA NRCS custom soil resource report for Eastern Fresno Area, California.
Initial Soil Water Content assumed to be 100% as a result of winter precipitation and irrigation.

2 General cultural practice. Applies more directly to individual fields, not necessarily an aggregation of fields.

3 Storage pond information comes from a daily pond water balance that is ran in conjunction with the soil-water balance.

4 Effective Precipitation is the average precipitation from the CIMIS station #15 in Stratford, CA multiplied by an equation to account for water that evaporates and does not infiltrate the soil.

5 Gross Irrigation: effluent = effluent available to irrigation system; Fresh = supplemental freshwater irrigation from irrigation wells.

6 Net Irrigation = Gross Irrigation * 50% Irrigation Efficiency. Total input = Net Irrigation + effective precipitation.

7 Evapotranspiration: Estimated ET = Potential ET * (previous month's Soil Water Content / Soil Water Holding Capacity)$^{0.5}$.

8 Soil Water = water held in soil for crop use from previous month. Dependent on estimated ETc, Net Total Input, and previous month Soil Water (does not exceed Soil Water Holding Capacity)
Maximum allowable depletion based on % of soil water holding capacity of 70%.

9 Deep Percolation: Soil Water in excess of the Soil Water Holding Capacity which drains out of the root zone.
Deep Percolation = previous month's Soil Water + Net Total Input - ET estimate - current month's Soil Water.

10 The percentage of calculated soil water of the soils AWHC. Management and irrigation of this LAA aims to maintain a maximum allowed depletion of 70%.

11 Leaching Fraction = % of gross water input estimated to percolate beyond root zone = Surplus / (Precip + gross irrigation (effluent + fresh)).

12 Leaching Requirement calculated from flow-weighted EC (precip, effluent, fresh) using formula by Rhodes (1982) and a target soil electrical conductivity (EC).

Appendix E2. Land Application Area loading rates from the generalized soil-water balance - Corn-wheat roation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	20		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	1
Total Yield (tons/acre):	25.00	32	25
--	--	--	--

Date	GROSS NITROGEN LOADING									NET NITROGEN LOADING												SALT (FDS) LOADING							BOD LOADING		Irrigation Efficiency
	Effluent		Fresh Water		Fertilizer and Other N		Total		Cumulative	Effluent		Fresh Water		Fertilizer and Other N		Total		Crop Demand		Cumulative Crop Demand	Net Cumulative Applied	Effluent		Fresh Water		Total		Cumulative	Effluent		
	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac			lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	
10/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/22	281	4	0	0	0	0	281	4	4	265	4	0	0	0	0	265	4	0	0	0	4	2,411	37	0	0	2,411	37	37	198	3	70%
10/23	281	4	0	0	0	0	281	4	4	265	4	0	0	0	0	265	4	0	0	0	8	2,411	37	0	0	2,411	37	37	198	3	70%
10/24	281	4	0	0	0	0	281	4	4	265	4	0	0	0	0	265	4	0	0	0	12	2,411	37	0	0	2,411	37	37	198	3	70%
10/25	282	4	0	0	0	0	282	4	4	266	4	0	0	0	0	266	4	0	0	0	16	2,423	37	0	0	2,423	37	37	199	3	70%
10/26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%
10/27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%
10/28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%
10/29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%
10/30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%
10/31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%

Appendix E2. Land Application Area loading rates from the generalized soil-water balance - Corn-wheat roation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	20		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	1
Total Yield (tons/acre):	25.00	32	25
--	--	--	--

Date	GROSS NITROGEN LOADING									NET NITROGEN LOADING													SALT (FDS) LOADING							BOD LOADING		Irrigation Efficiency
	Effluent		Fresh Water		Fertilizer and Other N		Total		Cumulative	Effluent		Fresh Water		Fertilizer and Other N		Total		Crop Demand		Cumulative Crop Demand	Net Cumulative Applied	Effluent		Fresh Water		Total		Cumulative	Effluent		
	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac			lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	
11/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%
11/2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%
11/3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%
11/4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%
11/5	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	18	1,218	18	0	0	1,218	18	18	100	2	70%
11/6	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	20	1,218	18	0	0	1,218	18	18	100	2	70%
11/7	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	22	1,218	18	0	0	1,218	18	18	100	2	70%
11/8	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	24	1,218	18	0	0	1,218	18	18	100	2	70%
11/9	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	26	1,218	18	0	0	1,218	18	18	100	2	70%
11/10	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	28	1,218	18	0	0	1,218	18	18	100	2	70%
11/11	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	30	1,218	18	0	0	1,218	18	18	100	2	70%
11/12	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	32	1,218	18	0	0	1,218	18	18	100	2	70%
11/13	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	34	1,218	18	0	0	1,218	18	18	100	2	70%
11/14	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	36	1,218	18	0	0	1,218	18	18	100	2	70%
11/15	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	38	1,218	18	0	0	1,218	18	18	100	2	70%
11/16	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	40	1,218	18	0	0	1,218	18	18	100	2	70%
11/17	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	42	1,218	18	0	0	1,218	18	18	100	2	70%
11/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%

Appendix E2. Land Application Area loading rates from the generalized soil-water balance - Corn-wheat roation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	20		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	1
Total Yield (tons/acre):	25.00	32	25
--	--	--	--

Date	GROSS NITROGEN LOADING									NET NITROGEN LOADING												SALT (FDS) LOADING							BOD LOADING		Irrigation Efficiency
	Effluent		Fresh Water		Fertilizer and Other N		Total		Cumulative	Effluent		Fresh Water		Fertilizer and Other N		Total		Crop Demand		Cumulative Crop Demand	Net Cumulative Applied	Effluent		Fresh Water		Total		Cumulative	Effluent		
	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac			lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	
1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%

Appendix E2. Land Application Area loading rates from the generalized soil-water balance - Corn-wheat roation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	20		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	1
Total Yield (tons/acre):	25.00	32	25
--	--	--	--

Date	GROSS NITROGEN LOADING									NET NITROGEN LOADING												SALT (FDS) LOADING							BOD LOADING		Irrigation Efficiency
	Effluent		Fresh Water		Fertilizer and Other N		Total		Cumulative	Effluent		Fresh Water		Fertilizer and Other N		Total		Crop Demand		Cumulative Crop Demand	Net Cumulative Applied	Effluent		Fresh Water		Total		Cumulative	Effluent		
	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac			lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	
3/1	149	2	0	0	0	0	149	2	2	141	2	0	0	0	0	141	2	0	0	0	45	1,279	19	0	0	1,279	19	19	105	2	70%
3/2	149	2	0	0	0	0	149	2	2	141	2	0	0	0	0	141	2	0	0	0	47	1,279	19	0	0	1,279	19	19	105	2	70%
3/3	149	2	0	0	0	0	149	2	2	141	2	0	0	0	0	141	2	0	0	0	49	1,279	19	0	0	1,279	19	19	105	2	70%
3/4	149	2	0	0	0	0	149	2	2	141	2	0	0	0	0	141	2	0	0	0	51	1,279	19	0	0	1,279	19	19	105	2	70%
3/5	149	2	0	0	0	0	149	2	2	141	2	0	0	0	0	141	2	0	0	0	53	1,279	19	0	0	1,279	19	19	105	2	70%
3/6	149	2	0	0	0	0	149	2	2	141	2	0	0	0	0	141	2	0	0	0	55	1,279	19	0	0	1,279	19	19	105	2	70%
3/7	149	2	0	0	0	0	149	2	2	141	2	0	0	0	0	141	2	0	0	0	57	1,279	19	0	0	1,279	19	19	105	2	70%
3/8	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	59	1,218	18	0	0	1,218	18	18	100	2	70%
3/9	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	61	1,218	18	0	0	1,218	18	18	100	2	70%
3/10	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	63	1,218	18	0	0	1,218	18	18	100	2	70%
3/11	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	65	1,218	18	0	0	1,218	18	18	100	2	70%
3/12	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	67	1,218	18	0	0	1,218	18	18	100	2	70%
3/13	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	70	1,218	18	0	0	1,218	18	18	100	2	70%
3/14	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	72	1,218	18	0	0	1,218	18	18	100	2	70%
3/15	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	74	1,218	18	0	0	1,218	18	18	100	2	70%
3/16	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	76	1,218	18	0	0	1,218	18	18	100	2	70%
3/17	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	78	1,218	18	0	0	1,218	18	18	100	2	70%
3/18	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	80	1,400	21	0	0	1,400	21	21	115	2	70%
3/19	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	82	1,400	21	0	0	1,400	21	21	115	2	70%
3/20	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	85	1,400	21	0	0	1,400	21	21	115	2	70%
3/21	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	87	1,400	21	0	0	1,400	21	21	115	2	70%
3/22	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	89	1,400	21	0	0	1,400	21	21	115	2	70%
3/23	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	92	1,400	21	0	0	1,400	21	21	115	2	70%
3/24	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	94	1,400	21	0	0	1,400	21	21	115	2	70%
3/25	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	96	1,400	21	0	0	1,400	21	21	115	2	70%
3/26	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	99	1,400	21	0	0	1,400	21	21	115	2	70%
3/27	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	101	1,400	21	0	0	1,400	21	21	115	2	70%
3/28	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	103	1,400	21	0	0	1,400	21	21	115	2	70%
3/29	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	106	1,400	21	0	0	1,400	21	21	115	2	70%
3/30	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	108	1,400	21	0	0	1,400	21	21	115	2	70%
3/31	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	110	1,400	21	0	0	1,400	21	21	115	2	70%
4/1	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	115	2,618	40	0	0	2,618	40	40	215	3	70%
4/2	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	119	2,618	40	0	0	2,618	40	40	215	3	70%
4/3	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	123	2,618	40	0	0	2,618	40	40	215	3	70%
4/4	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	128	2,618	40	0	0	2,618	40	40	215	3	70%
4/5	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	132	2,618	40	0	0	2,618	40	40	215	3	70%
4/6	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	136	2,618	40	0	0	2,618	40	40	215	3	70%
4/7	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	141	2,618	40	0	0	2,618	40	40	215	3	70%
4/8	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	145	2,618	40	0	0	2,618	40	40	215	3	70%
4/9	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	150	2,618	40	0	0	2,618	40	40	215	3	70%
4/10	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	154	2,618	40	0	0	2,618	40	40	215	3	70%
4/11	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	158	2,618	40	0	0	2,618	40	40	215	3	70%
4/12	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	163	2,618	40	0	0	2,618	40	40	215	3	70%
4/13	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	167	2,618	40	0	0	2,618	40	40	215	3	70%
4/14	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	171	2,618	40	0	0	2,618	40	40	215	3	70%
4/15	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	176	2,618	40	0	0	2,618	40	40	215	3	70%
4/16	390	6	0	0	0	0	390	6	6	368	6	0	0	0	0	368	6	0	0	0	181	3,349	51	0	0	3,349	51	51	275	4	70%
4/17	376	6	0	0	0	0	376	6	6	355	5	0	0	0	0	355	5	0	0	0	187	3,227	49	0	0	3,227	49	49	265	4	70%
4/18	376	6	0	0	0	0	376	6	6	355	5	0	0	0	0	355	5	0	0	0	192	3,227	49	0	0	3,227	49	49	265	4	70%
4/19	376	6	0	0	0	0	376	6	6	355	5	0	0	0	0	355	5	0	0	0	197	3,227	49	0	0	3,227	49	49	265	4	70%
4/20	376	6	0	0	0	0	376	6	6	355	5	0	0	0	0	355	5	0	0	0	203	3,227	49	0	0	3,227	49	49	265	4	70%
4/21	369	6	0	0	0	0	369	6	6	348	5	0	0	0	0	348	5	0	0	0	208	3,166	48	0	0	3,166	48	48	260	4	70%
4/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
4/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
4/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
4/25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
4/26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
4/27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
4/28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
4/29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
4/30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%

Appendix E2. Land Application Area loading rates from the generalized soil-water balance - Corn-wheat roation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	20		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	1
Total Yield (tons/acre):	25.00	32	25
--	--	--	--

Date	GROSS NITROGEN LOADING									NET NITROGEN LOADING												SALT (FDS) LOADING							BOD LOADING		Irrigation Efficiency
	Effluent		Fresh Water		Fertilizer and Other N		Total		Cumulative	Effluent		Fresh Water		Fertilizer and Other N		Total		Crop Demand		Cumulative Crop Demand	Net Cumulative Applied	Effluent		Fresh Water		Total		Cumulative	Effluent		
	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac			lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	
5/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
5/2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
5/3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
5/4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
5/5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
5/6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
5/7	1,276	19	0	0	0	0	1,276	19	19	1,205	18	0	0	0	0	1,205	18	0	0	0	226	10,959	166	0	0	10,959	166	166	901	14	70%
5/8	1,276	19	0	0	0	0	1,276	19	19	1,205	18	0	0	0	0	1,205	18	0	0	0	245	10,959	166	0	0	10,959	166	166	901	14	70%
5/9	1,276	19	0	0	0	0	1,276	19	19	1,205	18	0	0	0	0	1,205	18	0	0	0	263	10,959	166	0	0	10,959	166	166	901	14	70%
5/10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/20	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	264	609	9	0	0	609	9	9	50	1	70%
5/21	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	265	609	9	0	0	609	9	9	50	1	70%
5/22	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	266	609	9	0	0	609	9	9	50	1	70%
5/23	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	267	609	9	0	0	609	9	9	50	1	70%
5/24	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	268	609	9	0	0	609	9	9	50	1	70%
5/25	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	269	609	9	0	0	609	9	9	50	1	70%
5/26	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	270	609	9	0	0	609	9	9	50	1	70%
5/27	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	271	609	9	0	0	609	9	9	50	1	70%
5/28	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	272	609	9	0	0	609	9	9	50	1	70%
5/29	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	273	609	9	0	0	609	9	9	50	1	70%
5/30	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	274	609	9	0	0	609	9	9	50	1	70%
5/31	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	275	609	9	0	0	609	9	9	50	1	70%
6/1	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	276	609	9	0	0	609	9	9	50	1	70%
6/2	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	277	609	9	0	0	609	9	9	50	1	70%
6/3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	277	0	0	0	0	0	0	0	0	0	70%
6/4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	277	0	0	0	0	0	0	0	0	0	70%
6/5	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	278	609	9	0	0	609	9	9	50	1	70%
6/6	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	279	609	9	0	0	609	9	9	50	1	70%
6/7	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	280	609	9	0	0	609	9	9	50	1	70%
6/8	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	281	609	9	0	0	609	9	9	50	1	70%
6/9	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	282	609	9	0	0	609	9	9	50	1	70%
6/10	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	283	609	9	0	0	609	9	9	50	1	70%
6/11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	283	0	0	0	0	0	0	0	0	0	70%
6/12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	283	0	0	0	0	0	0	0	0	0	70%
6/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	283	0	0	0	0	0	0	0	0	0	70%
6/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	283	0	0	0	0	0	0	0	0	0	70%
6/15	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	284	609	9	0	0	609	9	9	50	1	70%
6/16	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	285	609	9	0	0	609	9	9	50	1	70%
6/17	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	286	609	9	0	0	609	9	9	50	1	70%
6/18	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	287	609	9	0	0	609	9	9	50	1	70%
6/19	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	288	609	9	0	0	609	9	9	50	1	70%
6/20	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	289	609	9	0	0	609	9	9	50	1	70%
6/21	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	290	609	9	0	0	609	9	9	50	1	70%
6/22	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	291	609	9	0	0	609	9	9	50	1	70%
6/23	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	292	609	9	0	0	609	9	9	50	1	70%
6/24	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	293	609	9	0	0	609	9	9	50	1	70%
6/25	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	294	609	9	0	0	609	9	9	50	1	70%
6/26	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	295	609	9	0	0	609	9	9	50	1	70%
6/27	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	296	609	9	0	0	609	9	9	50	1	70%
6/28	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	297	609	9	0	0	609	9	9	50	1	70%
6/29	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	298	609	9	0	0	609	9	9	50	1	70%
6/30	71	1	37	1	0	0	108	2	2	67	1	35	1	0	0	102	2	0	0	0	300	609	9	1,495	23	2,103	32	32	50	1	70%

Appendix E2. Land Application Area loading rates from the generalized soil-water balance - Corn-wheat roation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	20		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	1
Total Yield (tons/acre):	25.00	32	25
--	--	--	--

Date	GROSS NITROGEN LOADING									NET NITROGEN LOADING												SALT (FDS) LOADING							BOD LOADING		Irrigation Efficiency
	Effluent		Fresh Water		Fertilizer and Other N		Total		Cumulative	Effluent		Fresh Water		Fertilizer and Other N		Total		Crop Demand		Cumulative Crop Demand	Net Cumulative Applied	Effluent		Fresh Water		Total		Cumulative	Effluent		
	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac			lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	
7/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	300	0	0	0	0	0	0	0	0	0	70%
7/2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	300	0	0	0	0	0	0	0	0	0	70%
7/3	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	302	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/4	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	304	1,096	17	0	0	1,096	17	17	90	1	70%
7/5	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	306	1,096	17	0	0	1,096	17	17	90	1	70%
7/6	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	308	1,096	17	0	0	1,096	17	17	90	1	70%
7/7	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	310	1,096	17	0	0	1,096	17	17	90	1	70%
7/8	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	312	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/9	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	314	1,096	17	0	0	1,096	17	17	90	1	70%
7/10	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	316	1,096	17	0	0	1,096	17	17	90	1	70%
7/11	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	317	1,096	17	0	0	1,096	17	17	90	1	70%
7/12	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	320	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/13	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	322	1,096	17	0	0	1,096	17	17	90	1	70%
7/14	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	323	1,096	17	0	0	1,096	17	17	90	1	70%
7/15	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	326	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/16	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	328	1,096	17	0	0	1,096	17	17	90	1	70%
7/17	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	330	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/18	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	332	1,096	17	0	0	1,096	17	17	90	1	70%
7/19	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	334	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/20	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	336	1,096	17	0	0	1,096	17	17	90	1	70%
7/21	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	338	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/22	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	341	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/23	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	342	1,096	17	0	0	1,096	17	17	90	1	70%
7/24	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	345	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/25	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	347	1,096	17	0	0	1,096	17	17	90	1	70%
7/26	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	349	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/27	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	351	1,096	17	0	0	1,096	17	17	90	1	70%
7/28	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	353	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/29	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	356	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/30	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	357	1,096	17	0	0	1,096	17	17	90	1	70%
7/31	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	360	1,096	17	1,495	23	2,591	39	39	90	1	70%
8/1	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	362	852	13	1,495	23	2,347	36	36	70	1	70%
8/2	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	363	852	13	0	0	852	13	13	70	1	70%
8/3	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	365	852	13	1,495	23	2,347	36	36	70	1	70%
8/4	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	367	852	13	1,495	23	2,347	36	36	70	1	70%
8/5	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	369	852	13	1,495	23	2,347	36	36	70	1	70%
8/6	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	370	852	13	0	0	852	13	13	70	1	70%
8/7	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	372	852	13	1,495	23	2,347	36	36	70	1	70%
8/8	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	374	852	13	1,495	23	2,347	36	36	70	1	70%
8/9	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	376	852	13	0	0	852	13	13	70	1	70%
8/10	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	378	852	13	1,495	23	2,347	36	36	70	1	70%
8/11	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	380	852	13	1,495	23	2,347	36	36	70	1	70%
8/12	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	382	852	13	1,495	23	2,347	36	36	70	1	70%
8/13	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	383	852	13	0	0	852	13	13	70	1	70%
8/14	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	385	852	13	1,495	23	2,347	36	36	70	1	70%
8/15	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	387	852	13	1,495	23	2,347	36	36	70	1	70%
8/16	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	389	852	13	1,495	23	2,347	36	36	70	1	70%
8/17	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	390	852	13	0	0	852	13	13	70	1	70%
8/18	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	392	852	13	1,495	23	2,347	36	36	70	1	70%
8/19	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	394	852	13	0	0	852	13	13	70	1	70%
8/20	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	396	852	13	1,495	23	2,347	36	36	70	1	70%
8/21	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	398	852	13	1,495	23	2,347	36	36	70	1	70%
8/22	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	399	852	13	0	0	852	13	13	70	1	70%
8/23	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	401	852	13	1,495	23	2,347	36	36	70	1	70%
8/24	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	403	852	13	1,495	23	2,347	36	36	70	1	70%
8/25	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	404	852	13	0	0	852	13	13	70	1	70%
8/26	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	406	852	13	1,495	23	2,347	36	36	70	1	70%
8/27	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	408	852	13	0	0	852	13	13	70	1	70%
8/28	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	410	852	13	1,495	23	2,347	36	36	70	1	70%
8/29	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	412	852	13	1,495	23	2,347	36	36	70	1	70%
8/30	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	413	852	13	0	0	852	13	13	70	1	70%
8/31	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	415	852	13	1,495	23	2,347	36	36	70	1	70%

Appendix E2. Land Application Area loading rates from the generalized soil-water balance - Corn-wheat roation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	20		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	1
Total Yield (tons/acre):	25.00	32	25
--	--	--	--

Date	GROSS NITROGEN LOADING									NET NITROGEN LOADING													
	Effluent		Fresh Water		Fertilizer and Other N		Total		Cumulative	Effluent		Fresh Water		Fertilizer and Other N		Total		Crop Demand		Cumulative Crop Demand	Net Cumulative Applied
	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		
9/1	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	417
9/2	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	418
9/3	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	420
9/4	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	422
9/5	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	424
9/6	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	425
9/7	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	427
9/8	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	429
9/9	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	431
9/10	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	433
9/11	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	434
9/12	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	436
9/13	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	437
9/14	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	439
9/15	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	441
9/16	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	443
9/17	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	444
9/18	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	445
9/19	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	447
9/20	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	449
9/21	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	451
9/22	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	452
9/23	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	454
9/24	99	2	52	1	0	0	152	2	2	94	1	50	1	0	0	143	2	0	0	0	456
9/25	99	2	52	1	0	0	152	2	2	94	1	50	1	0	0	143	2	0	0	0	458
9/26	99	2	52	1	0	0	152	2	2	94	1	50	1	0	0	143	2	0	0	0	460
9/27	99	2	52	1	0	0	152	2	2	94	1	50	1	0	0	143	2	0	0	0	462
9/28	99	2	52	1	0	0	152	2	2	94	1	50	1	0	0	143	2	0	0	0	465
9/29	99	2	45	1	0	0	144	2	2	94	1	43	1	0	0	136	2	0	0	0	467
9/30	99	2	46	1	0	0	146	2	2	94	1	44	1	0	0	138	2	0	0	0	469
--	30,678	465	2,072	31	0	0	32,750	496	--	28,964	439	1,968	30	0	0	30,932	469	0	0	--	--
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Date	SALT (FDS) LOADING							BOD LOADING		Irrigation Efficiency
	Effluent		Fresh Water		Total		Cumulative	Effluent		
	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	
9/1	852	13	1,495	23	2,347	36	36	70	1	70%
9/2	852	13	0	0	852	13	13	70	1	70%
9/3	852	13	1,495	23	2,347	36	36	70	1	70%
9/4	852	13	0	0	852	13	13	70	1	70%
9/5	852	13	1,495	23	2,347	36	36	70	1	70%
9/6	852	13	0	0	852	13	13	70	1	70%
9/7	852	13	1,495	23	2,347	36	36	70	1	70%
9/8	852	13	0	0	852	13	13	70	1	70%
9/9	852	13	1,495	23	2,347	36	36	70	1	70%
9/10	852	13	1,495	23	2,347	36	36	70	1	70%
9/11	852	13	0	0	852	13	13	70	1	70%
9/12	852	13	1,495	23	2,347	36	36	70	1	70%
9/13	852	13	0	0	852	13	13	70	1	70%
9/14	852	13	1,495	23	2,347	36	36	70	1	70%
9/15	852	13	0	0	852	13	13	70	1	70%
9/16	852	13	1,495	23	2,347	36	36	70	1	70%
9/17	852	13	0	0	852	13	13	70	1	70%
9/18	852	13	0	0	852	13	13	70	1	70%
9/19	852	13	1,495	23	2,347	36	36	70	1	70%
9/20	852	13	0	0	852	13	13	70	1	70%
9/21	852	13	1,495	23	2,347	36	36	70	1	70%
9/22	852	13	0	0	852	13	13	70	1	70%
9/23	852	13	0	0	852	13	13	70	1	70%
9/24	852	13	2,093	32	2,945	45	45	70	1	70%
9/25	852	13	2,093	32	2,945	45	45	70	1	70%
9/26	852	13	2,093	32	2,945	45	45	70	1	70%
9/27	852	13	2,093	32	2,945	45	45	70	1	70%
9/28	852	13	2,093	32	2,945	45	45	70	1	70%
9/29	852	13	1,794	27	2,646	40	40	70	1	70%
9/30	852	13	1,853	28	2,706	41	41	70	1	70%
--	263,473	3,992	82,864	1,256	346,337	5,248	--	21,655	328	70%
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Appendix F – Daily Pond Water Balance

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: **0.000** **MG**

Date	INPUT					OUTPUT					Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	Direct Pond Precipitation	Stormwater From Unsurfaced	Stormwater From Surfaced	Influent Flow	Total Input	Effluent Flow	Pond Evap	Percolation	Mechanical Evaporation	Total Output			
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
10/1	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.376	**0.143**
10/2	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.520	**0.287**
10/3	0.002	0.001	0.000	0.000	0.004	0.000	0.010	0	0	0.010	-0.007	0.513	**0.280**
10/4	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.657	**0.424**
10/5	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.800	**0.567**
10/6	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.944	**0.711**
10/7	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	1.087	**0.854**
10/8	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	1.231	**0.998**
10/9	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	1.374	**1.141**
10/10	0.002	0.001	0.000	0.000	0.004	0.000	0.010	0	0	0.010	-0.007	1.367	**1.134**
10/11	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	1.511	**1.278**
10/12	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	1.654	**1.421**
10/13	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	1.798	**1.565**
10/14	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	1.941	**1.708**
10/15	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	2.085	**1.852**
10/16	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	2.228	**1.995**
10/17	0.002	0.001	0.000	0.000	0.004	0.000	0.010	0	0	0.010	-0.007	2.222	**1.989**
10/18	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	2.365	**2.132**
10/19	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	2.508	**2.276**
10/20	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	2.652	**2.419**
10/21	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	2.795	**2.562**
10/22	0.002	0.001	0.000	0.150	0.154	0.746	0.010	0	0	0.756	-0.603	2.193	**1.960**
10/23	0.002	0.001	0.000	0.150	0.154	0.746	0.010	0	0	0.756	-0.603	1.590	**1.357**
10/24	0.002	0.001	0.000	0.000	0.004	0.746	0.010	0	0	0.756	-0.753	0.838	**0.605**
10/25	0.002	0.001	0.000	0.150	0.154	0.748	0.010	0	0	0.758	-0.605	0.233	**0.000**
10/26	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.377	**0.144**
10/27	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.520	**0.287**
10/28	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.664	**0.431**
10/29	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.807	**0.574**
10/30	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.950	**0.717**
10/31	0.002	0.001	0.000	0.000	0.004	0.000	0.010	0	0	0.010	-0.007	0.944	**0.711**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: 0.000 MG

Date	INPUT					OUTPUT					Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	Direct Pond Precipitation	Stormwater From Unsurfaced	Stormwater From Surfaced	Influent Flow	Total Input	Effluent Flow	Pond Evap	Percolation	Mechanical Evaporation	Total Output			
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
11/1	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.097	**0.864**
11/2	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.250	**1.017**
11/3	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.403	**1.170**
11/4	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.556	**1.323**
11/5	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	1.509	**1.276**
11/6	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	1.462	**1.229**
11/7	0.005	0.002	0.001	0.000	0.008	0.200	0.005	0	0	0.205	-0.197	1.265	**1.032**
11/8	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	1.218	**0.985**
11/9	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	1.172	**0.939**
11/10	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	1.125	**0.892**
11/11	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	1.078	**0.845**
11/12	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	1.031	**0.798**
11/13	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	0.984	**0.751**
11/14	0.005	0.002	0.001	0.000	0.008	0.200	0.005	0	0	0.205	-0.197	0.787	**0.554**
11/15	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	0.740	**0.507**
11/16	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	0.693	**0.460**
11/17	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	0.646	**0.413**
11/18	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	0.799	**0.566**
11/19	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	0.952	**0.719**
11/20	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.105	**0.872**
11/21	0.005	0.002	0.001	0.000	0.008	0.000	0.005	0	0	0.005	0.003	1.108	**0.875**
11/22	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.261	**1.029**
11/23	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.415	**1.182**
11/24	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.568	**1.335**
11/25	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.721	**1.488**
11/26	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.874	**1.641**
11/27	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	2.027	**1.794**
11/28	0.005	0.002	0.001	0.000	0.008	0.000	0.005	0	0	0.005	0.003	2.030	**1.797**
11/29	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	2.183	**1.950**
11/30	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	2.336	**2.103**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: 0.000 MG

Date	---------- INPUT ----------					---------- OUTPUT ----------					Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	Direct Pond Precipitation	Stormwater From Unsurfaced	Stormwater From Surfaced	Influent Flow	Total Input	Effluent Flow	Pond Evap	Percolation	Mechanical Evaporation	Total Output			
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
12/1	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	2.494	**2.261**
12/2	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	2.652	**2.419**
12/3	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	2.809	**2.576**
12/4	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	2.967	**2.734**
12/5	0.005	0.004	0.001	0.000	0.010	0.000	0.003	0	0	0.003	0.008	2.975	**2.742**
12/6	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	3.132	**2.899**
12/7	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	3.290	**3.057**
12/8	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	3.448	**3.215**
12/9	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	3.606	**3.373**
12/10	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	3.763	**3.530**
12/11	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	3.921	**3.688**
12/12	0.005	0.004	0.001	0.000	0.010	0.000	0.003	0	0	0.003	0.008	3.929	**3.696**
12/13	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	4.087	**3.854**
12/14	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	4.244	**4.011**
12/15	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	4.402	**4.169**
12/16	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	4.560	**4.327**
12/17	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	4.718	**4.485**
12/18	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	4.875	**4.642**
12/19	0.005	0.004	0.001	0.000	0.010	0.000	0.003	0	0	0.003	0.008	4.883	**4.650**
12/20	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	5.041	**4.808**
12/21	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	5.198	**4.965**
12/22	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	5.356	**5.123**
12/23	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	5.514	**5.281**
12/24	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	5.672	**5.439**
12/25	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	5.829	**5.596**
12/26	0.005	0.004	0.001	0.000	0.010	0.000	0.003	0	0	0.003	0.008	5.837	**5.604**
12/27	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	5.995	**5.762**
12/28	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	6.153	**5.920**
12/29	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	6.310	**6.077**
12/30	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	6.468	**6.235**
12/31	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	6.626	**6.393**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: 0.000 MG

Date	---- INPUT ----					---- OUTPUT ----					Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	Direct Pond Precipitation	Stormwater From Unsurfaced	Stormwater From Surfaced	Influent Flow	Total Input	Effluent Flow	Pond Evap	Percolation	Mechanical Evaporation	Total Output			
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
1/1	0.008	0.596	0.002	0.150	0.756	0.000	0.003	0	0	0.003	0.752	7.378	**7.145**
1/2	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	7.534	**7.301**
1/3	0.008	0.000	0.002	0.000	0.010	0.000	0.003	0	0	0.003	0.006	7.541	**7.308**
1/4	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	7.697	**7.464**
1/5	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	7.854	**7.621**
1/6	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	8.010	**7.777**
1/7	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	8.166	**7.934**
1/8	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	8.323	**8.090**
1/9	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	8.479	**8.246**
1/10	0.008	0.000	0.002	0.000	0.010	0.000	0.003	0	0	0.003	0.006	8.486	**8.253**
1/11	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	8.642	**8.409**
1/12	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	8.799	**8.566**
1/13	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	8.955	**8.722**
1/14	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	9.111	**8.878**
1/15	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	9.268	**9.035**
1/16	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	9.424	**9.191**
1/17	0.008	0.000	0.002	0.000	0.010	0.000	0.003	0	0	0.003	0.006	9.431	**9.198**
1/18	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	9.587	**9.354**
1/19	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	9.743	**9.510**
1/20	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	9.900	**9.667**
1/21	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	10.056	**9.823**
1/22	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	10.213	**9.980**
1/23	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	10.369	**10.136**
1/24	0.008	0.000	0.002	0.000	0.010	0.000	0.003	0	0	0.003	0.006	10.375	**10.142**
1/25	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	10.532	**10.299**
1/26	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	10.688	**10.455**
1/27	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	10.845	**10.612**
1/28	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	11.001	**10.768**
1/29	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	11.157	**10.924**
1/30	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	11.314	**11.081**
1/31	0.008	0.000	0.002	0.000	0.010	0.000	0.003	0	0	0.003	0.006	11.320	**11.087**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: 0.000 MG

Date	INPUT: Direct Pond Precipitation	INPUT: Stormwater From Unsurfaced	INPUT: Stormwater From Surfaced	INPUT: Influent Flow	INPUT: Total Input	OUTPUT: Effluent Flow	OUTPUT: Pond Evap	OUTPUT: Percolation	OUTPUT: Mechanical Evaporation	OUTPUT: Total Output	Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
2/1	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	11.474	**11.241**
2/2	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	11.629	**11.396**
2/3	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	11.783	**11.550**
2/4	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	11.937	**11.704**
2/5	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	12.092	**11.859**
2/6	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	12.246	**12.013**
2/7	0.008	0.000	0.002	0.000	0.010	0.000	0.006	0	0	0.006	0.004	12.250	**12.017**
2/8	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	12.404	**12.171**
2/9	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	12.559	**12.326**
2/10	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	12.713	**12.480**
2/11	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	12.867	**12.634**
2/12	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	13.022	**12.789**
2/13	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	13.176	**12.943**
2/14	0.008	0.000	0.002	0.000	0.010	0.000	0.006	0	0	0.006	0.004	13.180	**12.947**
2/15	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	13.334	**13.101**
2/16	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	13.489	**13.256**
2/17	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	13.643	**13.410**
2/18	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	13.797	**13.564**
2/19	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	13.951	**13.718**
2/20	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	14.106	**13.873**
2/21	0.008	0.000	0.002	0.000	0.010	0.000	0.006	0	0	0.006	0.004	14.110	**13.877**
2/22	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	14.264	**14.031**
2/23	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	14.419	**14.186**
2/24	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	14.573	**14.340**
2/25	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	14.727	**14.494**
2/26	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	14.881	**14.648**
2/27	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	15.036	**14.803**
2/28	0.008	0.000	0.002	0.000	0.010	0.000	0.006	0	0	0.006	0.004	15.040	**14.807**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: 0.000 MG

Date	INPUT: Direct Pond Precipitation	INPUT: Stormwater From Unsurfaced	INPUT: Stormwater From Surfaced	INPUT: Influent Flow	INPUT: Total Input	OUTPUT: Effluent Flow	OUTPUT: Pond Evap	OUTPUT: Percolation	OUTPUT: Mechanical Evaporation	OUTPUT: Total Output	Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
3/1	0.007	0.000	0.001	0.150	0.159	0.210	0.009	0	0	0.219	-0.061	14.979	**14.746**
3/2	0.007	0.000	0.001	0.150	0.159	0.210	0.009	0	0	0.219	-0.061	14.918	**14.685**
3/3	0.007	0.000	0.001	0.150	0.159	0.210	0.009	0	0	0.219	-0.061	14.857	**14.624**
3/4	0.007	0.000	0.001	0.150	0.159	0.210	0.009	0	0	0.219	-0.061	14.796	**14.563**
3/5	0.007	0.000	0.001	0.150	0.159	0.210	0.009	0	0	0.219	-0.061	14.736	**14.503**
3/6	0.007	0.000	0.001	0.150	0.159	0.210	0.009	0	0	0.219	-0.061	14.675	**14.442**
3/7	0.007	0.000	0.001	0.000	0.009	0.210	0.009	0	0	0.219	-0.211	14.464	**14.231**
3/8	0.007	0.000	0.001	0.150	0.159	0.200	0.009	0	0	0.209	-0.051	14.413	**14.180**
3/9	0.007	0.000	0.001	0.150	0.159	0.200	0.009	0	0	0.209	-0.051	14.362	**14.129**
3/10	0.007	0.000	0.001	0.150	0.159	0.200	0.009	0	0	0.209	-0.051	14.311	**14.078**
3/11	0.007	0.000	0.001	0.150	0.159	0.200	0.009	0	0	0.209	-0.051	14.260	**14.027**
3/12	0.007	0.000	0.001	0.150	0.159	0.200	0.009	0	0	0.209	-0.051	14.209	**13.976**
3/13	0.007	0.000	0.001	0.150	0.159	0.200	0.009	0	0	0.209	-0.051	14.158	**13.925**
3/14	0.007	0.000	0.001	0.000	0.009	0.200	0.009	0	0	0.209	-0.201	13.958	**13.725**
3/15	0.007	0.000	0.001	0.150	0.159	0.200	0.009	0	0	0.209	-0.051	13.907	**13.674**
3/16	0.007	0.000	0.001	0.150	0.159	0.200	0.009	0	0	0.209	-0.051	13.856	**13.623**
3/17	0.007	0.000	0.001	0.150	0.159	0.200	0.009	0	0	0.209	-0.051	13.805	**13.572**
3/18	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	13.724	**13.491**
3/19	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	13.643	**13.410**
3/20	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	13.562	**13.329**
3/21	0.007	0.000	0.001	0.000	0.009	0.230	0.009	0	0	0.239	-0.231	13.331	**13.098**
3/22	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	13.251	**13.018**
3/23	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	13.170	**12.937**
3/24	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	13.089	**12.856**
3/25	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	13.008	**12.775**
3/26	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	12.927	**12.694**
3/27	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	12.846	**12.613**
3/28	0.007	0.000	0.001	0.000	0.009	0.230	0.009	0	0	0.239	-0.231	12.615	**12.382**
3/29	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	12.534	**12.301**
3/30	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	12.453	**12.220**
3/31	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	12.373	**12.140**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: **0.000** **MG**

Date	INPUT					OUTPUT					Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	Direct Pond Precipitation	Stormwater From Unsurfaced	Stormwater From Surfaced	Influent Flow	Total Input	Effluent Flow	Pond Evap	Percolation	Mechanical Evaporation	Total Output			
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
4/1	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	12.083	**11.850**
4/2	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	11.794	**11.561**
4/3	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	11.505	**11.272**
4/4	0.004	0.000	0.001	0.000	0.005	0.430	0.015	0	0	0.445	-0.439	11.066	**10.833**
4/5	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	10.776	**10.543**
4/6	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	10.487	**10.254**
4/7	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	10.198	**9.965**
4/8	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	9.909	**9.676**
4/9	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	9.619	**9.386**
4/10	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	9.330	**9.097**
4/11	0.004	0.000	0.001	0.000	0.005	0.430	0.015	0	0	0.445	-0.439	8.891	**8.658**
4/12	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	8.602	**8.369**
4/13	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	8.313	**8.080**
4/14	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	8.023	**7.790**
4/15	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	7.734	**7.501**
4/16	0.004	0.000	0.001	0.150	0.155	0.550	0.015	0	0	0.565	-0.409	7.325	**7.092**
4/17	0.004	0.000	0.001	0.150	0.155	0.530	0.015	0	0	0.545	-0.389	6.936	**6.703**
4/18	0.004	0.000	0.001	0.000	0.005	0.530	0.015	0	0	0.545	-0.539	6.396	**6.163**
4/19	0.004	0.000	0.001	0.150	0.155	0.530	0.015	0	0	0.545	-0.389	6.007	**5.774**
4/20	0.004	0.000	0.001	0.150	0.155	0.530	0.015	0	0	0.545	-0.389	5.618	**5.385**
4/21	0.004	0.000	0.001	0.150	0.155	0.520	0.015	0	0	0.535	-0.379	5.239	**5.006**
4/22	0.004	0.000	0.001	0.150	0.155	0.000	0.015	0	0	0.015	0.141	5.379	**5.146**
4/23	0.004	0.000	0.001	0.150	0.155	0.000	0.015	0	0	0.015	0.141	5.520	**5.287**
4/24	0.004	0.000	0.001	0.150	0.155	0.000	0.015	0	0	0.015	0.141	5.661	**5.428**
4/25	0.004	0.000	0.001	0.000	0.005	0.000	0.015	0	0	0.015	-0.009	5.652	**5.419**
4/26	0.004	0.000	0.001	0.150	0.155	0.000	0.015	0	0	0.015	0.141	5.792	**5.559**
4/27	0.004	0.000	0.001	0.150	0.155	0.000	0.015	0	0	0.015	0.141	5.933	**5.700**
4/28	0.004	0.000	0.001	0.150	0.155	0.000	0.015	0	0	0.015	0.141	6.074	**5.841**
4/29	0.004	0.000	0.001	0.150	0.155	0.000	0.015	0	0	0.015	0.141	6.215	**5.982**
4/30	0.004	0.000	0.001	0.150	0.155	0.000	0.015	0	0	0.015	0.141	6.356	**6.123**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: **0.000** **MG**

Date	INPUT					OUTPUT					Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	Direct Pond Precipitation	Stormwater From Unsurfaced	Stormwater From Surfaced	Influent Flow	Total Input	Effluent Flow	Pond Evap	Percolation	Mechanical Evaporation	Total Output			
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
5/1	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	6.489	**6.256**
5/2	0.002	0.000	0.000	0.000	0.002	0.000	0.019	0	0	0.019	-0.017	6.472	**6.239**
5/3	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	6.605	**6.372**
5/4	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	6.738	**6.505**
5/5	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	6.871	**6.638**
5/6	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	7.005	**6.772**
5/7	0.002	0.000	0.000	0.150	0.152	1.800	0.019	0	0	1.819	-1.667	5.338	**5.105**
5/8	0.002	0.000	0.000	0.150	0.152	1.800	0.019	0	0	1.819	-1.667	3.671	**3.438**
5/9	0.002	0.000	0.000	0.000	0.002	1.800	0.019	0	0	1.819	-1.817	1.854	**1.621**
5/10	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	1.987	**1.754**
5/11	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	2.120	**1.887**
5/12	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	2.253	**2.021**
5/13	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	2.387	**2.154**
5/14	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	2.520	**2.287**
5/15	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	2.653	**2.420**
5/16	0.002	0.000	0.000	0.000	0.002	0.000	0.019	0	0	0.019	-0.017	2.636	**2.403**
5/17	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	2.769	**2.536**
5/18	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	2.902	**2.669**
5/19	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	3.036	**2.803**
5/20	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.069	**2.836**
5/21	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.102	**2.869**
5/22	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.135	**2.902**
5/23	0.002	0.000	0.000	0.000	0.002	0.100	0.019	0	0	0.119	-0.117	3.018	**2.785**
5/24	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.051	**2.818**
5/25	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.085	**2.852**
5/26	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.118	**2.885**
5/27	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.151	**2.918**
5/28	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.184	**2.951**
5/29	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.217	**2.984**
5/30	0.002	0.000	0.000	0.000	0.002	0.100	0.019	0	0	0.119	-0.117	3.100	**2.867**
5/31	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.134	**2.901**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: 0.000 MG

Date	INPUT: Direct Pond Precipitation	INPUT: Stormwater From Unsurfaced	INPUT: Stormwater From Surfaced	INPUT: Influent Flow	INPUT: Total Input	OUTPUT: Effluent Flow	OUTPUT: Pond Evap	OUTPUT: Percolation	OUTPUT: Mechanical Evaporation	OUTPUT: Total Output	Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
6/1	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.162	**2.929**
6/2	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.190	**2.957**
6/3	0.000	0.000	0.000	0.150	0.150	0.000	0.022	0	0	0.022	0.128	3.318	**3.085**
6/4	0.000	0.000	0.000	0.150	0.150	0.000	0.022	0	0	0.022	0.128	3.446	**3.213**
6/5	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.474	**3.241**
6/6	0.000	0.000	0.000	0.000	0.000	0.100	0.022	0	0	0.122	-0.122	3.352	**3.119**
6/7	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.380	**3.147**
6/8	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.409	**3.176**
6/9	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.437	**3.204**
6/10	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.465	**3.232**
6/11	0.000	0.000	0.000	0.150	0.150	0.000	0.022	0	0	0.022	0.128	3.593	**3.360**
6/12	0.000	0.000	0.000	0.150	0.150	0.000	0.022	0	0	0.022	0.128	3.721	**3.488**
6/13	0.000	0.000	0.000	0.000	0.000	0.000	0.022	0	0	0.022	-0.022	3.699	**3.466**
6/14	0.000	0.000	0.000	0.150	0.150	0.000	0.022	0	0	0.022	0.128	3.827	**3.594**
6/15	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.855	**3.622**
6/16	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.883	**3.650**
6/17	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.911	**3.679**
6/18	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.940	**3.707**
6/19	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.968	**3.735**
6/20	0.000	0.000	0.000	0.000	0.000	0.100	0.022	0	0	0.122	-0.122	3.846	**3.613**
6/21	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.874	**3.641**
6/22	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.902	**3.669**
6/23	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.930	**3.697**
6/24	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.958	**3.725**
6/25	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.986	**3.753**
6/26	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	4.014	**3.781**
6/27	0.000	0.000	0.000	0.000	0.000	0.100	0.022	0	0	0.122	-0.122	3.893	**3.660**
6/28	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.921	**3.688**
6/29	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.949	**3.716**
6/30	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.977	**3.744**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: 0.000 MG

Date	INPUT					OUTPUT					Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	Direct Pond Precipitation	Stormwater From Unsurfaced	Stormwater From Surfaced	Influent Flow	Total Input	Effluent Flow	Pond Evap	Percolation	Mechanical Evaporation	Total Output			
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
7/1	0.000	0.000	0.000	0.150	0.150	0.000	0.022	0	0	0.022	0.128	4.105	**3.872**
7/2	0.000	0.000	0.000	0.150	0.150	0.000	0.022	0	0	0.022	0.128	4.232	**3.999**
7/3	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	4.180	**3.947**
7/4	0.000	0.000	0.000	0.000	0.000	0.180	0.022	0	0	0.202	-0.202	3.977	**3.744**
7/5	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.925	**3.692**
7/6	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.873	**3.640**
7/7	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.820	**3.587**
7/8	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.768	**3.535**
7/9	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.715	**3.482**
7/10	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.663	**3.430**
7/11	0.000	0.000	0.000	0.000	0.000	0.180	0.022	0	0	0.202	-0.202	3.461	**3.228**
7/12	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.408	**3.175**
7/13	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.356	**3.123**
7/14	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.304	**3.071**
7/15	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.251	**3.018**
7/16	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.199	**2.966**
7/17	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.146	**2.913**
7/18	0.000	0.000	0.000	0.000	0.000	0.180	0.022	0	0	0.202	-0.202	2.944	**2.711**
7/19	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.892	**2.659**
7/20	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.839	**2.606**
7/21	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.787	**2.554**
7/22	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.734	**2.501**
7/23	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.682	**2.449**
7/24	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.630	**2.397**
7/25	0.000	0.000	0.000	0.000	0.000	0.180	0.022	0	0	0.202	-0.202	2.427	**2.194**
7/26	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.375	**2.142**
7/27	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.323	**2.090**
7/28	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.270	**2.037**
7/29	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.218	**1.985**
7/30	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.165	**1.932**
7/31	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.113	**1.880**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: 0.000 MG

Date	---- INPUT ----					---- OUTPUT ----					Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	Direct Pond Precipitation	Stormwater From Unsurfaced	Stormwater From Surfaced	Influent Flow	Total Input	Effluent Flow	Pond Evap	Percolation	Mechanical Evaporation	Total Output			
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
8/1	0.000	0.000	0.000	0.000	0.000	0.140	0.020	0	0	0.160	-0.160	1.953	**1.720**
8/2	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.944	**1.711**
8/3	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.934	**1.701**
8/4	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.924	**1.691**
8/5	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.914	**1.681**
8/6	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.905	**1.672**
8/7	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.895	**1.662**
8/8	0.000	0.000	0.000	0.000	0.000	0.140	0.020	0	0	0.160	-0.160	1.735	**1.502**
8/9	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.725	**1.492**
8/10	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.716	**1.483**
8/11	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.706	**1.473**
8/12	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.696	**1.463**
8/13	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.686	**1.453**
8/14	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.677	**1.444**
8/15	0.000	0.000	0.000	0.000	0.000	0.140	0.020	0	0	0.160	-0.160	1.517	**1.284**
8/16	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.507	**1.274**
8/17	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.497	**1.264**
8/18	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.488	**1.255**
8/19	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.478	**1.245**
8/20	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.468	**1.235**
8/21	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.458	**1.226**
8/22	0.000	0.000	0.000	0.000	0.000	0.140	0.020	0	0	0.160	-0.160	1.299	**1.066**
8/23	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.289	**1.056**
8/24	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.279	**1.046**
8/25	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.270	**1.037**
8/26	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.260	**1.027**
8/27	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.250	**1.017**
8/28	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.240	**1.007**
8/29	0.000	0.000	0.000	0.000	0.000	0.140	0.020	0	0	0.160	-0.160	1.081	**0.848**
8/30	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.071	**0.838**
8/31	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.061	**0.828**

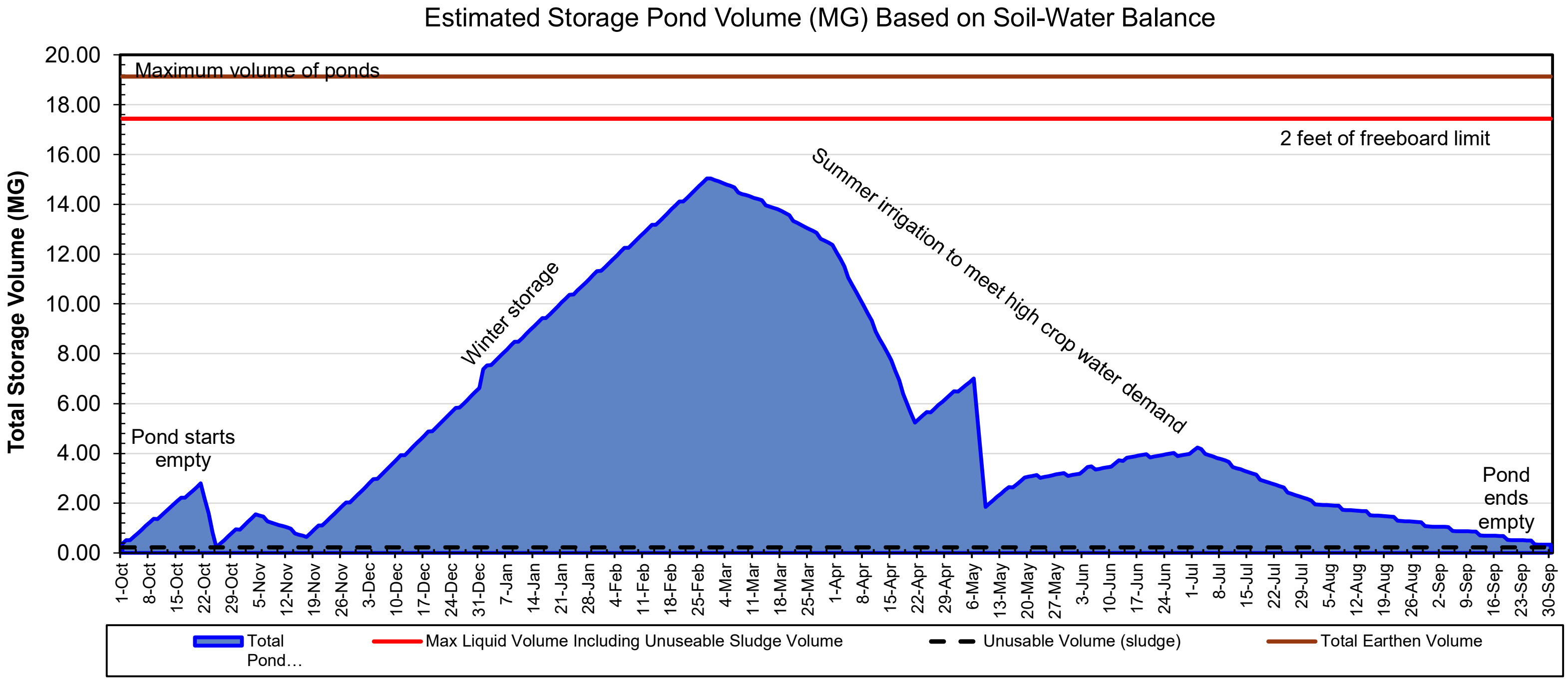
Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: **0.000** **MG**

Date	---- INPUT ----					---- OUTPUT ----					Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	Direct Pond Precipitation	Stormwater From Unsurfaced	Stormwater From Surfaced	Influent Flow	Total Input	Effluent Flow	Pond Evap	Percolation	Mechanical Evaporation	Total Output			
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
9/1	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	1.057	**0.824**
9/2	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	1.052	**0.819**
9/3	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	1.048	**0.815**
9/4	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	1.044	**0.811**
9/5	0.001	0.000	0.000	0.000	0.001	0.140	0.015	0	0	0.155	-0.154	0.889	**0.656**
9/6	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.885	**0.652**
9/7	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.881	**0.648**
9/8	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.876	**0.643**
9/9	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.872	**0.639**
9/10	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.867	**0.635**
9/11	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.863	**0.630**
9/12	0.001	0.000	0.000	0.000	0.001	0.140	0.015	0	0	0.155	-0.154	0.709	**0.476**
9/13	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.704	**0.471**
9/14	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.700	**0.467**
9/15	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.696	**0.463**
9/16	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.691	**0.458**
9/17	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.687	**0.454**
9/18	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.683	**0.450**
9/19	0.001	0.000	0.000	0.000	0.001	0.140	0.015	0	0	0.155	-0.154	0.528	**0.295**
9/20	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.524	**0.291**
9/21	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.520	**0.287**
9/22	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.515	**0.282**
9/23	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.511	**0.278**
9/24	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.506	**0.273**
9/25	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.502	**0.269**
9/26	0.001	0.000	0.000	0.000	0.001	0.140	0.015	0	0	0.155	-0.154	0.348	**0.115**
9/27	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.343	**0.110**
9/28	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.339	**0.106**
9/29	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.335	**0.102**
9/30	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.330	**0.097**

Appendix G – Figure of Water Balance

Appendix G. Illustration of pond water balance.



Appendix H – Irrigation Plan

Appendix H1. Generalized soil-water balance to evaluate land application area loading rates - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan		
					Field:	1	2
					Note:	Scenario 1 - 100% Corn-Wheat Rotation	
					Acres:	38.0	28.0
					Effluent Irrig:	inches/acre of effluent	
OCTOBER	10/1	Corn	Dry corn & field for harvest	NO	10/1	--	--
	10/2	Corn	Dry corn & field for harvest	NO	10/2	--	--
	10/3	Corn	Dry corn & field for harvest	NO	10/3	--	--
	10/4	Corn	Dry corn & field for harvest	NO	10/4	--	--
	10/5	Corn	Dry corn & field for harvest	NO	10/5	--	--
	10/6	Corn	Dry corn & field for harvest	NO	10/6	--	--
	10/7	Corn	Dry corn & field for harvest	NO	10/7	--	--
	10/8	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	10/8	--	--
	10/9	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	10/9	--	--
	10/10	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	10/10	--	--
	10/11	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	10/11	--	--
	10/12	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	10/12	--	--
	10/13	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	10/13	--	--
	10/14	Corn	Disc & Incorporate WF Stubble 2x	NO	10/14	--	--
	10/15	Corn	Disc & Incorporate WF Stubble 2x	NO	10/15	--	--
	10/16	Fallow	Finish Disc (2x)	NO	10/16	--	--
	10/17	Fallow	Finish Disc (2x)	NO	10/17	--	--
	10/18	Fallow	Collect fall soil samples for analysis	NO	10/18	--	--
	10/19	Fallow	Collect fall soil samples for analysis	NO	10/19	--	--
	10/20	Fallow	Form Border Check Borders (~100' wide)	NO	10/20	--	--
	10/21	Fallow	Form Border Check Borders (~100' wide)	NO	10/21	--	--
	10/22	Fallow	Preirrigation Event (~8")	--	10/22	0.22	0.22
	10/23	Fallow	Preirrigation Event (~8")	--	10/23	0.22	0.22
	10/24	Fallow	Preirrigation Event (~8")	--	10/24	0.22	0.22
	10/25	Fallow	Preirrigation Event (~8")	--	10/25	0.22	0.22
	10/26	Fallow	Field Drying for Planting	NO	10/26	--	--
	10/27	Fallow	|	NO	10/27	--	--
	10/28	Fallow	|	NO	10/28	--	--
	10/29	Fallow	|	NO	10/29	--	--
	10/30	Fallow	|	NO	10/30	--	--
	10/31	Fallow	|	NO	10/31	--	--
NOVEMBER	11/1	WF	Plant Winter Forage	NO	11/1	--	--
	11/2	WF	Plant Winter Forage	NO	11/2	--	--
	11/3	WF	Plant Winter Forage	NO	11/3	--	--
	11/4	WF	Plant Winter Forage	NO	11/4	--	--
	11/5	WF	Winter Forage Growing	--	11/5	0.19	--
	11/6	WF	|	--	11/6	0.19	--
	11/7	WF	|	--	11/7	0.19	--
	11/8	WF	|	--	11/8	0.19	--
	11/9	WF	|	--	11/9	0.19	--
	11/10	WF	|	--	11/10	0.19	--
	11/11	WF	|	--	11/11	0.19	--
	11/12	WF	|	--	11/12	0.19	--
	11/13	WF	|	--	11/13	--	0.26
	11/14	WF	|	--	11/14	--	0.26
	11/15	WF	|	--	11/15	--	0.26
	11/16	WF	|	--	11/16	--	0.26
	11/17	WF	|	--	11/17	--	0.26
	11/18	WF	|	--	11/18	--	--
	11/19	WF	|	--	11/19	--	--
	11/20	WF	|	--	11/20	--	--
	11/21	WF	|	--	11/21	--	--
	11/22	WF	|	--	11/22	--	--
	11/23	WF	|	--	11/23	--	--
	11/24	WF	|	--	11/24	--	--
	11/25	WF	|	--	11/25	--	--
	11/26	WF	|	--	11/26	--	--
	11/27	WF	|	--	11/27	--	--
	11/28	WF	|	--	11/28	--	--
	11/29	WF	|	--	11/29	--	--
	11/30	WF	|	--	11/30	--	--

Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan			
Field:	1	2	Total Applied in BOD Plan
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	38.0	28.0	
Effluent Irrig:	million gallons of effluent (MG)		
10/1	--	--	0.00000
10/2	--	--	0.00000
10/3	--	--	0.00000
10/4	--	--	0.00000
10/5	--	--	0.00000
10/6	--	--	0.00000
10/7	--	--	0.00000
10/8	--	--	0.00000
10/9	--	--	0.00000
10/10	--	--	0.00000
10/11	--	--	0.00000
10/12	--	--	0.00000
10/13	--	--	0.00000
10/14	--	--	0.00000
10/15	--	--	0.00000
10/16	--	--	0.00000
10/17	--	--	0.00000
10/18	--	--	0.00000
10/19	--	--	0.00000
10/20	--	--	0.00000
10/21	--	--	0.00000
10/22	0.23	0.17	0.39600
10/23	0.23	0.17	0.39600
10/24	0.23	0.17	0.39600
10/25	0.23	0.17	0.39800
10/26	--	--	0.00000
10/27	--	--	0.00000
10/28	--	--	0.00000
10/29	--	--	0.00000
10/30	--	--	0.00000
10/31	--	--	0.00000
11/1	--	--	0.00000
11/2	--	--	0.00000
11/3	--	--	0.00000
11/4	--	--	0.00000
11/5	0.20	--	0.20000
11/6	0.20	--	0.20000
11/7	0.20	--	0.20000
11/8	0.20	--	0.20000
11/9	0.20	--	0.20000
11/10	0.20	--	0.20000
11/11	0.20	--	0.20000
11/12	0.20	--	0.20000
11/13	--	0.20	0.20000
11/14	--	0.20	0.20000
11/15	--	0.20	0.20000
11/16	--	0.20	0.20000
11/17	--	0.20	0.20000
11/18	--	--	0.00000
11/19	--	--	0.00000
11/20	--	--	0.00000
11/21	--	--	0.00000
11/22	--	--	0.00000
11/23	--	--	0.00000
11/24	--	--	0.00000
11/25	--	--	0.00000
11/26	--	--	0.00000
11/27	--	--	0.00000
11/28	--	--	0.00000
11/29	--	--	0.00000
11/30	--	--	0.00000

Appendix H1. Generalized soil-water balance to evaluate land application area loading rates - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan		
					Field:	1	2
					Note:	Scenario 1 - 100% Corn-Wheat Rotation	
					Acres:	38.0	28.0
					Effluent Irrig:	inches/acre of effluent	
DECEMBER	12/1	WF	|	--	12/1	--	--
	12/2	WF	|	--	12/2	--	--
	12/3	WF	|	--	12/3	--	--
	12/4	WF	|	--	12/4	--	--
	12/5	WF	|	--	12/5	--	--
	12/6	WF	|	--	12/6	--	--
	12/7	WF	|	--	12/7	--	--
	12/8	WF	|	--	12/8	--	--
	12/9	WF	|	--	12/9	--	--
	12/10	WF	|	--	12/10	--	--
	12/11	WF	|	--	12/11	--	--
	12/12	WF	|	--	12/12	--	--
	12/13	WF	|	--	12/13	--	--
	12/14	WF	|	--	12/14	--	--
	12/15	WF	|	--	12/15	--	--
	12/16	WF	Winter Soil Salinity Leaching	--	12/16	--	--
	12/17	WF	Winter Soil Salinity Leaching	--	12/17	--	--
	12/18	WF	Winter Soil Salinity Leaching	--	12/18	--	--
	12/19	WF	Winter Soil Salinity Leaching	--	12/19	--	--
	12/20	WF	Winter Soil Salinity Leaching	--	12/20	--	--
	12/21	WF	Winter Soil Salinity Leaching	--	12/21	--	--
	12/22	WF	Winter Soil Salinity Leaching	--	12/22	--	--
	12/23	WF	Winter Soil Salinity Leaching	--	12/23	--	--
	12/24	WF	Winter Soil Salinity Leaching	--	12/24	--	--
	12/25	WF	Winter Soil Salinity Leaching	--	12/25	--	--
	12/26	WF	Winter Soil Salinity Leaching	--	12/26	--	--
	12/27	WF	Winter Soil Salinity Leaching	--	12/27	--	--
	12/28	WF	Winter Soil Salinity Leaching	--	12/28	--	--
	12/29	WF	Winter Soil Salinity Leaching	--	12/29	--	--
	12/30	WF	Winter Soil Salinity Leaching	--	12/30	--	--
	12/31	WF	Winter Soil Salinity Leaching	--	12/31	--	--
JANUARY	1/1	WF	Winter Soil Salinity Leaching	--	1/1	--	--
	1/2	WF	Winter Soil Salinity Leaching	--	1/2	--	--
	1/3	WF	Winter Soil Salinity Leaching	--	1/3	--	--
	1/4	WF	Winter Soil Salinity Leaching	--	1/4	--	--
	1/5	WF	Winter Soil Salinity Leaching	--	1/5	--	--
	1/6	WF	Winter Soil Salinity Leaching	--	1/6	--	--
	1/7	WF	Winter Soil Salinity Leaching	--	1/7	--	--
	1/8	WF	Winter Soil Salinity Leaching	--	1/8	--	--
	1/9	WF	Winter Soil Salinity Leaching	--	1/9	--	--
	1/10	WF	Winter Soil Salinity Leaching	--	1/10	--	--
	1/11	WF	Winter Soil Salinity Leaching	--	1/11	--	--
	1/12	WF	Winter Soil Salinity Leaching	--	1/12	--	--
	1/13	WF	Winter Soil Salinity Leaching	--	1/13	--	--
	1/14	WF	Winter Soil Salinity Leaching	--	1/14	--	--
	1/15	WF	Winter Soil Salinity Leaching	--	1/15	--	--
	1/16	WF	Winter Soil Salinity Leaching	--	1/16	--	--
	1/17	WF	Winter Soil Salinity Leaching	--	1/17	--	--
	1/18	WF	Winter Soil Salinity Leaching	--	1/18	--	--
	1/19	WF	Winter Soil Salinity Leaching	--	1/19	--	--
	1/20	WF	Winter Soil Salinity Leaching	--	1/20	--	--
	1/21	WF	Post-Emergent Herbicide Application	NO	1/21	--	--
	1/22	WF	Post-Emergent Herbicide Application	NO	1/22	--	--
	1/23	WF	Winter Soil Salinity Leaching	--	1/23	--	--
	1/24	WF	Winter Soil Salinity Leaching	--	1/24	--	--
	1/25	WF	Winter Soil Salinity Leaching	--	1/25	--	--
	1/26	WF	Winter Soil Salinity Leaching	--	1/26	--	--
	1/27	WF	Winter Soil Salinity Leaching	--	1/27	--	--
	1/28	WF	Winter Soil Salinity Leaching	--	1/28	--	--
	1/29	WF	Winter Soil Salinity Leaching	--	1/29	--	--
	1/30	WF	Winter Soil Salinity Leaching	--	1/30	--	--
	1/31	WF	Winter Soil Salinity Leaching	--	1/31	--	--

Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan			
Field:	1	2	Total Applied in BOD Plan
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	38.0	28.0	
Effluent Irrig:	million gallons of effluent (MG)		
12/1	--	--	0.00000
12/2	--	--	0.00000
12/3	--	--	0.00000
12/4	--	--	0.00000
12/5	--	--	0.00000
12/6	--	--	0.00000
12/7	--	--	0.00000
12/8	--	--	0.00000
12/9	--	--	0.00000
12/10	--	--	0.00000
12/11	--	--	0.00000
12/12	--	--	0.00000
12/13	--	--	0.00000
12/14	--	--	0.00000
12/15	--	--	0.00000
12/16	--	--	0.00000
12/17	--	--	0.00000
12/18	--	--	0.00000
12/19	--	--	0.00000
12/20	--	--	0.00000
12/21	--	--	0.00000
12/22	--	--	0.00000
12/23	--	--	0.00000
12/24	--	--	0.00000
12/25	--	--	0.00000
12/26	--	--	0.00000
12/27	--	--	0.00000
12/28	--	--	0.00000
12/29	--	--	0.00000
12/30	--	--	0.00000
12/31	--	--	0.00000
1/1	--	--	0.00000
1/2	--	--	0.00000
1/3	--	--	0.00000
1/4	--	--	0.00000
1/5	--	--	0.00000
1/6	--	--	0.00000
1/7	--	--	0.00000
1/8	--	--	0.00000
1/9	--	--	0.00000
1/10	--	--	0.00000
1/11	--	--	0.00000
1/12	--	--	0.00000
1/13	--	--	0.00000
1/14	--	--	0.00000
1/15	--	--	0.00000
1/16	--	--	0.00000
1/17	--	--	0.00000
1/18	--	--	0.00000
1/19	--	--	0.00000
1/20	--	--	0.00000
1/21	--	--	0.00000
1/22	--	--	0.00000
1/23	--	--	0.00000
1/24	--	--	0.00000
1/25	--	--	0.00000
1/26	--	--	0.00000
1/27	--	--	0.00000
1/28	--	--	0.00000
1/29	--	--	0.00000
1/30	--	--	0.00000
1/31	--	--	0.00000

Appendix H1. Generalized soil-water balance to evaluate land application area loading rates - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan		
					Field:	1	2
					Note:	Scenario 1 - 100% Corn-Wheat Rotation	
					Acres:	38.0	28.0
					Effluent Irrig:	inches/acre of effluent	
FEBRUARY	2/1	WF	Post-Emergent Herbicide Application	NO	2/1	--	--
	2/2	WF	Post-Emergent Herbicide Application	NO	2/2	--	--
	2/3	WF	Post-Emergent Herbicide Application	NO	2/3	--	--
	2/4	WF		--	2/4	--	--
	2/5	WF		--	2/5	--	--
	2/6	WF		--	2/6	--	--
	2/7	WF		--	2/7	--	--
	2/8	WF		--	2/8	--	--
	2/9	WF		--	2/9	--	--
	2/10	WF		--	2/10	--	--
	2/11	WF		--	2/11	--	--
	2/12	WF		--	2/12	--	--
	2/13	WF		--	2/13	--	--
	2/14	WF		--	2/14	--	--
	2/15	WF		--	2/15	--	--
	2/16	WF		--	2/16	--	--
	2/17	WF		--	2/17	--	--
	2/18	WF		--	2/18	--	--
	2/19	WF		--	2/19	--	--
	2/20	WF		--	2/20	--	--
	2/21	WF		--	2/21	--	--
	2/22	WF		--	2/22	--	--
	2/23	WF		--	2/23	--	--
	2/24	WF		--	2/24	--	--
	2/25	WF		--	2/25	--	--
	2/26	WF		--	2/26	--	--
	2/27	WF		--	2/27	--	--
	2/28	WF		--	2/28	--	--
MARCH	3/1	WF		--	3/1	0.20	--
	3/2	WF		--	3/2	0.20	--
	3/3	WF		--	3/3	0.20	--
	3/4	WF		--	3/4	0.20	--
	3/5	WF		--	3/5	0.20	--
	3/6	WF		--	3/6	0.20	--
	3/7	WF		--	3/7	0.20	--
	3/8	WF		--	3/8	0.19	--
	3/9	WF		--	3/9	--	0.26
	3/10	WF		--	3/10	--	0.26
	3/11	WF		--	3/11	--	0.26
	3/12	WF		--	3/12	--	0.26
	3/13	WF		--	3/13	--	0.26
	3/14	WF		--	3/14	--	0.26
	3/15	WF		--	3/15	0.19	--
	3/16	WF		--	3/16	0.19	--
	3/17	WF		--	3/17	0.19	--
	3/18	WF		--	3/18	0.22	--
	3/19	WF		--	3/19	0.22	--
	3/20	WF		--	3/20	0.22	--
	3/21	WF		--	3/21	0.22	--
	3/22	WF		--	3/22	0.22	--
	3/23	WF		--	3/23	--	0.30
	3/24	WF		--	3/24	--	0.30
	3/25	WF		--	3/25	--	0.30
	3/26	WF		--	3/26	--	0.30
	3/27	WF		--	3/27	--	0.30
	3/28	WF		--	3/28	--	0.30
	3/29	WF		--	3/29	0.22	--
	3/30	WF		--	3/30	0.22	--
	3/31	WF		--	3/31	0.22	--

Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan			
Field:	1	2	Total Applied in BOD Plan
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	38.0	28.0	
Effluent Irrig:	million gallons of effluent (MG)		
2/1	--	--	0.00000
2/2	--	--	0.00000
2/3	--	--	0.00000
2/4	--	--	0.00000
2/5	--	--	0.00000
2/6	--	--	0.00000
2/7	--	--	0.00000
2/8	--	--	0.00000
2/9	--	--	0.00000
2/10	--	--	0.00000
2/11	--	--	0.00000
2/12	--	--	0.00000
2/13	--	--	0.00000
2/14	--	--	0.00000
2/15	--	--	0.00000
2/16	--	--	0.00000
2/17	--	--	0.00000
2/18	--	--	0.00000
2/19	--	--	0.00000
2/20	--	--	0.00000
2/21	--	--	0.00000
2/22	--	--	0.00000
2/23	--	--	0.00000
2/24	--	--	0.00000
2/25	--	--	0.00000
2/26	--	--	0.00000
2/27	--	--	0.00000
2/28	--	--	0.00000
3/1	0.21	--	0.21000
3/2	0.21	--	0.21000
3/3	0.21	--	0.21000
3/4	0.21	--	0.21000
3/5	0.21	--	0.21000
3/6	0.21	--	0.21000
3/7	0.21	--	0.21000
3/8	0.20	--	0.20000
3/9	--	0.20	0.20000
3/10	--	0.20	0.20000
3/11	--	0.20	0.20000
3/12	--	0.20	0.20000
3/13	--	0.20	0.20000
3/14	--	0.20	0.20000
3/15	0.20	--	0.20000
3/16	0.20	--	0.20000
3/17	0.20	--	0.20000
3/18	0.23	--	0.23000
3/19	0.23	--	0.23000
3/20	0.23	--	0.23000
3/21	0.23	--	0.23000
3/22	0.23	--	0.23000
3/23	--	0.23	0.23000
3/24	--	0.23	0.23000
3/25	--	0.23	0.23000
3/26	--	0.23	0.23000
3/27	--	0.23	0.23000
3/28	--	0.23	0.23000
3/29	0.23	--	0.23000
3/30	0.23	--	0.23000
3/31	0.23	--	0.23000

Appendix H1. Generalized soil-water balance to evaluate land application area loading rates - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan		
					Field:	1	2
					Note:	Scenario 1 - 100% Corn-Wheat Rotation	
					Acres:	38.0	28.0
					Effluent Irrig:	inches/acre of effluent	
APRIL	4/1	WF	|	--	4/1	0.42	--
	4/2	WF	|	--	4/2	0.42	--
	4/3	WF	|	--	4/3	0.42	--
	4/4	WF	|	--	4/4	0.42	--
	4/5	WF	|	--	4/5	0.42	--
	4/6	WF	|	--	4/6	--	0.57
	4/7	WF	|	--	4/7	--	0.57
	4/8	WF	|	--	4/8	--	0.57
	4/9	WF	|	--	4/9	--	0.57
	4/10	WF	|	--	4/10	--	0.57
	4/11	WF	|	--	4/11	0.42	--
	4/12	WF	|	--	4/12	0.42	--
	4/13	WF	|	--	4/13	0.42	--
	4/14	WF	|	--	4/14	0.42	--
	4/15	WF	|	--	4/15	0.42	--
	4/16	WF	|	--	4/16	0.53	--
	4/17	WF	|	--	4/17	0.51	--
	4/18	WF	|	--	4/18	0.51	--
	4/19	WF	|	--	4/19	0.51	--
	4/20	WF	|	--	4/20	0.51	--
	4/21	WF	|	--	4/21	0.50	--
	4/22	WF	Harvest/Chop/Haul WF	NO	4/22	--	--
	4/23	WF	Harvest/Chop/Haul WF	NO	4/23	--	--
	4/24	WF	Harvest/Chop/Haul WF	NO	4/24	--	--
	4/25	WF	Harvest/Chop/Haul WF	NO	4/25	--	--
	4/26	WF	Harvest/Chop/Haul WF	NO	4/26	--	--
	4/27	WF	Harvest/Chop/Haul WF	NO	4/27	--	--
	4/28	WF	Harvest/Chop/Haul WF	NO	4/28	--	--
	4/29	WF	Collect spring soil samples for analysis	NO	4/29	--	--
	4/30	WF	Collect spring soil samples for analysis	NO	4/30	--	--
MAY	5/1	Fallow	Apply & Spread Solid Manure/Compost	NO	5/1	--	--
	5/2	Fallow	Apply & Spread Solid Manure/Compost	NO	5/2	--	--
	5/3	Fallow	Disc & Incorporate WF Stubble 2x	NO	5/3	--	--
	5/4	Fallow	Disc & Incorporate WF Stubble 2x	NO	5/4	--	--
	5/5	Fallow	Pull/Ridge/Shape Borders (~100 ft width)	NO	5/5	--	--
	5/6	Fallow	Pull/Ridge/Shape Borders (~100 ft width)	NO	5/6	--	--
	5/7	Fallow	Preirrigation Event (~8")	--	5/7	--	2.37
	5/8	Fallow	Preirrigation Event (~8")	--	5/8	--	2.37
	5/9	Fallow	Preirrigation Event (~8")	--	5/9	--	2.37
	5/10	Fallow	Field Drying	NO	5/10	--	--
	5/11	Fallow	Knockdown Borders	NO	5/11	--	--
	5/12	Fallow	Finish/Offset Disc to Prepare Seedbed (2x)	NO	5/12	--	--
	5/13	Fallow	Finish/Offset Disc to Prepare Seedbed (2x)	NO	5/13	--	--
	5/14	Fallow	Finish/Offset Disc to Prepare Seedbed (2x)	NO	5/14	--	--
	5/15	Fallow	Plant Corn Silage w/ insecticide+fertilizer	NO	5/15	--	--
	5/16	Corn	Plant Corn Silage w/ insecticide+fertilizer	NO	5/16	--	--
	5/17	Corn	Plant Corn Silage w/ insecticide+fertilizer	NO	5/17	--	--
	5/18	Corn	Plant Corn Silage w/ insecticide+fertilizer	NO	5/18	--	--
	5/19	Corn	Plant Corn Silage w/ insecticide+fertilizer	NO	5/19	--	--
	5/20	Corn	Corn Silage Growing	--	5/20	0.10	--
	5/21	Corn	|	--	5/21	0.10	--
	5/22	Corn	|	--	5/22	0.10	--
	5/23	Corn	|	--	5/23	0.10	--
	5/24	Corn	|	--	5/24	0.10	--
	5/25	Corn	|	--	5/25	0.10	--
	5/26	Corn	|	--	5/26	0.10	--
	5/27	Corn	|	--	5/27	0.10	--
	5/28	Corn	|	--	5/28	--	0.13
	5/29	Corn	|	--	5/29	--	0.13
	5/30	Corn	|	--	5/30	--	0.13
	5/31	Corn	|	--	5/31	--	0.13

Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan			
Field:	1	2	Total Applied in BOD Plan
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	38.0	28.0	
Effluent Irrig:	million gallons of effluent (MG)		
4/1	0.43	--	0.43000
4/2	0.43	--	0.43000
4/3	0.43	--	0.43000
4/4	0.43	--	0.43000
4/5	0.43	--	0.43000
4/6	--	0.43	0.43000
4/7	--	0.43	0.43000
4/8	--	0.43	0.43000
4/9	--	0.43	0.43000
4/10	--	0.43	0.43000
4/11	0.43	--	0.43000
4/12	0.43	--	0.43000
4/13	0.43	--	0.43000
4/14	0.43	--	0.43000
4/15	0.43	--	0.43000
4/16	0.55	--	0.55000
4/17	0.53	--	0.53000
4/18	0.53	--	0.53000
4/19	0.53	--	0.53000
4/20	0.53	--	0.53000
4/21	0.52	--	0.52000
4/22	--	--	0.00000
4/23	--	--	0.00000
4/24	--	--	0.00000
4/25	--	--	0.00000
4/26	--	--	0.00000
4/27	--	--	0.00000
4/28	--	--	0.00000
4/29	--	--	0.00000
4/30	--	--	0.00000
5/1	--	--	0.00000
5/2	--	--	0.00000
5/3	--	--	0.00000
5/4	--	--	0.00000
5/5	--	--	0.00000
5/6	--	--	0.00000
5/7	--	1.80	1.80000
5/8	--	1.80	1.80000
5/9	--	1.80	1.80000
5/10	--	--	0.00000
5/11	--	--	0.00000
5/12	--	--	0.00000
5/13	--	--	0.00000
5/14	--	--	0.00000
5/15	--	--	0.00000
5/16	--	--	0.00000
5/17	--	--	0.00000
5/18	--	--	0.00000
5/19	--	--	0.00000
5/20	0.10	--	0.10000
5/21	0.10	--	0.10000
5/22	0.10	--	0.10000
5/23	0.10	--	0.10000
5/24	0.10	--	0.10000
5/25	0.10	--	0.10000
5/26	0.10	--	0.10000
5/27	0.10	--	0.10000
5/28	--	0.10	0.10000
5/29	--	0.10	0.10000
5/30	--	0.10	0.10000
5/31	--	0.10	0.10000

Appendix H1. Generalized soil-water balance to evaluate land application area loading rates - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan		
					Field:	1	2
					Note:	Scenario 1 - 100% Corn-Wheat Rotation	
					Acres:	38.0	28.0
					Effluent Irrig:	inches/acre of effluent	
JUNE	6/1	Corn	Irrigation #1	--	6/1	0.10	--
	6/2	Corn	|	--	6/2	0.10	--
	6/3	Corn	Herbicide Application: Roundup	NO	6/3	--	--
	6/4	Corn	Insecticide Application: Comite for spider mites	NO	6/4	--	--
	6/5	Corn	|	--	6/5	0.10	--
	6/6	Corn	|	--	6/6	0.10	--
	6/7	Corn	|	--	6/7	0.10	--
	6/8	Corn	|	--	6/8	0.10	--
	6/9	Corn	|	--	6/9	0.10	--
	6/10	Corn	|	--	6/10	0.10	--
	6/11	Corn	Cultivated for weeds/furrowed	NO	6/11	--	--
	6/12	Corn	Cultivated for weeds/furrowed	NO	6/12	--	--
	6/13	Corn	Cultivated for weeds/furrowed	NO	6/13	--	--
	6/14	Corn	Cultivated for weeds/furrowed	NO	6/14	--	--
	6/15	Corn	Corn Silage Growing	--	6/15	--	0.13
	6/16	Corn	|	--	6/16	--	0.13
	6/17	Corn	|	--	6/17	--	0.13
	6/18	Corn	|	--	6/18	--	0.13
	6/19	Corn	|	--	6/19	--	0.13
	6/20	Corn	|	--	6/20	--	0.13
	6/21	Corn	|	--	6/21	0.10	--
	6/22	Corn	|	--	6/22	0.10	--
	6/23	Corn	|	--	6/23	0.10	--
	6/24	Corn	|	--	6/24	0.10	--
	6/25	Corn	|	--	6/25	0.10	--
	6/26	Corn	|	--	6/26	0.10	--
	6/27	Corn	|	--	6/27	0.10	--
	6/28	Corn	|	--	6/28	0.10	--
	6/29	Corn	|	--	6/29	--	0.13
	6/30	Corn	|	--	6/30	--	0.13
JULY	7/1	Corn	Herbicide Application: Clarity	NO	7/1	--	--
	7/2	Corn	Herbicide Application: Clarity	NO	7/2	--	--
	7/3	Corn	Corn Silage Growing	--	7/3	--	0.24
	7/4	Corn	|	--	7/4	--	0.24
	7/5	Corn	|	--	7/5	--	0.24
	7/6	Corn	|	--	7/6	0.17	--
	7/7	Corn	|	--	7/7	0.17	--
	7/8	Corn	|	--	7/8	0.17	--
	7/9	Corn	|	--	7/9	0.17	--
	7/10	Corn	|	--	7/10	0.17	--
	7/11	Corn	|	--	7/11	0.17	--
	7/12	Corn	|	--	7/12	0.17	--
	7/13	Corn	|	--	7/13	0.17	--
	7/14	Corn	|	--	7/14	0.17	--
	7/15	Corn	|	--	7/15	--	0.24
	7/16	Corn	|	--	7/16	--	0.24
	7/17	Corn	|	--	7/17	--	0.24
	7/18	Corn	|	--	7/18	--	0.24
	7/19	Corn	|	--	7/19	--	0.24
	7/20	Corn	|	--	7/20	0.17	--
	7/21	Corn	|	--	7/21	0.17	--
	7/22	Corn	|	--	7/22	0.17	--
	7/23	Corn	|	--	7/23	0.17	--
	7/24	Corn	|	--	7/24	0.17	--
	7/25	Corn	|	--	7/25	0.17	--
	7/26	Corn	|	--	7/26	0.17	--
	7/27	Corn	|	--	7/27	0.17	--
	7/28	Corn	|	--	7/28	0.17	--
	7/29	Corn	|	--	7/29	--	0.24
	7/30	Corn	|	--	7/30	--	0.24
	7/31	Corn	|	--	7/31	--	0.24

Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan			
Field:	1	2	Total Applied in BOD Plan
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	38.0	28.0	
Effluent Irrig:	million gallons of effluent (MG)		
6/1	0.10	--	0.10000
6/2	0.10	--	0.10000
6/3	--	--	0.00000
6/4	--	--	0.00000
6/5	0.10	--	0.10000
6/6	0.10	--	0.10000
6/7	0.10	--	0.10000
6/8	0.10	--	0.10000
6/9	0.10	--	0.10000
6/10	0.10	--	0.10000
6/11	--	--	0.00000
6/12	--	--	0.00000
6/13	--	--	0.00000
6/14	--	--	0.00000
6/15	--	0.10	0.10000
6/16	--	0.10	0.10000
6/17	--	0.10	0.10000
6/18	--	0.10	0.10000
6/19	--	0.10	0.10000
6/20	--	0.10	0.10000
6/21	0.10	--	0.10000
6/22	0.10	--	0.10000
6/23	0.10	--	0.10000
6/24	0.10	--	0.10000
6/25	0.10	--	0.10000
6/26	0.10	--	0.10000
6/27	0.10	--	0.10000
6/28	0.10	--	0.10000
6/29	--	0.10	0.10000
6/30	--	0.10	0.10000
7/1	--	--	0.00000
7/2	--	--	0.00000
7/3	--	0.18	0.18000
7/4	--	0.18	0.18000
7/5	--	0.18	0.18000
7/6	0.18	--	0.18000
7/7	0.18	--	0.18000
7/8	0.18	--	0.18000
7/9	0.18	--	0.18000
7/10	0.18	--	0.18000
7/11	0.18	--	0.18000
7/12	0.18	--	0.18000
7/13	0.18	--	0.18000
7/14	0.18	--	0.18000
7/15	--	0.18	0.18000
7/16	--	0.18	0.18000
7/17	--	0.18	0.18000
7/18	--	0.18	0.18000
7/19	--	0.18	0.18000
7/20	0.18	--	0.18000
7/21	0.18	--	0.18000
7/22	0.18	--	0.18000
7/23	0.18	--	0.18000
7/24	0.18	--	0.18000
7/25	0.18	--	0.18000
7/26	0.18	--	0.18000
7/27	0.18	--	0.18000
7/28	0.18	--	0.18000
7/29	--	0.18	0.18000
7/30	--	0.18	0.18000
7/31	--	0.18	0.18000

Appendix H1. Generalized soil-water balance to evaluate land application area loading rates - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan			Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan			Total Applied in BOD Plan
					Field:	1	2	Field:	1	2	
					Note:	Scenario 1 - 100% Corn-Wheat Rotation		Note:	Scenario 1 - 100% Corn-Wheat Rotation		
					Acres:	38.0	28.0	Acres:	38.0	28.0	
					Effluent Irrig:	inches/acre of effluent		Effluent Irrig:	million gallons of effluent (MG)		
AUGUST	8/1	Corn	I	--	8/1	--	0.18	8/1	--	0.14	0.14000
	8/2	Corn	I	--	8/2	--	0.18	8/2	--	0.14	0.14000
	8/3	Corn	I	--	8/3	0.14	--	8/3	0.14	--	0.14000
	8/4	Corn	I	--	8/4	0.14	--	8/4	0.14	--	0.14000
	8/5	Corn	I	--	8/5	0.14	--	8/5	0.14	--	0.14000
	8/6	Corn	I	--	8/6	0.14	--	8/6	0.14	--	0.14000
	8/7	Corn	I	--	8/7	0.14	--	8/7	0.14	--	0.14000
	8/8	Corn	I	--	8/8	0.14	--	8/8	0.14	--	0.14000
	8/9	Corn	I	--	8/9	0.14	--	8/9	0.14	--	0.14000
	8/10	Corn	I	--	8/10	0.14	--	8/10	0.14	--	0.14000
	8/11	Corn	I	--	8/11	0.14	--	8/11	0.14	--	0.14000
	8/12	Corn	I	--	8/12	--	0.18	8/12	--	0.14	0.14000
	8/13	Corn	I	--	8/13	--	0.18	8/13	--	0.14	0.14000
	8/14	Corn	I	--	8/14	--	0.18	8/14	--	0.14	0.14000
	8/15	Corn	I	--	8/15	--	0.18	8/15	--	0.14	0.14000
	8/16	Corn	I	--	8/16	--	0.18	8/16	--	0.14	0.14000
	8/17	Corn	I	--	8/17	0.14	--	8/17	0.14	--	0.14000
	8/18	Corn	I	--	8/18	0.14	--	8/18	0.14	--	0.14000
	8/19	Corn	I	--	8/19	0.14	--	8/19	0.14	--	0.14000
	8/20	Corn	I	--	8/20	0.14	--	8/20	0.14	--	0.14000
	8/21	Corn	I	--	8/21	0.14	--	8/21	0.14	--	0.14000
	8/22	Corn	I	--	8/22	0.14	--	8/22	0.14	--	0.14000
	8/23	Corn	I	--	8/23	0.14	--	8/23	0.14	--	0.14000
	8/24	Corn	I	--	8/24	0.14	--	8/24	0.14	--	0.14000
	8/25	Corn	I	--	8/25	0.14	--	8/25	0.14	--	0.14000
	8/26	Corn	I	--	8/26	--	0.18	8/26	--	0.14	0.14000
	8/27	Corn	I	--	8/27	--	0.18	8/27	--	0.14	0.14000
	8/28	Corn	I	--	8/28	--	0.18	8/28	--	0.14	0.14000
	8/29	Corn	I	--	8/29	--	0.18	8/29	--	0.14	0.14000
	8/30	Corn	I	--	8/30	--	0.18	8/30	--	0.14	0.14000
	8/31	Corn	I	--	8/31	0.14	--	8/31	0.14	--	0.14000
SEPTEMBER	9/1	Corn	I	--	9/1	0.14	--	9/1	0.14	--	0.14000
	9/2	Corn	I	--	9/2	0.14	--	9/2	0.14	--	0.14000
	9/3	Corn	I	--	9/3	0.14	--	9/3	0.14	--	0.14000
	9/4	Corn	I	--	9/4	0.14	--	9/4	0.14	--	0.14000
	9/5	Corn	I	--	9/5	0.14	--	9/5	0.14	--	0.14000
	9/6	Corn	I	--	9/6	0.14	--	9/6	0.14	--	0.14000
	9/7	Corn	I	--	9/7	0.14	--	9/7	0.14	--	0.14000
	9/8	Corn	I	--	9/8	0.14	--	9/8	0.14	--	0.14000
	9/9	Corn	I	--	9/9	--	0.18	9/9	--	0.14	0.14000
	9/10	Corn	I	--	9/10	--	0.18	9/10	--	0.14	0.14000
	9/11	Corn	I	--	9/11	--	0.18	9/11	--	0.14	0.14000
	9/12	Corn	I	--	9/12	--	0.18	9/12	--	0.14	0.14000
	9/13	Corn	I	--	9/13	--	0.18	9/13	--	0.14	0.14000
	9/14	Corn	I	--	9/14	0.14	--	9/14	0.14	--	0.14000
	9/15	Corn	I	--	9/15	0.14	--	9/15	0.14	--	0.14000
	9/16	Corn	I	--	9/16	0.14	--	9/16	0.14	--	0.14000
	9/17	Corn	I	--	9/17	0.14	--	9/17	0.14	--	0.14000
	9/18	Corn	I	--	9/18	0.14	--	9/18	0.14	--	0.14000
	9/19	Corn	I	--	9/19	0.14	--	9/19	0.14	--	0.14000
	9/20	Corn	I	--	9/20	0.14	--	9/20	0.14	--	0.14000
	9/21	Corn	I	--	9/21	0.14	--	9/21	0.14	--	0.14000
	9/22	Corn	I	--	9/22	0.14	--	9/22	0.14	--	0.14000
	9/23	Corn	I	--	9/23	--	0.18	9/23	--	0.14	0.14000
	9/24	Corn	I	--	9/24	--	0.18	9/24	--	0.14	0.14000
	9/25	Corn	I	--	9/25	--	0.18	9/25	--	0.14	0.14000
	9/26	Corn	I	--	9/26	--	0.18	9/26	--	0.14	0.14000
	9/27	Corn	I	--	9/27	--	0.18	9/27	--	0.14	0.14000
	9/28	Corn	I	--	9/28	0.14	--	9/28	0.14	--	0.14000
	9/29	Corn	I	--	9/29	0.14	--	9/29	0.14	--	0.14000
	9/30	Corn	I	--	9/30	0.14	--	9/30	0.14	--	0.14000
Total Applied (inches)				--	--	24.43	23.76	Total Applied	25.21	18.06	43.276
--				--	--	--	--	Max Daily	0.55	1.80	--

NOTES:

Appendix H2. BOD Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - BOD Loading Rates		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	BOD Applied (pounds/acre)	
OCTOBER	10/1	Corn	10/1	--	--
	10/2	Corn	10/2	--	--
	10/3	Corn	10/3	--	--
	10/4	Corn	10/4	--	--
	10/5	Corn	10/5	--	--
	10/6	Corn	10/6	--	--
	10/7	Corn	10/7	--	--
	10/8	Corn	10/8	--	--
	10/9	Corn	10/9	--	--
	10/10	Corn	10/10	--	--
	10/11	Corn	10/11	--	--
	10/12	Corn	10/12	--	--
	10/13	Corn	10/13	--	--
	10/14	Corn	10/14	--	--
	10/15	Corn	10/15	--	--
	10/16	Fallow	10/16	--	--
	10/17	Fallow	10/17	--	--
	10/18	Fallow	10/18	--	--
	10/19	Fallow	10/19	--	--
	10/20	Fallow	10/20	--	--
	10/21	Fallow	10/21	--	--
	10/22	Fallow	10/22	3	3
	10/23	Fallow	10/23	3	3
	10/24	Fallow	10/24	3	3
	10/25	Fallow	10/25	3	3
	10/26	Fallow	10/26	--	--
	10/27	Fallow	10/27	--	--
	10/28	Fallow	10/28	--	--
	10/29	Fallow	10/29	--	--
	10/30	Fallow	10/30	--	--
	10/31	Fallow	10/31	--	--
NOVEMBER	11/1	WF	11/1	--	--
	11/2	WF	11/2	--	--
	11/3	WF	11/3	--	--
	11/4	WF	11/4	--	--
	11/5	WF	11/5	3	--
	11/6	WF	11/6	3	--
	11/7	WF	11/7	3	--
	11/8	WF	11/8	3	--
	11/9	WF	11/9	3	--
	11/10	WF	11/10	3	--
	11/11	WF	11/11	3	--
	11/12	WF	11/12	3	--
	11/13	WF	11/13	--	4
	11/14	WF	11/14	--	4
	11/15	WF	11/15	--	4
	11/16	WF	11/16	--	4
	11/17	WF	11/17	--	4
	11/18	WF	11/18	--	--
	11/19	WF	11/19	--	--
	11/20	WF	11/20	--	--
	11/21	WF	11/21	--	--
	11/22	WF	11/22	--	--
	11/23	WF	11/23	--	--
	11/24	WF	11/24	--	--
	11/25	WF	11/25	--	--
	11/26	WF	11/26	--	--
	11/27	WF	11/27	--	--
	11/28	WF	11/28	--	--
	11/29	WF	11/29	--	--
	11/30	WF	11/30	--	--

Land Application Area Irrigation Plan to Manage BOD Loading			
Field:	1	2	Total Applied
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	26.6	19.6	
Effluent Irrig:	BOD Applied (pounds)		
10/1	--	--	0
10/2	--	--	0
10/3	--	--	0
10/4	--	--	0
10/5	--	--	0
10/6	--	--	0
10/7	--	--	0
10/8	--	--	0
10/9	--	--	0
10/10	--	--	0
10/11	--	--	0
10/12	--	--	0
10/13	--	--	0
10/14	--	--	0
10/15	--	--	0
10/16	--	--	0
10/17	--	--	0
10/18	--	--	0
10/19	--	--	0
10/20	--	--	0
10/21	--	--	0
10/22	80	59	139
10/23	80	59	139
10/24	80	59	139
10/25	80	59	139
10/26	--	--	0
10/27	--	--	0
10/28	--	--	0
10/29	--	--	0
10/30	--	--	0
10/31	--	--	0
11/1	--	--	0
11/2	--	--	0
11/3	--	--	0
11/4	--	--	0
11/5	70	--	70
11/6	70	--	70
11/7	70	--	70
11/8	70	--	70
11/9	70	--	70
11/10	70	--	70
11/11	70	--	70
11/12	70	--	70
11/13	--	70	70
11/14	--	70	70
11/15	--	70	70
11/16	--	70	70
11/17	--	70	70
11/18	--	--	0
11/19	--	--	0
11/20	--	--	0
11/21	--	--	0
11/22	--	--	0
11/23	--	--	0
11/24	--	--	0
11/25	--	--	0
11/26	--	--	0
11/27	--	--	0
11/28	--	--	0
11/29	--	--	0
11/30	--	--	0

Appendix H2. BOD Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - BOD Loading Rates		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irig:	BOD Applied (pounds/acre)	
DECEMBER	12/1	WF	12/1	--	--
	12/2	WF	12/2	--	--
	12/3	WF	12/3	--	--
	12/4	WF	12/4	--	--
	12/5	WF	12/5	--	--
	12/6	WF	12/6	--	--
	12/7	WF	12/7	--	--
	12/8	WF	12/8	--	--
	12/9	WF	12/9	--	--
	12/10	WF	12/10	--	--
	12/11	WF	12/11	--	--
	12/12	WF	12/12	--	--
	12/13	WF	12/13	--	--
	12/14	WF	12/14	--	--
	12/15	WF	12/15	--	--
	12/16	WF	12/16	--	--
	12/17	WF	12/17	--	--
	12/18	WF	12/18	--	--
	12/19	WF	12/19	--	--
	12/20	WF	12/20	--	--
	12/21	WF	12/21	--	--
	12/22	WF	12/22	--	--
	12/23	WF	12/23	--	--
	12/24	WF	12/24	--	--
	12/25	WF	12/25	--	--
	12/26	WF	12/26	--	--
	12/27	WF	12/27	--	--
	12/28	WF	12/28	--	--
	12/29	WF	12/29	--	--
	12/30	WF	12/30	--	--
	12/31	WF	12/31	--	--
JANUARY	1/1	WF	1/1	--	--
	1/2	WF	1/2	--	--
	1/3	WF	1/3	--	--
	1/4	WF	1/4	--	--
	1/5	WF	1/5	--	--
	1/6	WF	1/6	--	--
	1/7	WF	1/7	--	--
	1/8	WF	1/8	--	--
	1/9	WF	1/9	--	--
	1/10	WF	1/10	--	--
	1/11	WF	1/11	--	--
	1/12	WF	1/12	--	--
	1/13	WF	1/13	--	--
	1/14	WF	1/14	--	--
	1/15	WF	1/15	--	--
	1/16	WF	1/16	--	--
	1/17	WF	1/17	--	--
	1/18	WF	1/18	--	--
	1/19	WF	1/19	--	--
	1/20	WF	1/20	--	--
	1/21	WF	1/21	--	--
	1/22	WF	1/22	--	--
	1/23	WF	1/23	--	--
	1/24	WF	1/24	--	--
	1/25	WF	1/25	--	--
	1/26	WF	1/26	--	--
	1/27	WF	1/27	--	--
	1/28	WF	1/28	--	--
	1/29	WF	1/29	--	--
	1/30	WF	1/30	--	--
	1/31	WF	1/31	--	--

Land Application Area Irrigation Plan to Manage BOD Loading			
Field:	1	2	Total Applied
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	26.6	19.6	
Effluent Irig:	BOD Applied (pounds)		
12/1	--	--	0
12/2	--	--	0
12/3	--	--	0
12/4	--	--	0
12/5	--	--	0
12/6	--	--	0
12/7	--	--	0
12/8	--	--	0
12/9	--	--	0
12/10	--	--	0
12/11	--	--	0
12/12	--	--	0
12/13	--	--	0
12/14	--	--	0
12/15	--	--	0
12/16	--	--	0
12/17	--	--	0
12/18	--	--	0
12/19	--	--	0
12/20	--	--	0
12/21	--	--	0
12/22	--	--	0
12/23	--	--	0
12/24	--	--	0
12/25	--	--	0
12/26	--	--	0
12/27	--	--	0
12/28	--	--	0
12/29	--	--	0
12/30	--	--	0
12/31	--	--	0
1/1	--	--	0
1/2	--	--	0
1/3	--	--	0
1/4	--	--	0
1/5	--	--	0
1/6	--	--	0
1/7	--	--	0
1/8	--	--	0
1/9	--	--	0
1/10	--	--	0
1/11	--	--	0
1/12	--	--	0
1/13	--	--	0
1/14	--	--	0
1/15	--	--	0
1/16	--	--	0
1/17	--	--	0
1/18	--	--	0
1/19	--	--	0
1/20	--	--	0
1/21	--	--	0
1/22	--	--	0
1/23	--	--	0
1/24	--	--	0
1/25	--	--	0
1/26	--	--	0
1/27	--	--	0
1/28	--	--	0
1/29	--	--	0
1/30	--	--	0
1/31	--	--	0

Appendix H2. BOD Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - BOD Loading Rates		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	BOD Applied (pounds/acre)	
FEBRUARY	2/1	WF	2/1	--	--
	2/2	WF	2/2	--	--
	2/3	WF	2/3	--	--
	2/4	WF	2/4	--	--
	2/5	WF	2/5	--	--
	2/6	WF	2/6	--	--
	2/7	WF	2/7	--	--
	2/8	WF	2/8	--	--
	2/9	WF	2/9	--	--
	2/10	WF	2/10	--	--
	2/11	WF	2/11	--	--
	2/12	WF	2/12	--	--
	2/13	WF	2/13	--	--
	2/14	WF	2/14	--	--
	2/15	WF	2/15	--	--
	2/16	WF	2/16	--	--
	2/17	WF	2/17	--	--
	2/18	WF	2/18	--	--
	2/19	WF	2/19	--	--
	2/20	WF	2/20	--	--
	2/21	WF	2/21	--	--
	2/22	WF	2/22	--	--
	2/23	WF	2/23	--	--
	2/24	WF	2/24	--	--
	2/25	WF	2/25	--	--
	2/26	WF	2/26	--	--
	2/27	WF	2/27	--	--
	2/28	WF	2/28	--	--
MARCH	3/1	WF	3/1	3	--
	3/2	WF	3/2	3	--
	3/3	WF	3/3	3	--
	3/4	WF	3/4	3	--
	3/5	WF	3/5	3	--
	3/6	WF	3/6	3	--
	3/7	WF	3/7	3	--
	3/8	WF	3/8	3	--
	3/9	WF	3/9	--	4
	3/10	WF	3/10	--	4
	3/11	WF	3/11	--	4
	3/12	WF	3/12	--	4
	3/13	WF	3/13	--	4
	3/14	WF	3/14	--	4
	3/15	WF	3/15	3	--
	3/16	WF	3/16	3	--
	3/17	WF	3/17	3	--
	3/18	WF	3/18	3	--
	3/19	WF	3/19	3	--
	3/20	WF	3/20	3	--
	3/21	WF	3/21	3	--
	3/22	WF	3/22	3	--
	3/23	WF	3/23	--	4
	3/24	WF	3/24	--	4
	3/25	WF	3/25	--	4
	3/26	WF	3/26	--	4
	3/27	WF	3/27	--	4
	3/28	WF	3/28	--	4
	3/29	WF	3/29	3	--
	3/30	WF	3/30	3	--
	3/31	WF	3/31	3	--

Land Application Area Irrigation Plan to Manage BOD Loading			
Field:	1	2	Total Applied
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	26.6	19.6	
Effluent Irrig:	BOD Applied (pounds)		
2/1	--	--	0
2/2	--	--	0
2/3	--	--	0
2/4	--	--	0
2/5	--	--	0
2/6	--	--	0
2/7	--	--	0
2/8	--	--	0
2/9	--	--	0
2/10	--	--	0
2/11	--	--	0
2/12	--	--	0
2/13	--	--	0
2/14	--	--	0
2/15	--	--	0
2/16	--	--	0
2/17	--	--	0
2/18	--	--	0
2/19	--	--	0
2/20	--	--	0
2/21	--	--	0
2/22	--	--	0
2/23	--	--	0
2/24	--	--	0
2/25	--	--	0
2/26	--	--	0
2/27	--	--	0
2/28	--	--	0
3/1	74	--	74
3/2	74	--	74
3/3	74	--	74
3/4	74	--	74
3/5	74	--	74
3/6	74	--	74
3/7	74	--	74
3/8	70	--	70
3/9	--	70	70
3/10	--	70	70
3/11	--	70	70
3/12	--	70	70
3/13	--	70	70
3/14	--	70	70
3/15	70	--	70
3/16	70	--	70
3/17	70	--	70
3/18	81	--	81
3/19	81	--	81
3/20	81	--	81
3/21	81	--	81
3/22	81	--	81
3/23	--	81	81
3/24	--	81	81
3/25	--	81	81
3/26	--	81	81
3/27	--	81	81
3/28	--	81	81
3/29	81	--	81
3/30	81	--	81
3/31	81	--	81

Appendix H2. BOD Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - BOD Loading Rates		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	BOD Applied (pounds/acre)	
APRIL	4/1	WF	4/1	6	--
	4/2	WF	4/2	6	--
	4/3	WF	4/3	6	--
	4/4	WF	4/4	6	--
	4/5	WF	4/5	6	--
	4/6	WF	4/6	--	8
	4/7	WF	4/7	--	8
	4/8	WF	4/8	--	8
	4/9	WF	4/9	--	8
	4/10	WF	4/10	--	8
	4/11	WF	4/11	6	--
	4/12	WF	4/12	6	--
	4/13	WF	4/13	6	--
	4/14	WF	4/14	6	--
	4/15	WF	4/15	6	--
	4/16	WF	4/16	7	--
	4/17	WF	4/17	7	--
	4/18	WF	4/18	7	--
	4/19	WF	4/19	7	--
	4/20	WF	4/20	7	--
	4/21	WF	4/21	7	--
	4/22	WF	4/22	--	--
	4/23	WF	4/23	--	--
	4/24	WF	4/24	--	--
	4/25	WF	4/25	--	--
	4/26	WF	4/26	--	--
	4/27	WF	4/27	--	--
	4/28	WF	4/28	--	--
	4/29	WF	4/29	--	--
	4/30	WF	4/30	--	--
MAY	5/1	Fallow	5/1	--	--
	5/2	Fallow	5/2	--	--
	5/3	Fallow	5/3	--	--
	5/4	Fallow	5/4	--	--
	5/5	Fallow	5/5	--	--
	5/6	Fallow	5/6	--	--
	5/7	Fallow	5/7	--	32
	5/8	Fallow	5/8	--	32
	5/9	Fallow	5/9	--	32
	5/10	Fallow	5/10	--	--
	5/11	Fallow	5/11	--	--
	5/12	Fallow	5/12	--	--
	5/13	Fallow	5/13	--	--
	5/14	Fallow	5/14	--	--
	5/15	Fallow	5/15	--	--
	5/16	Corn	5/16	--	--
	5/17	Corn	5/17	--	--
	5/18	Corn	5/18	--	--
	5/19	Corn	5/19	--	--
	5/20	Corn	5/20	1	--
	5/21	Corn	5/21	1	--
	5/22	Corn	5/22	1	--
	5/23	Corn	5/23	1	--
	5/24	Corn	5/24	1	--
	5/25	Corn	5/25	1	--
	5/26	Corn	5/26	1	--
	5/27	Corn	5/27	1	--
	5/28	Corn	5/28	--	2
	5/29	Corn	5/29	--	2
	5/30	Corn	5/30	--	2
	5/31	Corn	5/31	--	2

Land Application Area Irrigation Plan to Manage BOD Loading			
Field:	1	2	Total Applied
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	26.6	19.6	
Effluent Irrig:	BOD Applied (pounds)		
4/1	151	--	151
4/2	151	--	151
4/3	151	--	151
4/4	151	--	151
4/5	151	--	151
4/6	--	151	151
4/7	--	151	151
4/8	--	151	151
4/9	--	151	151
4/10	--	151	151
4/11	151	--	151
4/12	151	--	151
4/13	151	--	151
4/14	151	--	151
4/15	151	--	151
4/16	193	--	193
4/17	186	--	186
4/18	186	--	186
4/19	186	--	186
4/20	186	--	186
4/21	182	--	182
4/22	--	--	0
4/23	--	--	0
4/24	--	--	0
4/25	--	--	0
4/26	--	--	0
4/27	--	--	0
4/28	--	--	0
4/29	--	--	0
4/30	--	--	0
5/1	--	--	0
5/2	--	--	0
5/3	--	--	0
5/4	--	--	0
5/5	--	--	0
5/6	--	--	0
5/7	--	631	631
5/8	--	631	631
5/9	--	631	631
5/10	--	--	0
5/11	--	--	0
5/12	--	--	0
5/13	--	--	0
5/14	--	--	0
5/15	--	--	0
5/16	--	--	0
5/17	--	--	0
5/18	--	--	0
5/19	--	--	0
5/20	35	--	35
5/21	35	--	35
5/22	35	--	35
5/23	35	--	35
5/24	35	--	35
5/25	35	--	35
5/26	35	--	35
5/27	35	--	35
5/28	--	35	35
5/29	--	35	35
5/30	--	35	35
5/31	--	35	35

Appendix H2. BOD Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - BOD Loading Rates		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	BOD Applied (pounds/acre)	
JUNE	6/1	Corn	6/1	1	--
	6/2	Corn	6/2	1	--
	6/3	Corn	6/3	--	--
	6/4	Corn	6/4	--	--
	6/5	Corn	6/5	1	--
	6/6	Corn	6/6	1	--
	6/7	Corn	6/7	1	--
	6/8	Corn	6/8	1	--
	6/9	Corn	6/9	1	--
	6/10	Corn	6/10	1	--
	6/11	Corn	6/11	--	--
	6/12	Corn	6/12	--	--
	6/13	Corn	6/13	--	--
	6/14	Corn	6/14	--	--
	6/15	Corn	6/15	--	2
	6/16	Corn	6/16	--	2
	6/17	Corn	6/17	--	2
	6/18	Corn	6/18	--	2
	6/19	Corn	6/19	--	2
	6/20	Corn	6/20	--	2
	6/21	Corn	6/21	1	--
	6/22	Corn	6/22	1	--
	6/23	Corn	6/23	1	--
	6/24	Corn	6/24	1	--
	6/25	Corn	6/25	1	--
	6/26	Corn	6/26	1	--
	6/27	Corn	6/27	1	--
	6/28	Corn	6/28	1	--
	6/29	Corn	6/29	--	2
	6/30	Corn	6/30	--	2
JULY	7/1	Corn	7/1	--	--
	7/2	Corn	7/2	--	--
	7/3	Corn	7/3	--	3
	7/4	Corn	7/4	--	3
	7/5	Corn	7/5	--	3
	7/6	Corn	7/6	2	--
	7/7	Corn	7/7	2	--
	7/8	Corn	7/8	2	--
	7/9	Corn	7/9	2	--
	7/10	Corn	7/10	2	--
	7/11	Corn	7/11	2	--
	7/12	Corn	7/12	2	--
	7/13	Corn	7/13	2	--
	7/14	Corn	7/14	2	--
	7/15	Corn	7/15	--	3
	7/16	Corn	7/16	--	3
	7/17	Corn	7/17	--	3
	7/18	Corn	7/18	--	3
	7/19	Corn	7/19	--	3
	7/20	Corn	7/20	2	--
	7/21	Corn	7/21	2	--
	7/22	Corn	7/22	2	--
	7/23	Corn	7/23	2	--
	7/24	Corn	7/24	2	--
	7/25	Corn	7/25	2	--
	7/26	Corn	7/26	2	--
	7/27	Corn	7/27	2	--
	7/28	Corn	7/28	2	--
	7/29	Corn	7/29	--	3
	7/30	Corn	7/30	--	3
	7/31	Corn	7/31	--	3

Land Application Area Irrigation Plan to Manage BOD Loading			
Field:	1	2	Total Applied
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	26.6	19.6	
Effluent Irrig:	BOD Applied (pounds)		
6/1	35	--	35
6/2	35	--	35
6/3	--	--	0
6/4	--	--	0
6/5	35	--	35
6/6	35	--	35
6/7	35	--	35
6/8	35	--	35
6/9	35	--	35
6/10	35	--	35
6/11	--	--	0
6/12	--	--	0
6/13	--	--	0
6/14	--	--	0
6/15	--	35	35
6/16	--	35	35
6/17	--	35	35
6/18	--	35	35
6/19	--	35	35
6/20	--	35	35
6/21	35	--	35
6/22	35	--	35
6/23	35	--	35
6/24	35	--	35
6/25	35	--	35
6/26	35	--	35
6/27	35	--	35
6/28	35	--	35
6/29	--	35	35
6/30	--	35	35
7/1	--	--	0
7/2	--	--	0
7/3	--	63	63
7/4	--	63	63
7/5	--	63	63
7/6	63	--	63
7/7	63	--	63
7/8	63	--	63
7/9	63	--	63
7/10	63	--	63
7/11	63	--	63
7/12	63	--	63
7/13	63	--	63
7/14	63	--	63
7/15	--	63	63
7/16	--	63	63
7/17	--	63	63
7/18	--	63	63
7/19	--	63	63
7/20	63	--	63
7/21	63	--	63
7/22	63	--	63
7/23	63	--	63
7/24	63	--	63
7/25	63	--	63
7/26	63	--	63
7/27	63	--	63
7/28	63	--	63
7/29	--	63	63
7/30	--	63	63
7/31	--	63	63

Appendix H2. BOD Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - BOD Loading Rates		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	BOD Applied (pounds/acre)	
AUGUST	8/1	Corn	8/1	--	3
	8/2	Corn	8/2	--	3
	8/3	Corn	8/3	2	--
	8/4	Corn	8/4	2	--
	8/5	Corn	8/5	2	--
	8/6	Corn	8/6	2	--
	8/7	Corn	8/7	2	--
	8/8	Corn	8/8	2	--
	8/9	Corn	8/9	2	--
	8/10	Corn	8/10	2	--
	8/11	Corn	8/11	2	--
	8/12	Corn	8/12	--	3
	8/13	Corn	8/13	--	3
	8/14	Corn	8/14	--	3
	8/15	Corn	8/15	--	3
	8/16	Corn	8/16	--	3
	8/17	Corn	8/17	2	--
	8/18	Corn	8/18	2	--
	8/19	Corn	8/19	2	--
	8/20	Corn	8/20	2	--
	8/21	Corn	8/21	2	--
	8/22	Corn	8/22	2	--
	8/23	Corn	8/23	2	--
	8/24	Corn	8/24	2	--
	8/25	Corn	8/25	2	--
	8/26	Corn	8/26	--	3
	8/27	Corn	8/27	--	3
	8/28	Corn	8/28	--	3
	8/29	Corn	8/29	--	3
	8/30	Corn	8/30	--	3
	8/31	Corn	8/31	2	--
SEPTEMBER	9/1	Corn	9/1	2	--
	9/2	Corn	9/2	2	--
	9/3	Corn	9/3	2	--
	9/4	Corn	9/4	2	--
	9/5	Corn	9/5	2	--
	9/6	Corn	9/6	2	--
	9/7	Corn	9/7	2	--
	9/8	Corn	9/8	2	--
	9/9	Corn	9/9	--	3
	9/10	Corn	9/10	--	3
	9/11	Corn	9/11	--	3
	9/12	Corn	9/12	--	3
	9/13	Corn	9/13	--	3
	9/14	Corn	9/14	2	--
	9/15	Corn	9/15	2	--
	9/16	Corn	9/16	2	--
	9/17	Corn	9/17	2	--
	9/18	Corn	9/18	2	--
	9/19	Corn	9/19	2	--
	9/20	Corn	9/20	2	--
	9/21	Corn	9/21	2	--
	9/22	Corn	9/22	2	--
	9/23	Corn	9/23	--	3
	9/24	Corn	9/24	--	3
	9/25	Corn	9/25	--	3
	9/26	Corn	9/26	--	3
	9/27	Corn	9/27	--	3
	9/28	Corn	9/28	2	--
	9/29	Corn	9/29	2	--
	9/30	Corn	9/30	2	--
Total Applied				332	323
Max Daily				7	32

Land Application Area Irrigation Plan to Manage BOD Loading			
Field:	1	2	Total Applied
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	26.6	19.6	
Effluent Irrig:	BOD Applied (pounds)		
8/1	--	49	49
8/2	--	49	49
8/3	49	--	49
8/4	49	--	49
8/5	49	--	49
8/6	49	--	49
8/7	49	--	49
8/8	49	--	49
8/9	49	--	49
8/10	49	--	49
8/11	49	--	49
8/12	--	49	49
8/13	--	49	49
8/14	--	49	49
8/15	--	49	49
8/16	--	49	49
8/17	49	--	49
8/18	49	--	49
8/19	49	--	49
8/20	49	--	49
8/21	49	--	49
8/22	49	--	49
8/23	49	--	49
8/24	49	--	49
8/25	49	--	49
8/26	--	49	49
8/27	--	49	49
8/28	--	49	49
8/29	--	49	49
8/30	--	49	49
8/31	49	--	49
9/1	49	--	49
9/2	49	--	49
9/3	49	--	49
9/4	49	--	49
9/5	49	--	49
9/6	49	--	49
9/7	49	--	49
9/8	49	--	49
9/9	--	49	49
9/10	--	49	49
9/11	--	49	49
9/12	--	49	49
9/13	--	49	49
9/14	49	--	49
9/15	49	--	49
9/16	49	--	49
9/17	49	--	49
9/18	49	--	49
9/19	49	--	49
9/20	49	--	49
9/21	49	--	49
9/22	49	--	49
9/23	--	49	49
9/24	--	49	49
9/25	--	49	49
9/26	--	49	49
9/27	--	49	49
9/28	49	--	49
9/29	49	--	49
9/30	49	--	49
Total	8,832	6,327	--
--	--	--	--

NOTES:

Appendix H3. Nitrogen Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - GROSS Nitrogen Loading			Land Application Area Irrigation Plan to Manage BOD Loading - NET Nitrogen Loading		
			Field:	1	2	Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation		Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0	Acres:	38.0	28.0
			Effluent Irrig:	Gross Nitrogen Applied (pounds/acre)		Effluent Irrig:	Net Nitrogen Applied (pounds/acre)	
OCTOBER	10/1	Corn	10/1	--	--	10/1	--	--
	10/2	Corn	10/2	--	--	10/2	--	--
	10/3	Corn	10/3	--	--	10/3	--	--
	10/4	Corn	10/4	--	--	10/4	--	--
	10/5	Corn	10/5	--	--	10/5	--	--
	10/6	Corn	10/6	--	--	10/6	--	--
	10/7	Corn	10/7	--	--	10/7	--	--
	10/8	Corn	10/8	--	--	10/8	--	--
	10/9	Corn	10/9	--	--	10/9	--	--
	10/10	Corn	10/10	--	--	10/10	--	--
	10/11	Corn	10/11	--	--	10/11	--	--
	10/12	Corn	10/12	--	--	10/12	--	--
	10/13	Corn	10/13	--	--	10/13	--	--
	10/14	Corn	10/14	--	--	10/14	--	--
	10/15	Corn	10/15	--	--	10/15	--	--
	10/16	Fallow	10/16	--	--	10/16	--	--
	10/17	Fallow	10/17	--	--	10/17	--	--
	10/18	Fallow	10/18	--	--	10/18	--	--
	10/19	Fallow	10/19	--	--	10/19	--	--
	10/20	Fallow	10/20	--	--	10/20	--	--
	10/21	Fallow	10/21	--	--	10/21	--	--
	10/22	Fallow	10/22	4	4	10/22	4	4
	10/23	Fallow	10/23	4	4	10/23	4	4
	10/24	Fallow	10/24	4	4	10/24	4	4
	10/25	Fallow	10/25	4	4	10/25	4	4
	10/26	Fallow	10/26	--	--	10/26	--	--
	10/27	Fallow	10/27	--	--	10/27	--	--
	10/28	Fallow	10/28	--	--	10/28	--	--
	10/29	Fallow	10/29	--	--	10/29	--	--
	10/30	Fallow	10/30	--	--	10/30	--	--
	10/31	Fallow	10/31	--	--	10/31	--	--
NOVEMBER	11/1	WF	11/1	--	--	11/1	--	--
	11/2	WF	11/2	--	--	11/2	--	--
	11/3	WF	11/3	--	--	11/3	--	--
	11/4	WF	11/4	--	--	11/4	--	--
	11/5	WF	11/5	4	--	11/5	4	--
	11/6	WF	11/6	4	--	11/6	4	--
	11/7	WF	11/7	4	--	11/7	4	--
	11/8	WF	11/8	4	--	11/8	4	--
	11/9	WF	11/9	4	--	11/9	4	--
	11/10	WF	11/10	4	--	11/10	4	--
	11/11	WF	11/11	4	--	11/11	4	--
	11/12	WF	11/12	4	--	11/12	4	--
	11/13	WF	11/13	--	5	11/13	--	5
	11/14	WF	11/14	--	5	11/14	--	5
	11/15	WF	11/15	--	5	11/15	--	5
	11/16	WF	11/16	--	5	11/16	--	5
	11/17	WF	11/17	--	5	11/17	--	5
	11/18	WF	11/18	--	--	11/18	--	--
	11/19	WF	11/19	--	--	11/19	--	--
	11/20	WF	11/20	--	--	11/20	--	--
	11/21	WF	11/21	--	--	11/21	--	--
	11/22	WF	11/22	--	--	11/22	--	--
	11/23	WF	11/23	--	--	11/23	--	--
	11/24	WF	11/24	--	--	11/24	--	--
	11/25	WF	11/25	--	--	11/25	--	--
	11/26	WF	11/26	--	--	11/26	--	--
	11/27	WF	11/27	--	--	11/27	--	--
	11/28	WF	11/28	--	--	11/28	--	--
	11/29	WF	11/29	--	--	11/29	--	--
	11/30	WF	11/30	--	--	11/30	--	--

Appendix H3. Nitrogen Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - GROSS Nitrogen Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Gross Nitrogen Applied (pounds/acre)	
DECEMBER	12/1	WF	12/1	--	--
	12/2	WF	12/2	--	--
	12/3	WF	12/3	--	--
	12/4	WF	12/4	--	--
	12/5	WF	12/5	--	--
	12/6	WF	12/6	--	--
	12/7	WF	12/7	--	--
	12/8	WF	12/8	--	--
	12/9	WF	12/9	--	--
	12/10	WF	12/10	--	--
	12/11	WF	12/11	--	--
	12/12	WF	12/12	--	--
	12/13	WF	12/13	--	--
	12/14	WF	12/14	--	--
	12/15	WF	12/15	--	--
	12/16	WF	12/16	--	--
	12/17	WF	12/17	--	--
	12/18	WF	12/18	--	--
	12/19	WF	12/19	--	--
	12/20	WF	12/20	--	--
	12/21	WF	12/21	--	--
	12/22	WF	12/22	--	--
	12/23	WF	12/23	--	--
	12/24	WF	12/24	--	--
	12/25	WF	12/25	--	--
	12/26	WF	12/26	--	--
	12/27	WF	12/27	--	--
	12/28	WF	12/28	--	--
	12/29	WF	12/29	--	--
	12/30	WF	12/30	--	--
	12/31	WF	12/31	--	--
JANUARY	1/1	WF	1/1	--	--
	1/2	WF	1/2	--	--
	1/3	WF	1/3	--	--
	1/4	WF	1/4	--	--
	1/5	WF	1/5	--	--
	1/6	WF	1/6	--	--
	1/7	WF	1/7	--	--
	1/8	WF	1/8	--	--
	1/9	WF	1/9	--	--
	1/10	WF	1/10	--	--
	1/11	WF	1/11	--	--
	1/12	WF	1/12	--	--
	1/13	WF	1/13	--	--
	1/14	WF	1/14	--	--
	1/15	WF	1/15	--	--
	1/16	WF	1/16	--	--
	1/17	WF	1/17	--	--
	1/18	WF	1/18	--	--
	1/19	WF	1/19	--	--
	1/20	WF	1/20	--	--
	1/21	WF	1/21	--	--
	1/22	WF	1/22	--	--
	1/23	WF	1/23	--	--
	1/24	WF	1/24	--	--
	1/25	WF	1/25	--	--
	1/26	WF	1/26	--	--
	1/27	WF	1/27	--	--
	1/28	WF	1/28	--	--
	1/29	WF	1/29	--	--
	1/30	WF	1/30	--	--
	1/31	WF	1/31	--	--

Land Application Area Irrigation Plan to Manage BOD Loading - NET Nitrogen Loading		
Field:	1	2
Note:	Scenario 1 - 100% Corn-Wheat Rotation	
Acres:	38.0	28.0
Effluent Irrig:	Net Nitrogen Applied (pounds/acre)	
12/1	--	--
12/2	--	--
12/3	--	--
12/4	--	--
12/5	--	--
12/6	--	--
12/7	--	--
12/8	--	--
12/9	--	--
12/10	--	--
12/11	--	--
12/12	--	--
12/13	--	--
12/14	--	--
12/15	--	--
12/16	--	--
12/17	--	--
12/18	--	--
12/19	--	--
12/20	--	--
12/21	--	--
12/22	--	--
12/23	--	--
12/24	--	--
12/25	--	--
12/26	--	--
12/27	--	--
12/28	--	--
12/29	--	--
12/30	--	--
12/31	--	--
1/1	--	--
1/2	--	--
1/3	--	--
1/4	--	--
1/5	--	--
1/6	--	--
1/7	--	--
1/8	--	--
1/9	--	--
1/10	--	--
1/11	--	--
1/12	--	--
1/13	--	--
1/14	--	--
1/15	--	--
1/16	--	--
1/17	--	--
1/18	--	--
1/19	--	--
1/20	--	--
1/21	--	--
1/22	--	--
1/23	--	--
1/24	--	--
1/25	--	--
1/26	--	--
1/27	--	--
1/28	--	--
1/29	--	--
1/30	--	--
1/31	--	--

Appendix H3. Nitrogen Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - GROSS Nitrogen Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Gross Nitrogen Applied (pounds/acre)	
FEBRUARY	2/1	WF	2/1	--	--
	2/2	WF	2/2	--	--
	2/3	WF	2/3	--	--
	2/4	WF	2/4	--	--
	2/5	WF	2/5	--	--
	2/6	WF	2/6	--	--
	2/7	WF	2/7	--	--
	2/8	WF	2/8	--	--
	2/9	WF	2/9	--	--
	2/10	WF	2/10	--	--
	2/11	WF	2/11	--	--
	2/12	WF	2/12	--	--
	2/13	WF	2/13	--	--
	2/14	WF	2/14	--	--
	2/15	WF	2/15	--	--
	2/16	WF	2/16	--	--
	2/17	WF	2/17	--	--
	2/18	WF	2/18	--	--
	2/19	WF	2/19	--	--
	2/20	WF	2/20	--	--
	2/21	WF	2/21	--	--
	2/22	WF	2/22	--	--
	2/23	WF	2/23	--	--
	2/24	WF	2/24	--	--
	2/25	WF	2/25	--	--
	2/26	WF	2/26	--	--
	2/27	WF	2/27	--	--
	2/28	WF	2/28	--	--
MARCH	3/1	WF	3/1	4	--
	3/2	WF	3/2	4	--
	3/3	WF	3/3	4	--
	3/4	WF	3/4	4	--
	3/5	WF	3/5	4	--
	3/6	WF	3/6	4	--
	3/7	WF	3/7	4	--
	3/8	WF	3/8	4	--
	3/9	WF	3/9	--	5
	3/10	WF	3/10	--	5
	3/11	WF	3/11	--	5
	3/12	WF	3/12	--	5
	3/13	WF	3/13	--	5
	3/14	WF	3/14	--	5
	3/15	WF	3/15	4	--
	3/16	WF	3/16	4	--
	3/17	WF	3/17	4	--
	3/18	WF	3/18	4	--
	3/19	WF	3/19	4	--
	3/20	WF	3/20	4	--
	3/21	WF	3/21	4	--
	3/22	WF	3/22	4	--
	3/23	WF	3/23	--	6
	3/24	WF	3/24	--	6
	3/25	WF	3/25	--	6
	3/26	WF	3/26	--	6
	3/27	WF	3/27	--	6
	3/28	WF	3/28	--	6
	3/29	WF	3/29	4	--
	3/30	WF	3/30	4	--
	3/31	WF	3/31	4	--

Land Application Area Irrigation Plan to Manage BOD Loading - NET Nitrogen Loading		
Field:	1	2
Note:	Scenario 1 - 100% Corn-Wheat Rotation	
Acres:	38.0	28.0
Effluent Irrig:	Net Nitrogen Applied (pounds/acre)	
2/1	--	--
2/2	--	--
2/3	--	--
2/4	--	--
2/5	--	--
2/6	--	--
2/7	--	--
2/8	--	--
2/9	--	--
2/10	--	--
2/11	--	--
2/12	--	--
2/13	--	--
2/14	--	--
2/15	--	--
2/16	--	--
2/17	--	--
2/18	--	--
2/19	--	--
2/20	--	--
2/21	--	--
2/22	--	--
2/23	--	--
2/24	--	--
2/25	--	--
2/26	--	--
2/27	--	--
2/28	--	--
3/1	4	--
3/2	4	--
3/3	4	--
3/4	4	--
3/5	4	--
3/6	4	--
3/7	4	--
3/8	4	--
3/9	--	5
3/10	--	5
3/11	--	5
3/12	--	5
3/13	--	5
3/14	--	5
3/15	4	--
3/16	4	--
3/17	4	--
3/18	4	--
3/19	4	--
3/20	4	--
3/21	4	--
3/22	4	--
3/23	--	5
3/24	--	5
3/25	--	5
3/26	--	5
3/27	--	5
3/28	--	5
3/29	4	--
3/30	4	--
3/31	4	--

Appendix H3. Nitrogen Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - GROSS Nitrogen Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Gross Nitrogen Applied (pounds/acre)	
APRIL	4/1	WF	4/1	8	--
	4/2	WF	4/2	8	--
	4/3	WF	4/3	8	--
	4/4	WF	4/4	8	--
	4/5	WF	4/5	8	--
	4/6	WF	4/6	--	11
	4/7	WF	4/7	--	11
	4/8	WF	4/8	--	11
	4/9	WF	4/9	--	11
	4/10	WF	4/10	--	11
	4/11	WF	4/11	8	--
	4/12	WF	4/12	8	--
	4/13	WF	4/13	8	--
	4/14	WF	4/14	8	--
	4/15	WF	4/15	8	--
	4/16	WF	4/16	10	--
	4/17	WF	4/17	10	--
	4/18	WF	4/18	10	--
	4/19	WF	4/19	10	--
	4/20	WF	4/20	10	--
	4/21	WF	4/21	10	--
	4/22	WF	4/22	--	--
	4/23	WF	4/23	--	--
	4/24	WF	4/24	--	--
	4/25	WF	4/25	--	--
	4/26	WF	4/26	--	--
	4/27	WF	4/27	--	--
	4/28	WF	4/28	--	--
	4/29	WF	4/29	--	--
	4/30	WF	4/30	--	--
MAY	5/1	Fallow	5/1	--	--
	5/2	Fallow	5/2	--	--
	5/3	Fallow	5/3	--	--
	5/4	Fallow	5/4	--	--
	5/5	Fallow	5/5	--	--
	5/6	Fallow	5/6	--	--
	5/7	Fallow	5/7	--	46
	5/8	Fallow	5/8	--	46
	5/9	Fallow	5/9	--	46
	5/10	Fallow	5/10	--	--
	5/11	Fallow	5/11	--	--
	5/12	Fallow	5/12	--	--
	5/13	Fallow	5/13	--	--
	5/14	Fallow	5/14	--	--
	5/15	Fallow	5/15	--	--
	5/16	Corn	5/16	--	--
	5/17	Corn	5/17	--	--
	5/18	Corn	5/18	--	--
	5/19	Corn	5/19	--	--
	5/20	Corn	5/20	2	--
	5/21	Corn	5/21	2	--
	5/22	Corn	5/22	2	--
	5/23	Corn	5/23	2	--
	5/24	Corn	5/24	2	--
	5/25	Corn	5/25	2	--
	5/26	Corn	5/26	2	--
	5/27	Corn	5/27	2	--
	5/28	Corn	5/28	--	3
	5/29	Corn	5/29	--	3
	5/30	Corn	5/30	--	3
	5/31	Corn	5/31	--	3

Land Application Area Irrigation Plan to Manage BOD Loading - NET Nitrogen Loading		
Field:	1	2
Note:	Scenario 1 - 100% Corn-Wheat Rotation	
Acres:	38.0	28.0
Effluent Irrig:	Net Nitrogen Applied (pounds/acre)	
4/1	8	--
4/2	8	--
4/3	8	--
4/4	8	--
4/5	8	--
4/6	--	10
4/7	--	10
4/8	--	10
4/9	--	10
4/10	--	10
4/11	8	--
4/12	8	--
4/13	8	--
4/14	8	--
4/15	8	--
4/16	10	--
4/17	9	--
4/18	9	--
4/19	9	--
4/20	9	--
4/21	9	--
4/22	--	--
4/23	--	--
4/24	--	--
4/25	--	--
4/26	--	--
4/27	--	--
4/28	--	--
4/29	--	--
4/30	--	--
5/1	--	--
5/2	--	--
5/3	--	--
5/4	--	--
5/5	--	--
5/6	--	--
5/7	--	43
5/8	--	43
5/9	--	43
5/10	--	--
5/11	--	--
5/12	--	--
5/13	--	--
5/14	--	--
5/15	--	--
5/16	--	--
5/17	--	--
5/18	--	--
5/19	--	--
5/20	2	--
5/21	2	--
5/22	2	--
5/23	2	--
5/24	2	--
5/25	2	--
5/26	2	--
5/27	2	--
5/28	--	2
5/29	--	2
5/30	--	2
5/31	--	2

Appendix H3. Nitrogen Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - GROSS Nitrogen Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Gross Nitrogen Applied (pounds/acre)	
JUNE	6/1	Corn	6/1	2	--
	6/2	Corn	6/2	2	--
	6/3	Corn	6/3	--	--
	6/4	Corn	6/4	--	--
	6/5	Corn	6/5	2	--
	6/6	Corn	6/6	2	--
	6/7	Corn	6/7	2	--
	6/8	Corn	6/8	2	--
	6/9	Corn	6/9	2	--
	6/10	Corn	6/10	2	--
	6/11	Corn	6/11	--	--
	6/12	Corn	6/12	--	--
	6/13	Corn	6/13	--	--
	6/14	Corn	6/14	--	--
	6/15	Corn	6/15	--	3
	6/16	Corn	6/16	--	3
	6/17	Corn	6/17	--	3
	6/18	Corn	6/18	--	3
	6/19	Corn	6/19	--	3
	6/20	Corn	6/20	--	3
	6/21	Corn	6/21	2	--
	6/22	Corn	6/22	2	--
	6/23	Corn	6/23	2	--
	6/24	Corn	6/24	2	--
	6/25	Corn	6/25	2	--
	6/26	Corn	6/26	2	--
	6/27	Corn	6/27	2	--
	6/28	Corn	6/28	2	--
	6/29	Corn	6/29	--	3
	6/30	Corn	6/30	--	3
JULY	7/1	Corn	7/1	--	--
	7/2	Corn	7/2	--	--
	7/3	Corn	7/3	--	5
	7/4	Corn	7/4	--	5
	7/5	Corn	7/5	--	5
	7/6	Corn	7/6	3	--
	7/7	Corn	7/7	3	--
	7/8	Corn	7/8	3	--
	7/9	Corn	7/9	3	--
	7/10	Corn	7/10	3	--
	7/11	Corn	7/11	3	--
	7/12	Corn	7/12	3	--
	7/13	Corn	7/13	3	--
	7/14	Corn	7/14	3	--
	7/15	Corn	7/15	--	5
	7/16	Corn	7/16	--	5
	7/17	Corn	7/17	--	5
	7/18	Corn	7/18	--	5
	7/19	Corn	7/19	--	5
	7/20	Corn	7/20	3	--
	7/21	Corn	7/21	3	--
	7/22	Corn	7/22	3	--
	7/23	Corn	7/23	3	--
	7/24	Corn	7/24	3	--
	7/25	Corn	7/25	3	--
	7/26	Corn	7/26	3	--
	7/27	Corn	7/27	3	--
	7/28	Corn	7/28	3	--
	7/29	Corn	7/29	--	5
	7/30	Corn	7/30	--	5
	7/31	Corn	7/31	--	5

Land Application Area Irrigation Plan to Manage BOD Loading - NET Nitrogen Loading		
Field:	1	2
Note:	Scenario 1 - 100% Corn-Wheat Rotation	
Acres:	38.0	28.0
Effluent Irrig:	Net Nitrogen Applied (pounds/acre)	
6/1	2	--
6/2	2	--
6/3	--	--
6/4	--	--
6/5	2	--
6/6	2	--
6/7	2	--
6/8	2	--
6/9	2	--
6/10	2	--
6/11	--	--
6/12	--	--
6/13	--	--
6/14	--	--
6/15	--	2
6/16	--	2
6/17	--	2
6/18	--	2
6/19	--	2
6/20	--	2
6/21	2	--
6/22	2	--
6/23	2	--
6/24	2	--
6/25	2	--
6/26	2	--
6/27	2	--
6/28	2	--
6/29	--	2
6/30	--	2
7/1	--	--
7/2	--	--
7/3	--	4
7/4	--	4
7/5	--	4
7/6	3	--
7/7	3	--
7/8	3	--
7/9	3	--
7/10	3	--
7/11	3	--
7/12	3	--
7/13	3	--
7/14	3	--
7/15	--	4
7/16	--	4
7/17	--	4
7/18	--	4
7/19	--	4
7/20	3	--
7/21	3	--
7/22	3	--
7/23	3	--
7/24	3	--
7/25	3	--
7/26	3	--
7/27	3	--
7/28	3	--
7/29	--	4
7/30	--	4
7/31	--	4

Appendix H3. Nitrogen Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - GROSS Nitrogen Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Gross Nitrogen Applied (pounds/acre)	
AUGUST	8/1	Corn	8/1	--	4
	8/2	Corn	8/2	--	4
	8/3	Corn	8/3	3	--
	8/4	Corn	8/4	3	--
	8/5	Corn	8/5	3	--
	8/6	Corn	8/6	3	--
	8/7	Corn	8/7	3	--
	8/8	Corn	8/8	3	--
	8/9	Corn	8/9	3	--
	8/10	Corn	8/10	3	--
	8/11	Corn	8/11	3	--
	8/12	Corn	8/12	--	4
	8/13	Corn	8/13	--	4
	8/14	Corn	8/14	--	4
	8/15	Corn	8/15	--	4
	8/16	Corn	8/16	--	4
	8/17	Corn	8/17	3	--
	8/18	Corn	8/18	3	--
	8/19	Corn	8/19	3	--
	8/20	Corn	8/20	3	--
	8/21	Corn	8/21	3	--
	8/22	Corn	8/22	3	--
	8/23	Corn	8/23	3	--
	8/24	Corn	8/24	3	--
	8/25	Corn	8/25	3	--
	8/26	Corn	8/26	--	4
	8/27	Corn	8/27	--	4
	8/28	Corn	8/28	--	4
	8/29	Corn	8/29	--	4
	8/30	Corn	8/30	--	4
	8/31	Corn	8/31	3	--
SEPTEMBER	9/1	Corn	9/1	3	--
	9/2	Corn	9/2	3	--
	9/3	Corn	9/3	3	--
	9/4	Corn	9/4	3	--
	9/5	Corn	9/5	3	--
	9/6	Corn	9/6	3	--
	9/7	Corn	9/7	3	--
	9/8	Corn	9/8	3	--
	9/9	Corn	9/9	--	4
	9/10	Corn	9/10	--	4
	9/11	Corn	9/11	--	4
	9/12	Corn	9/12	--	4
	9/13	Corn	9/13	--	4
	9/14	Corn	9/14	3	--
	9/15	Corn	9/15	3	--
	9/16	Corn	9/16	3	--
	9/17	Corn	9/17	3	--
	9/18	Corn	9/18	3	--
	9/19	Corn	9/19	3	--
	9/20	Corn	9/20	3	--
	9/21	Corn	9/21	3	--
	9/22	Corn	9/22	3	--
	9/23	Corn	9/23	--	4
	9/24	Corn	9/24	--	4
	9/25	Corn	9/25	--	4
	9/26	Corn	9/26	--	4
	9/27	Corn	9/27	--	4
	9/28	Corn	9/28	3	--
	9/29	Corn	9/29	3	--
	9/30	Corn	9/30	3	--
Total Applied (A)				470	457
Total Removed (R)				623	623
A-R				-153	-166
A/R				0.75	0.73

Land Application Area Irrigation Plan to Manage BOD Loading - NET Nitrogen Loading		
Field:	1	2
Note:	Scenario 1 - 100% Corn-Wheat Rotation	
Acres:	38.0	28.0
Effluent Irrig:	Net Nitrogen Applied (pounds/acre)	
8/1	--	3
8/2	--	3
8/3	2	--
8/4	2	--
8/5	2	--
8/6	2	--
8/7	2	--
8/8	2	--
8/9	2	--
8/10	2	--
8/11	2	--
8/12	--	3
8/13	--	3
8/14	--	3
8/15	--	3
8/16	--	3
8/17	2	--
8/18	2	--
8/19	2	--
8/20	2	--
8/21	2	--
8/22	2	--
8/23	2	--
8/24	2	--
8/25	2	--
8/26	--	3
8/27	--	3
8/28	--	3
8/29	--	3
8/30	--	3
8/31	2	--
9/1	2	--
9/2	2	--
9/3	2	--
9/4	2	--
9/5	2	--
9/6	2	--
9/7	2	--
9/8	2	--
9/9	--	3
9/10	--	3
9/11	--	3
9/12	--	3
9/13	--	3
9/14	2	--
9/15	2	--
9/16	2	--
9/17	2	--
9/18	2	--
9/19	2	--
9/20	2	--
9/21	2	--
9/22	2	--
9/23	--	3
9/24	--	3
9/25	--	3
9/26	--	3
9/27	--	3
9/28	2	--
9/29	2	--
9/30	2	--
Total Applied (A)	444	432
Total Removed (R)	623	623
A-R	-179	-191
A/R	0.71	0.69

Appendix H3. Nitrogen L Appendix H4. Salt Loading Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - Salt (FDS) Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Salt (FDS) Applied (pounds/acre)	
OCTOBER	10/1	Corn	10/1	--	--
	10/2	Corn	10/2	--	--
	10/3	Corn	10/3	--	--
	10/4	Corn	10/4	--	--
	10/5	Corn	10/5	--	--
	10/6	Corn	10/6	--	--
	10/7	Corn	10/7	--	--
	10/8	Corn	10/8	--	--
	10/9	Corn	10/9	--	--
	10/10	Corn	10/10	--	--
	10/11	Corn	10/11	--	--
	10/12	Corn	10/12	--	--
	10/13	Corn	10/13	--	--
	10/14	Corn	10/14	--	--
	10/15	Corn	10/15	--	--
	10/16	Fallow	10/16	--	--
	10/17	Fallow	10/17	--	--
	10/18	Fallow	10/18	--	--
	10/19	Fallow	10/19	--	--
	10/20	Fallow	10/20	--	--
	10/21	Fallow	10/21	--	--
	10/22	Fallow	10/22	37	37
	10/23	Fallow	10/23	37	37
	10/24	Fallow	10/24	37	37
	10/25	Fallow	10/25	37	37
	10/26	Fallow	10/26	--	--
	10/27	Fallow	10/27	--	--
	10/28	Fallow	10/28	--	--
	10/29	Fallow	10/29	--	--
	10/30	Fallow	10/30	--	--
	10/31	Fallow	10/31	--	--
NOVEMBER	11/1	WF	11/1	--	--
	11/2	WF	11/2	--	--
	11/3	WF	11/3	--	--
	11/4	WF	11/4	--	--
	11/5	WF	11/5	32	--
	11/6	WF	11/6	32	--
	11/7	WF	11/7	32	--
	11/8	WF	11/8	32	--
	11/9	WF	11/9	32	--
	11/10	WF	11/10	32	--
	11/11	WF	11/11	32	--
	11/12	WF	11/12	32	--
	11/13	WF	11/13	--	43
	11/14	WF	11/14	--	43
	11/15	WF	11/15	--	43
	11/16	WF	11/16	--	43
	11/17	WF	11/17	--	43
	11/18	WF	11/18	--	--
	11/19	WF	11/19	--	--
	11/20	WF	11/20	--	--
	11/21	WF	11/21	--	--
	11/22	WF	11/22	--	--
	11/23	WF	11/23	--	--
	11/24	WF	11/24	--	--
	11/25	WF	11/25	--	--
	11/26	WF	11/26	--	--
	11/27	WF	11/27	--	--
	11/28	WF	11/28	--	--
	11/29	WF	11/29	--	--
	11/30	WF	11/30	--	--

Appendix H3. Nitrogen L‹ Appendix H4. Salt Loading Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - Salt (FDS) Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Salt (FDS) Applied (pounds/acre)	
DECEMBER	12/1	WF	12/1	--	--
	12/2	WF	12/2	--	--
	12/3	WF	12/3	--	--
	12/4	WF	12/4	--	--
	12/5	WF	12/5	--	--
	12/6	WF	12/6	--	--
	12/7	WF	12/7	--	--
	12/8	WF	12/8	--	--
	12/9	WF	12/9	--	--
	12/10	WF	12/10	--	--
	12/11	WF	12/11	--	--
	12/12	WF	12/12	--	--
	12/13	WF	12/13	--	--
	12/14	WF	12/14	--	--
	12/15	WF	12/15	--	--
	12/16	WF	12/16	--	--
	12/17	WF	12/17	--	--
	12/18	WF	12/18	--	--
	12/19	WF	12/19	--	--
	12/20	WF	12/20	--	--
	12/21	WF	12/21	--	--
	12/22	WF	12/22	--	--
	12/23	WF	12/23	--	--
	12/24	WF	12/24	--	--
	12/25	WF	12/25	--	--
	12/26	WF	12/26	--	--
	12/27	WF	12/27	--	--
	12/28	WF	12/28	--	--
	12/29	WF	12/29	--	--
	12/30	WF	12/30	--	--
	12/31	WF	12/31	--	--
JANUARY	1/1	WF	1/1	--	--
	1/2	WF	1/2	--	--
	1/3	WF	1/3	--	--
	1/4	WF	1/4	--	--
	1/5	WF	1/5	--	--
	1/6	WF	1/6	--	--
	1/7	WF	1/7	--	--
	1/8	WF	1/8	--	--
	1/9	WF	1/9	--	--
	1/10	WF	1/10	--	--
	1/11	WF	1/11	--	--
	1/12	WF	1/12	--	--
	1/13	WF	1/13	--	--
	1/14	WF	1/14	--	--
	1/15	WF	1/15	--	--
	1/16	WF	1/16	--	--
	1/17	WF	1/17	--	--
	1/18	WF	1/18	--	--
	1/19	WF	1/19	--	--
	1/20	WF	1/20	--	--
	1/21	WF	1/21	--	--
	1/22	WF	1/22	--	--
	1/23	WF	1/23	--	--
	1/24	WF	1/24	--	--
	1/25	WF	1/25	--	--
	1/26	WF	1/26	--	--
	1/27	WF	1/27	--	--
	1/28	WF	1/28	--	--
	1/29	WF	1/29	--	--
	1/30	WF	1/30	--	--
	1/31	WF	1/31	--	--

Appendix H3. Nitrogen L‹ Appendix H4. Salt Loading Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - Salt (FDS) Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Salt (FDS) Applied (pounds/acre)	
FEBRUARY	2/1	WF	2/1	--	--
	2/2	WF	2/2	--	--
	2/3	WF	2/3	--	--
	2/4	WF	2/4	--	--
	2/5	WF	2/5	--	--
	2/6	WF	2/6	--	--
	2/7	WF	2/7	--	--
	2/8	WF	2/8	--	--
	2/9	WF	2/9	--	--
	2/10	WF	2/10	--	--
	2/11	WF	2/11	--	--
	2/12	WF	2/12	--	--
	2/13	WF	2/13	--	--
	2/14	WF	2/14	--	--
	2/15	WF	2/15	--	--
	2/16	WF	2/16	--	--
	2/17	WF	2/17	--	--
	2/18	WF	2/18	--	--
	2/19	WF	2/19	--	--
	2/20	WF	2/20	--	--
	2/21	WF	2/21	--	--
	2/22	WF	2/22	--	--
	2/23	WF	2/23	--	--
	2/24	WF	2/24	--	--
	2/25	WF	2/25	--	--
	2/26	WF	2/26	--	--
	2/27	WF	2/27	--	--
	2/28	WF	2/28	--	--
MARCH	3/1	WF	3/1	34	--
	3/2	WF	3/2	34	--
	3/3	WF	3/3	34	--
	3/4	WF	3/4	34	--
	3/5	WF	3/5	34	--
	3/6	WF	3/6	34	--
	3/7	WF	3/7	34	--
	3/8	WF	3/8	32	--
	3/9	WF	3/9	--	43
	3/10	WF	3/10	--	43
	3/11	WF	3/11	--	43
	3/12	WF	3/12	--	43
	3/13	WF	3/13	--	43
	3/14	WF	3/14	--	43
	3/15	WF	3/15	32	--
	3/16	WF	3/16	32	--
	3/17	WF	3/17	32	--
	3/18	WF	3/18	37	--
	3/19	WF	3/19	37	--
	3/20	WF	3/20	37	--
	3/21	WF	3/21	37	--
	3/22	WF	3/22	37	--
	3/23	WF	3/23	--	50
	3/24	WF	3/24	--	50
	3/25	WF	3/25	--	50
	3/26	WF	3/26	--	50
	3/27	WF	3/27	--	50
	3/28	WF	3/28	--	50
	3/29	WF	3/29	37	--
	3/30	WF	3/30	37	--
	3/31	WF	3/31	37	--

Appendix H3. Nitrogen L Appendix H4. Salt Loading Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - Salt (FDS) Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Salt (FDS) Applied (pounds/acre)	
APRIL	4/1	WF	4/1	69	--
	4/2	WF	4/2	69	--
	4/3	WF	4/3	69	--
	4/4	WF	4/4	69	--
	4/5	WF	4/5	69	--
	4/6	WF	4/6	--	93
	4/7	WF	4/7	--	93
	4/8	WF	4/8	--	93
	4/9	WF	4/9	--	93
	4/10	WF	4/10	--	93
	4/11	WF	4/11	69	--
	4/12	WF	4/12	69	--
	4/13	WF	4/13	69	--
	4/14	WF	4/14	69	--
	4/15	WF	4/15	69	--
	4/16	WF	4/16	88	--
	4/17	WF	4/17	85	--
	4/18	WF	4/18	85	--
	4/19	WF	4/19	85	--
	4/20	WF	4/20	85	--
	4/21	WF	4/21	83	--
	4/22	WF	4/22	--	--
	4/23	WF	4/23	--	--
	4/24	WF	4/24	--	--
	4/25	WF	4/25	--	--
	4/26	WF	4/26	--	--
	4/27	WF	4/27	--	--
	4/28	WF	4/28	--	--
	4/29	WF	4/29	--	--
	4/30	WF	4/30	--	--
MAY	5/1	Fallow	5/1	--	--
	5/2	Fallow	5/2	--	--
	5/3	Fallow	5/3	--	--
	5/4	Fallow	5/4	--	--
	5/5	Fallow	5/5	--	--
	5/6	Fallow	5/6	--	--
	5/7	Fallow	5/7	--	391
	5/8	Fallow	5/8	--	391
	5/9	Fallow	5/9	--	391
	5/10	Fallow	5/10	--	--
	5/11	Fallow	5/11	--	--
	5/12	Fallow	5/12	--	--
	5/13	Fallow	5/13	--	--
	5/14	Fallow	5/14	--	--
	5/15	Fallow	5/15	--	--
	5/16	Corn	5/16	--	--
	5/17	Corn	5/17	--	--
	5/18	Corn	5/18	--	--
	5/19	Corn	5/19	--	--
	5/20	Corn	5/20	16	--
	5/21	Corn	5/21	16	--
	5/22	Corn	5/22	16	--
	5/23	Corn	5/23	16	--
	5/24	Corn	5/24	16	--
	5/25	Corn	5/25	16	--
	5/26	Corn	5/26	16	--
	5/27	Corn	5/27	16	--
	5/28	Corn	5/28	--	22
	5/29	Corn	5/29	--	22
	5/30	Corn	5/30	--	22
	5/31	Corn	5/31	--	22

Appendix H3. Nitrogen L Appendix H4. Salt Loading Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - Salt (FDS) Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Salt (FDS) Applied (pounds/acre)	
JUNE	6/1	Corn	6/1	16	--
	6/2	Corn	6/2	16	--
	6/3	Corn	6/3	--	--
	6/4	Corn	6/4	--	--
	6/5	Corn	6/5	16	--
	6/6	Corn	6/6	16	--
	6/7	Corn	6/7	16	--
	6/8	Corn	6/8	16	--
	6/9	Corn	6/9	16	--
	6/10	Corn	6/10	16	--
	6/11	Corn	6/11	--	--
	6/12	Corn	6/12	--	--
	6/13	Corn	6/13	--	--
	6/14	Corn	6/14	--	--
	6/15	Corn	6/15	--	22
	6/16	Corn	6/16	--	22
	6/17	Corn	6/17	--	22
	6/18	Corn	6/18	--	22
	6/19	Corn	6/19	--	22
	6/20	Corn	6/20	--	22
	6/21	Corn	6/21	16	--
	6/22	Corn	6/22	16	--
	6/23	Corn	6/23	16	--
	6/24	Corn	6/24	16	--
	6/25	Corn	6/25	16	--
	6/26	Corn	6/26	16	--
	6/27	Corn	6/27	16	--
	6/28	Corn	6/28	16	--
	6/29	Corn	6/29	--	22
	6/30	Corn	6/30	--	22
JULY	7/1	Corn	7/1	--	--
	7/2	Corn	7/2	--	--
	7/3	Corn	7/3	--	39
	7/4	Corn	7/4	--	39
	7/5	Corn	7/5	--	39
	7/6	Corn	7/6	29	--
	7/7	Corn	7/7	29	--
	7/8	Corn	7/8	29	--
	7/9	Corn	7/9	29	--
	7/10	Corn	7/10	29	--
	7/11	Corn	7/11	29	--
	7/12	Corn	7/12	29	--
	7/13	Corn	7/13	29	--
	7/14	Corn	7/14	29	--
	7/15	Corn	7/15	--	39
	7/16	Corn	7/16	--	39
	7/17	Corn	7/17	--	39
	7/18	Corn	7/18	--	39
	7/19	Corn	7/19	--	39
	7/20	Corn	7/20	29	--
	7/21	Corn	7/21	29	--
	7/22	Corn	7/22	29	--
	7/23	Corn	7/23	29	--
	7/24	Corn	7/24	29	--
	7/25	Corn	7/25	29	--
	7/26	Corn	7/26	29	--
	7/27	Corn	7/27	29	--
	7/28	Corn	7/28	29	--
	7/29	Corn	7/29	--	39
	7/30	Corn	7/30	--	39
	7/31	Corn	7/31	--	39

Appendix H3. Nitrogen Lo Appendix H4. Salt Loading Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - Salt (FDS) Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Salt (FDS) Applied (pounds/acre)	
AUGUST	8/1	Corn	8/1	--	30
	8/2	Corn	8/2	--	30
	8/3	Corn	8/3	22	--
	8/4	Corn	8/4	22	--
	8/5	Corn	8/5	22	--
	8/6	Corn	8/6	22	--
	8/7	Corn	8/7	22	--
	8/8	Corn	8/8	22	--
	8/9	Corn	8/9	22	--
	8/10	Corn	8/10	22	--
	8/11	Corn	8/11	22	--
	8/12	Corn	8/12	--	30
	8/13	Corn	8/13	--	30
	8/14	Corn	8/14	--	30
	8/15	Corn	8/15	--	30
	8/16	Corn	8/16	--	30
	8/17	Corn	8/17	22	--
	8/18	Corn	8/18	22	--
	8/19	Corn	8/19	22	--
	8/20	Corn	8/20	22	--
	8/21	Corn	8/21	22	--
	8/22	Corn	8/22	22	--
	8/23	Corn	8/23	22	--
	8/24	Corn	8/24	22	--
	8/25	Corn	8/25	22	--
	8/26	Corn	8/26	--	30
	8/27	Corn	8/27	--	30
	8/28	Corn	8/28	--	30
	8/29	Corn	8/29	--	30
	8/30	Corn	8/30	--	30
	8/31	Corn	8/31	22	--
SEPTEMBER	9/1	Corn	9/1	22	--
	9/2	Corn	9/2	22	--
	9/3	Corn	9/3	22	--
	9/4	Corn	9/4	22	--
	9/5	Corn	9/5	22	--
	9/6	Corn	9/6	22	--
	9/7	Corn	9/7	22	--
	9/8	Corn	9/8	22	--
	9/9	Corn	9/9	--	30
	9/10	Corn	9/10	--	30
	9/11	Corn	9/11	--	30
	9/12	Corn	9/12	--	30
	9/13	Corn	9/13	--	30
	9/14	Corn	9/14	22	--
	9/15	Corn	9/15	22	--
	9/16	Corn	9/16	22	--
	9/17	Corn	9/17	22	--
	9/18	Corn	9/18	22	--
	9/19	Corn	9/19	22	--
	9/20	Corn	9/20	22	--
	9/21	Corn	9/21	22	--
	9/22	Corn	9/22	22	--
	9/23	Corn	9/23	--	30
	9/24	Corn	9/24	--	30
	9/25	Corn	9/25	--	30
	9/26	Corn	9/26	--	30
	9/27	Corn	9/27	--	30
	9/28	Corn	9/28	22	--
	9/29	Corn	9/29	22	--
	9/30	Corn	9/30	22	--
Total Applied (A)				4,040	3,928
Total Removed (R)				2,200	2,200
A/R				1.8	1.79
A-R (non-nutrient Load)				1,840	1,728

Appendix I – Salinity Control and Minimization Plan

Treehouse California Almonds, LLC

Salt Control Program

May 2023

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Exhibit #1 – Chemical Usage Analysis

1. - Introduction

Treehouse is an almond processor. We size, clean, blanch, roast, slice, sliver, meal, dice, and butter almonds. These are packaged for wholesale markets in packages from 2,200 lbs. to 25 lbs. Most of our almond processes are physical, and no chemicals are added. Many are ambient temperature with a few that use steam, water, or dry heat. Cleaning occurs at various frequency depending on processing line type and style.

2 - Process Review

Sizing and Warehousing

Raw almonds are delivered from the huller and shellers in poly lined wooden 4x4 boxes. The first step of the almond process is a general cleaning and sizing process. Sizing is a dry process at ambient temperatures that is dry cleaned. This includes a scalping deck that is a punched metal plate that the almonds are conveyed via vibration tables. Then gravity removes much of the large Foreign Material (FM) types such as almond hulls and sticks with a table that pulls air from the top and pushes air through the bottom.

An additional gravity system is used to remove heavier and lighter FM types such as almond sized shell and dirt clods and rocks. The gravity tables use air pressure and air flow to create an environment for finer density separation thus the ability to separate heavier and lighter components. Electronic sorting removes several types of FM and SD that are not desirable.

Sizing occurs on stainless steel metal punch plates that start with smaller sizes of holes and increase to larger ones until all almonds are sized. From the sizer they are placed in poly lined wood bins for fumigation and storage in the warehouse. Almonds are kept in ambient storage warehouses, which are metal buildings that have fiberglass covered insulation in walls and ceiling. These are stored at ambient temperatures for conventionally grown almonds and Organic are stored in an offsite freezer until tempering and use.

Sizer Flow = *poly lined wood bins - scalping deck - gravity - electronic sorting - sizing - poly lined wood bin - warehouse*

Raw Presorting

Raw almonds go through addition FM cleaning prior to further processing. Presort is a dry ambient temperature process that is dry cleaned. Almonds in wooden poly lined boxes in warehouses are assembled as per desired traits for certain contracts. These specific almonds bins are physically assembled for further FM cleaning. Then they pass through an x-ray to detect metals, stones, glass, and any other dense FM. A color sorter is then used to remove differing colors of FM and other undesired almonds traits such as dark spots, insect damaged colors, shriveled almonds, and others. Sorted almonds are then returned to a poly lined bin and prepared for further processing.

Flow = *Warehouse - contract assembly, X-ray, color sorting, Poly lined bin - further processing*

Raw Processing & Packaging

Many customers purchase cleaned raw almonds that are unpasteurized from TCA. Raw processing and packaging are a dry ambient temperature process that is dry cleaned. These are also assembled as per desired almond traits for certain customer contracts. These specific bins are physically assembled out of warehouse bins.

They are then sorted through two laser/color sorters and an additional color sorter for FM and desired almonds traits. Then they pass over sort tables which are inspected by human persons or a QCFY electronic sorter. Almonds are passed through an x-ray inspection and packaged in a 50 lbs. box, poly lined bin or poly lined adjustable height tote. These are then fumigated and shipped.

Flow *= Warehouse - contract assembly, Laser, and color sorting (3), QCFY or hand sorting, x-ray, packaging, fumigation, and shipping*

Blanching

Blanching is the key processing step for many of our products at TCA. This is a wet process that uses culinary steam to heat water for scalding almonds then a drying and sorting process. The line is wet cleaned. The blanching process is started with the presorting of the almonds for FM and any undesirable traits such as serious defects to include decay and insect damage. The almonds are then passed through a scalder (a hot water tube) that loosens the skin from the almond meat.

The Blancher roller then removes skin from almonds. The wet almonds are then passed through a forced air dryer and forced air cooler for drying and cooling. Electronic sorting then will remove most of the remaining FM, darker almonds, and almonds with skin tips. Certain orders will require a hand sorting step with occurs after electronic sorting then finally sifting for broken almonds and boxing in poly lined bins or stainless-steel bins.

Flow *= raw presorting, scalding, blanching, drying, cooling, electronic sorting, sifting, boxing*

Roasting

Raw almonds are roasted as a pre-processing step and as a final step with certain customers. Raw presorted almonds are fed into the roaster for roasting. Dry heat from natural gas burners generates the heat required for forced air roasting. Cooled almonds are then boxed for further processing or final packaging.

***Flow** = raw presorted almonds, roasting, boxing*

Slicing

Blanched and natural whole almonds are cut as per customers specifications for various uses. Almonds are prepared by cleaning for FM, blanching or pasteurization (natural or almonds with skin) are conditioned then physically cut with knives. Cut almonds are then dried and cooled with a forced air dryer and separate cooler. Fines are separated with a slotted hole vibratory screen and used for alternative inputs. An x-ray verifies that no dense FM is in the cut almonds. Almonds are then packaged bulk (poly lined bin or poly line adjustable tote) for shipping or further processing. They may also be packaged in a 25 lbs. cases for final shipment.

***Flow** = blanched or natural raw presorted almonds, plasticizer (preparation step), cutting (slicing or slivering), drying, cooling, sifting, x-ray, packaging*

Mealing and Flour

Blanched or natural whole or by-product almonds are used in the mealing of almond flour. These inputs are fed into a series of dicers that reduce almond size then finally into a series of crunching rollers. Once almonds are reduced, they pass through a sifter then they are packaged and shipped.

Flow *= blanched or natural whole or byproduct almonds, dicing, mealing, sifting, packaging, shipping*

Dicing

Blanched and natural whole almonds are diced as per customers specifications for various uses. Almonds are prepared by cleaning for FM, blanching or pasteurization (natural or almonds with skin) are conditioned then physically cut with cylindrical knives. Cut almonds are then sifted and then packaged for further processing or for final shipment.

Flow *= Blanched or natural almonds, dicing, sifting, packaging*

Buttering

Blanched and natural whole almonds and byproduct almonds are prepared for little FM and proper moisture levels. Almonds are fed into primary and secondary mills that grind and further grind almonds into a smooth butter. The butter is then cooled in a series of chilled water votators, screened, and packaged. Shipment occurs after micro and physical trait clearance.

Flow *= Blanched or natural or byproduct almonds, milling, cooling, packaging, and shipping*

Pasteurization

Blanched and natural whole almonds are sold as per customers specifications for various uses. Pasteurized almonds are prepared by cleaning for FM in the pre-cleaning or hand sort lines. Almonds are then fed into the preheated and pasteurizing section of the process. Dry heat is used to raise the almond temperature, then a steam saturation step does the pasteurization in a separate section of the machine. After pasteurization they are dried with hot forced air and cooled with chilled forced air. Finally, they are discharged from the line and packaged for shipment of further processing.

***Flow** = Natural almonds, cleaning and sorting, pre-heating, pasteurization, drying/roasting, cooling & packaging*

3 - Salinity Background

Potable Water Salinity

TCA has not tested our well water's salinity levels. We have found from our tests in the wastewater over the past several years the following data. We have not seen an increase of salinity in our wastewater in the past 3 years, but a stabilized and small trending downward as we have tried to use less chemicals and with use of the RO system that does not dump the salt brine back into the wastewater. TCA uses two wells for our water that are at a similar depth and within 50 ft. From the south and east side of our building.

Treehouse Wastewater Results				
Chloride Content in Wastewater				
Sample Date	**Result**	**RL**	**Units**	**Dil.**
7-Mar-23	68	2	mg/L	2
13-Dec-22	60	1	mg/L	1
3-Nov-22	54	5	mg/L	5
25-Oct-22	60	2	mg/L	2
13-Sep-22	84	1	mg/L	1
12-Oct-21	69	1	mg/L	1
14-Sep-21	73	5	mg/L	5
4-Aug-21	86	1	mg/L	1
22-Jun-21	74	1	mg/L	1
18-May-21	70	5	mg/L	5
13-Apr-21	83	1	mg/L	1
9-Mar-21	88	1	mg/L	1
13-Jan-21	86	5	mg/L	5

Chemical Usage

Chemicals are not used in common production at TCA as an ingredient. We do have lubricants that are vegetable oil based but do not commonly leak or are added by intention to products or cleaning. Sanitation chemicals that are used do have an alkaline PH and thus may be classified as salt. These cleaners will be covered in the next section.

Salt additions from sanitation chemicals to our water have been calculated in appendix A by B&L Neeley who provides our chemical testing and has a deep understanding of their effect on wastewater. Their analysis shows an increase of 44 ppm salt with the sanitation chemicals. The salinity of the wastewater is similar or lower to most metro areas near and around us in the San Joaquin valley. The salinity of this water is sufficiently low to be used in irrigation on salt tolerant crops.

4 – Sanitation Management & Control Measures

Sizing and Warehousing

This is a dry clean area thus no chemicals would be added to the wastewater system. We do clean with alcohol quaternary ammonia used to wet towel in dry cleaning and as a sanitizer. We will remove and wash buckets from elevators on an annual basis. Solv 30 mixture is used for this and these waste discharge will be added to general wastewater.

Raw Presorting

This is a dry clean area thus no chemicals would be added to the wastewater system on a weekly basis. We do cleaning by blowing off debris and dust then collecting them. Wet wiping off machinery and cable-vey tubes with alcohol quaternary ammonia is used to wet towel in dry cleaning and as the sanitizer agent. We will remove and wash buckets from elevators on a quarterly basis. Solv 30 mixture is used, and these waste discharge will be added to general wastewater.

Raw Processing & Packaging

This is a dry clean area thus no chemicals would be added to the wastewater system on a weekly basis. We do cleaning by blowing off debris and dust then collecting them. Wet wiping off machinery and elevators structures with alcohol quaternary ammonia used to wet towel in dry cleaning and as sanitizer. We will remove and wash buckets from elevators on a quarterly basis. Solv 30 mixture is used for this and these waste discharge will be added to general wastewater.

Blanching

Wet cleaning is done in the blanching line every week of production. Several strengths of degreasers are used for varies areas of the sanitation process. This process starts out as almond debris being removed from processing equipment via compressed air or vacuum and then collected and discarded. A water rinse pressurized and non-pressurized is used to dislodge other almond debris, this is flushed down drain and most organics separated via a screening prior to discharge into ponds.

Scalder is cleaned with concentrated degreaser that is added to machinery in hot water and allowed to mix with agitation of machinery. Dryer and cooler flaps are cleaned every quarter in a concentrated degreaser – these flaps are removed and soaked in concentrated chemical in hot water and allowed to sit for up to 12 hours. They are then rinsed with hot pressurized water and replaced in the machine. Other dryers, coolers, screens, and conveyance uses a lighter degreaser that is applied via a foam application and rinsed off via pressurized water. All parts of processing equipment are then allowed to air dry, and an alcohol-based sanitizer is applied prior to startup of the production line.

Roasting

Wet cleaning in the roaster line occurs every two weeks of production. Several strengths of degreasers are used for varies areas of the sanitation process. This process starts our as almond debris is removed from processing equipment via compressed air or vacuum and then collected and discarded. A water rinse, pressurized and non-pressurized, is used to dislodge other almond debris, this is flushed down drain and most organics separated via a screening prior to discharge into ponds.

The roaster belt is cleaned with concentrated degreaser that is added to machinery and allowed 15-20 minutes of action prior to agitation and rinsing with hot pressurized water. Other external parts of roaster and conveyance use a lighter degreaser that is applied via a foam application and rinsed off via pressurized water. All parts of processing equipment are then allowed to air dry, and an alcohol-based sanitizer is applied prior to startup of the production line.

Slicing

Wet cleaning in the cutting line occurs every week of production. Several strengths of degreasers are used for varies areas of the sanitation process. This process starts out as almond debris being removed from processing equipment via compressed air or vacuum and then collected and discarded.
A water rinse, pressurized and non-pressurized, is used to dislodge other almond debris, this is flushed down drain and most organics separated via a screening prior to discharge into ponds. Cooler flaps are cleaned every quarter in a concentrated degreaser – these flaps are removed and soaked in concentrated chemical in hot water and allowed to sit for up to 12 hours.
They are then rinsed with hot pressurized water and replaced in the machine. Other parts of the dryer, cooler, screens and conveyance use a lighter degreaser that is applied via a foam application and rinsed off via pressurized water. All parts of processing equipment are then allowed to air dry, and an alcohol-based sanitizer is applied prior to start-up of the production line.

Mealing and Flour

This is a dry clean area thus no chemicals would be added to the wastewater system on a weekly basis. We do cleaning by blowing off debris and dust then collecting them. Wet wiping of machinery and elevators structures with alcohol quaternary ammonia used to wet towel in dry cleaning and as sanitizer. We will remove and wash buckets from elevators on a quarterly basis. Solv 30 mixture is used for this and these waste discharge will be added to general wastewater.

Dicing

Wet cleaning in the cutting line occurs every two weeks of production. This process starts our as almond debris is removed from processing equipment via compressed air or vacuum and then collected and discarded. A water rinse, pressurized and non-pressurized, is used to dislodge other almond debris, this is flushed down drain and most organics separated via a screening prior to discharge into ponds. All parts of the dicer, screens and conveyance use a lighter degreaser that is applied via a foam application and rinsed off via pressurized water. All parts of processing equipment are then allowed to air dry, and an alcohol-based sanitizer is applied prior to start-up of the production line.

Buttering

Wet cleaning of the butter line occurs every two weeks of production. Several strengths of degreasers are used for varies areas of the sanitation process. This process starts our as almond debris is removed from processing equipment via compressed air or vacuum and opening and dumping butter from pipes and filters then clean butter is collected and reworked and loose almond debris is discarded or used as oil stock. A water rinse, pressurized and non-pressurized, is used to dislodge other almond debris, this is flushed down drain and most organics separated via a screening prior to discharge into ponds. All pipes are cleaned with a CIP system that flows a hot water rinse, a hot chemical degreaser, and a hot water rinse. Other parts of the dumpers, conveyance and packaging use a lighter degreaser that is applied via a foam application and rinsed off via pressurized water. All parts of processing equipment are then allowed to air dry, and an alcohol-based sanitizer is applied to open machinery prior to start-up of the production line.

Pasteurizer

Wet cleaning the pasteurizer roaster line every two weeks of production. Several strengths of degreasers are used for varies areas of the sanitation process. This process starts out as almond debris being removed from processing equipment via compressed air or vacuum and then collected and discarded. A water rinse, pressurized and non-pressurized, is used to dislodge other almond debris, this is flushed down drain and most organics separated via a screening prior to discharge into ponds. The convenance belt is cleaned with concentrated degreaser that is added to machinery for 15-20 minutes prior to agitation and rinsing with hot pressurized water. Other external parts of pasteurizer and conveyance use a lighter degreaser that is applied via a foam application and rinsed off via pressurized water. All parts of processing equipment are then allowed to air dry, and an alcohol-based sanitizer is applied prior to startup of the production line.

5. Chemical Conservation, Reuse, & Recovery

Chemical Reuse

Chemicals used in the CIP system of the butter are used and stored in a separate tank for several cleanings. Concentrations are monitored and chemicals are only added as needed to meet desired concentrations in the cleaning cycles. Other cleaning chemicals are used once and discarded into the wastewater. We are evaluating ways to use concentrated soapy water multiple times, but the cleaning water and degreaser soaps have not been in a uniform system thus making the multiple use challenging at the time of writing of this document.

Chemical Replacement

In the past 8-10 years Treehouse has evaluated multiple chemical types and companies. We have continually returned to similar chemistries and concentrations that do work well in the sanitation and removal or the almond oils in our products. TCA does not intend to change or use different chemicals as current ones have been found to work best.

Boiler Chemicals

Boiler chemicals are used in the scavenging and removal of oxygen in the boiler water to reduce the oxidation and buildup of minerals on the tubes of the boiler for energy efficient transfer of heat. These are small in concentration and do not add a significant addition to the overall wastewater. These chemicals are monitored several times per week by Treehouse personnel as well as a boiler water technician once each week. Together we balance the use of these chemicals in our water system and boiler.

6 - Recommended Future Actions

Management Considerations

TCA made a significant change from the salt softened water to Reverse Osmosis (RO) water for the boiler and water injection into the scalder line. This one change has significantly reduced the salt in our water from the removal of the re-brining process of the salt system to the carbon filters of the RO system. We are currently adding a duplicate and redundant RO system for consistent reliability of the RO water.

Actions

TCA understands our ongoing actions will affect the salt concentrations in the water of the area and soil for the upcoming decades. For this, and our ongoing commitment to sustainability, we will continue the use of RO water in our boiler processes. We will also continue to use our wastewater and captured runoff in the irrigation of crops that will be used for livestock feed in the area as mitigation of the chemical we need to use in our cleaning and sanitation processes.

Limitations

TCA is limited to the knowledge we currently possess on the processes of cleaning our water use. We are aware based on the test results that we are not adding to the overall salts levels to the area and environment. Treehouse will continue to use our water wisely for the ag production as noted.

Exhibit #1 – Chemical Usage Analysis

Water Technologies — Cleaning Compounds

B & L NEELEY, INC.

Hawksley Laboratories — Process Solutions

151 W 5th Street • Ripon, California 95366 • 24 Hour No. • 209-823-3571 • www.blneeley.com

Water Treatment &Testing • Consultation • C.I.P. & High Pressure Cleaning Systems • 10,000 PSI Tube Cleaning • Service & Parts for Equipment

Contractor's License #427126

Since 1951

Summary of Sodium Discharge by Chemical - B&L Neeley Chemicals

Treehouse Almonds

Chemical	2022			
	Chemicals Purchased (gal or lb)	Gallons Contributing to Sodium	Sodium Weight (lb)	PPM of Salinity to Water Discharge (PPM)
Chlor 12.5 (sodium hypochlorite)	1,196	46	462	2.98
Chlorinated Foamer #5B (sodium hypochlorite)	1,540	9	89	0.57
Cleaner Solv #30 (sodium hydroxide)	1,760	61	750	4.83
Cleaner L-145 (sodium hydroxide)	1,595	447	5,514	35.52
				--
				--
				--
				--
				--
				--
				--
				--
Total PPM of Salinity to Water Discharge (sodium):	**43.9**			

Notes: PPM Calculations Assume the Following:

Gallons of water discharged per day: 62,000

Total days in operation: 300

PROVOST&PRITCHARD
CONSULTING GROUP

400 E Main St, Ste 300 • Visalia, CA 93291 • (559) 636-1166
www.provostandpritchard.com

MEMORANDUM

To:	GMA Engineering
From:	Steven Bommelje
Subject:	WWTF Description for Tulare County Permit for Treehouse Almonds
Date:	March 20, 2024

Here is a description of the wastewater treatment area for Treehouse for the county use permit.

Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

The two anaerobic ponds (88' x 88' x 19') will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280' x 87' x 13') where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

The clarifier (24' diameter x 12') will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466' x 280' x 27') for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the HDPE double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

A grading permit for pond construction was obtained from Tulare County on January 11, 2024. Excavation for the ponds began in March 2024. Completion of the construction for the treatment area is anticipated in June of 2024.

ATTACHMENT "E"

OPERATIONAL STATEMENT

GMA
GERALD MELE & ASSOCIATES, INC.
7337 N. FIRST ST., SUITE 110 FRESNO, CA. 93720 (559)435-1411 FAX (559)435-1169
CONSULTING ENGINEERS AND ARCHITECTS
GERALD A. MELE, PE, SE
MARTIN R. INESS, PE, SE
ROBERT A. SANDERS, ARCHITECT
BRAD S. EDWARDS, PE, SE
JACOB G. KENNINGTON, PE
LUIS A. GOMEZ, PE

County of Tulare
Planning Department
5961 South Mooney Boulevard
Visalia, CA 93277

Treehouse California Almond, L.L.C. – Proposed boiler building
Operational Statement

To whom it may concern,

The project will be located on the parcel with the APN of 318-290-006, 318-290-005, which have a current zoning designation of AE-40 – Agricultural Exclusive – 40 Acre, and 319-060-019, 319-060-022, and 319-060-037, which have a current zoning designation of AE-20 – Agricultural Exclusive – 20 Acre. The company currently operates its existing facilities on said parcels. The company has the current address of 6914 Earlimart, CA. 93219.

The company sells a full range of roasted and manufactured almonds, including blanched whole, sliced, and diced almonds, almond meal, almond butter and natural whole almonds. The almonds are hulled and shelled in the Treehouse Almonds plant near Delano in Kern County. This shelled raw product is then trucked to the Earlimart site for processing.

The project will consist of several phases as follows:

Phase 1 - The construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. As additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

Phase 2 – The construction of a 5,176 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

Phase 3 – The renovation to an existing building from a warehouse to a two story office. It will also include the construction of a 162,000 sq. ft. warehouse.

Phase 4 – Construction of a 4,783 sq. ft. solar panel canopy, a 7,259 sq. ft. solar panel canopy, and an 8,208 sq. ft. solar panel canopy.

Phase 5 – Construction of a 7,040 sq. ft. warehouse addition, a 2,873 sq. ft. warehouse addition, and 578 sq. ft. trucker's welfare addition.

Phase 6 – Construction of a 1,600 sq. ft. caretaker's residence.

The company currently operates two 10-hour shifts, four to five days a week, depending on the season. The company has 87 employees who work the day shift and 49 employees who work the night shift. The company anticipates the possible addition of 8 more employees with the above additions.

GERALD MELE & ASSOCIATES, INC.
7337 N. FIRST ST., SUITE 110 FRESNO, CA. 93720 (559)435-1411 FAX (559)435-1169
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JACOB G. KENNINGTON, PE
LUIS A. GOMEZ, PE

The company currently has approximately two to three customers who visit the site every week with no change anticipated as a result of the proposed additions.

The company currently receives approximately 5-20 delivery trucks a day during the peak harvest season which is from August through November. From December through July they receive approximately 8-15 trucks a day. There will be no increase

The Company uses much of the normal equipment that would be found in an almond processing plant such as blanchers, slicers, dicers, a sliver machine, roasters, a sizer, an El Bascan electronic sorter, a blending station, a 300hp boiler that is permitted every year, forklifts, a tractor, and conveyors.

No goods will be sold on-site.

Currently there is no caretaker living on-site. Once the previously approved Phase 7 caretaker residence is constructed, the company will be adding an on-site caretaker.

A combination of a 7' high chain link fence, video cameras, 24-hour security on the weekends, and on-site outdoor lighting are used to secure the property.

Respectfully submitted,

Sean Odom
Gerald Mele & Associates, Inc.

TULARE COUNTY RESOURCE MANAGEMENT AGENCY
PLANNING APPLICATION
GENERAL INFORMATION / COVER SHEET

LAND USE ENTITLEMENT (DISCRETIONARY)

TYPE OF APPLICATION:

☐ Development Agreement	☐ Review/Interpretation Request	☐ Variance- Flood
☐ Final Site Plan	☐ Revisions to a Parcel/Sub Map	☐ Variance-Building/Road Setback
☐ General Plan Initiation	☐ Special Use Permit (PC)	☐ Variance- Zoning
☐ General Plan Amendment	☐ Specific Plan	☐ Zone Change Initiation
☐ Planned Development	☐ Tentative Parcel Map	☐ Zone Change
☐ Planned Unit Development	☐ Tentative Subdivision Map	☐ Other ______

Applicant: Tree House California Almonds, LLC
Mailing Address 6914 Road 160
City/Town Earlimart State CA Zip 93219
Phone ______ Cell (559) 757-5020
E-Mail ______
Signature ______

Property Owner: ______
Mailing Address ______
City/Town ______ State ______ Zip ______
Phone ______ Cell ______
E-Mail ______
Signature ______

Other Persons to be Notified: (Specify: Other Owner(s), Agent, Lender, Architect, Engineer, Surveyor)

Name/Title GMA Engineering · Sean Odom
Mailing Address 337 N. First Street, Suite 110
City/Town Fresno State CA Zip 93720
Phone 559-435-1411 Fax ______
E-Mail sean@gmaengineering.com

Name/Title Ryan Rhoads
Mailing Address ______
City/Town ______ State ______ Zip ______
Phone ______ Fax ______
E-Mail ______

Project Information: ryan@gmaengineering.com
Site Address(es): 6914 Road 160 City/Town: Earlimart
Assessor's Parcel No(s): 319-060-019, 022, 037, 318-290-005, 006.

$5,807.00 — CEQ 23-005

THIS SPACE FOR PERMIT CENTER STAFF USE ONLY

Project Number: PSP 23-064 **Supervisor District:** 5 **Economic Development:** ______
Current Zoning: AE-20 **General Plan Land Use:** ______ **UAB/UDB/HDB/MSC:** Yes ☐ No ☐
Project Description Almond facility Expansion
Agricultural Preserve ***(if applicable)*** **– Preserve No.** ______ **Contract No.** ______
Filing Fee(s): $6,088.00 **Total Amount Paid:** ______ **Payment Type:** ______
Date Received: 08/18/2023 **Existing Entitlements/References:** CEQ 23005
Application Received/Reviewed by: Neha.

PERMIT CENTER HOURS: MONDAY – THURSDAY 9:00 A.M. TO 4:30 P.M. FRIDAY 9 A.M. -11 A.M.

TULARE COUNTY RESOURCE MANAGEMENT AGENCY
****5961 S. Mooney Blvd. Visalia, CA 93277 ** PHONE: 559-624-7000 ****

DISCRETIONARY LAND USE ENTITLEMENT APPLICATION

REQUIREMENTS, FEES AND INSTRUCTIONS *(Please use dark blue or black ink)*
The application form must be filled out completely and in every respect with all questions answered and all required attachments before the County can officially accept the application for processing. In the course of accepting and processing the application, Permit Center staff or the project planner may ask the applicant to clarify, correct or otherwise supplement the required information. The application may be filed with the Resource Management Agency Permit Center, at 5961 S. Mooney Blvd. Visalia, CA 93277. Phone No. (559) 624-7000. **IMPORTANT NOTICE: Fees are required at time of application submittal and are subject to change. Please verify the most up to date fees with Permit Center staff. The applicant is responsible for the payment of all fees associated with this application, including the initial fee/deposit and additional fees charged for processing. In addition, the applicant may be required to submit to the County additional deposits.**

Please see application fee information on Page 3 for specific and detailed fee information.

In addition to this application, please provide the following:

1. One (1) copy of the Development / Site Plan (showing entire parcel and location of the project)
2. Operational Statement: Please attach a detailed operational statement.
3. A signed Indemnification Agreement
4. "Will Serve" Letter from the appropriate off-site Community Water or Sewage Disposal provider.
5. Supplemental Information: Parcel Map Applications may require applications for exceptions and/or a waiver of the final map (if appliable). Certain applications pertaining to projects involving the raising of animals (dairies or other animals), Surface Mining or other more intense uses may require additional information and forms which can be obtained by contacting the Permit Center staff.

SUMMARY OF REQUIREMENTS FOR A LAND USE ENTITLEMENT APPLICATION

	Applicant	Staff
1. Completed Application	☐	☐
2. Owner's Affidavit *(signed by property owner)*	☐	☐
3. Filing Fee	☐	☐
4. Development/Site Plan (1 copy) (additional copies may be required)	☐	☐
5. Indemnification and Cost Recovery Agreement *(separate attachment)*	☐	☐
6. Supplemental Information (Review of "Identified Hazardous Waste Sites")	☐	☐
7. Applicant's Request for Notification of Proposed Land Use Action	☐	☐
8. Operational Statement *(if required by County)*	☐	☐
9. "Will Serve" letter from the appropriate off-site Community water and/or sewage disposal provider.	☐	☐
10. Water availability information for all existing and/or proposed on-site domestic wells. (Note: If a domestic well on one parcel is going to supply water to another parcel, a ten foot wide well and pipeline repair and maintenance easement in favor of that parcel shall be shown on the parcel (tentative/final) map and incorporated into the legal description prepared for the division of land.)	☐	☐
11. Request for Unused Fees Form *(Signed by the Applicant)*	☐	☐

LAND USE ENTITLEMENT APPLICATION FEES

Project Type Development	***Fee Due at Application Submittal***
Agreement	\$1,303 deposit (then \$115/hourly charged)
Final Site Plan	\$3,415 deposit (then \$115/hourly charged)
General Plan Initiation	\$5,321 deposit (then \$115/hourly charged)
General Plan Amendment	\$10,321 deposit (then \$115/hourly charged)
Planned Development	\$8,304 deposit (then \$115/hourly charged)
Planned Unit Development	\$8,203 deposit (then \$115/hourly charged)
Review/Interpretation Request	\$300 deposit (then \$115/hourly charged)
Revisons to a Parcel/Sub Map	\$1,312 (for a Minor Revision) 1/2 of fee for Tent Map not less than \$1,354 (Major Revision)
Special Use Permit (PC)	\$3,005 deposit (then \$115/hourly charged) for CEQA Exempt projects, temporary uses, mobile home/additional housing \$5,750 deposit (then \$115/hourly charged) for New Special Use Permits and Amendments \$5,528 deposit (then \$115/hourly charged) for Expansions of Non-Conforming Uses *Note that Large Day Cares, Kennels, and Hazardous Waste Facilties have special fee amounts. Please contact Permit Center staff for any fee questions. Additional \$150 fee in SRA Areas
Specific Plan	\$5,321 deposit (then \$115/hourly charged)
Tentative Parcel Map	\$2,507 flat fee (for 1-4 lots) - Additional: \$168 for Waiver request, \$249 for exceptions to maps/lot lines, \$113 in SRA Areas; \$3,568 plus \$65 per lot (for more than 4 lots) (then \$115/hourly charged)
Tentative Subdivision Map	Deposit Varies based on number of lots (then \$115/hourly charged)
Variance - Flood	\$3,313 deposit (then \$115/hourly charged)
Variance - Building/Road Setback	\$1,801 flat fee
Variance - Zoning	\$3,490 deposit (then \$115/hourly charged)
Zone Change Initiation	\$3,333 deposit (then \$115/hourly charged) Note: Zone Initiation fee is deducted from Zone Change Fee
Zone Change	\$6,451 deposit (then \$115/hourly charged)

Additional Fees Due Prior to Hearing or Project Completion

CEQA (Environmental) Fees for 2021	Varies: Exempt: \$58, ND or MND: \$2,480.25, EIR: \$3,445.25
Recording Fee Deposit	\$150 (Including SB2 - Building Homes and Jobs Act Fee)
Compliance Monitoring Fee	\$130

Tax Clearance Fees for Parcel Maps/Lot Line Adjustments

Assessor Fee Per Map for Tax Estimates	\$63
Assessor Fee Per Map for Waived Maps	\$336
Tax Collector Fee	\$131 per Original APN

PLEASE FILL OUT THE FOLLOWING INFORMATION COMPLETELY.

1. Type of Project:

☐ Residential ☐ Commercial ☐ Industrial ☐ Agricultural

2. Present use of the project site (existing conditions, improvements, and/or development)?

Almond facility

3. What is the project/proposed use of site? And when will the use begin? *(Please state exactly and in detail what the intended reason to be done on, or with, the property).*

Addition to Existing facility to enable to allow the Company to diversify product Packing in the future and use additional property for water treatment

4. Is the project proposing to create new lots? No.

If yes, how many? ____________

5. Is this project to resolve a violation? No

6. Liquid waste disposal *(please check appropriate box)*: ☐ Existing ☐ Proposed

☐ Septic Tank-Leach Lines: Size of tank __________gallons & length of lines __________ft.

☐ Seepage Pit - Size____________

☐ Community System – Name:____________

☐ Aerobic tank - Size of tank ____________

7. Water supply *(please check appropriate box)*: ☐ Existing ☐ Proposed

☐ Domestic Well – Size of pump__________ Gallons per minute __________

☐ Irrigation Well: ____________

☐ Irrigation District – Name: ____________

☐ Private Water Company – Name: ____________

☐ Community System – Name: ____________

Note: A "Will Serve" letter must be provided from any off-site community water and/or sewage disposal provider and must be submitted as part of this application. In addition, water availability information for all existing and/or proposed on-site domestic wells must also be submitted with this application.

8. Source of energy *(please check appropriate box)*:

☐ Electricity – Company name: __________ ☐ Natural Gas – Company name: __________

☐ Propane: Size of tank __________ Provider __________

9. Date property was acquired: ____________

10. Date use began on site: ____________

o. Show the location of all existing and proposed septic tank-leach line systems, community sewage systems and potable water sources in accordance with the Tulare County Environmental Health Services Standards. (Note: proposed septic tank-leach line systems must be a minimum of 100 ft. from any on- or off-site wells.)
p. Indicate the location, length, width, and surface type of all existing and/or proposed easements including those for access and public utilities and private vehicular access easements.
a. The attached "Indemnification Agreement" must be signed by the property owner and submitted with the completed application.

SUMMARY OF REQUIREMENTS FOR A SPECIAL USE PERMIT APPLICATION

	Applicant	Staff
1. Completed Application	☒	☐
2. Owner's Affidavit *(signed by Property Owner)*	☒	☐
3. Filing Fee.	☒	☐
4. Site Plan (minimum of 1 copy) (Note: additional copies may be required)	☒	☐
5. "Will Serve" letter from the appropriate off-site Community water and/or sewage disposal provider (if applicable).	☐	☐
6. Water availability information for all existing and/or proposed on-site domestic wells (if applicable). See op. statement for further information.	☒	☐
7. Supplemental Information – Review of "Identified Hazardous Waste Sites" List	☒	☐
8. Applicant's Request for Notification of Proposed Land Use Action	☒	☐
9. Indemnification and Cost Recovery Agreement (separate attachment)	☒	☐
10. Request for Unused Fees Form (Signed by Applicant)	☒	☐

PLEASE FILL OUT THE FOLLOWING INFORMATION COMPLETELY.

1. Proposed use of site? *(Please state exactly and in detail what is intended to be done on, or with, the property).*
The project is an addition to the existing Almond facility to enable to allow the company to diversify product packaging in the future and use additional property for water treatment. See op. statement for further information.

2. Parcel or Lot Size(s) *(in acres or sq. ft. as appropriate)*: 319-060-19 - 4.68 Acres, 318-290-05 - 39.32 Acres, 318-290-06-38.55 Acres, 319-060-37 - 40.71 Acres, 319-060-22 - 15.81 Acres

3. How much area of the total parcel or lot is being developed or utilized for the proposed use? Main Facility - 51.90 Acres Water Treatment area - 7.87 Acres

4. Present use of the project site? Existing almond storage/ packing facility including several structures. See site plan.

5. If residential structure(s) on site, please provide the relationship of persons to the applicant in each dwelling unit. n/a

6. Employees: Indicate the total number of employees and include the number of shifts and number of employees per shift. day shift - 87 employees, night shift - 49 employees

7. Hours/Days of Operation *(if seasonal, include months of operation)*: 20 hours a day, 4-5 days a week

8. Type of equipment and/or machines to be utilized *(if applicable)*: Existing Equipment See Site Plan

9. If the proposed use is for a second residence, indicate the type *(conventional, mobile home, duplex, triplex)* and the size of the unit. n/a

10. Are alcoholic beverages proposed to be served on site? Yes ☐ No ■
Type of alcoholic beverages to be served ____________

ENVIRONMENTAL SETTING

11. Describe the project site, prior to the proposed use, including all above and below ground developed improvements *(residences, outbuildings, barns, sheds, covers, shop buildings, septic tank-leach line*

systems, domestic/agricultural wells, fuel storage tanks, etc.), including the size of each.
Existing almond packing facility See Site Plan

12. Describe the slopes (percentage and direction) and general terrain of the subject site: Flat

13. Trees: identify the type and size of any large trees on site. Several trees on the southwest corner of parcel, possibly almond trees

14. Water courses: identify the type and location of any on-site or nearby water courses *(rivers, canals, ditches, streams, creeks, etc.).* several ponding basins - see site plan.

15. Describe the character and land use of the surrounding properties (orchards, vineyards, row crops, pasture, open space, water courses, railroads, roads, rural residential, subdivisions, commercial, schools, churches, vacant, city or county boundary):

DIRECTION	CHARACTER/LAND USE
North	ag land
South	ag land
East	ag land
West	ag land

16 Liquid waste disposal *(please check appropriate box)*: ■ Existing ☐ Proposed

☐ Septic Tank-Leach Lines: Size of tank _____ gallons & length of lines _____ ft.

■ Seepage Pit - Size there are multiple on the site. See site plan.

☐ Community System – Name: _____

☐ Aerobic tank - Size of tank _____

17. Water supply *(please check appropriate box)*: ■ Existing ☐ Proposed

■ Domestic Well – Size of pump 60 h.p. Gallons per minute 600 gal

☐ Irrigation Well: _____

☐ Irrigation District – Name: _____

☐ Private Water Company – Name: _____

☐ Community System – Name: _____

Note: A "Will Serve" letter must be provided from any off-site community water and/or sewage disposal provider and must be submitted as part of this application. In addition, water availability information for all existing and/or proposed on-site domestic wells must also be submitted with this application.

18. Source of energy *(please check appropriate box)*:

■ Electricity – Company name: S. Cal. Edison

■ Natural Gas – Company name: The Gas Co.

■ Propane: Size of tank (2) 1,000 gal. Provider Jack Riggs Propane

19. Will the project require the development of public service *facilities (roads, sewer lines, water lines, etc.)?* If so, describe the required development:
Yes - See Site Plan

11. Parcel or Lot Size(s) *(in acres or sq. ft. as appropriate)*: ______________________

12. How much area of the total parcel or lot is being developed or utilized for the proposed use (acreage, square footage and percentage)?

____

13. Will the development of the project be in phases? If yes, please describe each phase and estimated time frames. Yes ☐ No ☐

____

14. List and describe any other related permits and/or other public approvals required for this project, including those required by city, regional, state and federal agencies.

____

15. Parking: Specify the number of on-site parking spaces, including the location, size, and type of surfacing.

____

Specify number of loading space(s) and loading dock(s) ______________________

16. Number of trips generated per day by each type listed below *(2 trips = 1 arrival and 1 departure)*:

Residents	________	Customers	________
Employees (including self)	________	Shipping	________
Deliveries	________	Other	________

Residential Projects Only:

17. Please indicate the type of residential development *(conventional, mobile home, duplex, tri-plex)*.

____

18. How many structures/buildings are being proposed? ______________________

19. How many units will there be? ______________________

____

20. Please provide the relationship of persons to the applicant in each dwelling unit.

____

****For Residential Projects and Tentative Parcel Map/Subdivision Map Projects please skip the next section and proceed to Page 9 to complete the Environmental Setting Questions and additional required forms.**

Commercial, Industrial and Agricultural Projects Only:

21. Employees: Indicate the total number of employees and include the number of shifts and number of employees per shift.

____

22. Days and Hours of Operation *(if seasonal, include months of operation)*:

____

23. Please fill out the table below regarding your proposed project. Note: For proposed expansions please provide a copy of the existing use permit or approved site plan. Please describe additional information about the expansion on a separate sheet.

DESCRIPTION OF EXISTING USE AND NEW OR PROPOSED EXPANSION		
	EXISTING	**NEW OR PROPOSED EXPANSION**
Type of Use		
Number of Employees		
Type of Development		
Size of Development (sq. ft.)		
Area of Development (sq. ft./acres)		
Operating Hours & Days		
Annual Production (tons, gallons, etc.)		
Daily Trips (arrivals & departures) of : Employees Customers Deliveries Shipments		
Equipment		
Vehicles, by type		
Water usage (# of gallons per year)		
Wastewater (# of gallons per year)		

24. Are alcoholic beverages proposed to be served on site? ☐ Yes ☐ No
If Yes, please explain and state who will hold the license from the State Department of Alcohol Beverage Control. ____________________

25. Waste materials: Indicate types of all waste materials and the existing or proposed method for disposal.

____

26. Waste/Storm water: Indicate plans for reclamation for waste/stormwater *(if applicable)*:

____

Required permit or waiver from Regional Water Quality Control Board? Y / N (If yes, attach report.)
If processing water is used for irrigating, specify # of acres, location (APNs) and property owner(s)

____

27. Access to major roads, railroads or waterways. ____________________

____

28. Drive approach(es) – Describe existing or proposed. ____________________

29. Signage – Describe existing and proposed signage for the proposed use.____________________

____

30. Landscaping – Describe existing and proposed landscaping on the site.____________________

____

31. If the proposed use is for commercial development, indicate the type *(neighborhood, general, service, urban, rural, agricultural)*, proposed use, and square footage of retail and/or wholesale sales area and/or storage area.

____

32. If the proposed use is for institutional, indicate the type *(hospital, daycare, clinics, or similar use)*, the major function, estimated occupancy and the community benefits to be derived from the project.

____

33. If the proposed use includes manufacturing or processing, indicate the type of product, method of storage, process for distribution or selling, and whether the operation is for retail or wholesale.

____

____

Equipment used__________________________ Where operated ____________________

Distance from nearest off-site residence ______

Current production (# gallons or tons/yr) _____ Proposed production(# gallons or tons/yr) ________

34. If the proposed use includes storage or warehousing, indicate the type of materials to be stored on site and the size and description of the storage area, including existing and proposed fencing and screening.

____

Are any portable toilets stored on site? Yes / No If so, how many? __________

Where are portable toilets emptied and cleaned out? ______________By whom? ______________

Are any of the stored materials hazardous? Yes / No

Any explosive materials? Yes / No Volatile materials? Yes / No Poisons? Yes / No

If so, please describe storage arrangements (containment, inside structure, signage, etc.)

____

Does applicant have a Hazardous Materials Business Plan on file with the County Environmental Health Services Division? _______________________

Does applicant have current State and local permits for transporting hazardous materials? Yes / No

Describe ____

35. Type of equipment and/or machines to be utilized, including horsepower. Specify - powered by propane, gasoline, diesel or electricity *(if applicable)*:__________________________________

____ Fork Lifts ____________

36. Type and number of vehicles to be utilized *(if applicable)*:

Pickups ____________ Tractors ____________

2-ton trucks __________ ARB compliant? Yes / No

18-wheelers __________ ARB compliant? Yes / No

Trailers ____________ Other ____________________________________

Specific Types of Projects (Applicable only to Cell Tower, Solar Projects, Confined Animal Operations and Assemblage of People applications):

37. If the proposed use is for a telecommunications/cell tower, indicate the type, height, size of lease area and the number of receivers proposed.

____

Distance from nearest residence ____________ Distance from public road ______________

NOTE: Please provide map of cell tower locations within 10 mile radius.

38. If the proposed use is for a solar facility, describe whether power will be generated -

For use on the site ☐ or back to the grid ☐

Panel type_____________________________ Square footage or acreage ______________

Ground mounted ☐ Roof-mounted ☐ Amount of power to be generated______________

39. If the proposed use is for an animal operation, specify the types of animals and their maximum number.

____

____

Note: Dairies and Other Concentrated Animal Raising Operations require special application forms.

40. If the proposed use will include facilities for an assemblage of people (in a church, auditorium, or other structure, or in an open area), inside/outside (tent, canopy or building), indicate the seating capacity, including whether it is fixed or loose seating, and the number of tables with seating.

____

Proposed days (weekends or weekdays?) __________ Proposed # of events/year ________

Proposed Number of Commercial Events: ____________________________

Expected # of attendees ____________________ Employees (including self): __________

Distance to lot lines ____________________ Distance to nearest off-site residence ________

Proposed entertainment ____________________ Amplification type ________________

Hours of events - Setup ____________ Event(s) ______________ Cleanup ______________

# of parking spaces _____ On-site parking area size ____________ Surface ______________

Off-site parking arrangements, if any: ____________________________

Fencing - Type ____________________ Location ____________________

Proposed # of security guards (*Need 1 for each 100 attendees if no alcohol served or 2 for each 100 if alcohol is served*): ____________________________

Will alcohol be served? Yes☐ No☐

If yes, who holds the ABC license? ____________________________

Restroom arrangements: ☐ Portable Toilets (Need 1:50 people) ☐ Restrooms (1:100 people)
Number Provided ____________________________

Number of hand wash sinks ________________(*If portable toilets, need 1 hot water dispenser for every 15 food handlers*).

Food Provider or Caterer: ____________________________

ENVIRONMENTAL SETTING

41. Describe the project site, prior to the proposed use, including all above and below ground developed improvements *(residences, outbuildings, barns, sheds, covers, shop buildings, septic tank-leach line systems, domestic/agricultural wells, fuel storage tanks, etc.),* including the size of each.

____

____

42. Please describe and indicate the slopes and general terrain of the subject site (fairly level, on bluff, hillside with outcroppings, etc.): ____________________________

43. Trees: Please identify the type and size of any large trees on site.

____

44. Water bodies/courses: Identify the type and location of any on-site or nearby water bodies/courses *(rivers, canals, ditches, streams, creeks, ponds etc.).*

____

45. Describe the character and land use of the surrounding properties (orchards, vineyards, row crops, pasture, open space, water courses, railroads, roads, rural residential, subdivisions, commercial, schools, churches, vacant, city or county boundary):

DIRECTION	CHARACTER/LAND USE
North	
South	
East	
West	

46. Fire Suppression:

Number of Hydrants on site _______ Hydrant(s) off site ____ Distance ________

Storage tank on site for fire suppression (requires Fire Department connection) Size _______

47. Will the project require the development of public service *facilities (roads, sewer lines, water lines, etc.)?* If so, describe the required development:

____

48. Provide any additional information that may be helpful in evaluating this request. *(Use the back of this form or attach separate sheet, if needed.)*

____

____

SUPPLEMENTAL INFORMATION FOR
APPLICATION OF ANY DEVELOPMENT PROJECT

HAZARDOUS WASTE AND SUBSTANCES STATEMENT:
Per California Government Code Section 65962.5(f), before the County accepts as complete an application for any development project, the applicant or owner shall consult the State's lists of hazardous waste facilities, shall submit a signed statement to the County indicating whether the project is located on a site that is included on any of the lists. The "Identified Hazardous Waste Sites" list may be viewed on the web at http://www.envirostor.dtsc.ca.gov/public or reviewed at the Resource Management Agency Permit Center, 5961 South Mooney Blvd., Visalia, California.

Before any application can be accepted as complete by the Tulare County Resource Management Agency, the owner of the subject property, or the owner's authorized agent, must complete this form.

STATEMENT:

I have reviewed the "Identified Hazardous Waste Sites" list (which may be viewed on the web at http://www.envirostor.dtsc.ca.gov/public) dated ____________________, 20____, and state that:

> "The site(s) of the project subject to this application ___ is / ___ is not on the "Identified Hazardous Waste Sites" list."

(If the site is on any of hazardous waste facilities lists, the applicant shall inform the County of which list, the date of the list, the regulatory identification number of the site on the list and corrective measures that will be taken to remove the site from the State list.)

CERTIFICATION:

I hereby certify that the information furnished herein presents to the best of my knowledge and belief, true and correct facts, statements, and information, and that I am the owner, or the authorized agent of the owner, of the subject property.

Signed: ____________________________________ Dated: ____________________

OWNER'S AFFIDAVIT
(Must be signed by property owner)

STATE OF CALIFORNIA)
SS.
COUNTY OF TULARE)

I, (We,) the undersigned, say:

I (We) own property involved in this application and I (we) have completed this application and other documents and maps required hereby to the best of my (our) ability and the statements and information above referred to are, in all respects, true and correct to the best of my (our) knowledge and belief.

I (We) declare under penalty of perjury that the foregoing is true and correct.

Executed on 4 MAY, 2023, at EARLIMART CA

Name: BRIAN J. BALL Signature: Brian J. Bell

Address: 6914 ROAD 160 EARLIMART State: CA Zip: 93219

Optional – additional property owner

Name: ______ Signature: ______

Address: ______ State: ______ Zip: ______

If there is an agent, title company, or prospective buyer who desires notification of the Director's action on this application, please enter name here.

Name: GMA Engineering, Gerald Mele, Rob Sanders and Sean Odom, Reps.

Relationship: Agent

Address: 7337 North First Street, Suite #110

State: CA Zip: 93720

Telephone: 559-392-9819

FAX No.: ______

In the case of applications which are subject to the authority of the Zoning Administrator, (see list of projects), the Zoning Ordinance provides that the applicant has the right to request that the Planning Commission hear the application rather than the Zoning Administrator. Please sign below if you wish to have your application heard by the Planning Commission. Note: An additional fee is required for the Planning Commission process.

Signed: ______ Date: ______

APPLICANT(S) REQUEST FOR NOTIFICATION OF PROPOSED LAND USE ACTION

NOTICE:

Under Section 65945(a) of the California Government Code, at the time of filing an application for a development permit, the applicant may make a written request to receive notice from the County of a proposal to adopt or amend any of the following plans or ordinances which may affect the proposed development permit:

1. A General Plan
2. A Specific Plan
3. A Zoning Ordinance
4. An Ordinance affecting building permits or grading permits

The applicant shall specify, in written request, the types of proposed actions for which notice is requested. Prior to taking any of those actions, the County is required to give notice to any applicant who has requested notice of the type of action proposed and whose develop0ment project is pending before the County if the County determines that the proposal is reasonably related to the applicant's request for the development permit. Notice shall be given only for those types of actions which the applicant specifies in the request for notification.

REQUEST:

☐ I hereby request under Section 65945(a) for the following types of actions (see above). Circle those that apply:

1 2 3 4

☐ I hereby waive notice under Section 65945(a).

I understand that any rights to notice under Section 65945(a) will lapse at the time that final action is taken on my development project.

Signed: ______________________________ Dated: ________________
(applicant or authorized agent)

Permit No.: ____________________________

The County of Tulare
"INDEMNIFICATION AND COST RECOVERY AGREEMENT"
must accompany this application

Please download or print out the form from the
County Web Site
(located with the list of land use applications).

The Indemnification and Cost Recovery Agreement must be filled in and signed by the applicant and must be submitted as part of any land use application requiring discretionary review by the County.

This Agreement must be signed by the Applicant

Please sign the Agreement in blue ink (preferred) and submit the original, signed document with the appropriate land use application.

WITHDRAWAL OF APPLICATION

Should you, at any time during the processing of your application, wish to withdraw your application and request a refund of fees paid, you may do so by forwarding a letter to the Resource Management Agency making that request. Please state clearly that you no longer wish to proceed with your land use project *(state the project number),* and that you are requesting a withdrawal of your project and a refund of any fees that have not been expended for the processing of your application.

Please date and sign the letter and include a mailing address where you would like any refund of fees (if applicable) to be mailed. Forward the request to the attention of the project planner.

REQUEST FOR REFUND OF FEES

Resource Management Agency
5961 S. Mooney Blvd.
Visalia, CA 93277

Project Number: ____________________

Please refund any unused fees associated with this application to the designated name and address below.

TREE HOUSE CALIFORNIA ALMONDS, LLC
(please print name)

P.O. BOX 12150
(Street Address,Suite/Apt. No.)

EARLIMART CA 93219
(City, State, Zip)

Signature

18 May 2023
Date

SUPPLEMENTAL INFORMATION FOR APPLICATION OF ANY DEVELOPMENT PROJECT

HAZARDOUS WASTE AND SUBSTANCES STATEMENT:

Per California Government Code Section 65962.5(f), before the County accepts as complete an application for any development project, the applicant or owner shall consult the State's lists of hazardous waste facilities, shall submit a signed statement to the County indicating whether the project is located on a site that is included on any of the lists. The "Identified Hazardous Waste Sites" list may be viewed on the web at http://www.envirostor.dtsc.ca.gov/public or reviewed at the Resource Management Agency Permit Center, 5961 South Mooney Blvd., Visalia, California.

Before any application can be accepted as complete by the Tulare County Resource Management Agency, the owner of the subject property, or the owner's authorized agent, must complete this form.

STATEMENT:

I have reviewed the "Identified Hazardous Waste Sites" list (which may be viewed on the web at http://www.envirostor.dtsc.ca.gov/public) dated current website, 2023, and state that:

> "The site(s) of the project subject to this application ___ is / X is not on the "Identified Hazardous Waste Sites" list."

(If the site is on any of hazardous waste facilities lists, the applicant shall inform the County of which list, the date of the list, the regulatory identification number of the site on the list and corrective measures that will be taken to remove the site from the State list.)

CERTIFICATION:

I hereby certify that the information furnished herein presents to the best of my knowledge and belief, true and correct facts, statements, and information, and that I am the owner, or the authorized agent of the owner, of the subject property.

Signed: Ryan Rhoads Dated: 05/18/23

OWNER'S AFFIDAVIT
(Must be signed by a property owner)

STATE OF CALIFORNIA)
SS.
COUNTY OF TULARE)

I, (We,) the undersigned, say:

I (We) own property involved in this application and I (we) have completed this application and other documents and maps required hereby to the best of my (our) ability and the statements and information above referred to are, in all respects, true and correct to the best of my (our) knowledge and belief.

I (We) declare under penalty of perjury that the foregoing is true and correct.

Executed on ________________, 20 23, at ______________________________

Name: Brian Ball Signature: ______________________________

Address: 6914 Road 160 Earlimart State: CA Zip: 93219

Optional – additional property owner

Name: ______________________ Signature: ______________________________

Address: ______________________________________ State: ______ Zip: ________

If there is an agent, title company, or prospective buyer who desires notification of the Director's action on this application, please enter name here.

Name: ______________________________________

Relationship: ______________________________________

Address: ______________________________________

State: ____________ Zip: ______________

Telephone: ______________________________________

FAX No.: ______________________________________

APPLICANTS' REQUEST FOR NOTIFICATION OF PROPOSED LAND USE ACTION

NOTICE:

Under Section 65945(a) of the California Government Code, at the time of filing an application for a development permit, the applicant may make a written request to receive notice from the County of a proposal to adopt or amend any of the following plans or ordinances which may affect the proposed development permit:

1. A General Plan
2. A Specific Plan
3. A Zoning Ordinance
4. An Ordinance affecting building permits or grading permits

The applicant shall specify, in written request, the types of proposed actions for which notice is requested. Prior to taking any of those actions, the County is required to give notice to any applicant who has requested notice of the type of action proposed and whose develop0ment project is pending before the County if the County determines that the proposal is reasonably related to the applicant's request for the development permit. Notice shall be given only for those types of actions which the applicant specifies in the request for notification.

REQUEST:

☐ I hereby request under Section 65945(a) for the following types of actions (see above). Circle those that apply:

1 2 3 4

☐ I hereby waive notice under Section 65945(a).

I understand that any rights to notice under Section 65945(a) will lapse at the time that final action is taken on my development project.

Signed: ______________________________ Dated: ________________
(applicant or authorized agent)

Permit No.: ____________________________

The County of Tulare
"INDEMNIFICATION AND COST RECOVERY AGREEMENT"
(must accompany this application)

Please download or print out the form from the
County Web Site
(located with the list of land use applications).

The Indemnification and Cost Recovery Agreement must be filled in and signed by the applicant and must be submitted as part of any land use application requiring discretionary review by the County.

This Agreement must be signed by the Applicant

Please sign the Agreement in blue ink (preferred) and submit the <u>original, signed document</u> with the appropriate land use application.

WITHDRAWAL OF APPLICATION

Should you, at any time during the processing of your application, wish to withdraw your application and request a refund of fees paid, you may do so by forwarding a letter to the Resource Management Agency making that request. Please state clearly that you no longer wish to proceed with your land use project *(state the project number),* and that you are requesting a withdrawal of your project and a refund of any fees that have not been expended for the processing of your application.

Please date and sign the letter and include a mailing address where you would like any refund of fees (if applicable) to be mailed. Forward the request to the attention of the project planner.

REQUEST FOR REFUND OF FEES

Resource Management Agency
5961 S. Mooney Blvd.
Visalia, CA 93277

Project Number: ______________________

Please refund any unused fees associated with this application to the designated name and address below.

____
(please print name)

____
(Street Address, Suite/Apt. No.)

____
(City, State, Zip)

____ __________
Signature Date

ATTACHMENT "F"

MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MONITORING AND REPORTING PROGRAM

This Draft Mitigation Monitoring and Reporting Program (MMRP) has been prepared in compliance with State law and based upon the findings of the Draft Mitigated Negative Declaration (MND) for Tulare 40 Generation Facility Project.

The CEQA Public Resources Code Section 21081.6 requires the Lead Agency decision making body is going to approve a project and certify the MND that it also adopts a reporting or monitoring program for those measures recommended to mitigate or avoid significant/adverse effects of the environment identified in the MND. The law states that the reporting or monitoring program shall be designed to ensure compliance during project implementation. The MMRP is to contain the following elements:

- **Action and Procedure.** The mitigation measures are recorded with the action and procedure necessary to ensure compliance. In some instances, one action may be used to verify implementation of several mitigation measures.

- **Compliance and Verification.** A procedure for compliance and verification has been outlined for each action necessary. This procedure designates who will take action, what action will be taken and when and by whom compliance will be monitored and reported and to whom it will be report. As necessary the reporting should indicate any follow-up actions that might be necessary if the reporting notes the impact has not been mitigated.

- **Flexibility.** The program has been designed to be flexible. As monitoring progresses, changes to compliance procedures may be necessary based upon the recommendations by those responsible for the MMRP. As changes are made, new monitoring compliance procedures and records will be developed and incorporated into the program.

The following presents the Mitigation Measures identified for the proposed Project in this MND. Each Mitigation Measure is identified by the impact number. For example, 4-1 would be the first Mitigation Measure identified in the Biological analysis of the MND.

The first column of the MMRP Table identifies the Mitigation Measure. The second column, "Timing/Frequency," identifies the time the Mitigation Measure should be initiated and identifies the frequency of the monitoring that should take place to assure the mitigation is being or has been implemented to achieve the desired outcome or performance standard. The third column, "Action Indicating Compliance," identifies the requirements of compliance with the Mitigation Measure. The fourth column, "Monitoring Agency," names the party ultimately responsible for ensuring that the Mitigation Measure is implemented. The fifth column, "Person/Agency Conducting Monitoring/Reporting" names the party/agency/entity responsible for verification that the Mitigation Measure has been implemented. The last three columns will be used by the County of Tulare to ensure that individual Mitigation Measures have been complied with and monitored.

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
AIR QUALITY							
3-1. Interagency Coordination: If a nuisance odor complaint is received from the processing facility or the WWTF, the applicant shall immediately contact (within 3 business days) Tulare County RMA staff to report the complaint. The applicant shall coordinate with the Air District and/or the Water Boards to remedy the source of the complaint. The applicant shall notify Tulare County of any actions taken pursuant to Air District or Water Boards recommendations for remedy.	As issue arises	As needed if complaint made.	County of Tulare, Air District, and RWQCB	Applicant			
BIOLOGICAL RESOURCES							
4-1. Pre-construction Survey – Special Status Plant Species: A qualified biologist/botanist will conduct pre-construction surveys for special status plant species in accordance with the California Department of Fish and Wildlife (CDFW) Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (2009). This protocol includes identification of reference populations to facilitate the likelihood of field investigation occurring during the appropriate floristic period. Surveys should be timed to coincide with flowering. • If special status plant species are not identified during pre-construction surveys, no further action is required. • If special status plant species are detected	Once within 30 days of construction, unless pre-construction survey results in new recommendation for further study and mitigation. Then mitigation should occur as recommended following coordination with Tulare County RMA.	Field Survey and Report submitted to Tulare County RMA prior to construction.	County of Tulare	Qualified Biologist			

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
during preconstruction surveys, plant population shall be avoided with the establishment of a minimum 50-foot no disturbance buffer from the outer edge of the plant population. If buffers cannot be maintained, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be contacted immediately to identify the appropriate minimization actions to be taken as appropriate for the species identified and to determine permitting needs. nimization actions to be taken as appropriate for the species identified and to determine permitting needs.							
4-2. Pre-construction Survey – San Joaquin Kit Fox and Nesting Raptors/Migratory Birds: A qualified biologist will conduct pre-construction surveys during the appropriate periods for special status animal species in accordance with the CDFW guidance and recommendations identified below (see measures 4-4 and 4-9). In the absence of protocol-level surveys being performed, additional surveys may be necessary. If special status animal species are not identified during pre-construction surveys, no further action is required. If special status animal species are detected during pre-construction surveys, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be contacted immediately to	Prior to start of construction, unless pre-construction survey results in recommendation for further study and mitigation, mitigation should occur as recommended following coordination with CDFW and Tulare County RMA.	Field Survey and Report submitted to Tulare County RMA prior to construction.	County of Tulare	Qualified Biologist			

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
identify the appropriate avoidance and minimization actions to be taken as applicable for the species identified and to determine incidental take permitting needs.							
4-3: Employee Education Program: Prior to the start of construction, the applicant shall retain a qualified biologist/botanist to conduct a tailgate meeting to train all construction staff that will be involved with the project on the special status species that occur, or may occur, on the project site. This training will include a description of the species and its habitat needs; a report of the occurrence of the species in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; a list of the measures being taken to reduce impacts to the species during project construction and implementation.	Prior to construction-related activities if special status species are detected.	Meeting conducted by Qualified Biologist working with USFS and/or CDFW; meeting sign-in sheet submitted to Tulare County RMA.	County of Tulare	County of Tulare, Qualified Biologist			
4-4: Pre-construction Survey: If project activities must occur during the nesting season (February 1-August 31), the project proponent and/or their contractor is responsible for ensuring that implementation does not violate the Migratory Bird Treaty Act or relevant Fish and Game Code. A qualified biologist shall conduct pre-construction surveys for active bird nests within 10 days of the onset of these activities. Nest surveys will include all accessible areas on the project site and within 250 feet of the site for tricolored blackbird, loggerhead	Prior to construction-related activities.	As needed if special status species are detected.	County of Tulare	Qualified biologist			

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
shrike and other migratory birds, and within 500 feet for all nesting raptors and migratory birds; with the exception of Swainson's hawk. The Swainson's hawk survey will utilize the Swainson's Hawk Technical Advisory Committee *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (2000) methodology and will extend to ½-mile outside of work area boundaries. Inaccessible areas will be scanned with binoculars or spotting scope, as appropriate. If no nesting pairs are found within the survey area, no further mitigation is required.							
4-5: Avoidance: In order to avoid impacts to nesting birds, construction will occur, where possible, outside the nesting season (between September 1st and January 31st).	Prior to start of construction.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable.	County of Tulare Planning Department	Field survey by a qualified Biologist			
4-6: Buffers: If active nests are found within the survey areas a qualified biologist will establish appropriate no-disturbance buffers based on species tolerance of human disturbance (for example, for tricolored blackbird, no less than 60 feet), baseline levels of disturbance, and barriers that may separate the nest from construction disturbance. These buffers will remain in place until the breeding season has ended or until the qualified biologist has	Prior to and during construction-related activities. On-going.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable.	County of Tulare Planning Department	Qualified biologist			

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.							
4-7: Compensatory Mitigation: If Swainson's hawks are determined to be nesting within ½ mile of alfalfa fields, wheat fields, or other high-quality foraging habitat on an individual project site, as determined by nesting surveys conducted during the nesting season immediately prior to the start of construction (Mitigation Measure 3.3.1a), loss of foraging habitat will be compensated through the purchase of credits from an approved mitigation bank, the preservation of on-site habitats, or the acquisition and preservation of off-site habitats. Habitat suitable for the Swainson's hawk will be preserved at a ratio of one acre of habitat preserved for each acre of habitat permanently disturbed by project construction within ½ mile of the nest. The preservation lands will be protected in perpetuity by conservation easement.							
4-8: Mortality Reporting: The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be contacted immediately by phone and in writing within three days in the event of accidental death or injury of a special status bird species during project-related activities. Notification must include the date, time, location of the incident or of the finding of	During construction.	As needed during construction.	County of Tulare	Determination by qualified biologist			

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
a dead or injured animal, and any other pertinent information.							
4-9: Pre-construction Survey: A qualified biologist shall conduct a pre-construction survey to determine if suitable habitat for blunt-nosed leopard exists on the project site within 30 days of the onset of project-related construction activities. If suitable habitat is identified, the qualified biologist shall conduct further surveys utilizing the CDFW *Approved Survey Methodology for the Blunt-Nosed Leopard Lizard* (2019) methodology. If no blunt-nosed leopard lizards are identified within the survey area, no further mitigation is required.	Prior to construction-related activities.	As needed if special status species are detected.	County of Tulare	Qualified biologist			
4-10: Avoidance and Minimization: Construction activities shall be carried out in a manner that minimizes disturbance to blunt-nosed leopard lizard. If a blunt-nosed leopard lizard is detected during pre-construction surveys, prior to the onset of project-related construction activities the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be contacted to determine the best course of action and if required, to initiate the take authorization/permit process.	Prior to start of construction-related activities and during.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable.	County of Tulare Planning Department and/or CDFW	Qualified biologist			
4-11: Mortality Reporting: The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be contacted immediately by phone and in writing within three days in the event of accidental death or injury of a blunt-nosed leopard lizard during project-related	During construction.	As needed during construction.	County of Tulare	Determination by qualified biologist			

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.							
CULTURAL RESOURCES							
5-1. Discovery: If historical, archaeological or paleontological resources are discovered during site excavation, the County shall require that grading and construction work on the Preferred/Proposed Project site be immediately suspended until the significance of the features can be determined by a qualified archaeologist or paleontologist. In this event, the specialists shall provide recommendations for measures necessary to protect any site determined to contain or constitute an historical resource, a unique archaeological resource, or a unique paleontological resource or to undertake data recover, excavation analysis, and curation of archaeological or paleontological materials. County staff shall consider such recommendations and implement them where they are feasible in light of Project design as previously approved by the County.	Daily or as needed throughout the construction period if historical, archaeological or paleontological resources are discovered.	Field Evaluation Report submitted to Tulare County RMA if resources are discovered. The report shall include results of field evaluation and recommend further actions to be taken to mitigate for unique resources or human remains found, consistent with all applicable laws including CEQA.	County of Tulare	County of Tulare, Qualified Archaeologist or Paleontologist			
5-2- Avoidance, Preservation, and Treatment: The property owner shall avoid and minimize impacts to paleontological resources. If a potentially significant paleontological resource is encountered during ground disturbing activities, all construction within a 100-foot radius of the find shall immediately cease until	Daily or as needed throughout the construction period if paleontological resources are discovered.	Field Evaluation Report submitted to Tulare County RMA if resources are discovered.	County of Tulare	County of Tulare, Qualified Paleontologist			

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
a qualified paleontologist determines whether the resources require further study. The project proponent shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. The paleontologist shall notify the Tulare County Resource Management Agency and the project proponent of the procedures that must be followed before construction is allowed to resume at the location of the find. If the find is determined to be significant and the Tulare County Resource Management Agency determines avoidance is not feasible, the paleontologist shall design and implement a data recovery plan consistent with applicable standards. The plan shall be submitted to the Tulare County Resource Management Agency for review and approval. Upon approval, the plan shall be incorporated into the project.							
5-3. Compliance with Health and Safety Code. Consistent with Section 7050.5 of the California Health and Safety Code and (CEQA Guidelines) Section 15064.5, if human remains of Native American origin are discovered during project construction, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Public Resources Code Sec. 5097). In the event of the accidental [that is, unanticipated] discovery or recognition of any	Daily or as needed throughout the construction period if human remains are discovered.	Field Evaluation Report and Data Recovery Plan submitted to Tulare County RMA if human remains are discovered.	County of Tulare	County of Tulare, Qualified Archaeologist			

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
human remains in any location other than a dedicated cemetery, the following steps should be taken: 1. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until: a. The Tulare County Coroner/Sheriff must be contacted to determine that no investigation of the cause of death is required; and b. If the coroner determines the remains to be Native American: i. The coroner/sheriff shall contact the Native American Heritage Commission within 24 hours. ii. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. iii. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in Public Resources Code section 5097.98, or 2. Where the following conditions occur, the							

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
landowner or his/her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance. a. The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission. b. The descendant fails to make a recommendation; or c. The landowner or his authorized representative rejects the recommendation of the descendent.							
GEOLOGY/SOILS (PALEONTOLOGICAL RESOURCES)							
See Mitigation Measures 5-1 through 5-3.							
TRIBAL CULTURAL RESOURCES							
18-1: **Employee Education Program:** Prior to the start of construction the applicant will coordinate with the Santa Rosa Rancheria Tachi Yokut Tribe to provide a tailgate meeting to train all construction staff that will be involved with the project regarding Tribal Cultural Resources.	Prior to initiation of construction.	Issuance of grading/building permit.	County of Tulare Planning Department	County of Tulare Resource Management Agency			
Also See Mitigation Measures 5-1 through 5-3.							

ATTACHMENT "A"

AIR QUALITY AND GREENHOUSE GAS ASSESSMENT TECHNICAL REPORT

RESOURCE MANAGEMENT AGENCY

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Aaron R. Bock — Economic Development and Planning
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REED SCHENKE, DIRECTOR

MICHAEL WASHAM, ASSOCIATE DIRECTOR

TECHNICAL MEMORANDUM
AIR QUALITY, ENERGY AND GREENHOUSE GAS ASSESSMENT

DATE: July 22, 2024, revised July 29, 2024

TO: Gary Mills, Chief Environmental Planner

FROM: Jessica Willis, Planner IV

SUBJECT: Air Quality, Energy and Greenhouse Gas Assessment for the Treehouse California Almonds Expansion Project (PSP 23-064)

PROJECT DESCRIPTION AND LOCATION

Treehouse California Almonds (applicant) sells a full range of roasted and manufactured almonds, including blanched whole, sliced, and diced almonds, almond meal, almond butter, and natural whole almonds. The almonds are hulled and shelled in the Treehouse Almonds plant near Delano in Kern County. This shelled raw product is then trucked to the Earlimart site for processing.

The proposed Project is located at 6914 Road 160, Earlimart, CA 93219 and is located on five (5) parcels (APNs 319-060-037, -022, -019, and 318-290-005, -006) totaling approximately 140 acres. The existing Earlimart facility is located within the ±61.2-acre northern project area, with a new wastewater treatment facility proposed within the ±77.8-acre southern project area (see Figure 1). The proposed Project consists of an expansion of the existing processing plant in four (4) phases, including construction of additional processing, warehouse, and canopy space, solar canopies (see Figure 2a), and a new water treatment facility (see Figure 2b).

- **Phase 1**: Construction of a new 644 square foot (sf) metal building addition; warehouse expansion consisting of a 4,966 sf canopy and two (2) 5,013 sf fumigation room buildings with two (2) 902 sf canopies totaling 5,915 sf each; relocation of an existing 750 sf scale house; and construction of a water treatment facility.

- **Phase 2:** Warehouse expansion consisting of construction of a 5,176 sf canopy, a 6,263 sf fumigation room building with a 1,127 sf canopy totaling 7,390 sf, and a 1,275 sf fumigation room with a 230 sf canopy totaling 1,505 sf.

- **Phase 3:** Construction of a new 162,000 sf warehouse building.

- **Phase 4:** Construction of a 4,433 sf solar panel canopy, a 6,975 sf solar panel canopy, and n 7,182 sf solar panel canopy.

The facility currently operates two (2) 10-hours shifts, four (4) to five (5) days per week depending on the season. Facility operational hours will not change.

The facility currently employs 136 people, 87 during the day shift and 49 during the night shift. It is anticipated that the Project will result in the need for eight (8) new employees.

The facility currently receives two (2) to three (3) customers per week. The Project will not result in any change to the volume of customers received.

The facility currently receives five (5) to twenty (20) delivery trucks from the Delano facility per day during peak harvest season (August – November) and eight (8) to fifteen (15) deliveries during non-peak season (December – July). The Project would allow the applicant to diversify the packaging of materials on-site and use additional property for wastewater treatment and irrigation of crops. The Project does not include any increase in the amount of raw almond product coming into the facility from Delano, nor will it increase the amount of processed or finished product shipped out of the facility.

PURPOSE AND NEED FOR ASSESSMENT

This document is intended to assist Tulare County Resource Management Agency (RMA) staff in the preparation of the Air Quality and Greenhouse Gas (GHG) components of the Mitigated Negative Declaration (MND) being prepared for the proposed Treehouse California Almonds Expansion Project (PSP 23-064) project. The assessments provided herein are intended to provide the County with sufficient detail regarding potential impacts of Project implementation and to identify mitigation measures, if necessary, to reduce potentially significant impacts.

The air quality assessment provided in this document was prepared to evaluate whether the air pollutant emissions generated from implementation of the Project would cause significant impacts to air quality and health risks to nearby receptors. The GHG assessment was prepared to evaluate whether the estimated GHG emissions generated from the implementation of the Project would cause significant impacts on global climate change.

The assessments were conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.). The methodology for the Air Quality and GHG assessments follows Air District recommendations for quantification of emissions and evaluation of potential impacts as provided in their guidance documents:

- *Guidance for Assessing and Mitigating Air Quality Impacts* (GAMAQI), adopted March 19, 2015.[1]
- *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Project under CEQA*, adopted December 17, 2009.[2]

[1] Air District. Guidance for Assessing and Mitigating Air Quality Impacts. March 19, 2015. https://ww2.valleyair.org/media/g4nl3p0g/gamaqi.pdf. Accessed June 2024.
[2] Air District. Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Project under CEQA. December 17, 2009. https://ww2.valleyair.org/media/dnsnicdv/3-ccap-final-lu-guidance-dec-17-2009.pdf. Accessed June 2024.

Figure 1. Aerial Photograph of Project Site

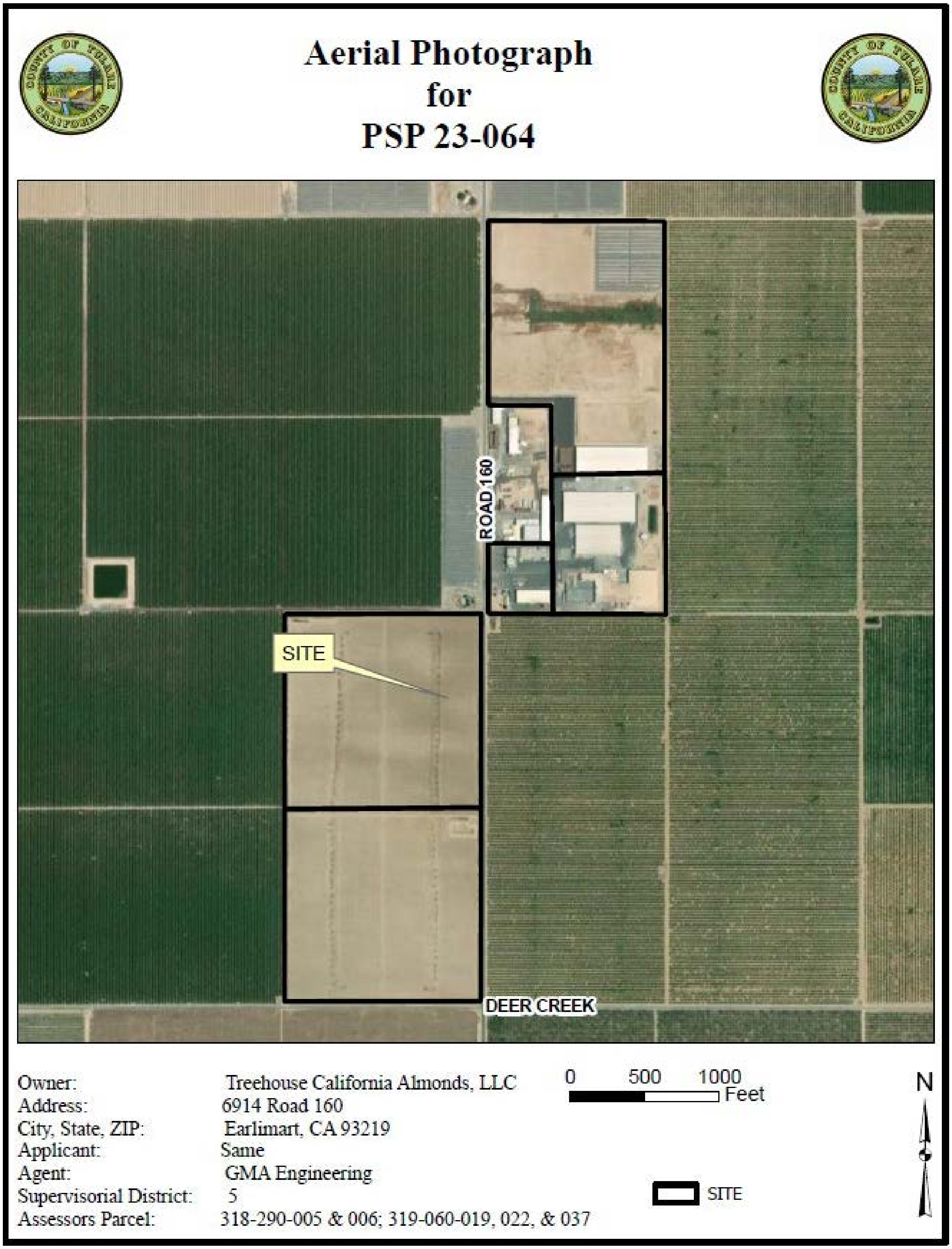


Figure 2a. Project Site Plan – Processing Facility

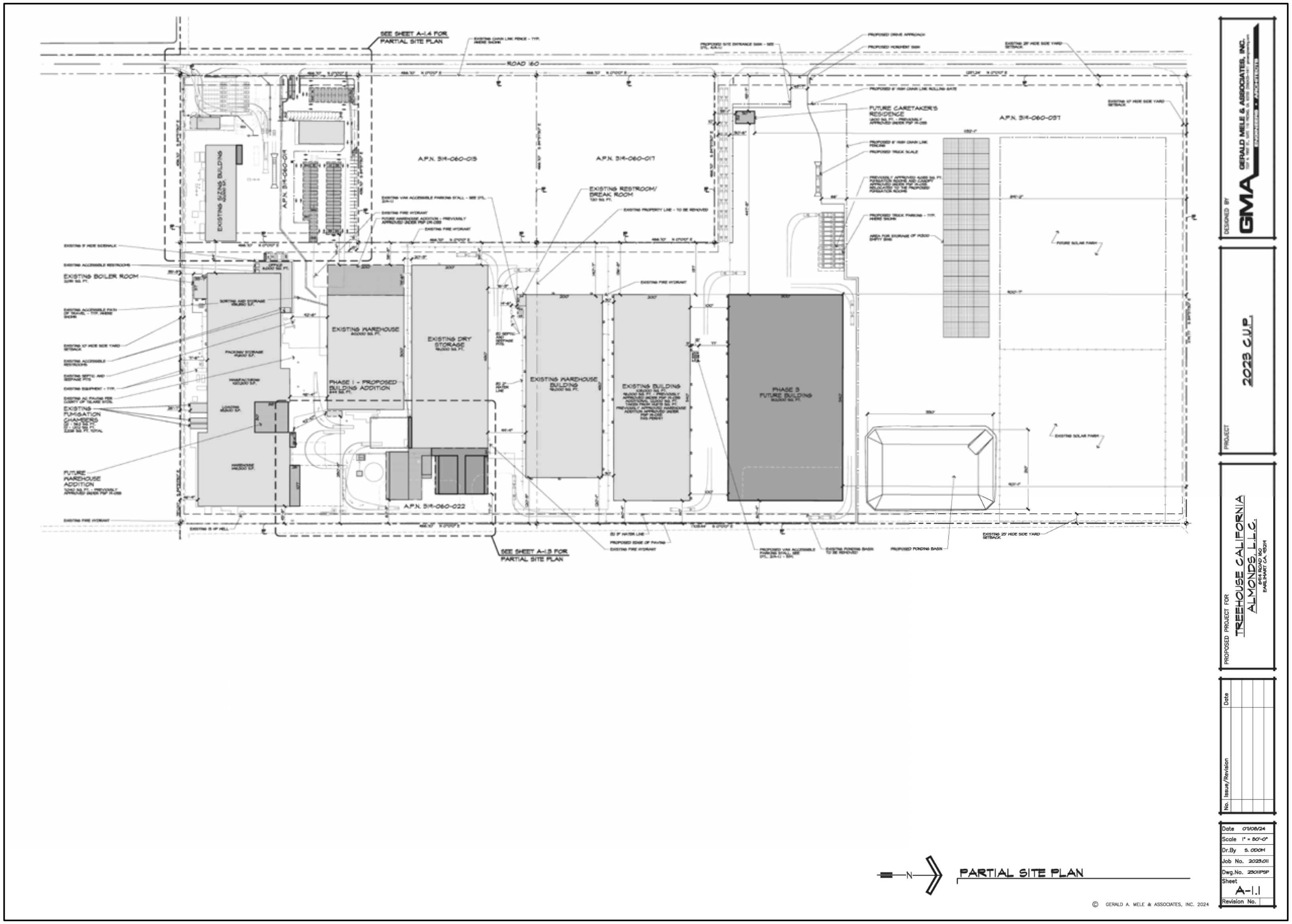
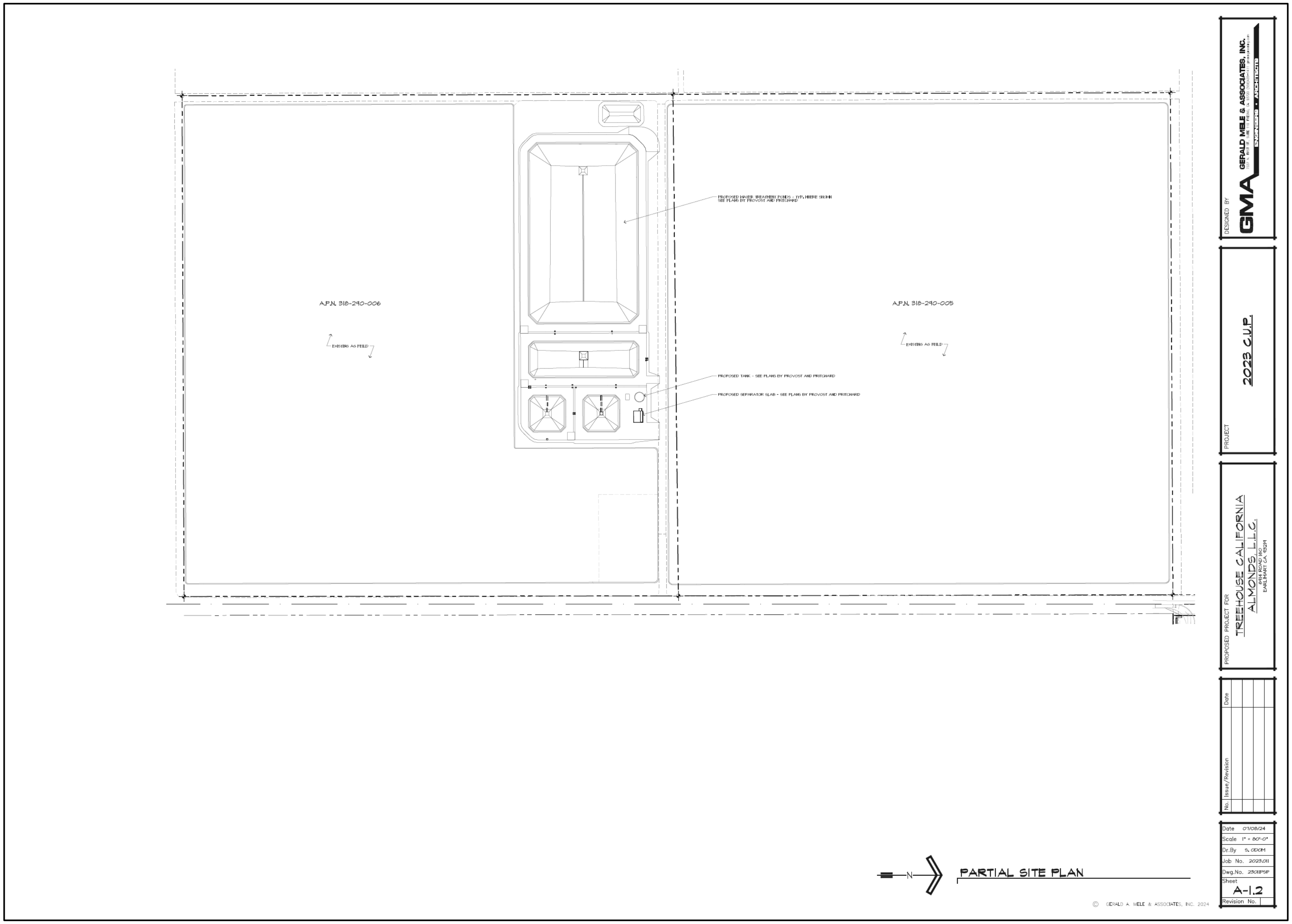


Figure 2b. Project Site Plan – Wastewater Treatment Facility



Energy consumption utilized the vehicle trips and trip rates in the CalEEMod reports. Energy consumed by construction equipment used the consumption rate found in the South Coast Air Quality Management District's CEQA Air Quality Handbook. On-road vehicle diesel and gasoline fuel consumption utilized consumption rates calculated from EMFAC 2021 data. The consumption rate calculations and EMFAC printouts are provided in **Attachments A** and **B**, respectively.

SMALL PROJECT ANALYSIS LEVEL

As previously noted, the Project consists of an expansion to an existing almond processing plant in four (4) phases, including construction of a wastewater treatment facility (WWTF), additional processing, warehouse, and canopy space, solar canopies, and a caretaker residence. **Table 1** provides a summary of the Project phases.

Table 1. Project Development Summary

Phase	Building/Facility Type	Square Feet	Construction Start	Construction Complete
1	Metal building	644	2024	2027
	Canopy	4,966		
	Fumigation room with canopy	5,915		
	Fumigation room with canopy	5,915		
	Scale house	750		
	Wastewater treatment facility	470,000		
2	Warehouse canopy	5,176	2028	2031
	Fumigation room with canopy	7,390		
	Fumigation room with canopy	1,505		
3	Warehouse	162,000	2032	2034
4	Solar panel canopies	18,590	2035	2037
Note: Anticipated development timeline provided by the project applicant.				

"To streamline the process of assessing significance of criteria pollutant emissions from commonly encountered projects, the District has developed the screening tool, Small Project Analysis Level (SPAL). Using project type and size, the District has pre-quantified emissions and determined a size below which it is reasonable to conclude that a project would not exceed applicable thresholds of significance for criteria pollutants.

The District pre-calculated the emissions on a large number and types of projects to identify the level at which they have no possibility of exceeding the emissions thresholds. The information is provided in terms of vehicle trips required to exceed the SPAL threshold for five general land use categories. Sizes of various specific development types meeting SPAL are also provided. For a multi-use project, if its combined trip generation rate exceeds the lowest applicable trip threshold from, an air quality analysis should be prepared."[3]

The Air District does not have a SPAL specifically for agricultural product processing facilities. The Air District's SPAL for the most closely related land uses are provided in **Table 2**.

[3] Air District, GAMAQI, Section 8.3.4, Page 85

Table 2. Air District Small Project Analysis Level				
Land Use Type	**Size**		**1-way ADT, except HHDT**	**1-way ADT, HHDT**
General Light Industrial	280,000 sf	and less than	550	70 trips, 50 mile trip length (3,500 daily VMT)
Manufacturing	472,000 sf	and less than	550	70 trips, 50 mile trip length (3,500 daily VMT)
Note: ADT = average daily trips; HHDT = heavy-heavy duty trucks; VMT = vehicle miles traveled *Source: Air District, https://ww2.valleyair.org/media/5jppiwed/cms-format-spal.pdf, Tables 4a and 4b, accessed June 2024.*				

As previously noted, the Air District requires an air quality analysis for any project in which the size of the development, the trip generation rate, or both exceeds the lowest applicable trip thresholds. As indicated in **Table 2**, the most closely related land uses to the existing use are General Light Industrial and Manufacturing. Based on the definition of these land use types by the Institute of Transportation Engineers (ITE) and the California Emissions Estimator Model (CalEEMod), the Project is most closely related to a Manufacturing facility. [4] [5] [6] The Project includes a total of 212,851 sf of new facilities within the existing facilities boundaries in the northern project site, of which 18,590 sf are solar canopy covered parking. The Project will result in eight (8) new employees resulting in 16 new employee trips per day. As the Project is intended only to provide diversity in production of product without an increase in raw almond received, there will be no new HHDT truck traffic. As such, both the size of the Project and the resulting vehicle trips fall below SPAL thresholds.

The Project also includes a new WWTF in the southern project site which will process facility wastewater for use as irrigation water. The WWTF is located on an approximately ±7-acre (470,000 sf) site. Process wastewater is first separated within the processing facility to remove solids (culls, skins, almond pieces, etc.) from the water. These solids are loaded directly into a truck. The separated water is then sent to the WWTF for further separation. Solids from separation at the WWTF are combined with the solids separated at the processing facility for use as animal feed. As the Project will not increase the volume of raw product brought into the facility or the volume of processed almonds leaving the facility, no additional HHDT trips are required to ship separated solids from site. It is anticipated that the operation and maintenance of the WWTF will be provided by plant personnel. As such, both the size of the Project and the resulting vehicle trips fall below SPAL thresholds.

Although the Project qualifies for qualitative analysis of potential impacts on air quality, a quantitative analysis has been prepared to provide a more robust evaluation of potential impacts.

4 The CalEEMod Users Guide defines General Light Industrial as free-standing facilities devoted to a single use. The facilities have an emphasis on activities other than manufacturing and typically have minimal office space. Typical light industrial activities include printing, material testing and assembly of data processing equipment. CalEEMod requires this land use subtype to be less than 50,000 square feet.

5 The CalEEMod Users Guide defines Manufacturing as areas where the primary activity is the conversion of raw materials or parts into finished products. It generally also has office, warehouse, and R&D functions at the site.

6 CalEEMod is a publicly available tool to estimate criteria pollutants and greenhouse gases. The model and supporting documents are available at www.caleemod.com.

MODELING ASSUMPTIONS

CalEEMod does not have a land use specific to agricultural product processing facilities. As such, the most closely related land uses were used to quantify Project related emissions. The Industrial - Manufacturing land use was used for the proposed expanded facility Parking – Parking Lot was used for the solar canopies. The Project would result in short-term, temporary, and intermittent construction-related and long-term operational-related air pollutant emissions and GHGs. Consistent with the Air District guidance, Project-related construction and operational emissions have been estimated using CalEEMod, Version 2022.1.1.24 (the most recent version of the model).

CalEEMod provides default values for much of the input data utilized in calculating project emissions. These default values can be modified where Project-specific information is available. The development parameters (land use type, building footprint, and project acreage) and construction start year, which must be input by the modeler, are the basis for all emissions calculations. **Table 1** provides the development parameters used in the emissions model. Construction phases (i.e., applicable construction subphases), off-road construction equipment and on-road employee, hauling, and vendor vehicle estimates utilized model default values. Model defaults were also utilized for operational activities, with the exception of the vehicle fleet which was modified to reflect the fleet of current operations. The CalEEMod report and project calculations can be found in **Attachment B**.

As presented in **Table 1**, the Project includes a total of 214,451 sf total building and canopy cover; of this 194,261 sf are dedicated for almond processing and 18,590 sf for solar covered parking. Of the 194,261 sf of processing space, 1,394 sf is general building space, 17,564 sf is fumigation rooms, 13,303 sf is warehouse canopy, and 162,000 sf is warehouse building. The Project also includes a ±7-acre wastewater treatment facility for treating wastewater for use in irrigation of crops. Each phase will take two (2) to three (3) years to complete with gaps between construction activity. However, using the model default construction timeline provides a conservative estimate of project emissions as construction would occur in a more compact timeline and utilizing higher emission factors. The Project will not increase the volume of almonds processed at the facility; rather, it will allow an increase in the type of production opportunities. As such, the operational emissions would represent a worst-case emissions scenario resulting from an increase in production within these new facilities.

SIGNIFICANCE THRESHOLDS

CEQA Guidelines define a significant effect on the environment as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project.[7] To determine if a project would have a significant impact on air quality and climate change, the type, level, and impact of criteria pollutant and GHG emissions generated by the project must be evaluated. Appendix G of the CEQA Guidelines provides the criteria (as Checklist Items) for evaluating potential impacts on the environment. The CEQA criteria and the Air District's significance thresholds and guidance for evaluation are provided below.

[7] CEQA Guidelines Sections 15002(g) and 15382

Criteria Pollutant Significance Thresholds

The Air District has established thresholds of significance for criteria pollutant emissions. These thresholds are based on District New Source Review (NSR) offset requirements for stationary sources. "Stationary sources in the District are subject to some of the toughest regulatory requirements in the nation. Emission reductions achieved through implementation of District offset requirements are a major component of the District's air quality plans. Thus, projects with emissions below the thresholds of significance for criteria pollutants would be determined to "Not conflict or obstruct implementation of the District's air quality plan"."[8]

The Air District's thresholds of significance are provided in **Table 3**.

Table 3. Air District Criteria Pollutant Significance Thresholds

Pollutant/ Precursor	Construction Emissions	Operational Emissions	
		Permitted Equipment and Activities	Non- Permitted Equipment and Activities
	Emissions (tpy)	Emissions (tpy)	Emissions (tpy)
CO	100	100	100
NOx	10	10	10
ROG	10	10	10
SOx	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

Source: Air District, https://ww2.valleyair.org/media/m2ecyxiw/1-cms-format-ceqa-air-quality-thresholds-of-significance-criteria-pollutants.pdf, accessed June 2024.

"By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development. Future attainment of State and Federal ambient air quality standards is a function of successful implementation of the District's attainment plans. Consequently, the District's application of thresholds of significance for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

A Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including, but not limited to an air quality attainment or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located [CCR §15064(h)(3)].

Thus, if project specific emissions exceed the thresholds of significance for criteria pollutants the project would be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the District is in non-attainment under applicable Federal or State ambient air quality standards. This does not imply that if the project is below all such significance thresholds,

[8] Air District, GAMAQI, Section 7.12, Page 65.

it cannot be cumulatively significant. The thresholds of significance are presented in Chapter 8 [of the GAMAQI]"[9].

Health Risk Significance Thresholds

From a health risk perspective, there are two (2) categories of projects that have the potential to cause long-term health risks impacts:

- Type A Projects: Land use projects that will place new toxic sources in the vicinity of existing receptors. This category includes sources of toxic emissions such as gasoline dispensing facilities, asphalt batch plants, warehouse distribution centers, freeways and high traffic roads, and other stationary sources that emit toxic substances.
- Type B Projects: Land use projects that will place new receptors in the vicinity of existing toxic sources. This category includes residential, commercial, and institutional developments proposed in the vicinity of existing sources such as stationary sources, freeways and high traffic roads, rail yards, and warehouse distribution centers.[10]

The San Joaquin Valley Air Pollution Control District's current thresholds of significance for toxic air contaminant (TAC) emissions from the operations of both permitted and non-permitted sources are combined and presented in **Table 4**.

Table 4. Air District Toxic Air Contaminant Thresholds of Significance

Carcinogens	Maximally Exposed Individual risk equals or exceeds 20 in one million
Non-Carcinogens	Acute: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual
	Chronic: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual

Source: Air District, https://ww2.valleyair.org/media/2lpbkso0/2-cms-format-air-quality-thresholds-of-significance-toxic-air-contaminants.pdf, accessed June 2024.

"Determination of whether project emissions would expose sensitive receptors to substantial pollutant concentrations is a function of assessing potential health risks. Sensitive receptors are facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors. When evaluating whether a development proposal has the potential to result in localized impacts, Lead Agency staff need to consider the nature of the air pollutant emissions, the proximity between the emitting facility and sensitive receptors, the direction of prevailing winds, and local topography. Lead Agencies are encouraged to use the screening tools for Toxic Air Contaminant presented in section 6.5 (Potential Land Use Conflicts and Exposure of Sensitive Receptors [pages 44 – 45 of the GAMAQI]) to identify potential conflicts between land use and sensitive receptors and include the result of their analysis in the referral document."[11]

[9] Air District, GAMAQI, Section 7.14, Pages 65-66
[10] Air District, GAMAQI, Section 6.5, Page 44
[11] Air District, GAMAQI, Section 7.15, Page 66

Nuisance Odor Screening Thresholds

"The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The District has identified some common types of facilities that have been known to produce odors in the San Joaquin Valley Air Basin. These are presented in Table 6 (Screening Levels For Potential Odor Sources) [of the GAMAQI] along with a reasonable distance from the source within which, the degree of odors could possibly be significant. Table 6 (Screening Levels for Potential Odor Sources) [of the GAMAQI, **Table 5** of this document], can be used as a screening tool to qualitatively assess a project's potential to adversely affect area receptors. This list of facilities is not all-inclusive. The Lead Agency should evaluate facilities not included in the table or projects separated by greater distances if warranted by local conditions or special circumstances. If the proposed project would result in sensitive receptors being located closer than the screening level distances, a more detailed analysis should be provided."[12]

Table 5 presents the Air District's screening levels for potential nuisance odor sources.

Table 5. Air District Screening Levels for Potential Odor Sources

Odor Generator / Type of Facility	Distance
Wastewater Treatment Facilities	2 miles
Sanitary Landfill	1 mile
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g., auto body shop)	1 mile
Food Processing Facility	1 mile
Feed Lot/Dairy	1 mile
Rendering Plant	1 mile

Sources: Air District, Guidance for Assessing and Mitigating Air Quality Impacts, Page 103, Table 6

Energy Significance Thresholds

CEQA Guidelines Section 15126.2(b) provides the following guidance for determining the significance of energy consumption.

> If analysis of the project's energy use reveals that the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary consumption use of energy, or wasteful use of energy resources, the EIR shall mitigate that energy use. This

[12] Air District, GAMAQI, Section 8.6, Pages 102-103

> analysis should include the project's energy use for all project phases and components, includingtransportation-related energy, during construction and operation. In addition to building code compliance, other relevant considerations may include, among others, the project's size, location, orientation, equipment use and any renewable energy features that could be incorporated into the project… This analysis is subject to the rule of reason and shall focus on energy use that is caused by the project. …

Greenhouse Gas (GHG) Significance Thresholds

"It is widely recognized that no single project could generate enough GHG emissions to noticeably change the global climate temperature. However, the combination of GHG emissions from past, present and future projects could contribute substantially to global climate change. Thus, project specific GHG emissions should be evaluated in terms of whether or not they would result in a cumulatively significant impact on global climate change. GHG emissions, and their associated contribution to climate change, are inherently a cumulative impact issue. Therefore, project-level impacts of GHG emissions are treated as one-in-the-same as cumulative impacts." [13]

The Air District has determined that, "Projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the Lead Agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the Lead Agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement Best Performance Standards (BPS)."[14]

IMPACT EVALUATION

AIR QUALITY IMPACTS

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Project Impact Analysis: ***Less Than Significant Impact***

As previously noted, the Air District has determined that projects with emissions below the Air District's thresholds of significance for criteria pollutants would not conflict with or obstruct implementation of the Air District's air quality plans.

Construction-related emissions occur only during the time of construction activity and are temporary and intermittent. Operation-related emissions occur over the lifetime of a project. As indicated in **Table 3**, the Air District considers construction-related emissions independent of operation-related emissions. In addition, operational emissions are evaluated separately between permitted and non-permitted emission sources when making significance determinations.

[13] Air District, GAMAQI, Section 8.9.1, Pages 111
[14] Air District, GAMAQI, Section 8.9.1, Page 112

Construction and Non-permitted Operational Emissions

As demonstrated in **Table 6,** Project construction- and operations-related emissions will not exceed the Air District's CEQA significance thresholds for any criteria pollutant. Furthermore, the proposed Project will be required to comply with all applicable federal, state, and Air District rules and regulations. Therefore, the Project would not conflict with or obstruct implementation of the applicable AQPs. The Project will have a ***Less Than Significant Project-specific Impact*** related to this Checklist Item.

Table 6. Project Criteria Pollutant Emissions (non-permitted sources)

	ROG	NOx	CO	SO_2	PM_{10} Total	$PM_{2.5}$ Total
CONSTRUCTION						
Phase 1 – 2024	0.03	0.31	0.39	<0.005	0.03	0.02
Phase 1- 2025	0.05	0.03	0.04	<0.005	<0.005	<0.005
Phase 2 – 2028	0.06	0.23	0.37	<0.005	0.02	0.01
Phase 3 – 2032	0.14	1.08	1.78	<0.005	0.17	0.08
Phase 3 – 2033	0.38	0.07	0.13	<0.005	<0.005	<0.005
Phase 4 – 2035	0.03	0.26	0.49	<0.005	0.01	0.01
Total Construction	**0.69**	**1.98**	**3.2**	**0.00**	**0.23**	**0.12**
OPERATIONS						
Phase 1 – 2025	0.16	0.17	0.90	<0.005	0.18	0.05
Phase 2 – 2029	0.11	0.10	0.57	<0.005	0.14	0.04
Phase 3 – 2033	1.23	0.99	5.66	0.02	1.61	0.44
Phase 4 – 2036	<0.005	0.00	0.00	0.00	0.00	0.00
Total Operations	**1.5**	**1.26**	**7.13**	**0.02**	**1.93**	**0.53**
Source: CalEEMod (See Attachment B)						

Permitted Sources

Specific processes that may occur within the proposed expansion may include stationary sources that could require Air District permits (such as sorters, blanchers, slicers, dicers, slivers, blenders, and roasters). An Authority to Construct (ATC) must be submitted to the Air District for each new source. After submittal, the Air District will prepare an engineering evaluation of all proposed permitted equipment. This evaluation is necessary to determine the controls required to achieve best available control technology (BACT) requirements and whether emission reduction credits would be required. The Air District will not permit any source that cannot demonstrate that emissions are less than or have been reduce to less than the thresholds of significance. The Project is required to comply with all applicable Air District rules, regulations, and requirements. Therefore, the proposed Project's estimated permitted emissions would be Less Than Significant.

<u>Mitigation Measures:</u> ***None Required***

<u>Conclusion:</u> ***Less Than Significant Impacts*** related to this Checklist Item will occur.

b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?

Project Impact Analysis: ***Less Than Significant Impact***

The San Joaquin Valley Air Basin is designated as non-attainment of Federal or State ambient air quality standards. for the 1-hour state ozone standard as well as for the federal and state 8-hour standards. Additionally, the Air Basin is designated as non-attainment for the state 24-hour and annual arithmetic mean PM10 standards, as well as the state annual arithmetic mean and the national 24-hour PM2.5 standards.

The contribution of a project's individual air emissions to regional air quality impacts is, by its nature, a cumulative effect. Emissions from past, present, and future projects in the region also have or will contribute to adverse regional air quality impacts on a cumulative basis. No single project by itself would be sufficient in size to result in non-attainment of ambient air quality standards. Instead, a project’s individual emissions contribute to existing cumulative air quality conditions. The project-level thresholds for criteria air pollutants are based on levels by which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants.

As previously noted, the Air District’s guidance states that if project specific criteria pollutant emissions exceed the thresholds of significance the project would be expected to result in a cumulatively considerable net increase of those emissions. As presented in **Table 6**, proposed Project construction- and operational-related activities emissions would not exceed the annual SJVAPCD thresholds of significance for ROG, NOx, SO_2, CO, PM_{10}, and $PM_{2.5}$. Therefore, this Project would result in a ***Less Than Significant Impact*** related to this Checklist Item.

Mitigation Measures: ***None Required***

Conclusion: ***Less Than Significant Impact*** related to this Checklist Item will occur.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Project Impact Analysis: ***Less Than Significant Impact***

Criteria Pollutants

National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) have been established for each criteria pollutant to protect the public health and welfare. The federal and state standards were developed independently with differing purposes and methods, although both processes are intended to avoid health-related effects. As such, it is reasonable to assume that if a project’s emissions exceed the applicable air quality standard, which was established to protect human health, then the project could pose a health risk to nearby receptors. The Air District has established a 100-pound-per-day (lb/day) screening threshold for each of the criteria pollutants.[15] Based on the emissions presented in **Table 6**, non-permitted operational emissions from the Project would not exceed the 100 lb/day threshold. and therefore, would not exceed any of the health-based air quality standards.

[15] Air District, GAMAQI, Sections 8.4.2, 8.4.3, and 8.4.4, Pages 93-97

Toxic Air Contaminants

Diesel particulate matter (DPM) represents the primary toxic air contaminates (TAC) of concern associated with the construction of the proposed Project. DPM emissions are primarily the result of the operation of internal combustion engines in equipment (e.g., loaders, backhoes, and cranes, as well as haul trucks) commonly associated with construction-related activities. Future construction activities will be short-term and intermittent as the Project progresses. Activities associated with the operation of the proposed Project could result in short-term, temporary, and intermittent use of mobile or stationary sources of DPM (e.g., maintenance workers driving to and from the Project site, and the occupational use of off-road equipment to move equipment, and almond haul trucks transporting both raw and processed almonds). Stationary source emissions (such as those from roasters, sorters, dicers, etc. and fumigants) that could be proposed in the future would be subject to Air District permitting requirements. As such, operation-related activities of the proposed Project would not expose nearby sensitive receptors to DPM emissions that would result in a health risk. Impacts are Less Than Significant.

Mitigation Measures: ***None Required***

Conclusion: ***Less Than Significant Impact*** related to this Checklist Item will occur.

d) Would the project result in other emissions (such as those leading to odors adversely affecting a substantial number of people?

Project Impact Analysis: ***Less Than Significant Impact***

Construction-related activities would include fuels and other odor sources (such as diesel-fueled equipment and architectural coatings) that could result in the creation of objectionable odors. Since construction-related activities would be short-term, temporary, and spatially dispersed (i.e., intermittent), and will occur in a predominantly rural area, these activities would not affect a substantial number of people. Therefore, odors from Project construction activities would result in a ***Less Than Significant Impact*** related to this Checklist Item.

Nuisance odors from operations of development projects within the San Joaquin Valley Air Basin are subject to the Air District's Nuisance Rule (Rule 4102). Odors from the WWTF are also subject to the requirements of the State Water Resources Control Board (Water Boards). The processing operations of the existing facility are not generators of substantial odors.[16] Future use proposed in the expansion of the facility is consistent with existing operations and will not result in nuisance odors. However, the Project includes construction and operation of a WWTF to process the facility's wastewater for use as irrigation water. The WWTF is a land use identified in **Table 5** which requires further analysis of potential odor impact to nearby receptors.

The proposed WWTF and use of process water for irrigation are not anticipated to result in nuisance odors due to the utilization of the pretreatment system. The pretreatment system reduces the amount of nutrients and organics in the wastewater thereby reducing odor producing compounds. The WWTF has been designed such that wastewater can also be blended with supplemental freshwater to further dilute any odor producing compounds if needed. To the extent

[16] Air District. Public Records Request #24-629, dated July 22, 2024, returned with no complaints for this facility.

possible, irrigation will be limited to days with dry and slightly breezy conditions. The Land Application Area (LAA) will be graded to promote distribution and drainage of the treated water which will limit standing water and any potential odors. Where possible, irrigation lines will be flushed with freshwater after each irrigation to minimize odor producing solids left in the pipelines. The storage pond will be required to comply with all Water Boards rules, regulations, and requirements as established in WDR R5-2018-0066, including but not limited to maintaining a minimum 1.0 mg/L dissolved oxygen concentration in the storage pond, visual observations of the ponds for algae, vegetation, or scum accumulation on the surface of the ponds, and daily inspection of the LAA for evidence of erosion, field saturation, or the presence of nuisance conditions. If any nuisance conditions are observed, the applicant will work with the Water Boards and Tulare County RMA to prepare and implement a swift action plan to mitigate the issues as appropriate.

The Project is located in a rural area surrounded by agricultural uses. The nearest residential receptors are located approximately 0.65 mile east, 0.5 mile south, and 1.15 miles southeast of the WWTF site, and 1.8 miles northeast and 2.0 miles northwest of the processing facility. The processing facility is not a generator of nuisance odors. The WWTF and LAA will be monitored to reduce the potential for odor producing conditions. Therefore, odors from Project operational activities would not affect a substantial number of people and the Project would result in a ***Less Than Significant Impact*** related to this Checklist Item.

Mitigation Measures: ***None Required***

Conclusion: ***Less Than Significant Impact*** related to this Checklist Item will occur.

ENERGY IMPACTS

a) Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Project Impact Analysis: ***Less Than Significant Impact***

The construction equipment and construction and operation vehicle energy requirements were determined using the construction- and operational-related vehicle estimates provided in the CalEEMod reports and applying fuel consumption rates for each vehicle type. The calculation worksheets and CalEEMod reports are provided in **Attachments A** and **B**, respectively.

Short Term Construction

Off-Road Equipment

Project construction would require the use of diesel and/or gasoline fueled equipment. Typical construction fleets, as provided by CalEEMod, include equipment such as excavators, dozers, tractors, loaders, backhoes, scrapers, pavers, and various other off-road equipment. The Project will be constructed in four (4) phases; however, the construction timeline and construction fleet will vary with each phase. Project construction would also require the use of on-road vehicles for construction workers, vendors, and haulers would require fuel for travel to and from the Project site.

Table 7
Construction Off-Road Diesel Fuel Consumption

Construction Phase	Fuel Consumption (gallons)
Phase 1 WWTF	11,236
Phase 1	5,980
Phase 2	5,980
Phase 3	26,626
Phase 4	7,626
Total	**57,448**

Source: Energy Consumption Calculations (Attachment A).

<u>On-Road Vehicles</u>

On-road vehicles will comply with all applicable State and federal emissions and fuel efficiency regulations. There are no unusual Project characteristics that would necessitate the use of construction equipment or vehicles that would be less energy efficient than at comparable construction sites in Tulare County, the San Joaquin Valley, or other parts of the state. Therefore, it is expected that construction fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.

Table 8
Construction On-Road Fuel Consumption

Construction Phase	Diesel Fuel Consumption (gallons)	Gasoline Fuel Consumption (gallons)
Phase 1 WWTF	19,129	2,477
Phase 1	693	2,022
Phase 2	464	1,623
Phase 3	12,281	37,909
Phase 4	0	124
Total	**32,567**	**44,155**

Source: Energy Consumption Calculations (Attachment A).

<u>Other Construction Energy Consumption</u>

Other equipment could include construction lighting, field services (office trailers), and electrically driven equipment such as pumps and other tools. As the on-site construction activities would be restricted to the permissible hours allowed in Tulare County, it is anticipated that the use of construction lighting would be minimal. Singlewide mobile office trailers, which are commonly used in construction staging areas, generally range in size from 160 square feet to 720 square feet.

The mobile office would be used only during construction of the WWTF, which would last approximately four (4) months.

Long-Term Operations

Transportation Energy Demand

Table 9 provides an estimate of the annual fuel consumed by vehicles traveling to and from the proposed Project. These estimates were derived using the default fleet mix provided in CalEEMod and adjusting them to provide only the HHDT for product transport and LDA, LDT1, and LDT2 for employee trips. The fuel consumption rate was provided using EMFAC 2021 as specified for each vehicle class.

Table 9
Long-Term Operational Vehicle Fuel Consumption

	Total VMT	Diesel VMT	Gasoline VMT	Diesel Consumed (gallons)	Gasoline Consumed (gallons)
Phase 1 WWTF	0	0	0	0	0
Phase 1	505,875	53,253	452,621	7,860	67,721
Phase 2	391,323	41,195	350,128	6,080	52,386
Phase 3	4,505,319	474,276	4,031,041	70,003	603,124
Phase 4	0	0	0	0	0
Total	**5,402,517**	**568,724**	**4,833,791**	**83,944**	**723,232**

Source: Energy Consumption Calculations and CalEEMod Reports Attachment A and B, respectively.

As shown in **Table 9** annual consumption is estimated at 807,175 gallons (723,232 gallons from passenger vehicles, and 83,944 gallons from delivery and haul vehicles). In addition, the proposed project would constitute development within near proximity of an established community and would not be opening a new geographical area for development. As such, the proposed project would not result in unusually long trip lengths for future employees, vendors, or visitors. The property is located within five (5) miles of a major highway (State Route 99), within four (4) miles of the community of Earlimart and has scattered residences in the surrounding properties. The Project is intended to provide flexibility in the types of processing that the facility can accommodate and will not result in increased volume of product received and shipped from the site. For these reasons, it would be expected that vehicular fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than for any other similar land use activities in the region, and impacts would be less than significant.

Building Energy Demand

As shown in **Table 10**, the proposed Project is estimated to demand 2,418,652 kilowatt-hours (kWhr) of electricity and 72,275,672 1,000-British Thermal Units (kBTU) of natural gas, respectively, on an annual basis.

Table 10
Long-Term Operational Electricity Usage

Land Use	Total Electricity Demand (kWhr/year)	Total Natural Gas Demand (kBTU/year)
Phase 1 WWTF	401,141	-
Phase 1	185,344	817,700
Phase 2	143,374	632,538
Phase 3	1,650,673	72,825,434
Phase 4	38,120	0
Total	**2,418,652**	**74,275,672**

Source: Energy Consumption Calculations and CalEEMod Reports Attachment A and B, respectively.

Buildings and infrastructure constructed on the Project site would comply with the versions of CCR Titles 20 and 24, including California Green Building Standards (CALGreen), that are applicable at the time that building permits are issued. The proposed Project's estimated energy demands would represent an increase in demand for electricity and natural gas.

It would be expected that building energy consumption associated with the proposed Project would not be any more inefficient, wasteful, or unnecessary than for any other similar buildings in the region. Current state regulatory requirements for new building construction contained in the 2022 CALGreen and Title 24 standards would increase energy efficiency and reduce energy demand in comparison to existing commercial structures, and therefore would reduce actual environmental effects associated with energy use from the proposed Project. Additionally, the CALGreen and Title 24 standards have increased efficiency standards through each update. Therefore, while the proposed Project would result in increased electricity and natural gas demand, electricity and natural gas would be consumed more efficiently and would be typical of existing commercial development.

Based on the above information, the proposed Project would not result in the inefficient or wasteful consumption of electricity or natural gas, and impacts would be less than significant. As such, Project-specific impacts related to this Checklist Item to a level considered Less Than Significant.

Mitigation Measures: ***None Required***

Conclusion: ***Less Than Significant Impact*** related to this Checklist Item will occur.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Project Impact Analysis: ***Less Than Significant Impact***

The Tulare County General Plan contains policies that aim to reduce GHG emissions. The Tulare County Climate Action Plan (CAP) references the General Plan policies as tools for reducing GHG emissions. These policies are divided into the categories of Transportation Strategies, Building Energy Efficiency, Water Conservation Energy Savings, Solid Waste Reduction and Recycling, and Agricultural Programs and Incentives. The policies are aimed at County action and do not specifically mandate action at the project level. Therefore, compliance with established and applicable regulations would ensure consistency with GHG reduction measures contained in the Tulare County 2030 General Plan. Moreover, compliance with Title 24 standards would ensure that the proposed Project would not conflict with any of the General Plan energy conservation policies related to the proposed Project's building envelope, mechanical systems, and indoor and outdoor lighting. In addition, the facility, which has been in operation since the 1970's, is located along Road 160 south of Avenue 72, less than one (1) mile from sparse residential development and less than four (4) miles northeast of the community of Earlimart and State Route 99 (SR 99). As such, the project would not be opening a new geographical area for development such that it would result in unusually long trip lengths for future employees or vendors. Therefore, the Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and impacts would be Less Than Significant.

Mitigation Measures: ***None Required***

Conclusion: ***Less Than Significant Impact*** related to this Checklist Item will occur.

GREENHOUSE GAS IMPACTS

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Project Impact Analysis: ***Less Than Significant Impact***

The Air District's "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Project under CEQA" states that projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions would be determined to have a less than significant individual and cumulative impact for GHG emissions and would not require quantification unless an Environmental Impact Report is being prepared. The County has an adopted Climate Action Plan (CAP), which is discussed further in item b). The proposed Project is consistent with the Tulare County General Plan and as discussed below, the proposed Project is consistent with Tulare County CAP.

The Tulare County CAP does not require quantification of emissions for projects less intense than a 500-unit subdivision or 100,000 square feet of retail or equivalent intensity for other uses. The proposed Project at full buildout would include 652,497 sf of storage space and 213,444 sf of business park, generating approximately 1,650 ADT. As such, the proposed Project is less intense than the threshold requiring GHG emissions quantification. As such, GHG emissions resulting from the proposed Project have been quantified for disclosure purposes.

Construction

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Project site, and off-road construction equipment (e.g., dozers, loaders, excavators). **Table 11** presents the specific construction generated GHG emissions that would result from construction of the Project.

Table 11. Construction-Related Greenhouse Gas Emissions	
Emissions Source	**CO_2e (Metric Tons/Year)**
Phase 1 WWTF – 2024	241.5
Phase 1 - 2025	68.90
Phase 2 – 2028	67.40
Phase 3 – 2032	375.7
Phase 4 – 2035	78.90
Total Emissions	**832.30**
Source: CalEEMod Reports (See Attachment B)	

As shown in **Table 11**, Project construction would result in the generation of approximately 832 metric tons of CO_2e over the course of construction. Once construction is complete, the generation of these GHG emissions would cease. The amortized construction emissions (amortized over 30 years) are added to the annual average operational emissions.

<u>Operations</u>

Operation of the Project would result in GHG emissions predominantly associated with motor vehicle use and building operations such and heating and cooling, lighting, utilities, cleaning supplies, landscaping activities, etc. Long-term operational GHG emissions attributable to the Project are identified in **Table 12**.

Table 12. Operational-Related GHG Emissions						
Emissions Source	**CO_2e (Metric Tons/Year)**					
	WWTF	**Phase 1**	**Phase 2**	**Phase 3**	**Phase 4**	**Total**
Mobile	0	240	156	1,662	0	2,058
Area	0	0.27	0.21	2.37	0	2.85
Energy	0	72.8	56.6	584	4.54	717.64
Water	109	8.34	6.45	68.6	0	192.4
Waste	0	7.04	5.45	62.7	0	75.19
Refrigeration	0	0.78	0.61	6.98	0	8.37
Amortized Construction						27.74
Total Emissions						**3,082**
Source: CalEEMod Reports (See Attachment B)						

As shown in **Table 12**, Project operations would result in the generation of approximately 3,082 metric tons of CO_2e annually.

The proposed Project is consistent with the Tulare County General Plan and the Tulare County CAP. Therefore, the proposed Project would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment. As such, the proposed Project would result in a less than significant impact to this resource.

Therefore, the proposed Project would result in a ***Less Than Significant Project-specific Impact*** related to this Checklist Item.

Mitigation Measures: ***None Required***

Conclusion: ***Less Than Significant Impact*** related to this Checklist Item will occur.

b) Would the project conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact Analysis: ***Less Than Significant Impact***

As the Project is located within unincorporated Tulare County, the most applicable GHG plan is the Tulare County CAP. The CAP is a strategic planning document that identifies sources of GHG emissions within the County, presents current and future emissions estimates, identifies a GHG reduction target for future years, and presents strategic policies and actions to reduce emissions from the development project subject to CEQA. The GHG-reduction strategies in the Plan build key opportunities prioritized by County staff and members of the public.

The Tulare County CAP does not require quantification of emissions for projects less intense than a 500-unit subdivision or 100,000 square feet of retail or equivalent intensity for other uses. As previously noted in Checklist Item a, the proposed Project at full buildout would include 194,261sf of almond processing facilities, 18,590 sf of solar canopy covered parking, and a new wastewater treatment plant to process the facility's wastewater into irrigation water. As there is no increase in the volume of almonds received by the facility, which receives no more than 20 trucks per day, the Project's daily trip rate is below the threshold requiring GHG emissions quantification. However, for disclosure purposes, Project construction- and operation-related GHG emissions are provided in **Table 11** and **Table 12**, respectively.

For development projects less intense than a 500-unit subdivision or 100,000 square feet of retail or equivalent intensity, the CAP consistency checklist is used to determine the project's consistency with the CAP. The checklist contains design features and measures that are used to determine consistency. The overarching CAP consistency requirements for all projects are outlined in **Table 13**.

Table 2.8-3 CAP Consistency Checklist		
Non-Residential Project		
1. Is the project consistent with applicable General Plan goals and policies listed in CAP?	Review CAP General Plan policies to identify applicable policies. If not consistent, provide additional justification for approving the project in light of the inconsistency or revise the project or perform quantitative analysis.	**Consistent.** **AQ.3-5** Alternative Energy Design; **ERM-4.1** Energy Conservation and Efficiency Measures; **ERM-4.6** Renewable Energy; **ERM-4.8** Energy Efficiency Standards; **HS-1.4** Building and Codes, Chapter 11: Water Resource; **WR-1.5** Expand Use of Reclaimed Wastewater; **WR-1.6** Expand Use of Reclaimed Water
2. Is the project within a rural community plan or hamlet plan? If	If the project requires a plan amendment make findings on why	**Not Applicable.** No, the project is in a rural area but is located outside

yes, is the project consistent with the plan?	the project is appropriate for the site and will be consistent with plan goals and policies after approval of the amendment. Amendments for large non-residential projects (100 square feet of retail or projects generating 4,200 ADT or higher) in community plan or hamlets should perform a GHG analysis to identify best management practices including site design for walking and bicycling, energy efficiency and self-generation measures, and water conservation as part of the environmental review.	of the Earlimart Urban Development Boundary.
3. Is the project an agriculture oriented commercial or industrial project in a rural area of the County?	If yes and the project is consistent with the General Plan, the project will comply with applicable State and local regulations. No further GHG review is required.	**Consistent.** The project is an agriculture oriented industrial project. The site is in a rural area outside of the Earlimart Urban Development Boundary. **No further GHG review is required.**
4. Is the project a general commercial or industrial project in a rural area of the County? If yes, is the project consistent with the General Plan?	If a plan amendment is required, perform a GHG analysis to identify best management practices including site design to encourage walking and bicycling, energy efficiency and self-generation measures, and water conservation as part of the environmental review. Sites in rural areas with no other development nearby would need to assess pedestrian measures; however, carpool and vanpool parking may be appropriate.	Consistent/Inconsistent/Not Applicable. Discussion:
5. Is the project required to construct a portion of a bicycle or pedestrian path that is part of an approved bicycle or mobility plan?	If yes, ensure that funding for construction of the project's fair share is included as a condition of approval.	Consistent/Inconsistent/Not Applicable. Discussion:
6. Is the development site appropriate for locating an improved TCAT transit stop?	Review TCAT transit maps to determine if project is on an existing line. For large projects consult with TCAG and TCAT to determine if project is on a planned route and is suitable for a future transit stop. Work with TCAG to identify a fair share contribution for the transit stop construction and reserve right of way if needed	Consistent/Inconsistent/Not Applicable. Discussion:
7. Does the site plan have space set aside for recycling bins or compost collection? Review site plan to determine if refuse collection area	Review site plan to determine if refuse collection area dimensions and location is consistent with County standards.	Consistent/Inconsistent/Not Applicable. Discussion:

dimensions and location is consistent with County s		
9. Does the site include shared EV charging stations per CalGreen requirements?	Review site plan and/or project description to determine if charger installations meet CalGreen requirements. Currently only conduits to future charger locations are required.	Consistent/Inconsistent/Not Applicable. Discussion:
10. Does the project comply with Tulare County Solar Roof Ordinance and/or Title 24 solar installation whichever is more stringent?	The project description should include the solar installation plans for the project. Compare installation plans to Solar Ordinance and Title 24 to determine if the project is in compliance.	Consistent/Inconsistent/Not Applicable. Discussion:
11. Does the project include drought tolerant landscaping and Irrigation systems meeting County standards and the MWELO.	Ensure developers are aware of drought tolerant landscaping and Irrigation requirements from County standards and the MWELO. Include the requirement as a standard condition of approval or similar mechanism.	Consistent/Inconsistent/Not Applicable. Discussion:
12. Does the project comply with Title 24 building energy efficiency, lighting, and interior water efficiency requirements?	Prior to issuing building permits, the County will review building plans to ensure Title 24 compliance.	Consistent/Inconsistent/Not Applicable. Discussion:
13. Is the project required to comply with SJVAPCD Rule 9510 Indirect Source Review	Review project description to determine if the project meets Rule 9510 applicability criteria. For example, 50 single family residential units or 2,000 square feet of retail development. Include Rule 9510 compliance as a condition of approval if applicable.	Consistent/Inconsistent/Not Applicable. Discussion:
14. Does the project employ over 100 employees arriving for work during peak traffic hours?	Determine if the project has the potential to be a large employer. Include a standard condition of approval to inform the applicant that the project may be subject to Rule 9410 Employer Trip Reduction Plans.	Consistent/Inconsistent/Not Applicable. Discussion:
Source: Tulare County CAP 2018 Update, Appendix C. CAP Consistency Checklist		

The Project would comply with all applicable General Plan policies intended to reduce GHG emissions. The Project would not conflict with the applicable policies of the Rural Valley Lands Plan. Furthermore, the Project would comply with the Land Use and Urban Policies of the 2030 General Plan. As such, the Project will not conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Mitigation Measures: ***None Required***

Conclusion: ***Less Than Significant Impact*** related to this Checklist Item will occur.

ATTACHMENT A

PROJECTS CALCULATIONS

PROJECT PHASING AND VENDOR TRIP CALCULATIONS

Phase	Facility	Buildings / Canopies	Concrete Movement (vendor)			Soil Movement			
			sq. ft.	cu. yd.	truck	sq. ft.	cu. ft.	cu. yd.	
Phase 1	clarifier tank		452	5.6	0.6				
WWTF	separator slab		750	9.3	0.9				
(2024)	blower pad		150	1.9	0.2				
	anaerobic pond					7,744	147,136	5,449	
	anaerobic pond					7,744	147,136	5,449	
	aeration pond					24,360	316,680	11,729	
	storage pond					130,480	3,522,960	130,480	no import/export
Phase 1	stormwater pond fill					16,000	160,000	5,926	
Ponds	stormwater pond fill					8,000	80,000	2,963	
(2024)	stormwater pond fill					33,600	336,000	12,444	
	new stormwater basin					69,300	693,000	25,667	26,000 import/export
Phase 1	loading dock		8,050	99	10				
(2025)	metal building	644							
	canopy	4,966							
	fumigation room with canopy	5,915							
	fumigation room with canopy	5,915							
	scale house	750							
	Total	**18,190**							
Phase 2	warehouse canopy	5,176							
(2028)	fumigation room with canopy	7,390							
	fumigation room with canopy	1,505							
	Total	**14,071**							
Phase 3	warehouse	**162,000**							
(2032)									
Phase 4	solar canopies	**18,590**							
(2035)	parking stalls	111							
		194,261							
		18,590							
	GRAND TOTAL	**212,851**							

	weeks	days/week	total days	HHDT/day	employee/day
Peak Season - August to November	18	6	108	20	144
Non-Peak Season - December to July	34	5	170	15	144
Total Working Days			**278**		

Existing Operations

HHDT/Year	4,710
employee trips/year	40,032
Total trips per year	44,742
% HHDT	10.5270
% LDA, LDT1, LDT2	89.4730

Default employee fleet

	Phase 1	%	Phase 2	%	Phase 3	%	Phase 4	%
LDA	46.0373	66.2917	47.0050	66.0007	47.8856	65.5197	47.8856	65.5197
LDT1	3.8030	5.4762	3.4462	4.8389	3.1574	4.3201	3.1574	4.3201
LDT2	19.6062	28.2321	20.7677	29.1604	22.0428	30.1602	22.0428	30.1602
Total	69.4465		71.2189		73.0858		73.0858	

Adjusted employee fleet

	Phase 1	Phase 2	Phase 3	Phase 4
HHDT	10.5270	10.5270	10.5270	10.5270
LDA	59.3132	59.0528	58.6224	58.6224
LDT1	4.8997	4.3295	3.8653	3.8653
LDT2	25.2601	26.0907	26.9852	26.9852
Total	100.0	100.0	100.0	100.0

Construction Criteria	Year	ROG	NOx	CO	SO2	PM10 total	PM2.5 total
WWTF	2024	0.08	0.85	0.67	<0.005	0.3	0.14
	2025	0.01	0.08	0.11	<0.005	<0.005	<0.005
Phase 1	2025	0.07	0.29	0.39	<0.005	0.02	0.01
Phase 2	2028	0.06	0.24	0.39	<0.005	0.02	0.01
Phase 3	2032	0.14	1.08	1.78	<0.005	0.17	0.08
	2033	0.38	0.07	0.13	<0.005	<0.005	<0.005
Phase 4	2035	0.03	0.27	0.47	<0.005	0.01	0.01
Total		0.77	2.88	3.94	<0.04	0.52	0.25

Operational Criteria	Year	ROG	NOx	CO	SO2	PM10 total	PM2.5 total
WWTF	2024	<0.005	0	0	0	0	0
Phase 1	2026	0.05	0.17	0.58	<0.005	0.2	0.05
Phase 2	2029	0.09	0.14	0.42	<0.005	0.14	0.04
Phase 3	2033	1.02	1.44	4.28	0.02	1.64	0.45
Phase 4	2036	<0.005	0.00	0.00	0.00	0.00	0.00
Total		1.16	1.75	5.28	0.02	1.98	0.54

Construction GHG	CO_2e
WWTF	227
	14.5
Phase 1	68.80
Phase 2	67.40
Phase 3	356.00
	19.70
Phase 4	78.90
Total	832.30

construction GHG amortized over 30 years **27.74**

Total Annual GHG **3,082.18**

Operational GHG	WWTF 2024	Phase 1 2025	Phase 2 2029	Phase 3 2033	Phase 4 2036	Total CO_2e
Mobile	0	240	156	1,662	0	2,058
Area	0	0.27	0.21	2.37	0	2.85
Energy	0	72.8	56.3	584	4.54	717.64
Water	109	8.34	6.45	68.6	0	192.4
Waste	0	7.04	5.45	62.7	0	75.19
Refrigeration	0	0.78	0.61	6.98	---	8.37
Total	109	329.23	225.02	2,387	4.54	3,054.44

Construction equipment fuel consumption rate is based on SCAQMD CEQA Air Quality Handbook (1993) Table A9-3-E.
https://www.dtsc-ssfl.com/files/lib_ceqa/ref_draft_peir/Chap4_2-AirQuality/SCAQMD_1993_-_CEQA_Handbook.pdf

WASTEWATER TREATMENT FACILITY CONSTRUCTION EQUIPMENT FUEL CONSUMPTION

Phase	Equipment	Work Days / Phase	Number / Day	Hours / Day	Horsepower	Load Factor	Gallon/HP-hr	Total Gallons
Site Prep	Rubber Tired Dozers	10	3	8	367	0.40	0.05	3,523.20
	Tractors/Loaders/Backhoes	10	4	8	84	0.37	0.05	994.56
Grading	Graders	30	1	5	148	0.41	0.05	303.40
	Excavators	30	2	8	36	0.38	0.05	218.88
	Tractors/Loaders/Backhoes	30	2	8	84	0.37	0.05	497.28
	Scrapers	30	2	8	423	0.48	0.05	3,248.64
	Rubber Tired Dozers	30	1	8	367	0.4	0.05	1,174.40
Paving	Pavers	20	2	8	81	0.42	0.05	544.32
	Paving Equipment	20	2	8	89	0.36	0.05	512.64
	Rollers	20	2	8	36	0.38	0.05	218.88
							Total Gallons - WWTF	**11,236**

WASTEWATER TREATMENT FACILITY CONSTRUCTION VEHICLE FUEL CONSUMPTION

Phase	Type	Vehicle Class	Work Days / Phase	1-way Trips/Day	Miles/Trip	Miles/Round Trip	Gallon / Mile	Total Gallons
Site Prep	Worker	LDA, LDT1, LDT2	10	17.50	7.70	15.40	0.14962	403
	Hauling	HHDT	10	0.00	20.00	40.00	0.1476	0
Grading	Worker	LDA, LDT1, LDT2	30	20.00	7.70	15.40	0.14962	1,382
	Hauling	HHDT	30	108.00	20.00	40.00	0.1476	19,129
Paving	Worker	LDA, LDT1, LDT2	20	15.00	7.70	15.40	0.14962	691
	Hauling	HHDT	20	0.00	20.00	40.00	0.1476	0
							Total Gallons - WWTF	**21,606**

Gallons Diesel	19,129
Gallons Gasoline	2,477

PHASE 1 CONSTRUCTION EQUIPMENT FUEL CONSUMPTION

Phase	Equipment	Work Days / Phase	Number / Day	Hours / Day	Horsepower	Load Factor	Gallon/HP-hr	Total Gallons
Site Prep	Graders	1	1	8	148	0	0.05	24
	Tractors/Loaders/Backhoes	1	1	8	84	0	0.05	12
Grading	Graders	2	1	6	148	0.41	0.05	36
	Rubber Tired Dozers	2	1	6	367	0.4	0.05	88
	Tractors/Loaders/Backhoes	2	1	7	84	0.37	0.05	22
Building	Cranes	100	1	4	367	0.29	0.05	2,129
	Forklifts	100	2	6	82	0.2	0.05	984
	Tractors/Loaders/Backhoes	100	2	8	84	0.37	0.05	2,486
Paving	Tractors/Loaders/Backhoes	5	1	7	84	0.37	0.05	54
	Cement and Mortar Mixers	5	4	6	10	0.56	0.05	34
	Pavers	5	1	7	81	0.42	0.05	60
	Rollers	5	1	7	36	0.38	0.05	24
Coating	Air Compressors	5	1	6	37	0.48	0.05	27
							Total Gallons - Phase 1	**5,980**

PHASE 1 CONSTRUCTION VEHICLE FUEL CONSUMPTION

Phase	Type	Vehicle Class	Work Days / Phase	1-way Trips/Day	Miles/Trip	Miles/Round Trip	Gallon / Mile	Total Gallons
Site Prep	Worker	LDA, LDT1, LDT2	1	5.00	7.70	15.40	0.14962	12
	Hauling	HHDT	1	0.00	20.00	40.00	0.1476	0
Grading	Worker	LDA, LDT1, LDT2	2	7.50	7.70	15.40	0.14962	35
	Hauling	HHDT	2	8.00	20.00	40.00	0.1476	94
Building	Worker	LDA, LDT1, LDT2	100	7.64	7.70	15.40	0.14962	1,760
	Vendor	HHDT, MHDT	100	2.98	6.80	13.60	0.1476	598
	Hauling	HHDT	100	0.00	20.00	40.00	0.1476	0
Paving	Worker	LDA, LDT1, LDT2	5	17.50	7.70	15.40	0.14962	202
	Hauling	HHDT	5	0.00	20.00	40.00	0.1476	0
Coating	Worker	LDA, LDT1, LDT2	5	1.18	7.70	15.40	0.14962	14
	Hauling	HHDT	5	0.00	20.00	40.00	0.1476	0
							Total Gallons - Phase 1	**2,714**

Gallons Diesel	693
Gallons Gasoline	2,022

PHASE 2 CONSTRUCTION EQUIPMENT FUEL CONSUMPTION

Phase	Equipment	Work Days / Phase	Number / Day	Hours / Day	Horsepower	Load Factor	Gallon/HP-hr	Total Gallons
Site Prep	Graders	1	1	8	148	0	0.05	24
	Tractors/Loaders/Backhoes	1	1	8	84	0	0.05	12
Grading	Graders	2	1	6	148	0.41	0.05	36
	Rubber Tired Dozers	2	1	6	367	0.4	0.05	88
	Tractors/Loaders/Backhoes	2	1	7	84	0.37	0.05	22
Building	Cranes	100	1	4	367	0.29	0.05	2,129
	Forklifts	100	2	6	82	0.2	0.05	984
	Tractors/Loaders/Backhoes	100	2	8	84	0.37	0.05	2,486
Paving	Tractors/Loaders/Backhoes	5	1	7	84	0.37	0.05	54.39
	Cement and Mortar Mixers	5	4	6	10	0.56	0.05	33.6
	Pavers	5	1	7	81	0.42	0.05	60
	Rollers	5	1	7	36	0.38	0.05	24
Coating	Air Compressors	5	1	6	37	0.48	0.05	27
							Total Gallons - Phase 2	**5,980**

PHASE 2 CONSTRUCTION VEHICLE FUEL CONSUMPTION

Phase	Type	Vehicle Class	Work Days / Phase	1-way Trips/Day	Miles/Trip	Miles/Round Trip	Gallon / Mile	Total Gallons
Site Prep	Worker	LDA, LDT1, LDT2	1	5.00	7.70	15.40	0.14962	12
	Hauling	HHDT	1	0.00	20.00	40.00	0.1476	0
Grading	Worker	LDA, LDT1, LDT2	2	7.50	7.70	15.40	0.14962	35
	Hauling	HHDT	2	0.00	20.00	40.00	0.1476	0
Building	Worker	LDA, LDT1, LDT2	100	5.91	7.70	15.40	0.14962	1,362
	Vendor	HHDT, MHDT	100	2.31	6.80	13.60	0.1476	464
	Hauling	HHDT	100	0.00	20.00	40.00	0.1476	0
Paving	Worker	LDA, LDT1, LDT2	5	17.50	7.70	15.40	0.14962	202
	Hauling	HHDT	5	0.00	20.00	40.00	0.1476	0
Coating	Worker	LDA, LDT1, LDT2	5	1.18	7.70	15.40	0.14962	14
	Hauling	HHDT	5	0.00	20.00	40.00	0.1476	0
							Total Gallons - Phase 2	**2,087**

Gallons Diesel	464
Gallons Gasoline	1,623

PHASE 3 CONSTRUCTION EQUIPMENT FUEL CONSUMPTION

Phase	Equipment	Work Days / Phase	Number / Day	Hours / Day	Horsepower	Load Factor	Gallon/HP-hr	Total Gallons
Site Prep	Tractors/Loaders/Backhoes	5	4	8	84	0.37	0.05	249
	Rubber Tired Dozers	5	3	8	367	0.40	0.05	881
Grading	Graders	8	1	6	148	0.41	0.05	146
	Rubber Tired Dozers	8	1	8	367	0.4	0.05	470
	Tractors/Loaders/Backhoes	8	3	7	84	0.37	0.05	261
	Excavators	8	1	8	36	0.38	0.05	44
Building	Cranes	230	1	7	367	0.29	0.05	8,568
	Forklifts	230	3	8	82	0.2	0.05	4,526
	Tractors/Loaders/Backhoes	230	3	7	84	0.37	0.05	7,506
	Generator Sets	230	1	8	14	0.74	0.05	953
	Welders	230	1	8	46	0.45	0.05	1,904
Paving	Tractors/Loaders/Backhoes	18	1	8	84	0.37	0.05	224
	Cement and Mortar Mixers	18	2	6	10	0.56	0.05	60
	Pavers	18	1	8	81	0.42	0.05	245
	Rollers	18	2	6	36	0.38	0.05	148
	Paving Equipment	18	2	6	89	0.36	0.05	346
Coating	Air Compressors	18	1	6	37	0.48	0.05	96
							Total Gallons - Phase 3	**26,626**

PHASE 3 CONSTRUCTION VEHICLE FUEL CONSUMPTION

Phase	Type	Vehicle Class	Work Days / Phase	1-way Trips/Day	Miles / Trip	Miles/Round Trip	Gallon / Mile	Total Gallons
Site Prep	Worker	LDA, LDT1, LDT2	5	17.50	7.70	15.40	0.14962	202
	Hauling	HHDT	5	0.00	20.00	40.00	0.1476	0
Grading	Worker	LDA, LDT1, LDT2	8	15.00	7.70	15.40	0.14962	276
	Hauling	HHDT	8	0.00	20.00	40.00	0.1476	0
Building	Worker	LDA, LDT1, LDT2	230	68.00	7.70	15.40	0.14962	36,037
	Vendor	HHDT, MHDT	230	26.60	6.80	13.60	0.1476	12,281
	Hauling	HHDT	230	0.00	20.00	40.00	0.1476	0
Paving	Worker	LDA, LDT1, LDT2	18	20.00	7.70	15.40	0.14962	829
	Hauling	HHDT	18	0.00	20.00	40.00	0.1476	0
Coating	Worker	LDA, LDT1, LDT2	18	13.60	7.70	15.40	0.14962	564
	Hauling	HHDT	18	0.00	20.00	40.00	0.1476	0
							Total Gallons - Phase 3	**50,190**

Gallons Diesel	12,281
Gallons Gasoline	37,909

PHASE 4 CONSTRUCTION EQUIPMENT FUEL CONSUMPTION

Phase	Equipment	Work Days / Phase	Number / Day	Hours / Day	Horsepower	Load Factor	Gallon/HP-hr	Total Gallons
Site Prep	Graders	1	1	8	148	0	0.05	24
	Tractors/Loaders/Backhoes	1	1	8	84	0	0.05	12
Grading	Graders	2	1	6	148	0.41	0.05	36
	Rubber Tired Dozers	2	1	6	367	0.40	0.05	88
	Tractors/Loaders/Backhoes	2	1	7	84	0.37	0.05	22
Building	Cranes	100	1	4	367	0.29	0.05	2,129
	Forklifts	100	2	6	82	0.2	0.05	984
	Tractors/Loaders/Backhoes	100	2	8	84	0.37	0.05	2,486
	Bore/Drill Rigs	100	1	6	83	0.5	0.05	1,245
	Aerial Lifts	100	1	6	46	0.31	0.05	428
Paving	Tractors/Loaders/Backhoes	5	1	7	84	0.37	0.05	54
	Cement and Mortar Mixers	5	4	6	10	0.56	0.05	34
	Pavers	5	1	7	81	0.42	0.05	60
	Rollers	5	1	7	36	0.38	0.05	24
							Total Gallons - Phase 4	**7,626**

PHASE 4 CONSTRUCTION VEHICLE FUEL CONSUMPTION

Phase	Type	Vehicle Class	Work Days / Phase	1-way Trips/Day	Miles/Trip	Miles/Round Trip	Gallon / Mile	Total Gallons
Site Prep	Worker	LDA, LDT1, LDT2	1	5.00	7.70	15.40	0.14962	6
	Hauling	HHDT	1	0.00	20.00	40.00	0.1476	0
Grading	Worker	LDA, LDT1, LDT2	2	7.50	7.70	15.40	0.1476	17
	Hauling	HHDT	2	0.00	20.00	40.00	0.14962	0
Building	Worker	LDA, LDT1, LDT2	100	0.00	7.70	15.40	0.14962	0
	Vendor	HHDT, MHDT	100	0.00	6.80	13.60	0.1476	0
	Hauling	HHDT	100	0.00	20.00	40.00	0.1476	0
Paving	Worker	LDA, LDT1, LDT2	5	17.50	7.70	15.40	0.14962	101
	Hauling	HHDT	5	0.00	20.00	40.00	0.1476	0
							Total Gallons - Phase 4	**124**

Gallons Diesel	0
Gallons Gasoline	124

TOTAL CONSTRUCTION EQUIPMENT FUEL CONSTRUCTION 57,448

TOTAL CONSTRUCTION VEHICLE FUEL CONSUMPTION 76,720

Total Diesel Consumption	**90,015**
Total Gasoline Consumption	**44,154**

OPERATIONAL ENERGY CONSUMPTION

Phase	Electricity kWh/yr	Natural Gas kBTU/yr
WWTF	401,141	
Phase 1	185,344	817,700
Phase 2	143,374	632,538
Phase 3	1,650,673	72,825,434
Phase 4	38,120	0
Total	2,418,652	74,275,672

https://www.energystar.gov/sites/default/files/tools/DataTrends_Wastewater_20150129.pdf
Energy Star found that WWTF electricity use is between 5-50 kBTU/gallon

gal/day	gal/year	kBTU/gallon	kBTU/year
150,000	54,750,000	25	1,368,750,000

kBTU/year	conversion factor	kWh/year
1,368,750,000	0.000293071	401,141

OPERATIONAL VEHICLE MILES TRAVELED

	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
WWTF	0	0	0	0	0	0	0	0
Phase 1	71.5	117	92.6	29,552	1,224	1,999	1,585	505,875
Phase 2	55.3	90.3	71.6	22,860	947	1,546	1,226	391,323
Phase 3	637	1,040	824	263,187	10,897	17,802	14,114	4,505,319
Phase 4	0	0	0	0	0	0	0	0
Total	764	1,247	988	315,599	13,068	21,347	16,925	5,402,517

OPERATIONAL FLEET MIX AND VMT

	Year	HHDT	VMT	LDA	VMT	LDT1	VMT	LDT2	VMT
WWTF	2024	0	0	0	0	0	0	0	0
Phase 1	2025	10.5270	53,253	59.3132	300,051	4.8997	24,786	25.2601	127,784
Phase 2	2029	10.5270	41,195	59.0528	231,087	4.3295	16,942	26.0907	102,099
Phase 3	2033	10.5270	474,276	58.6224	2,641,127	3.8653	174,144	26.9852	1,215,769
Phase 4	2303	10.5270	0	58.6224	0	3.8653	0	26.9852	0

OPERATIONAL VEHICLE FUEL CONSUMPTION

	Diesel Gallons/Mile	Diesel Total Gallons	Gasoline Gallons/Mile	Gasoline Gallons
WWTF	0.1476	0	0.14962	0
Phase 1	0.1476	7,860	0.14962	67,721
Phase 2	0.1476	6,080	0.14962	52,386
Phase 3	0.1476	70,003	0.14962	603,124
Phase 4	0.1476	0	0.14962	0
Total		83,944		723,232

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: County
Region: Tulare
Calendar Year: 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026,
Season: Annual
Vehicle Classification: EMFAC202x Categories
Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	Trips	Fuel Consumption
Tulare	2000	LDA	Aggregate	Aggregate	Gasoline	135410.14636102263	1729670358.2097175	216619591.41454798	73938.84994947542
Tulare	2000	LDT1	Aggregate	Aggregate	Gasoline	37319.90059024533	422986006.32056606	57487336.11178835	21057.586502029568
Tulare	2000	LDT2	Aggregate	Aggregate	Gasoline	44455.186465277126	561735035.0115625	71545468.08	33035.68190930669
Tulare	2001	LDA	Aggregate	Aggregate	Gasoline	137983.37424681656	1712541275.5445616	221187402.16812682	72370.67339910695
Tulare	2001	LDT1	Aggregate	Aggregate	Gasoline	36123.721266448745	393392314.6944818	55535586.23979187	19501.88947425179
Tulare	2001	LDT2	Aggregate	Aggregate	Gasoline	46372.712341069644	568847496.5839468	74798005.91930906	33167.582894045416
Tulare	2002	LDA	Aggregate	Aggregate	Gasoline	138732.6604401717	1794874621.3703926	222871530.48229906	74872.32358606921
Tulare	2002	LDT1	Aggregate	Aggregate	Gasoline	32551.9231	367641511.11505246	50040118.785857186	18057.25208529684
Tulare	2002	LDT2	Aggregate	Aggregate	Gasoline	46330.609780114966	586188926.9189545	74700132.06865229	33894.74372771392
Tulare	2003	LDA	Aggregate	Aggregate	Gasoline	138862.87974355795	1753202019.6696405	223110106.24128553	72609.31437988482
Tulare	2003	LDT1	Aggregate	Aggregate	Gasoline	31559.57032622889	343762798.09786266	48317462.42163659	16832.351161771265
Tulare	2003	LDT2	Aggregate	Aggregate	Gasoline	49977.487884997645	617056784.5463629	80608987.73757432	35465.37979385579
Tulare	2004	LDA	Aggregate	Aggregate	Gasoline	140465.2832759358	1721204343.5979707	225254309.42127508	71177.75677254389
Tulare	2004	LDT1	Aggregate	Aggregate	Gasoline	29629.74600303146	309227211.12528557	45037687.591419384	15151.822962963983
Tulare	2004	LDT2	Aggregate	Aggregate	Gasoline	51006.89913572634	612762692.4318962	82169742.05910692	34936.881975285374
Tulare	2005	LDA	Aggregate	Aggregate	Gasoline	141729.04874537146	1749672213.7093556	228232358.2971145	71914.44139135236
Tulare	2005	LDT1	Aggregate	Aggregate	Gasoline	28906.560031215577	295597091.00462097	43757195.117815055	14416.819078616178
Tulare	2005	LDT2	Aggregate	Aggregate	Gasoline	53072.12485	641350904.9394554	85884780.30444904	36030.38081884777
Tulare	2006	LDA	Aggregate	Aggregate	Gasoline	143745.0393399231	1736632929.405431	231761321.7	71229.79045345451
Tulare	2006	LDT1	Aggregate	Aggregate	Gasoline	28103.03280154076	275345674.5191853	42292064.96094059	13408.220519918614
Tulare	2006	LDT2	Aggregate	Aggregate	Gasoline	54360.52804567029	639499092.9282106	87965716.23826937	35575.29152138468
Tulare	2007	LDA	Aggregate	Aggregate	Gasoline	144752.03250887612	1731836044.797604	233635529.6374002	70786.72761206783
Tulare	2007	LDT1	Aggregate	Aggregate	Gasoline	26932.943412108136	257540659.01992846	40353130.02096773	12503.00930534045
Tulare	2007	LDT2	Aggregate	Aggregate	Gasoline	55490.23033261516	643537219.7337805	89782117.15128407	35449.56695796501
Tulare	2008	LDA	Aggregate	Aggregate	Gasoline	143788.8038239742	1678753292.302553	231876080.96128124	68481.24134061701
Tulare	2008	LDT1	Aggregate	Aggregate	Gasoline	25921.889409485797	243575231.05340666	38857717.47765652	11775.54806333156
Tulare	2008	LDT2	Aggregate	Aggregate	Gasoline	55419.320823832735	620498318.1571168	89277124.48566267	34014.378236064236
Tulare	2009	LDA	Aggregate	Aggregate	Gasoline	143311.3849106355	1672374788.941219	230211330.72323582	68820.54984263993
Tulare	2009	LDT1	Aggregate	Aggregate	Gasoline	24655.211821600504	234264758.8704704	36942492.58410535	11392.055450312568
Tulare	2009	LDT2	Aggregate	Aggregate	Gasoline	55192.325697923516	613948715.4231522	88367644.43182896	33896.60335703673
Tulare	2010	LDA	Aggregate	Aggregate	Gasoline	141921.32340397043	1710833055.2570882	227343923.8333899	69768.05796269303
Tulare	2010	LDT1	Aggregate	Aggregate	Gasoline	23442.596305813167	229602920.39085162	35006201.37447118	11083.880679160602
Tulare	2010	LDT2	Aggregate	Aggregate	Gasoline	55495.33956414271	634227602.6271776	88379747.77921328	34649.055713873284
Tulare	2011	LDA	Aggregate	Aggregate	Gasoline	140678.04808034882	1696303186.3130298	224974440.98663563	68616.78713886847
Tulare	2011	LDT1	Aggregate	Aggregate	Gasoline	21965.894838732554	212701277.1210651	32580468.808216255	10237.299545576632
Tulare	2011	LDT2	Aggregate	Aggregate	Gasoline	56226.96950641055	641372446.6830508	89262790.44844234	34585.83104610956
Tulare	2012	LDA	Aggregate	Aggregate	Gasoline	142398.70604020925	1727917706.3092177	227724420.11356816	69065.21139551488
Tulare	2012	LDT1	Aggregate	Aggregate	Gasoline	21071.211182564875	203285114.1665594	31109057.66464938	9722.215017746257
Tulare	2012	LDT2	Aggregate	Aggregate	Gasoline	56637.57667439822	647059610.3	89735168.50472254	34401.60257503206
Tulare	2013	LDA	Aggregate	Aggregate	Gasoline	146274.8872078857	1782925440.6289754	233914512.31048408	70247.04052367536
Tulare	2013	LDT1	Aggregate	Aggregate	Gasoline	20401.953907251063	196439968.88318875	30028790.742358707	9312.054664139885
Tulare	2013	LDT2	Aggregate	Aggregate	Gasoline	58279.04047678923	667827045.2901893	92267479.07504353	34916.14019410995
Tulare	2014	LDA	Aggregate	Aggregate	Gasoline	149105.68281592574	1841441082.0505779	238746579.06876048	71462.43977340721
Tulare	2014	LDT1	Aggregate	Aggregate	Gasoline	19700.91308081783	191351589.6310667	29004474.457523704	8956.563155473155
Tulare	2014	LDT2	Aggregate	Aggregate	Gasoline	59463.91242339546	686435970.9289365	94071607.91207819	35308.324259626344
Tulare	2015	LDA	Aggregate	Aggregate	Gasoline	153490.1256579683	1959273653.7957633	246412541.60234654	74704.64953
Tulare	2015	LDT1	Aggregate	Aggregate	Gasoline	19858.86574760001	202614142.8821533	29399688.40952042	9277.704810237467
Tulare	2015	LDT2	Aggregate	Aggregate	Gasoline	60559.16239178601	710102562.6334263	95496468.59245622	36034.04754616941
Tulare	2016	LDA	Aggregate	Aggregate	Gasoline	154129.7130023457	2106555316.5504432	247755298.28774577	78834.02035850447
Tulare	2016	LDT1	Aggregate	Aggregate	Gasoline	18857.45201940294	207348550.2	27961922.821717788	9308.681976442247
Tulare	2016	LDT2	Aggregate	Aggregate	Gasoline	57646.62168808609	712747806.5459603	90499252.60250439	35645.68336603618
Tulare	2017	LDA	Aggregate	Aggregate	Gasoline	158008.79852094312	2095969927.940913	254920841.75671464	77205.34889300326
Tulare	2017	LDT1	Aggregate	Aggregate	Gasoline	19055.25507165053	199929336.79645795	28204778.19060912	8918.092344469791
Tulare	2017	LDT2	Aggregate	Aggregate	Gasoline	62933.13497495759	766529282.5316564	99607717.78263634	37193.62517671958
Tulare	2018	LDA	Aggregate	Aggregate	Gasoline	158844.54817253488	2109899194.0355115	256095504.27807197	76755.62208501545
Tulare	2018	LDT1	Aggregate	Aggregate	Gasoline	18481.267876659498	194942736.67220145	27346409.38911064	8591.695750984209
Tulare	2018	LDT2	Aggregate	Aggregate	Gasoline	63797.32056	784255623.2994617	101141658.66091625	37275.583803024776
Tulare	2019	LDA	Aggregate	Aggregate	Gasoline	160428.63127433724	2135296768.4023833	258574239.07503632	76729.37932061087
Tulare	2019	LDT1	Aggregate	Aggregate	Gasoline	19343.054095777097	198214477.58348268	28262017.38269877	8720.129527310977
Tulare	2019	LDT2	Aggregate	Aggregate	Gasoline	64963.432622760985	814090671.0983509	103636328.83380729	37703.98345
Tulare	2020	LDA	Aggregate	Aggregate	Gasoline	159128.8162	1850881338.2366276	255961838.52767915	66033.16334832877
Tulare	2020	LDT1	Aggregate	Aggregate	Gasoline	18290.67198057548	164372018.60905448	26651579.917210996	7199.579402133288

Tulare	2020	LDT2	Aggregate	Aggregate	Gasoline	65092.463272472494	717424383.0534444	103805644.78865014	32770.74526339636
Tulare	2021	LDA	Aggregate	Aggregate	Gasoline	158180.16424236965	2163939225.950418	254066187.08824596	75768.4785
Tulare	2021	LDT1	Aggregate	Aggregate	Gasoline	17368.15004	184540891.61376423	25267351.65550577	7930.449956583157
Tulare	2021	LDT2	Aggregate	Aggregate	Gasoline	65617.22346393572	856270448.7672021	104657910.62830645	38073.99551069239
Tulare	2022	LDA	Aggregate	Aggregate	Gasoline	158071.25145986263	2213568357.5237513	253692094.5081769	76242.50018491616
Tulare	2022	LDT1	Aggregate	Aggregate	Gasoline	16569.967733698853	181529100.82526866	24103734.113884073	7679.459260840898
Tulare	2022	LDT2	Aggregate	Aggregate	Gasoline	66700.09512494734	897203410.7043304	106494559.56311639	38915.71323489967
Tulare	2023	LDA	Aggregate	Aggregate	Gasoline	158118.58560758035	2252616207.7096906	253606914.40116578	76223.77497605543
Tulare	2023	LDT1	Aggregate	Aggregate	Gasoline	15857.349610445424	178105542.68171158	23083264.42375086	7405.731679
Tulare	2023	LDT2	Aggregate	Aggregate	Gasoline	67885.93744	934547768	108499091.78969187	39516.71892337178
Tulare	2024	LDA	Aggregate	Aggregate	Gasoline	158223.95355078488	2277846309.712446	253614478.48549482	75628.75975
Tulare	2024	LDT1	Aggregate	Aggregate	Gasoline	15208.028076504972	174112932.19409665	22168562.995583903	7105.6786271242445
Tulare	2024	LDT2	Aggregate	Aggregate	Gasoline	69118.42037320804	966191613.5808195	110555982.3844758	39812.544111590476
Tulare	2025	LDA	Aggregate	Aggregate	Gasoline	158383.65263891694	2289452917.3322015	253691950.77073154	74505.13020241023
Tulare	2025	LDT1	Aggregate	Aggregate	Gasoline	14635.846916972321	169766970.18311366	21370499.959384173	6791.7321632344065
Tulare	2025	LDT2	Aggregate	Aggregate	Gasoline	70401.77848791284	992016701.9637337	112669467.07789016	39821.36951752507
Tulare	2026	LDA	Aggregate	Aggregate	Gasoline	158694.84398882816	2298981195.9053907	254055358.50691092	73310.93107238635
Tulare	2026	LDT1	Aggregate	Aggregate	Gasoline	14133.99387682969	165810480.81198046	20681648.337906163	6500.823476
Tulare	2026	LDT2	Aggregate	Aggregate	Gasoline	71739.09190930515	1015457106.5988066	114857402.28549738	39755.04209802526
Tulare	2027	LDA	Aggregate	Aggregate	Gasoline	159038.75506841816	2311648976.860844	254478457.33270252	72297.92699
Tulare	2027	LDT1	Aggregate	Aggregate	Gasoline	13684.841620431946	162478022.13421607	20074866.940637104	6244.1987974037675
Tulare	2027	LDT2	Aggregate	Aggregate	Gasoline	73134.58251	1039987043.0035601	117101111.8518576	39793.13585223688
Tulare	2028	LDA	Aggregate	Aggregate	Gasoline	159370.77061572668	2322806373.222358	254898677.07354844	71287.19069079564
Tulare	2028	LDT1	Aggregate	Aggregate	Gasoline	13293.734842516935	159606241.58564612	19554689.565196626	6012.237684848301
Tulare	2028	LDT2	Aggregate	Aggregate	Gasoline	74565.34760014233	1063352794.7598591	119366351.57595353	39827.40209468139
Tulare	2029	LDA	Aggregate	Aggregate	Gasoline	159668.86782727073	2332982765.8323927	255294418.5396868	70333.12214430264
Tulare	2029	LDT1	Aggregate	Aggregate	Gasoline	12938.775578608056	157074795.03238234	19094655.10837544	5801.821661235826
Tulare	2029	LDT2	Aggregate	Aggregate	Gasoline	75965.03698848607	1085143373.8898695	121559189.55345897	39854.80380072699
Tulare	2030	LDA	Aggregate	Aggregate	Gasoline	159938.64581497037	2342128031.539268	255663179.7375285	69459.65714058981
Tulare	2030	LDT1	Aggregate	Aggregate	Gasoline	12621.285372509969	154875611.28952032	18692760.851579335	5614.9876453326615
Tulare	2030	LDT2	Aggregate	Aggregate	Gasoline	77303.18186891692	1105103505.971952	123634337.28297013	39876.94507726208
Tulare	2031	LDA	Aggregate	Aggregate	Gasoline	160202.28797562627	2350786369.8396482	256039840.90365326	68676.63404659713
Tulare	2031	LDT1	Aggregate	Aggregate	Gasoline	12319.467580089757	152906411.71945322	18327946.959344666	5445.397156223745
Tulare	2031	LDT2	Aggregate	Aggregate	Gasoline	78571.28733	1123446375.454012	125589108.25947067	39897.343532681094
Tulare	2032	LDA	Aggregate	Aggregate	Gasoline	160466.97780738107	2359199044.063444	256450684.14995143	67910.61418736556
Tulare	2032	LDT1	Aggregate	Aggregate	Gasoline	12070.256947780832	151330436.71623224	18031247.19211624	5295.388812879165
Tulare	2032	LDT2	Aggregate	Aggregate	Gasoline	79786.74025907618	1140362030.5652058	127446133.14312963	39877.441025074986
Tulare	2033	LDA	Aggregate	Aggregate	Gasoline	160770.73101945728	2368276536.846444	256938753.85598105	67279.84626
Tulare	2033	LDT1	Aggregate	Aggregate	Gasoline	11856.313836068359	150059180.0376008	17782161.09447231	5167.061631322861
Tulare	2033	LDT2	Aggregate	Aggregate	Gasoline	80888.50734543469	1155866264.455691	129143291.19791579	39864.24437736106
Tulare	2034	LDA	Aggregate	Aggregate	Gasoline	161101.69259239608	2377507774.9841323	257498477.40803555	66739.93946687903
Tulare	2034	LDT1	Aggregate	Aggregate	Gasoline	11655.02765015878	148925320.09050658	17557806.422704652	5050.064079987274
Tulare	2034	LDT2	Aggregate	Aggregate	Gasoline	81929.39882869215	1170131448.7866795	130739480.00092626	39853.72559394241
Tulare	2035	LDA	Aggregate	Aggregate	Gasoline	161463.58789143412	2387069620.561023	258143880.72658938	66294.40665839093
Tulare	2035	LDT1	Aggregate	Aggregate	Gasoline	11505.044971365192	148138907.36266732	17391724.361092854	4954.614054156797
Tulare	2035	LDT2	Aggregate	Aggregate	Gasoline	82906.14653262957	1183186027.658053	132234179.01698536	39846.39312611324
Tulare	2036	LDA	Aggregate	Aggregate	Gasoline	161895.85692305613	2396914147.724231	258908165.2430195	65940.41243
Tulare	2036	LDT1	Aggregate	Aggregate	Gasoline	11351.73641843113	147364316.45166153	17229428.057652745	4864.415139315773
Tulare	2036	LDT2	Aggregate	Aggregate	Gasoline	83836.71894677082	1195099406.0726311	133640801.79559065	39847.08427309094
Tulare	2037	LDA	Aggregate	Aggregate	Gasoline	162424.90294795632	2407125603.509898	259819561.49788794	65678.10833241043
Tulare	2037	LDT1	Aggregate	Aggregate	Gasoline	11232.954038794483	146821182.11501884	17108350.462206997	4789.768488178187
Tulare	2037	LDT2	Aggregate	Aggregate	Gasoline	84727.10355800288	1205984216.3176332	134970221.54496112	39858.55957396409
Tulare	2038	LDA	Aggregate	Aggregate	Gasoline	163039.9891541284	2416718560.7814937	260860896.97613204	65532.41448
Tulare	2038	LDT1	Aggregate	Aggregate	Gasoline	11131.658611515953	146339185.70054817	17010535.28	4728.2599836498875
Tulare	2038	LDT2	Aggregate	Aggregate	Gasoline	85569.23425	1215474048.7657344	136223477.63483918	39899.66308426813
Tulare	2039	LDA	Aggregate	Aggregate	Gasoline	163730.9255105529	2426182947.2157307	262009453.90505853	65399.864747601816
Tulare	2039	LDT1	Aggregate	Aggregate	Gasoline	11041.930075607475	145936713.2	16930605.527359337	4670.474519210291
Tulare	2039	LDT2	Aggregate	Aggregate	Gasoline	86377.73940400008	1224127984.4600143	137423455.0870742	39918.31300899792
Tulare	2040	LDA	Aggregate	Aggregate	Gasoline	164451.12960494866	2434922180.9919057	263206943.83477336	65312.13848168767
Tulare	2040	LDT1	Aggregate	Aggregate	Gasoline	10973.42905	145602472.50967497	16875430.272695504	4620.353125045596
Tulare	2040	LDT2	Aggregate	Aggregate	Gasoline	87146.29615340556	1231740888.314692	138559546.7784954	39938.27152153432
Tulare	2041	LDA	Aggregate	Aggregate	Gasoline	165213.96539920938	2443979613.3284106	264452946.32443964	65290.11733
Tulare	2041	LDT1	Aggregate	Aggregate	Gasoline	10918.772645822539	145380658.46885782	16838227.558965553	4578.210389315223
Tulare	2041	LDT2	Aggregate	Aggregate	Gasoline	87866.14578325927	1238851872.933815	139619488.79058617	39972.93346882132
Tulare	2042	LDA	Aggregate	Aggregate	Gasoline	165970.10848074712	2452441990.875079	265693012.2376715	65301.58067971034
Tulare	2042	LDT1	Aggregate	Aggregate	Gasoline	10865.179297979741	145160154.89287487	16804292.973230395	4539.6896944962045
Tulare	2042	LDT2	Aggregate	Aggregate	Gasoline	88485.63301087356	1244867073.1527495	140560496.22187528	39992.84287239688
Tulare	2043	LDA	Aggregate	Aggregate	Gasoline	166723.88531554525	2460185093.1749763	266924429.94083992	65336.75954770236
Tulare	2043	LDT1	Aggregate	Aggregate	Gasoline	10814.528519480711	144932715.3786096	16774650.14459615	4504.430994746442
Tulare	2043	LDT2	Aggregate	Aggregate	Gasoline	89073.38228823469	1250202588.9715734	141450455.22345284	40016.24315031642
Tulare	2044	LDA	Aggregate	Aggregate	Gasoline	167478.1511169845	2467697104.9221396	268146343.62179688	65401.79162751314

Tulare	2044	LDT1	Aggregate	Aggregate	Gasoline	10794.647625752612	144908801.4	16777058.369125232	4480.582386475796
Tulare	2044	LDT2	Aggregate	Aggregate	Gasoline	89636.87251742683	1255211284.7227337	142299079.48342663	40051.82731248074
Tulare	2045	LDA	Aggregate	Aggregate	Gasoline	168201.4768944558	2473838086.3973475	269326000.03643924	65459.66079819394
Tulare	2045	LDT1	Aggregate	Aggregate	Gasoline	10773.677245285719	144834295.33595937	16780387.67084084	4456.616019412252
Tulare	2045	LDT2	Aggregate	Aggregate	Gasoline	90144.16044	1259209825.7677944	143077083.74004441	40070.43308388911
Tulare	2046	LDA	Aggregate	Aggregate	Gasoline	168925.42878687754	2479904978.2318344	270488351.3	65539.04337170802
Tulare	2046	LDT1	Aggregate	Aggregate	Gasoline	10770.35583671519	144880944.45690915	16801555.565308917	4440.150442051119
Tulare	2046	LDT2	Aggregate	Aggregate	Gasoline	90632.84584752316	1263072935.6005642	143820995.63501725	40100.78964656002
Tulare	2047	LDA	Aggregate	Aggregate	Gasoline	169625.7074	2484656907.7763767	271607165.2486304	65602.3448
Tulare	2047	LDT1	Aggregate	Aggregate	Gasoline	10781.500725327272	144960430.49456692	16837417.860992145	4427.932500794979
Tulare	2047	LDT2	Aggregate	Aggregate	Gasoline	91084.66021183527	1266114154.4861994	144515205.37801337	40116.384700088995
Tulare	2048	LDA	Aggregate	Aggregate	Gasoline	170299.1007867675	2488845054.850736	272679512.1616939	65664.93850573844
Tulare	2048	LDT1	Aggregate	Aggregate	Gasoline	10810.346836144021	145116874.81002775	16888956.224716954	4421.514409
Tulare	2048	LDT2	Aggregate	Aggregate	Gasoline	91513.61112677086	1268804776.7709723	145173863.8800006	40131.44092904005
Tulare	2049	LDA	Aggregate	Aggregate	Gasoline	170966.6928394487	2492265148	273723565.40574396	65718.70884561553
Tulare	2049	LDT1	Aggregate	Aggregate	Gasoline	10847.605102117219	145282129.68244767	16946868.423925128	4417.825443280241
Tulare	2049	LDT2	Aggregate	Aggregate	Gasoline	91910.28743728473	1270988401.081845	145788827.0522007	40141.021873529884
Tulare	2050	LDA	Aggregate	Aggregate	Gasoline	171574.31765750694	2495450077.9026103	274688980.98344487	65773.87672208283
Tulare	2050	LDT1	Aggregate	Aggregate	Gasoline	10888.351962118188	145468230.43810615	17006868.28442397	4416.508332722636
Tulare	2050	LDT2	Aggregate	Aggregate	Gasoline	92276.36559525553	1272987817.9809203	146361471.4793178	40152.075908379564
Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	Trips	Fuel Consumption
							4,572,066,591		684,077,003
								gallons/mile	
								0.149620962	

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: County
Region: Tulare
Calendar Year: 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050
Season: Annual
Vehicle Classification: EMFAC202x Categories
Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Region	Calendar Y	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	Trips	Fuel Consumption
Tulare	2000	PTO	Aggregate	Aggregate	Diesel	0	2328319.84	0	537.694741
Tulare	2000	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.503153835	113800.8292	32286.53224	12.01906899
Tulare	2000	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	5.836807869	156114.2735	41848.51159	16.4812129
Tulare	2000	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	15.08976218	407931.0633	108189.9733	43.0626534
Tulare	2000	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	47.68073228	2558749.819	341859.407	269.7192924
Tulare	2000	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	114.8908621	569217.5707	511521.692	81.61545138
Tulare	2000	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	83.94466774	399749.9669	373741.8075	57.51941497
Tulare	2000	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	284.139359	2431639.564	1265056.62	335.8100016
Tulare	2000	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	84.67739149	741208.2558	377004.0695	103.8769999
Tulare	2000	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	232.5946993	3944668.675	838903.954	489.9615955
Tulare	2000	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	367.9578983	9810470.371	1327121.111	1203.970885
Tulare	2000	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	373.9657326	8690084.786	1348789.687	1071.509044
Tulare	2000	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	288.1050929	6236858.604	1039114.401	775.3453814
Tulare	2000	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	4.397709204	163949.13	15861.30574	19.98390755
Tulare	2000	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	166.2650107	5211504.075	599671.3392	647.0655794
Tulare	2000	T6 OOS Class 4	Aggregate	Aggregate	Diesel	2.517499328	65890.60002	18049.86598	6.950245365
Tulare	2000	T6 OOS Class 5	Aggregate	Aggregate	Diesel	3.265192651	90390.05453	23410.64766	9.530727639
Tulare	2000	T6 OOS Class 6	Aggregate	Aggregate	Diesel	8.43938953	236191.7986	60508.39748	24.90221493
Tulare	2000	T6 OOS Class 7	Aggregate	Aggregate	Diesel	27.02195487	1717408.078	193740.9312	181.0279546
Tulare	2000	T6 Public Class 4	Aggregate	Aggregate	Diesel	16.60328771	299453.5006	26574.55817	41.1223204
Tulare	2000	T6 Public Class 5	Aggregate	Aggregate	Diesel	23.36180886	632915.6596	37391.97678	83.47204396
Tulare	2000	T6 Public Class 6	Aggregate	Aggregate	Diesel	20.75968313	769811.9398	33227.11844	103.6702028
Tulare	2000	T6 Public Class 7	Aggregate	Aggregate	Diesel	44.27522031	1314070.795	70865.14661	178.1757705
Tulare	2000	T6 Utility Class 5	Aggregate	Aggregate	Diesel	16.26519874	223905.2394	64956.69769	28.16162148
Tulare	2000	T6 Utility Class 6	Aggregate	Aggregate	Diesel	4.876122064	42313.55782	19473.28108	5.457270751
Tulare	2000	T6 Utility Class 7	Aggregate	Aggregate	Diesel	8.128679197	58872.21449	32462.69324	7.685122347
Tulare	2000	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	400.3855607	49929708.2	2870668.378	8521.168986
Tulare	2000	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	344.9629456	59032308.37	2473301.529	9939.442703
Tulare	2000	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	154.1699476	21445389.04	1105361.524	3680.891266
Tulare	2000	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	16.06519089	785839.6524	82001.87514	144.4825395
Tulare	2000	T7 POAK Class 8	Aggregate	Aggregate	Diesel	35.91001083	2053984.966	183296.1865	377.9336564
Tulare	2000	T7 POLA Class 8	Aggregate	Aggregate	Diesel	38	2730930.888	193964.16	506.6910721
Tulare	2000	T7 Public Class 8	Aggregate	Aggregate	Diesel	160.03	3704850.114	256137.6168	763.5488764
Tulare	2000	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	45.71936092	299430.2892	134371.0305	59.11363201
Tulare	2000	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	112.076696	1952107.167	329397.8927	356.1097246
Tulare	2000	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	261.6195878	9474346.649	768910.4334	1690.515584
Tulare	2000	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	86.29999999	4170332.27	123857.76	1820.574549
Tulare	2000	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1298.121629	32896245.99	5884852.67	5834.553299
Tulare	2000	T7 Utility Class 8	Aggregate	Aggregate	Diesel	10.71393854	176798.3462	42787.18495	34.10162293
Tulare	2001	PTO	Aggregate	Aggregate	Diesel	0	2324204.031	0	533.1032023
Tulare	2001	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.165417298	113599.6616	29865.04232	11.95730524
Tulare	2001	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	5.399047279	155838.3078	38709.87322	16.39683275
Tulare	2001	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	13.95803001	407209.957	100075.7253	42.84233141
Tulare	2001	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	43.8662737	2554226.676	314510.6545	269.0007474
Tulare	2001	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	133.453	568211.3557	594164.7846	82.41697415
Tulare	2001	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	97.50703871	399043.3225	434124.738	58.11899306
Tulare	2001	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	330.0458293	2427341.115	1469443.243	336.9078315
Tulare	2001	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	97.69017901	739898.0101	434940.1226	104.1927908
Tulare	2001	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	269.2452655	3937695.621	971092.2841	489.35362
Tulare	2001	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	426.682144	9793128.246	1538923.022	1200.09917
Tulare	2001	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	430.7530451	8674723.184	1553605.623	1068.198365
Tulare	2001	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	328.8687193	6225833.609	1186137.387	774.077232
Tulare	2001	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	5.021771773	163659.3145	18112.12469	19.89437195
Tulare	2001	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	187.9874078	5202291.616	678017.9434	644.92058
Tulare	2001	T6 OOS Class 4	Aggregate	Aggregate	Diesel	2.324984674	65774.12415	16669.58212	6.934126785
Tulare	2001	T6 OOS Class 5	Aggregate	Aggregate	Diesel	3.015501449	90230.27058	21620.42167	9.508844913
Tulare	2001	T6 OOS Class 6	Aggregate	Aggregate	Diesel	7.794024449	235774.2786	55881.28473	24.84514742
Tulare	2001	T6 OOS Class 7	Aggregate	Aggregate	Diesel	24.84681299	1714372.188	178145.6859	180.6375382

Tulare	2001	T6 Public Class 4	Aggregate	Aggregate	Diesel	15.84598066	298924.1519	25362.4428	40.81649859
Tulare	2001	T6 Public Class 5	Aggregate	Aggregate	Diesel	21.0120264	631796.8444	33631.00897	82.87262069
Tulare	2001	T6 Public Class 6	Aggregate	Aggregate	Diesel	20.92293869	768451.1309	33488.41876	103.4438428
Tulare	2001	T6 Public Class 7	Aggregate	Aggregate	Diesel	44.36905426	1311747.891	71015.33348	178.1445212
Tulare	2001	T6 Utility Class 5	Aggregate	Aggregate	Diesel	15.32598841	223509.4386	61205.86732	27.97320981
Tulare	2001	T6 Utility Class 6	Aggregate	Aggregate	Diesel	4.339157269	42238.75946	17328.85847	5.407766696
Tulare	2001	T6 Utility Class 7	Aggregate	Aggregate	Diesel	7.294854321	58768.14514	29132.73022	7.631491159
Tulare	2001	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	362.4494583	49841446.65	2598675.628	8421.018893
Tulare	2001	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	326.9974224	58927956.01	2344493.039	9897.620432
Tulare	2001	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	136.8236917	21407479.68	980993.032	3632.830872
Tulare	2001	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	16.29541875	784450.5111	83177.03183	142.8447293
Tulare	2001	T7 POAK Class 8	Aggregate	Aggregate	Diesel	38.25065791	2050354.104	195243.5982	374.4056481
Tulare	2001	T7 POLA Class 8	Aggregate	Aggregate	Diesel	39	2726103.378	199068.48	502.8504848
Tulare	2001	T7 Public Class 8	Aggregate	Aggregate	Diesel	156.04	3698300.991	249751.3824	761.20501
Tulare	2001	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	50.69861112	298900.9815	149005.246	59.5269851
Tulare	2001	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	124.2828577	1948656.396	365272.29	355.3100748
Tulare	2001	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	284.6079523	9457598.694	836474.1562	1680.405963
Tulare	2001	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	87.60999999	4162960.307	125737.872	1814.285189
Tulare	2001	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1385.075808	32838094.76	6279047.265	5800.916304
Tulare	2001	T7 Utility Class 8	Aggregate	Aggregate	Diesel	9.931918052	176485.8169	39664.10793	33.8913339
Tulare	2002	PTO	Aggregate	Aggregate	Diesel	0	2377356.182	0	542.5856138
Tulare	2002	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.165417298	116197.5688	29865.04233	12.23501898
Tulare	2002	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	5.399047279	159402.1693	38709.87322	16.77777189
Tulare	2002	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	13.95803002	416522.4291	100075.7253	43.83772002
Tulare	2002	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	43.8662737	2612639.208	314510.6545	275.2837422
Tulare	2002	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	130.0756701	581205.7638	579128.1014	83.73429342
Tulare	2002	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	95.03940266	408169.032	423138.2301	59.04083058
Tulare	2002	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	321.6932734	2482851.905	1432255.66	342.7438481
Tulare	2002	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	96.15169658	756818.7151	428090.4296	106.2083384
Tulare	2002	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	262.5767959	4027746.662	947040.9813	498.0250776
Tulare	2002	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	415.9974292	10017087	1500386.248	1221.8742
Tulare	2002	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	420.4207499	8873105.163	1516339.927	1087.475596
Tulare	2002	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	324.0492966	6368212.008	1168755.079	790.0942671
Tulare	2002	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	4.908225308	167402.0343	17702.59438	20.27543352
Tulare	2002	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	185.4192012	5321262.663	668755.1414	658.4022042
Tulare	2002	T6 OOS Class 4	Aggregate	Aggregate	Diesel	2.354602313	67278.31058	16881.93348	7.088643864
Tulare	2002	T6 OOS Class 5	Aggregate	Aggregate	Diesel	3.05391548	92293.74387	21895.84105	9.720733936
Tulare	2002	T6 OOS Class 6	Aggregate	Aggregate	Diesel	7.893311384	241166.1933	56593.14823	25.39877984
Tulare	2002	T6 OOS Class 7	Aggregate	Aggregate	Diesel	24.76315369	1753578.113	177545.8688	184.6548932
Tulare	2002	T6 Public Class 4	Aggregate	Aggregate	Diesel	21.23800948	305760.2392	33992.70845	41.73746375
Tulare	2002	T6 Public Class 5	Aggregate	Aggregate	Diesel	33.930989	646245.3871	54308.58375	85.35950241
Tulare	2002	T6 Public Class 6	Aggregate	Aggregate	Diesel	24.94323312	786024.8163	39923.1412	104.6891993
Tulare	2002	T6 Public Class 7	Aggregate	Aggregate	Diesel	53.88776841	1341746.213	86250.6066	180.1062908
Tulare	2002	T6 Utility Class 5	Aggregate	Aggregate	Diesel	14.534725	228620.8691	58045.87776	28.46566816
Tulare	2002	T6 Utility Class 6	Aggregate	Aggregate	Diesel	3.790707588	43204.71636	15138.56982	5.490951645
Tulare	2002	T6 Utility Class 7	Aggregate	Aggregate	Diesel	6.344567412	60112.11205	25337.66442	7.738398373
Tulare	2002	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	389.3866946	50981269.17	2791809.147	8614.939573
Tulare	2002	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	350.5347893	60275577.63	2513250.311	10137.77734
Tulare	2002	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	146.8718233	21897046.68	1053035.724	3716.655674
Tulare	2002	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	16.54565003	802390.0858	84454.29236	144.4557084
Tulare	2002	T7 POAK Class 8	Aggregate	Aggregate	Diesel	40.65132672	2097243.589	207497.38	379.2559434
Tulare	2002	T7 POLA Class 8	Aggregate	Aggregate	Diesel	48	2788446.553	245007.36	513.4842899
Tulare	2002	T7 Public Class 8	Aggregate	Aggregate	Diesel	199.02	3782877.324	318543.4512	775.0174624
Tulare	2002	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	45.4030071	305736.5389	133441.254	59.66229584
Tulare	2002	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	111.3011845	1993220.16	327118.6333	359.4644842
Tulare	2002	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	260.1590352	9673884.229	764617.8109	1706.037277
Tulare	2002	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	102.0091765	4244812.791	146403.5702	1840.493961
Tulare	2002	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1205.318204	33589068.15	5464141.335	5884.574904
Tulare	2002	T7 Utility Class 8	Aggregate	Aggregate	Diesel	8.341918052	180521.8656	33314.28393	34.49477166
Tulare	2003	PTO	Aggregate	Aggregate	Diesel	0	2312224.557	0	527.1642061
Tulare	2003	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	3.60252307	113014.1432	25829.22581	11.88597494
Tulare	2003	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	4.669446295	155035.0819	33478.80927	16.29977522
Tulare	2003	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	12.07180974	405111.1046	86551.97862	42.58909518
Tulare	2003	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	40.05181511	2541061.613	287161.9019	267.1273731
Tulare	2003	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	158.7969084	565282.6656	707001.9476	83.36138763
Tulare	2003	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	116.0244903	396986.5627	516568.8767	58.83634638
Tulare	2003	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	392.72446	2414830.049	1748503.55	337.511092
Tulare	2003	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	114.5507451	736084.4081	510007.4096	104.2905832

Tulare	2003	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	319.2863009	3917399.845	1151576.287	486.9577937
Tulare	2003	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	506.861589	9742652.243	1828107.83	1190.640082
Tulare	2003	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	508.2878887	8630011.695	1833252.094	1060.055794
Tulare	2003	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	381.6858283	6193744.252	1376633.911	770.0044125
Tulare	2003	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	5.873838752	162815.7773	21185.2917	19.7151279
Tulare	2003	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	216.1329464	5175477.826	779531.0204	640.128276
Tulare	2003	T6 OOS Class 4	Aggregate	Aggregate	Diesel	2.10285238	65435.1094	15076.94688	6.880306813
Tulare	2003	T6 OOS Class 5	Aggregate	Aggregate	Diesel	2.727396215	89765.20331	19554.77628	9.435278268
Tulare	2003	T6 OOS Class 6	Aggregate	Aggregate	Diesel	7.049372431	234559.0445	50542.30848	24.65304586
Tulare	2003	T6 OOS Class 7	Aggregate	Aggregate	Diesel	22.58801181	1705535.925	161950.6236	179.347523
Tulare	2003	T6 Public Class 4	Aggregate	Aggregate	Diesel	24.28686479	297383.429	38872.58431	40.79897736
Tulare	2003	T6 Public Class 5	Aggregate	Aggregate	Diesel	37.69453229	628540.4203	60332.3606	83.27035473
Tulare	2003	T6 Public Class 6	Aggregate	Aggregate	Diesel	31.90855325	764490.3596	51071.55399	102.2619011
Tulare	2003	T6 Public Class 7	Aggregate	Aggregate	Diesel	69.30004967	1304986.845	110918.8875	176.4029753
Tulare	2003	T6 Utility Class 5	Aggregate	Aggregate	Diesel	17.27975552	222357.4202	69008.43165	27.79820331
Tulare	2003	T6 Utility Class 6	Aggregate	Aggregate	Diesel	4.783691774	42021.05133	19104.15147	5.378155062
Tulare	2003	T6 Utility Class 7	Aggregate	Aggregate	Diesel	7.046552707	58465.2408	28141.11289	7.539157958
Tulare	2003	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	401.8242335	49584552.54	2880983.317	8393.699035
Tulare	2003	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	361.4444145	58624227.97	2591469.705	9871.468175
Tulare	2003	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	150.3103165	21297140.68	1077688.895	3620.204635
Tulare	2003	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	16.79588478	780407.2753	85731.5706	139.4186559
Tulare	2003	T7 POAK Class 8	Aggregate	Aggregate	Diesel	43.18201871	2039786.114	220414.8417	366.3859453
Tulare	2003	T7 POLA Class 8	Aggregate	Aggregate	Diesel	51	2712052.423	260320.32	496.3154134
Tulare	2003	T7 Public Class 8	Aggregate	Aggregate	Diesel	221.1	3679239.11	353883.816	756.0392956
Tulare	2003	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	64.98571932	297360.3781	190995.6285	61.35804525
Tulare	2003	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	159.3063543	1938612.579	468207.7476	357.7217863
Tulare	2003	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	350.5691389	9408852.087	1030336.722	1672.558848
Tulare	2003	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	111.3204608	4129279.661	159767.1253	1789.502293
Tulare	2003	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1451.465458	32668839.78	6580015.447	5743.397955
Tulare	2003	T7 Utility Class 8	Aggregate	Aggregate	Diesel	10.37191805	175576.169	41421.29193	33.54539165
Tulare	2004	PTO	Aggregate	Aggregate	Diesel	0	2469637.814	0	559.8698324
Tulare	2004	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.165417297	120707.9999	29865.04232	12.68138159
Tulare	2004	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	5.399047279	165589.6697	38709.87322	17.38994405
Tulare	2004	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	13.95803002	432690.5446	100075.7253	45.43726873
Tulare	2004	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	45.77350298	2714053.801	328185.0307	285.4779211
Tulare	2004	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	171.6978801	603766.3783	764440.1695	89.07724628
Tulare	2004	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	125.450547	424012.8945	558535.9432	62.8796506
Tulare	2004	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	424.6301637	2579228.556	1890555.4	360.0788264
Tulare	2004	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	124.1315047	786196.0825	552663.2505	111.2472548
Tulare	2004	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	344.7590087	4184091.36	1243449.212	518.9348122
Tulare	2004	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	547.6758441	10405919.41	1975313.42	1268.27414
Tulare	2004	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	547.7559453	9217531.729	1975602.323	1128.967928
Tulare	2004	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	411.6983451	6615406.35	1484880.655	820.1455059
Tulare	2004	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	6.30757185	173900.0648	22749.64554	20.99453216
Tulare	2004	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	232.1262195	5527817.662	837214.2783	681.3935004
Tulare	2004	T6 OOS Class 4	Aggregate	Aggregate	Diesel	2.413837591	69889.84702	17306.63621	7.346836498
Tulare	2004	T6 OOS Class 5	Aggregate	Aggregate	Diesel	3.130743542	95876.30225	22446.67982	10.07474446
Tulare	2004	T6 OOS Class 6	Aggregate	Aggregate	Diesel	8.091885255	250527.5209	58016.87523	26.32372928
Tulare	2004	T6 OOS Class 7	Aggregate	Aggregate	Diesel	26.60365836	1821646.605	190741.8455	191.4340661
Tulare	2004	T6 Public Class 4	Aggregate	Aggregate	Diesel	24.53002275	317628.9083	39261.77321	43.27195269
Tulare	2004	T6 Public Class 5	Aggregate	Aggregate	Diesel	41.04419325	671330.6391	65693.69395	88.87104483
Tulare	2004	T6 Public Class 6	Aggregate	Aggregate	Diesel	33.67423478	816535.8745	53897.63323	109.1066309
Tulare	2004	T6 Public Class 7	Aggregate	Aggregate	Diesel	68.99154922	1393828.661	110425.114	188.4442348
Tulare	2004	T6 Utility Class 5	Aggregate	Aggregate	Diesel	17.36339373	237495.2258	69342.4492	29.57877164
Tulare	2004	T6 Utility Class 6	Aggregate	Aggregate	Diesel	4.948395755	44881.79015	19761.91329	5.731415991
Tulare	2004	T6 Utility Class 7	Aggregate	Aggregate	Diesel	7.968210517	62445.47877	31821.84552	8.027583323
Tulare	2004	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	469.1209026	52960204.75	3363484.283	8999.008272
Tulare	2004	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	410.044703	62615289.58	2939922.11	10558.61449
Tulare	2004	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	174.7738602	22747022.47	1253086.632	3881.431432
Tulare	2004	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	17.05612305	833536.3933	87059.91002	147.8705757
Tulare	2004	T7 POAK Class 8	Aggregate	Aggregate	Diesel	45.74273539	2178652.114	233485.5591	388.7007664
Tulare	2004	T7 POLA Class 8	Aggregate	Aggregate	Diesel	56	2896685.444	285841.92	525.2474999
Tulare	2004	T7 Public Class 8	Aggregate	Aggregate	Diesel	224.14	3929716.95	358749.5184	806.1624511
Tulare	2004	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	74.34530736	317604.288	218503.8321	66.14089512
Tulare	2004	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	182.2505006	2070590.816	535641.5112	382.4374898
Tulare	2004	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	393.7807898	10049394.57	1157337.493	1780.890789
Tulare	2004	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	113.4960211	4399650.893	162889.4894	1903.180351
Tulare	2004	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1361.96468	34892892.14	6174276.202	6093.96947

Tulare	2004	T7 Utility Class 8	Aggregate	Aggregate	Diesel	10.84989757	187529.1675	43330.15092	35.69722051
Tulare	2005	PTO	Aggregate	Aggregate	Diesel	0	2575574.101	0	581.591503
Tulare	2005	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	5.178626911	125885.8269	37129.51208	13.23387422
Tulare	2005	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	6.712329049	172692.7172	48125.78832	18.14618942
Tulare	2005	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	17.3532265	451251.011	124418.4693	47.41256307
Tulare	2005	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	60.39559421	2830474.427	433021.9156	297.4017159
Tulare	2005	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	193.4635494	629665.2238	861346.153	93.77796313
Tulare	2005	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	141.3535687	442201.1289	629340.0127	66.22770444
Tulare	2005	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	478.4593648	2689865.789	2130215.922	377.1899563
Tulare	2005	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	140.0941391	819920.3368	623732.7299	116.4013322
Tulare	2005	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	387.7348831	4363569.946	1398451.158	541.9576573
Tulare	2005	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	616.5349661	10852286.26	2223668.993	1322.470798
Tulare	2005	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	614.3438501	9612922.129	2215766.251	1177.289651
Tulare	2005	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	461.7026092	6899177.346	1665232.035	854.9210752
Tulare	2005	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	7.039337757	181359.5907	25388.92028	21.8686011
Tulare	2005	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	258.7728302	5764936.025	933321.1422	709.2704492
Tulare	2005	T6 OOS Class 4	Aggregate	Aggregate	Diesel	3.139469751	72887.80519	22509.24464	7.670573198
Tulare	2005	T6 OOS Class 5	Aggregate	Aggregate	Diesel	4.071887306	99988.96176	29194.45473	10.51767634
Tulare	2005	T6 OOS Class 6	Aggregate	Aggregate	Diesel	10.52441518	261274.0178	75457.53097	27.48054419
Tulare	2005	T6 OOS Class 7	Aggregate	Aggregate	Diesel	34.71861075	1899787.001	248924.1066	199.6436733
Tulare	2005	T6 Public Class 4	Aggregate	Aggregate	Diesel	26.91160986	331253.7511	43073.64628	45.04768297
Tulare	2005	T6 Public Class 5	Aggregate	Aggregate	Diesel	44.05368675	700127.6857	70510.56886	92.69567738
Tulare	2005	T6 Public Class 6	Aggregate	Aggregate	Diesel	35.63274409	851561.5685	57032.34488	113.3929619
Tulare	2005	T6 Public Class 7	Aggregate	Aggregate	Diesel	75.72195931	1453617.604	121197.5392	196.0724175
Tulare	2005	T6 Utility Class 5	Aggregate	Aggregate	Diesel	18.75285588	247682.6963	74891.40526	30.8153898
Tulare	2005	T6 Utility Class 6	Aggregate	Aggregate	Diesel	5.112441278	46807.01585	20417.04549	5.972498178
Tulare	2005	T6 Utility Class 7	Aggregate	Aggregate	Diesel	8.324702836	65124.10723	33245.53325	8.355605476
Tulare	2005	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	520.8607789	55231957.87	3734446.778	9390.280267
Tulare	2005	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	464.7231402	65301202.16	3331953.381	11040.68832
Tulare	2005	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	192.428301	23722766.8	1379664.735	4052.764369
Tulare	2005	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	17.3163649	869291.3326	88388.26767	153.2357046
Tulare	2005	T7 POAK Class 8	Aggregate	Aggregate	Diesel	47.42321007	2272106.431	242063.2396	402.6368893
Tulare	2005	T7 POLA Class 8	Aggregate	Aggregate	Diesel	59	3020940.142	301154.88	544.6506542
Tulare	2005	T7 Public Class 8	Aggregate	Aggregate	Diesel	241.21	4098284.024	386071.0776	837.3254026
Tulare	2005	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	83.87990959	331228.0748	246526.4095	62.60851053
Tulare	2005	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	205.6236776	2159409.793	604336.2133	382.7601593
Tulare	2005	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	437.800452	10480468.12	1286713.04	1819.444302
Tulare	2005	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	109.2050148	4459160.262	156731.0372	1914.567466
Tulare	2005	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1441.758188	36389639.32	6536008.899	6197.35933
Tulare	2005	T7 Utility Class 8	Aggregate	Aggregate	Diesel	11.85989757	195573.3202	47363.68692	37.12694429
Tulare	2006	PTO	Aggregate	Aggregate	Diesel	0	2584452.442	0	581.9970239
Tulare	2006	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	5.854099986	126319.7718	41972.49192	13.28762002
Tulare	2006	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	7.587850229	173288.0116	54403.06506	18.21876055
Tulare	2006	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	19.61669083	452806.5323	140646.9652	47.60164277
Tulare	2006	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	64.21005279	2840231.443	460370.6681	298.3485206
Tulare	2006	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	202.9054053	631835.7623	903383.5615	94.65073069
Tulare	2006	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	148.2522327	443725.4541	660054.5206	66.86322491
Tulare	2006	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	501.8102461	2699138.109	2234179.65	379.4856736
Tulare	2006	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	149.2287144	822746.7095	664402.0513	117.2383407
Tulare	2006	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	406.3776368	4378611.742	1465690.35	544.177273
Tulare	2006	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	646.405764	10889695.51	2331404.597	1326.517043
Tulare	2006	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	643.2294035	9646059.13	2319948.354	1181.00824
Tulare	2006	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	490.317417	6922959.714	1768437.634	858.7032629
Tulare	2006	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	7.35677473	181984.7609	26533.82656	21.9279869
Tulare	2006	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	274.0212827	5784808.515	988318.0406	711.6945115
Tulare	2006	T6 OOS Class 4	Aggregate	Aggregate	Diesel	3.361602045	73139.059	24101.87988	7.697239674
Tulare	2006	T6 OOS Class 5	Aggregate	Aggregate	Diesel	4.35999254	100333.6368	31260.10011	10.55385433
Tulare	2006	T6 OOS Class 6	Aggregate	Aggregate	Diesel	11.2690672	262174.6636	80796.50722	27.57487977
Tulare	2006	T6 OOS Class 7	Aggregate	Aggregate	Diesel	36.89375262	1906335.815	264519.3518	200.286764
Tulare	2006	T6 Public Class 4	Aggregate	Aggregate	Diesel	27.34122968	332395.6261	43761.27858	45.07015215
Tulare	2006	T6 Public Class 5	Aggregate	Aggregate	Diesel	46.46079162	702541.1174	74363.28463	93.18912982
Tulare	2006	T6 Public Class 6	Aggregate	Aggregate	Diesel	37.92181939	854497.0127	60696.14724	114.1369269
Tulare	2006	T6 Public Class 7	Aggregate	Aggregate	Diesel	85.51615932	1458628.414	136873.744	197.985606
Tulare	2006	T6 Utility Class 5	Aggregate	Aggregate	Diesel	18.76556784	248536.491	74942.17174	30.91814113
Tulare	2006	T6 Utility Class 6	Aggregate	Aggregate	Diesel	4.988822735	46968.36576	19923.36247	5.960880274
Tulare	2006	T6 Utility Class 7	Aggregate	Aggregate	Diesel	7.345609424	65348.59856	29335.4258	8.340727955
Tulare	2006	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	564.5842361	55422349.66	4047933.473	9456.5946
Tulare	2006	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	510.2117287	65526303.95	3658095.644	11131.42149

Tulare	2006	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	210.7297167	23804542.28	1510881.494	4084.988773
Tulare	2006	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	17.54661472	872287.8937	89563.53644	153.6708998
Tulare	2006	T7 POAK Class 8	Aggregate	Aggregate	Diesel	51.17424949	2279938.679	261209.7452	404.1504939
Tulare	2006	T7 POLA Class 8	Aggregate	Aggregate	Diesel	63	3031353.718	321572.16	543.9611787
Tulare	2006	T7 Public Class 8	Aggregate	Aggregate	Diesel	239.26	4112411.346	382949.9856	836.6121482
Tulare	2006	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	91.63479696	332369.8613	269318.3337	63.28816773
Tulare	2006	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	224.6340517	2166853.561	660208.4632	384.7933898
Tulare	2006	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	473.6034687	10516595.67	1391939.539	1824.201437
Tulare	2006	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	117.5912887	4379965.012	168767.0175	1874.612745
Tulare	2006	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1601.525808	36515079.17	7260293.037	6214.626648
Tulare	2006	T7 Utility Class 8	Aggregate	Aggregate	Diesel	11.20191805	196247.487	44735.97993	37.13330159
Tulare	2007	PTO	Aggregate	Aggregate	Diesel	0	2672834.073	0	602.2832261
Tulare	2007	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	5.74152114	130639.5833	41165.32861	13.73286551
Tulare	2007	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	7.441930033	179214.0162	53356.85227	18.82960863
Tulare	2007	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	19.23944678	468291.3518	137942.2159	49.19783067
Tulare	2007	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	65.481539	2937360.058	469486.919	308.215753
Tulare	2007	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	195.4918747	653442.9213	870376.744	97.02497515
Tulare	2007	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	142.8355586	458899.7241	635938.1872	68.5206676
Tulare	2007	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	483.4756649	2791441.694	2152549.694	390.2585711
Tulare	2007	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	147.1011302	850882.5322	654929.536	120.8510472
Tulare	2007	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	391.7397704	4528349.009	1412895.665	560.6527306
Tulare	2007	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	622.9518925	11262095.11	2246813.05	1368.171109
Tulare	2007	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	620.5491235	9975929.558	2238146.935	1217.723195
Tulare	2007	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	483.6525847	7159707.141	1744399.45	887.170735
Tulare	2007	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	7.107530434	188208.172	25634.87217	22.63822994
Tulare	2007	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	270.4696818	5982634.097	975508.4106	735.4460871
Tulare	2007	T6 OOS Class 4	Aggregate	Aggregate	Diesel	3.420837323	75640.22682	24526.5826	7.958356682
Tulare	2007	T6 OOS Class 5	Aggregate	Aggregate	Diesel	4.436820603	103764.7893	31810.93888	10.91191327
Tulare	2007	T6 OOS Class 6	Aggregate	Aggregate	Diesel	11.46764107	271140.3632	82220.23422	28.51042589
Tulare	2007	T6 OOS Class 7	Aggregate	Aggregate	Diesel	38.14864217	1971527.6	273516.6087	207.06208
Tulare	2007	T6 Public Class 4	Aggregate	Aggregate	Diesel	28.27815742	343762.7022	45260.88764	46.54213755
Tulare	2007	T6 Public Class 5	Aggregate	Aggregate	Diesel	50.08196195	726566.2179	80159.18502	96.59998929
Tulare	2007	T6 Public Class 6	Aggregate	Aggregate	Diesel	42.95688747	883718.6142	68755.07581	118.1094263
Tulare	2007	T6 Public Class 7	Aggregate	Aggregate	Diesel	94.94299317	1508509.756	151961.9572	204.8288651
Tulare	2007	T6 Utility Class 5	Aggregate	Aggregate	Diesel	20.3694005	257035.8001	81347.23782	32.08133399
Tulare	2007	T6 Utility Class 6	Aggregate	Aggregate	Diesel	5.631558734	48574.56314	22490.19296	6.186200683
Tulare	2007	T6 Utility Class 7	Aggregate	Aggregate	Diesel	9.149040768	67583.35266	36537.60921	8.727699511
Tulare	2007	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	570.0857478	57317651.57	4087377.991	9766.671096
Tulare	2007	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	503.4289033	67767135.12	3609464.414	11497.19169
Tulare	2007	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	215.7197981	24618596.44	1546659.18	4221.672394
Tulare	2007	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	16.87598072	902117.8975	86140.40589	159.0263822
Tulare	2007	T7 POAK Class 8	Aggregate	Aggregate	Diesel	51.07422665	2357906.722	260699.1966	418.1316573
Tulare	2007	T7 POLA Class 8	Aggregate	Aggregate	Diesel	63	3135018.223	321572.16	560.1653854
Tulare	2007	T7 Public Class 8	Aggregate	Aggregate	Diesel	256.29	4253045.243	410207.5224	864.7883806
Tulare	2007	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	90.83006632	343704.4436	266953.1981	65.16318139
Tulare	2007	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	222.6613305	2240746.662	654410.5568	397.2239079
Tulare	2007	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	469.888162	10875322.87	1381020.104	1884.227361
Tulare	2007	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	122.5012817	4476103.824	175813.8396	1910.86518
Tulare	2007	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1569.645808	37763801.02	7115769.521	6411.243758
Tulare	2007	T7 Utility Class 8	Aggregate	Aggregate	Diesel	12.09191805	202958.6466	48290.28393	38.43193943
Tulare	2008	PTO	Aggregate	Aggregate	Diesel	0	2461072.165	0	555.8909189
Tulare	2008	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	5.516363449	120289.3384	39551.002	12.6541682
Tulare	2008	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	7.15008964	165015.3414	51264.4267	17.35006496
Tulare	2008	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	18.48495867	431189.8082	132532.7173	45.33185249
Tulare	2008	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	61.03133732	2704640.424	437580.041	283.815748
Tulare	2008	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	196.6347813	601672.2854	875465.2388	90.73758683
Tulare	2008	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	143.6706199	422542.2555	639656.0808	64.1115873
Tulare	2008	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	486.3022149	2570282.804	2165134.173	362.992069
Tulare	2008	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	149.2137556	783469.2536	664335.4514	112.3540403
Tulare	2008	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	393.9964165	4169579.33	1421034.755	519.3690825
Tulare	2008	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	626.5676577	10369827.7	2259854.102	1265.148936
Tulare	2008	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	624.045628	9185561.801	2250757.848	1126.255697
Tulare	2008	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	490.2705574	6592461.588	1768268.625	822.0707615
Tulare	2008	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	7.145955172	173296.9128	25773.45944	20.9145165
Tulare	2008	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	273.9963119	5508645.075	988227.978	680.0810311
Tulare	2008	T6 OOS Class 4	Aggregate	Aggregate	Diesel	3.139469751	69647.44228	22509.24464	7.326052409
Tulare	2008	T6 OOS Class 5	Aggregate	Aggregate	Diesel	4.071887306	95543.76654	29194.45473	10.0448792
Tulare	2008	T6 OOS Class 6	Aggregate	Aggregate	Diesel	10.52441518	249658.5955	75457.53098	26.24502488

Tulare	2008	T6 OOS Class 7	Aggregate	Aggregate	Diesel	35.38788517	1815328.437	253722.6436	190.5669552
Tulare	2008	T6 Public Class 4	Aggregate	Aggregate	Diesel	30.82289563	316520.6726	49333.89383	43.39398219
Tulare	2008	T6 Public Class 5	Aggregate	Aggregate	Diesel	55.6248437	668976.129	89030.89983	90.23982796
Tulare	2008	T6 Public Class 6	Aggregate	Aggregate	Diesel	47.60916525	813512.9621	76201.32553	109.5715916
Tulare	2008	T6 Public Class 7	Aggregate	Aggregate	Diesel	102.1412398	1388672.276	163483.1827	190.4491388
Tulare	2008	T6 Utility Class 5	Aggregate	Aggregate	Diesel	24.12847354	236671.5015	96359.47193	30.16266547
Tulare	2008	T6 Utility Class 6	Aggregate	Aggregate	Diesel	6.293393961	44726.12292	25133.29812	5.794376568
Tulare	2008	T6 Utility Class 7	Aggregate	Aggregate	Diesel	9.8481325	62228.89395	39329.50195	8.168620908
Tulare	2008	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	538.4281577	52776518.48	3860400.668	8704.553524
Tulare	2008	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	459.5762605	62398115.79	3295051.49	10286.32996
Tulare	2008	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	205.8349977	22668127.09	1475787.533	3747.563087
Tulare	2008	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	14.34341418	830645.37	73213.37585	146.5778586
Tulare	2008	T7 POAK Class 8	Aggregate	Aggregate	Diesel	47.8033069	2171095.715	244003.3755	386.2489579
Tulare	2008	T7 POLA Class 8	Aggregate	Aggregate	Diesel	59	2886638.63	301154.88	515.4515224
Tulare	2008	T7 Public Class 8	Aggregate	Aggregate	Diesel	268.9376112	3911827.492	430450.7829	799.3755471
Tulare	2008	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	87.68240405	316155.4108	257702.0928	58.41406059
Tulare	2008	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	214.9451337	2061125.004	631732.3457	361.8602118
Tulare	2008	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	455.3559323	10004570.35	1338309.299	1726.460575
Tulare	2008	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	126.3091448	4089446.915	181278.8846	1742.875593
Tulare	2008	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1651.493503	34769824.52	7486814.586	5888.358626
Tulare	2008	T7 Utility Class 8	Aggregate	Aggregate	Diesel	14.21393854	186878.7445	56764.78495	35.91762217
Tulare	2009	PTO	Aggregate	Aggregate	Diesel	0	2229792.818	0	504.8004248
Tulare	2009	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.615732683	108985.1434	33093.69556	11.45947282
Tulare	2009	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	5.982728066	149508.0186	42894.72438	15.71259171
Tulare	2009	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	15.46700623	390668.7301	110894.7226	41.0537698
Tulare	2009	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	55.30964944	2450471.74	396556.9122	257.0779206
Tulare	2009	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	192.7817132	545130.1103	858310.4547	83.38156033
Tulare	2009	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	140.8553871	382833.8315	627121.9888	58.94199643
Tulare	2009	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	476.7730994	2328740.383	2122708.264	331.7963077
Tulare	2009	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	146.0814537	709842.7017	650389.6912	102.4719991
Tulare	2009	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	386.3886114	3777742.959	1393595.532	473.0545218
Tulare	2009	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	614.3778701	9395322.757	2215888.952	1150.250749
Tulare	2009	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	612.2579027	8322348.293	2208242.823	1024.269446
Tulare	2009	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	480.4583642	5972934.768	1732878.791	747.478253
Tulare	2009	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	7.016414294	157011.3291	25306.24176	18.99978121
Tulare	2009	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	268.7675239	4990969.951	969369.2037	617.2831396
Tulare	2009	T6 OOS Class 4	Aggregate	Aggregate	Diesel	2.7988669	63102.32133	20067.20395	6.640092986
Tulare	2009	T6 OOS Class 5	Aggregate	Aggregate	Diesel	3.630125948	86565.03757	26027.13181	9.104390337
Tulare	2009	T6 OOS Class 6	Aggregate	Aggregate	Diesel	9.38261542	226196.9198	67271.10074	23.78775838
Tulare	2009	T6 OOS Class 7	Aggregate	Aggregate	Diesel	31.45589793	1644732.881	225531.2388	172.3693596
Tulare	2009	T6 Public Class 4	Aggregate	Aggregate	Diesel	33.75174056	286682.475	54021.68587	39.91869827
Tulare	2009	T6 Public Class 5	Aggregate	Aggregate	Diesel	58.73346981	605865.9967	94006.44244	83.05772394
Tulare	2009	T6 Public Class 6	Aggregate	Aggregate	Diesel	45.85029941	736840.8766	73386.15522	99.39229849
Tulare	2009	T6 Public Class 7	Aggregate	Aggregate	Diesel	101.8713974	1257471.725	163051.2839	173.2310108
Tulare	2009	T6 Utility Class 5	Aggregate	Aggregate	Diesel	24.49423113	214430.2884	97820.16142	27.71788619
Tulare	2009	T6 Utility Class 6	Aggregate	Aggregate	Diesel	5.948294489	40522.98388	23755.10887	5.272347761
Tulare	2009	T6 Utility Class 7	Aggregate	Aggregate	Diesel	8.017474386	56380.93136	32018.58571	7.356137072
Tulare	2009	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	505.7962333	47816843.22	3626437.601	7903.402244
Tulare	2009	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	435.5724291	56534250.57	3122949.78	9362.413541
Tulare	2009	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	193.9397441	20537889.02	1390501.42	3403.53271
Tulare	2009	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	11.1482227	752585.4409	56904.09607	132.526567
Tulare	2009	T7 POAK Class 8	Aggregate	Aggregate	Diesel	43.78218492	1967066.915	223478.2821	350.8129123
Tulare	2009	T7 POLA Class 8	Aggregate	Aggregate	Diesel	51	2615366.659	260320.32	466.0351958
Tulare	2009	T7 Public Class 8	Aggregate	Aggregate	Diesel	272.959577	3502156.632	436888.1805	719.6904949
Tulare	2009	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	85.62445618	286144.6514	251653.7017	53.37109688
Tulare	2009	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	209.9002688	1865452.673	616905.2861	329.0654541
Tulare	2009	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	445.8547316	9055873.945	1310384.89	1566.262468
Tulare	2009	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	126.1613967	3615190.371	181066.8366	1539.925148
Tulare	2009	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1529.02567	31485003.07	6931623.812	5365.220549
Tulare	2009	T7 Utility Class 8	Aggregate	Aggregate	Diesel	12.98595903	169316.8077	51860.72597	32.59028071
Tulare	2010	PTO	Aggregate	Aggregate	Diesel	0	2241265.924	0	507.5191458
Tulare	2010	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	5.178626912	109545.9121	37129.51209	11.513557
Tulare	2010	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	6.71232905	150277.2925	48125.78833	15.78579723
Tulare	2010	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	17.35322651	392678.8648	124418.4693	41.24458808
Tulare	2010	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	58.48836491	2463080.321	419347.5392	257.7989088
Tulare	2010	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	188.0084219	547935.0057	837058.6162	83.45653778
Tulare	2010	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	137.367796	384803.6527	611594.396	58.98798006
Tulare	2010	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	464.9681576	2340722.61	2070149.83	332.5396452

Tulare	2010	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	144.3465857	713495.104	642665.6427	102.7490466
Tulare	2010	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	376.9638441	3797180.839	1359603.036	474.5525956
Tulare	2010	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	599.2768115	9443665.155	2161423.662	1154.438608
Tulare	2010	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	597.6549304	8365169.843	2155573.991	1027.834094
Tulare	2010	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	475.0237476	6003667.719	1713277.651	750.0792711
Tulare	2010	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	6.855935346	157819.2102	24727.43913	19.07719771
Tulare	2010	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	265.8714887	5016650.331	958924.0156	619.3643995
Tulare	2010	T6 OOS Class 4	Aggregate	Aggregate	Diesel	3.124660931	63427.00603	22403.06896	6.670480286
Tulare	2010	T6 OOS Class 5	Aggregate	Aggregate	Diesel	4.052680291	87010.44659	29056.74504	9.145509178
Tulare	2010	T6 OOS Class 6	Aggregate	Aggregate	Diesel	10.47477171	227360.7864	75101.59923	23.89492416
Tulare	2010	T6 OOS Class 7	Aggregate	Aggregate	Diesel	34.71861075	1653195.637	248924.1066	172.990404
Tulare	2010	T6 Public Class 4	Aggregate	Aggregate	Diesel	36.19003713	288151.1341	57924.32583	40.37089045
Tulare	2010	T6 Public Class 5	Aggregate	Aggregate	Diesel	61.89560921	608618.3476	99067.63628	83.87763232
Tulare	2010	T6 Public Class 6	Aggregate	Aggregate	Diesel	49.50930877	740560.3865	79242.61924	100.0255335
Tulare	2010	T6 Public Class 7	Aggregate	Aggregate	Diesel	114.5740753	1264124.898	183382.6819	175.269964
Tulare	2010	T6 Utility Class 5	Aggregate	Aggregate	Diesel	22.15993221	215533.6113	88497.90528	27.84489884
Tulare	2010	T6 Utility Class 6	Aggregate	Aggregate	Diesel	5.27618859	40731.48957	21070.98675	5.301051371
Tulare	2010	T6 Utility Class 7	Aggregate	Aggregate	Diesel	7.583879199	56671.03203	30286.97997	7.325939634
Tulare	2010	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	559.2651949	48062878.5	4009797.224	7974.472882
Tulare	2010	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	497.2055033	56825140.13	3564844.129	9457.243261
Tulare	2010	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	216.0774785	20643564.02	1549223.662	3436.433084
Tulare	2010	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	10.29683552	756457.7704	52558.34346	133.0837078
Tulare	2010	T7 POAK Class 8	Aggregate	Aggregate	Diesel	49.86388435	1977188.2	254521.2222	354.9247461
Tulare	2010	T7 POLA Class 8	Aggregate	Aggregate	Diesel	50.42167206	2626202.724	257368.3492	467.4887382
Tulare	2010	T7 Public Class 8	Aggregate	Aggregate	Diesel	274.1391032	3503503.126	438776.083	719.7074774
Tulare	2010	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	86.09854	287414.3305	253047.053	53.68198212
Tulare	2010	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	211.0624405	1873716.09	620320.9552	330.6210069
Tulare	2010	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	448.0434972	9096752.531	1316817.76	1572.624907
Tulare	2010	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	124.5640743	3585757.577	178774.3594	1523.933622
Tulare	2010	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1596.792386	31648432.01	7238834.732	5376.29702
Tulare	2010	T7 Utility Class 8	Aggregate	Aggregate	Diesel	10.35797951	170188.005	41365.62698	32.84048607
Tulare	2011	PTO	Aggregate	Aggregate	Diesel	0	2285809.851	0	517.7289219
Tulare	2011	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	5.291205757	111723.0768	37936.67539	11.67998832
Tulare	2011	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	6.858249245	153263.971	49172.00111	16.01394352
Tulare	2011	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	17.73047056	400483.1411	127123.2186	41.84066119
Tulare	2011	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	59.12410801	2512032.687	423905.6646	260.4639885
Tulare	2011	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	181.9558481	558824.9123	810111.1049	84.25394735
Tulare	2011	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	132.9455009	392451.4135	591905.2768	59.53782577
Tulare	2011	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	449.9993914	2387243.184	2003505.29	336.5902734
Tulare	2011	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	141.3008083	727675.4266	629105.1107	103.9834373
Tulare	2011	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	365.0131593	3872647.718	1316500.262	481.3601227
Tulare	2011	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	580.1285411	9631352.803	2092361.212	1172.025771
Tulare	2011	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	579.1382377	8531422.99	2088789.465	1043.344938
Tulare	2011	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	465.4825996	6122987.311	1678865.402	759.3384183
Tulare	2011	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	6.652446666	160955.7802	23993.51244	19.37518309
Tulare	2011	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	260.7871371	5116353.496	940586.1831	626.9152634
Tulare	2011	T6 OOS Class 4	Aggregate	Aggregate	Diesel	3.065425653	64687.58287	21978.36623	6.758859839
Tulare	2011	T6 OOS Class 5	Aggregate	Aggregate	Diesel	3.975852228	88739.73134	28505.90627	9.266845942
Tulare	2011	T6 OOS Class 6	Aggregate	Aggregate	Diesel	10.27619784	231879.4569	73677.87222	24.21202777
Tulare	2011	T6 OOS Class 7	Aggregate	Aggregate	Diesel	33.96567702	1686051.991	243525.7525	174.7256262
Tulare	2011	T6 Public Class 4	Aggregate	Aggregate	Diesel	37.1314137	293367.695	59431.05552	41.03853178
Tulare	2011	T6 Public Class 5	Aggregate	Aggregate	Diesel	61.67766523	619330.2851	98718.80387	84.74068931
Tulare	2011	T6 Public Class 6	Aggregate	Aggregate	Diesel	52.45931157	753553.898	83964.27573	101.398696
Tulare	2011	T6 Public Class 7	Aggregate	Aggregate	Diesel	121.4115348	1284816.969	194326.4462	177.7324221
Tulare	2011	T6 Utility Class 5	Aggregate	Aggregate	Diesel	23.25571212	219817.2232	92874.01194	27.91309337
Tulare	2011	T6 Utility Class 6	Aggregate	Aggregate	Diesel	6.046597208	41541.00551	24147.69061	5.422381813
Tulare	2011	T6 Utility Class 7	Aggregate	Aggregate	Diesel	10.50633932	57762.51994	41958.11673	7.484565605
Tulare	2011	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	570.9514333	49018101.76	4093584.749	8128.991285
Tulare	2011	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	515.9794544	57954508.51	3699448.853	9615.597978
Tulare	2011	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	221.5186737	21053843.5	1588235.726	3504.418254
Tulare	2011	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	11.41866181	771491.9522	58284.50386	135.8963915
Tulare	2011	T7 POAK Class 8	Aggregate	Aggregate	Diesel	50.13395625	2016483.727	255899.7556	361.5310084
Tulare	2011	T7 POLA Class 8	Aggregate	Aggregate	Diesel	54.44532541	2678397.058	277906.3634	477.894033
Tulare	2011	T7 Public Class 8	Aggregate	Aggregate	Diesel	275.9065837	3569819.927	441605.0416	731.9316338
Tulare	2011	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	77.64044607	292901.0705	228188.3766	54.19737221
Tulare	2011	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	190.328222	1909485.413	559382.2575	335.5871155
Tulare	2011	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	408.9938936	9271682.369	1202049.413	1599.383061
Tulare	2011	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	122.2058202	3615134.211	175389.7931	1532.825929

Tulare	2011	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1568.831175	32241059.64	7112076.496	5464.889699
Tulare	2011	T7 Utility Class 8	Aggregate	Aggregate	Diesel	11.05797951	173570.398	44161.14698	33.45593782
Tulare	2012	PTO	Aggregate	Aggregate	Diesel	0	2274227.819	0	515.6676768
Tulare	2012	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.95346922	111156.9842	35515.18548	11.5694999
Tulare	2012	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	6.420488653	152487.3936	46033.36273	15.86292716
Tulare	2012	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	16.59873839	398453.9223	119008.9706	41.44631446
Tulare	2012	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	57.85262181	2499304.401	414789.4138	256.7359901
Tulare	2012	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	182.5160637	555993.3874	812605.3194	83.5742833
Tulare	2012	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	133.3548208	390462.8909	593727.6672	59.06368361
Tulare	2012	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	451.3848742	2375147.198	2009673.792	333.4856718
Tulare	2012	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	144.6058047	723988.3484	643819.748	103.1423269
Tulare	2012	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	366.1192938	3853025.296	1320489.779	476.8315363
Tulare	2012	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	581.9008715	9582551.443	2098753.511	1160.509702
Tulare	2012	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	580.8521103	8488194.894	2094970.923	1033.303536
Tulare	2012	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	475.8357725	6091962.583	1716206.397	749.5241497
Tulare	2012	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	6.671281224	160140.229	24061.44342	19.1675823
Tulare	2012	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	266.304206	5090429.307	960484.7057	617.8998234
Tulare	2012	T6 OOS Class 4	Aggregate	Aggregate	Diesel	2.961763916	64359.81562	21235.13645	6.684563432
Tulare	2012	T6 OOS Class 5	Aggregate	Aggregate	Diesel	3.841403119	88290.09361	27541.93843	9.165091154
Tulare	2012	T6 OOS Class 6	Aggregate	Aggregate	Diesel	9.928693565	230704.5406	71186.34997	23.9462215
Tulare	2012	T6 OOS Class 7	Aggregate	Aggregate	Diesel	32.96176538	1677508.889	236327.947	172.4298898
Tulare	2012	T6 Public Class 4	Aggregate	Aggregate	Diesel	37.76633839	291660.5576	60447.29057	40.712173
Tulare	2012	T6 Public Class 5	Aggregate	Aggregate	Diesel	61.86159474	613928.9419	99013.19408	83.25454997
Tulare	2012	T6 Public Class 6	Aggregate	Aggregate	Diesel	54.39547514	749617.9541	87063.2217	100.7525706
Tulare	2012	T6 Public Class 7	Aggregate	Aggregate	Diesel	125.4005201	1278560.313	200711.0564	176.7585636
Tulare	2012	T6 Utility Class 5	Aggregate	Aggregate	Diesel	23.31472067	218291.7496	93109.66846	27.12042445
Tulare	2012	T6 Utility Class 6	Aggregate	Aggregate	Diesel	5.818613442	41271.28226	23237.21464	5.353907432
Tulare	2012	T6 Utility Class 7	Aggregate	Aggregate	Diesel	9.522071292	57302.69597	38027.34391	7.34768511
Tulare	2012	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	614.9019624	48769730.63	4408699.494	8108.099328
Tulare	2012	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	557.8043875	57660857.26	3999323.585	9529.067648
Tulare	2012	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	238.6706087	20947165.21	1711210.983	3499.020103
Tulare	2012	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	14.40352544	767582.859	73520.20295	135.9600941
Tulare	2012	T7 POAK Class 8	Aggregate	Aggregate	Diesel	50.16396446	2006266.351	256052.9271	359.3274928
Tulare	2012	T7 POLA Class 8	Aggregate	Aggregate	Diesel	54.65331449	2664825.816	278968.0062	474.7796114
Tulare	2012	T7 Public Class 8	Aggregate	Aggregate	Diesel	282.4739591	3549645.851	452116.52	726.4446265
Tulare	2012	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	80.5529251	290631.8824	236748.269	54.17695868
Tulare	2012	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	197.4678893	1894657.564	580366.0253	333.487272
Tulare	2012	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	422.4403217	9202641.265	1241569.003	1586.172864
Tulare	2012	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	124.0382819	3560995.357	178019.7422	1531.717235
Tulare	2012	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1492.842668	32019846.89	6767593.238	5418.579681
Tulare	2012	T7 Utility Class 8	Aggregate	Aggregate	Diesel	11.01	172690.9295	43969.536	32.68013323
Tulare	2013	PTO	Aggregate	Aggregate	Diesel	0	2456164.252	0	556.0949206
Tulare	2013	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.554940105	120049.4553	32657.82737	12.25044069
Tulare	2013	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	5.90393116	164686.2649	42329.76947	16.79784402
Tulare	2013	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	15.26329444	430329.922	109434.1579	43.88965387
Tulare	2013	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	64.22276766	2699246.782	460461.8307	262.9221232
Tulare	2013	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	178.5495427	600472.42	794945.4159	88.2160169
Tulare	2013	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	130.4566939	421699.6143	580824.511	62.31642298
Tulare	2013	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	441.5751756	2565157.101	1965998.66	353.7621131
Tulare	2013	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	228.3547493	781906.8455	1016690.149	115.4497158
Tulare	2013	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	358.3101745	4161264.282	1292324.473	507.9761748
Tulare	2013	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	569.3698666	10349148	2053557.685	1238.347146
Tulare	2013	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	568.8061038	9167243.793	2051524.351	1102.463293
Tulare	2013	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	738.2764807	6579314.786	2662756.548	818.8404162
Tulare	2013	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	6.540039845	172951.3211	23588.09251	20.44743416
Tulare	2013	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	406.2057085	5497659.638	1465070.253	658.5565955
Tulare	2013	T6 OOS Class 4	Aggregate	Aggregate	Diesel	2.617310772	69508.55013	18765.49008	7.093341608
Tulare	2013	T6 OOS Class 5	Aggregate	Aggregate	Diesel	3.394647937	95353.23149	24338.81099	9.726495975
Tulare	2013	T6 OOS Class 6	Aggregate	Aggregate	Diesel	8.773986503	249160.722	62907.37747	25.41350054
Tulare	2013	T6 OOS Class 7	Aggregate	Aggregate	Diesel	36.8728378	1811708.277	264369.3975	176.5213164
Tulare	2013	T6 Public Class 4	Aggregate	Aggregate	Diesel	38.14999649	315101.2301	61061.35838	44.29755506
Tulare	2013	T6 Public Class 5	Aggregate	Aggregate	Diesel	60.39562918	663783.3861	96666.82824	90.09884811
Tulare	2013	T6 Public Class 6	Aggregate	Aggregate	Diesel	55.82005048	809664.9279	89343.33999	110.3292796
Tulare	2013	T6 Public Class 7	Aggregate	Aggregate	Diesel	126.0524931	1381039.716	201754.5784	192.5946019
Tulare	2013	T6 Utility Class 5	Aggregate	Aggregate	Diesel	27.79332895	235326.3558	110995.4385	28.63600393
Tulare	2013	T6 Utility Class 6	Aggregate	Aggregate	Diesel	5.872320768	44558.64071	23451.70022	5.62073176
Tulare	2013	T6 Utility Class 7	Aggregate	Aggregate	Diesel	9.186782714	61942.75814	36688.33545	7.606797042
Tulare	2013	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	650.2635689	52671270.63	4662233.726	8585.913478

Tulare	2013	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	564.9208761	62273680.38	4050347.101	10042.35686
Tulare	2013	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	243.0439792	22622921.92	1742567	3700.884949
Tulare	2013	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	14.43767082	828988.8825	73694.49193	148.5379716
Tulare	2013	T7 POAK Class 8	Aggregate	Aggregate	Diesel	51.05	2166766.078	260575.536	390.8840538
Tulare	2013	T7 POLA Class 8	Aggregate	Aggregate	Diesel	57.97182697	2823704.154	295906.7558	509.8701146
Tulare	2013	T7 Public Class 8	Aggregate	Aggregate	Diesel	302.0646056	3829073.679	483472.5251	794.6237558
Tulare	2013	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	108.8986873	312855.4756	320057.5979	59.76796012
Tulare	2013	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	266.9548486	2039384.689	784590.9783	361.6296937
Tulare	2013	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	554.6914499	9904527.232	1630260.359	1709.5349
Tulare	2013	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	173.6943905	3899661.896	249286.1892	1672.938021
Tulare	2013	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1595.576084	34522162.85	7233320.798	5696.450482
Tulare	2013	T7 Utility Class 8	Aggregate	Aggregate	Diesel	12.30393854	186506.0677	49137.00895	34.10269245
Tulare	2014	PTO	Aggregate	Aggregate	Diesel	0	2467367.003	0	557.2467354
Tulare	2014	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.512160143	120597.0099	32351.1053	12.4732351
Tulare	2014	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	5.848481484	165437.4114	41932.2086	17.10361153
Tulare	2014	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	15.1199417	432292.6893	108406.3532	44.68869664
Tulare	2014	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	59.42290728	2711558.251	426047.9837	272.7492898
Tulare	2014	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	188.5834659	603211.2202	839618.8502	88.99137601
Tulare	2014	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	137.7879502	423623.0182	613465.0233	62.88088872
Tulare	2014	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	466.3903128	2576856.976	2076481.606	355.8095426
Tulare	2014	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	236.8523505	785463.9908	1054523.509	116.6929483
Tulare	2014	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	378.4567243	4180244.123	1364987.437	511.4051579
Tulare	2014	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	601.3749688	10396351.25	2168991.128	1245.503458
Tulare	2014	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	600.8128672	9209056.285	2166963.784	1109.10633
Tulare	2014	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	766.2272	6609178.298	2763566.967	826.8357139
Tulare	2014	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	6.908560847	173740.1652	24917.24458	20.54466934
Tulare	2014	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	421.8425185	5522633.122	1521467.848	663.4474618
Tulare	2014	T6 OOS Class 4	Aggregate	Aggregate	Diesel	2.59287622	69825.58389	18590.30021	7.221919318
Tulare	2014	T6 OOS Class 5	Aggregate	Aggregate	Diesel	3.362956361	95788.14479	24111.59	9.902957176
Tulare	2014	T6 OOS Class 6	Aggregate	Aggregate	Diesel	8.692074782	250297.1629	62320.09009	25.87463595
Tulare	2014	T6 OOS Class 7	Aggregate	Aggregate	Diesel	34.09953191	1819971.616	244485.4599	182.9884591
Tulare	2014	T6 Public Class 4	Aggregate	Aggregate	Diesel	40.44327813	315577.3426	64731.89324	44.49722626
Tulare	2014	T6 Public Class 5	Aggregate	Aggregate	Diesel	61.51517945	663561.4005	98458.73562	89.6136498
Tulare	2014	T6 Public Class 6	Aggregate	Aggregate	Diesel	57.56679998	810585.8773	92139.11738	110.4451416
Tulare	2014	T6 Public Class 7	Aggregate	Aggregate	Diesel	133.0130437	1380118.633	212895.3572	192.8872621
Tulare	2014	T6 Utility Class 5	Aggregate	Aggregate	Diesel	26.85503853	236446.0277	107248.2819	28.3436274
Tulare	2014	T6 Utility Class 6	Aggregate	Aggregate	Diesel	6.084802557	44770.09591	24300.26749	5.550832289
Tulare	2014	T6 Utility Class 7	Aggregate	Aggregate	Diesel	9.058807561	62297.42278	36177.25387	7.610390677
Tulare	2014	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	701.1512647	52911508.28	5027086.291	8735.391338
Tulare	2014	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	641.5887152	62557715.34	4600037.106	10224.76925
Tulare	2014	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	261.7937255	22726106.77	1876998.181	3767.391737
Tulare	2014	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	14.94969693	832769.9635	76308.03703	149.0832992
Tulare	2014	T7 POAK Class 8	Aggregate	Aggregate	Diesel	54.85341356	2176648.862	279989.3759	393.9868436
Tulare	2014	T7 POLA Class 8	Aggregate	Aggregate	Diesel	60.61743167	2837862.268	309410.7688	512.3225795
Tulare	2014	T7 Public Class 8	Aggregate	Aggregate	Diesel	307.6423413	3843259.131	492400.0258	795.7362021
Tulare	2014	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	114.9467361	313564.4328	337833.0553	60.80218489
Tulare	2014	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	281.7810691	2043984.499	828165.8334	365.0731794
Tulare	2014	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	582.852364	9928401.92	1713026.412	1718.382299
Tulare	2014	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	170.7110965	3825944.248	245004.5657	1628.720679
Tulare	2014	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1580.795477	34619008.8	7166314.982	5750.877705
Tulare	2014	T7 Utility Class 8	Aggregate	Aggregate	Diesel	11.47191805	187356.736	45814.25193	33.84641175
Tulare	2015	PTO	Aggregate	Aggregate	Diesel	0	2466002.681	0	555.2390013
Tulare	2015	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.934330814	120530.3262	35377.9677	12.67366516
Tulare	2015	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	6.395682224	165345.9334	45855.50658	17.37797585
Tulare	2015	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	16.53460691	432053.6545	118549.1632	45.40533812
Tulare	2015	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	62.31553838	2710058.904	446787.4545	275.6285327
Tulare	2015	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	196.3511928	602877.6766	874202.6348	89.245761
Tulare	2015	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	143.4634168	423388.7773	638733.563	63.07413933
Tulare	2015	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	485.6008654	2575432.112	2162011.597	355.9703864
Tulare	2015	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	223.8508465	784986.8185	996637.6928	115.3338578
Tulare	2015	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	394.2882991	4177932.671	1422087.494	512.4505354
Tulare	2015	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	626.3351182	10390602.62	2259015.397	1247.067607
Tulare	2015	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	626.5110557	9203964.169	2259649.955	1110.776291
Tulare	2015	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	727.464822	6604858.312	2623761.923	822.3525479
Tulare	2015	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	7.215754596	173644.0961	26025.20642	20.56343523
Tulare	2015	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	402.2826243	5519114.472	1450920.787	659.6489621
Tulare	2015	T6 OOS Class 4	Aggregate	Aggregate	Diesel	2.835740861	69786.97407	20331.5814	7.338066023
Tulare	2015	T6 OOS Class 5	Aggregate	Aggregate	Diesel	3.677951417	95735.17906	26370.02895	10.06195407

Tulare	2015	T6 OOS Class 6	Aggregate	Aggregate	Diesel	9.506227655	250158.7619	68157.37079	26.28993437
Tulare	2015	T6 OOS Class 7	Aggregate	Aggregate	Diesel	35.77606434	1818965.269	256505.795	184.9188508
Tulare	2015	T6 Public Class 4	Aggregate	Aggregate	Diesel	43.32697804	314922.7081	69347.42797	44.65261681
Tulare	2015	T6 Public Class 5	Aggregate	Aggregate	Diesel	63.29082786	658732.025	101300.7674	89.31222693
Tulare	2015	T6 Public Class 6	Aggregate	Aggregate	Diesel	60.29828247	807572.0626	96511.01899	110.1874316
Tulare	2015	T6 Public Class 7	Aggregate	Aggregate	Diesel	144.3101577	1376687.919	230977.066	193.364389
Tulare	2015	T6 Utility Class 5	Aggregate	Aggregate	Diesel	27.67818357	236641.2164	110535.5939	28.51822573
Tulare	2015	T6 Utility Class 6	Aggregate	Aggregate	Diesel	6.898101345	44664.09945	27548.25753	5.552282511
Tulare	2015	T6 Utility Class 7	Aggregate	Aggregate	Diesel	10.73236373	62146.52084	42860.76781	7.767746475
Tulare	2015	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	748.6186994	52882251.04	5367416.407	8792.416992
Tulare	2015	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	697.9661787	62523124.27	5004249.989	10312.02508
Tulare	2015	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	278.4627839	22713540.45	1996511.329	3793.842018
Tulare	2015	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	15.01906693	832309.4862	76662.12371	148.425237
Tulare	2015	T7 POAK Class 8	Aggregate	Aggregate	Diesel	58.9015766	2175445.291	300652.4955	393.7027647
Tulare	2015	T7 POLA Class 8	Aggregate	Aggregate	Diesel	67.31796019	2839727.929	343612.4106	513.1727422
Tulare	2015	T7 Public Class 8	Aggregate	Aggregate	Diesel	314.0505017	3833223.556	502656.6711	794.038548
Tulare	2015	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	120.4767506	312625.5659	354085.9891	61.49784826
Tulare	2015	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	295.3373775	2037836.524	868008.366	365.5478514
Tulare	2015	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	608.4273402	9900313.863	1788192.29	1713.970118
Tulare	2015	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	172.5387775	3721280.243	247627.6535	1574.975399
Tulare	2015	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1605.744523	34543844.42	7279417.993	5753.421312
Tulare	2015	T7 Utility Class 8	Aggregate	Aggregate	Diesel	12.16191805	187253.1377	48569.83593	33.84136989
Tulare	2016	PTO	Aggregate	Aggregate	Diesel	0	2598259.308	0	577.9045393
Tulare	2016	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	5.409413545	126994.6073	38784.19686	13.72742622
Tulare	2016	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	7.011465456	174213.7645	50270.52456	18.82293532
Tulare	2016	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	18.12657681	455225.5511	129963.2054	49.18076796
Tulare	2016	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	59.18768233	2855404.752	424361.4773	294.8193098
Tulare	2016	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	203.0344197	635211.2051	903957.9646	93.55627559
Tulare	2016	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	148.3464967	446095.9592	660474.2064	66.11309408
Tulare	2016	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	502.1293147	2713557.657	2235600.22	373.6382754
Tulare	2016	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	200.1898076	827080.762	891293.0688	117.9698863
Tulare	2016	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	404.9500064	4402003.508	1460541.287	539.394899
Tulare	2016	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	645.5012491	10947871.3	2328142.265	1313.705703
Tulare	2016	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	637.0413294	9697591.068	2297629.704	1168.986337
Tulare	2016	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	643.2669582	6959079.501	2320083.803	848.7160696
Tulare	2016	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	7.204426469	182956.9743	25984.34903	21.64457031
Tulare	2016	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	351.7959916	5815088.782	1268829.639	681.6209249
Tulare	2016	T6 OOS Class 4	Aggregate	Aggregate	Diesel	3.1074827	73529.78825	22279.90517	7.947626614
Tulare	2016	T6 OOS Class 5	Aggregate	Aggregate	Diesel	4.030400153	100869.6471	28897.0018	10.8978159
Tulare	2016	T6 OOS Class 6	Aggregate	Aggregate	Diesel	10.41718529	263575.2737	74688.7184	28.47389519
Tulare	2016	T6 OOS Class 7	Aggregate	Aggregate	Diesel	33.96316724	1916519.993	243507.758	197.7801483
Tulare	2016	T6 Public Class 4	Aggregate	Aggregate	Diesel	43.55905192	330444.2009	69718.87615	46.59149769
Tulare	2016	T6 Public Class 5	Aggregate	Aggregate	Diesel	61.19476029	688615.6265	97945.88553	92.80520079
Tulare	2016	T6 Public Class 6	Aggregate	Aggregate	Diesel	61.34907041	848136.8461	98192.86814	115.3581673
Tulare	2016	T6 Public Class 7	Aggregate	Aggregate	Diesel	149.4179319	1443761.613	239152.365	202.6990411
Tulare	2016	T6 Utility Class 5	Aggregate	Aggregate	Diesel	28.13083139	249351.5389	112343.2882	30.21824749
Tulare	2016	T6 Utility Class 6	Aggregate	Aggregate	Diesel	7.308376984	47084.06959	29186.73432	5.746122181
Tulare	2016	T6 Utility Class 7	Aggregate	Aggregate	Diesel	12.02998081	65497.52529	48042.93138	8.187741634
Tulare	2016	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	781.4838364	55718431.31	5603051.551	9281.454923
Tulare	2016	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	731.1108883	65876363.74	5241889.602	10930.44041
Tulare	2016	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	290.2284852	23931712.79	2080868.584	4005.523179
Tulare	2016	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	15.07054421	876947.8989	76924.88022	155.0037041
Tulare	2016	T7 POAK Class 8	Aggregate	Aggregate	Diesel	63.24928156	2292118.748	322844.5728	413.0490364
Tulare	2016	T7 POLA Class 8	Aggregate	Aggregate	Diesel	75.09850216	2999907.711	383326.7866	539.611176
Tulare	2016	T7 Public Class 8	Aggregate	Aggregate	Diesel	317.4710621	4027875.831	508131.4831	832.0242945
Tulare	2016	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	72.20748679	327429.5815	212220.692	61.62806446
Tulare	2016	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	177.0098353	2134777.776	520238.9863	373.8542085
Tulare	2016	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	352.0905988	10368217.5	1034808.354	1766.324457
Tulare	2016	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	174.2858727	3834653.157	250135.0845	1615.734444
Tulare	2016	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1567.28471	36346999.99	7105065.813	6051.141075
Tulare	2016	T7 Utility Class 8	Aggregate	Aggregate	Diesel	12.09393854	197295.8958	48298.35295	35.53064207
Tulare	2017	PTO	Aggregate	Aggregate	Diesel	0	2740102.723	0	609.3187785
Tulare	2017	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	6.313857078	133927.4599	45268.83992	15.01551907
Tulare	2017	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	7.784475961	183724.3916	55812.82436	20.54190663
Tulare	2017	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	20.51023137	480077.0917	147053.4365	52.22500209
Tulare	2017	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	52.84423858	3011286.176	378880.508	311.3145048
Tulare	2017	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	74.57301362	669888.4701	332016.9541	89.64516968
Tulare	2017	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	47.19057289	470449.0998	210103.7562	61.59374444

Tulare	2017	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	299.8603125	2861695.406	1335050.078	374.9050922
Tulare	2017	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	76.21932999	868644.8731	339346.7497	115.9699529
Tulare	2017	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	433.7987712	4642316.4	1564590.704	577.2258787
Tulare	2017	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	705.7043524	11545534.3	2545278.002	1375.278249
Tulare	2017	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	959.1795454	10226999.13	3459492.05	1256.783398
Tulare	2017	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	654.7416049	7323069.018	2361469.641	906.8605816
Tulare	2017	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	18.83	192944.9081	67914.53759	24.23372098
Tulare	2017	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	450.6084825	6122019.445	1625218.626	698.129512
Tulare	2017	T6 OOS Class 4	Aggregate	Aggregate	Diesel	3.655718806	77543.90502	26210.62647	8.693974978
Tulare	2017	T6 OOS Class 5	Aggregate	Aggregate	Diesel	4.507206104	106376.2934	32315.58603	11.89374948
Tulare	2017	T6 OOS Class 6	Aggregate	Aggregate	Diesel	11.87540953	277964.2983	85143.83624	30.23823946
Tulare	2017	T6 OOS Class 7	Aggregate	Aggregate	Diesel	30.59677695	2021146.094	219371.5475	208.8203414
Tulare	2017	T6 Public Class 4	Aggregate	Aggregate	Diesel	34.31282302	343552.7342	54919.73201	47.131806
Tulare	2017	T6 Public Class 5	Aggregate	Aggregate	Diesel	53.42613595	720421.6655	85511.73616	95.33733824
Tulare	2017	T6 Public Class 6	Aggregate	Aggregate	Diesel	85.54949963	885828.1228	136927.1071	122.3214265
Tulare	2017	T6 Public Class 7	Aggregate	Aggregate	Diesel	112.3462542	1505789.193	179816.9206	206.9903958
Tulare	2017	T6 Utility Class 5	Aggregate	Aggregate	Diesel	20.86038814	262816.7572	83308.04606	30.74188661
Tulare	2017	T6 Utility Class 6	Aggregate	Aggregate	Diesel	4.426041805	49579.80712	17675.84055	5.980880672
Tulare	2017	T6 Utility Class 7	Aggregate	Aggregate	Diesel	5.945384227	69194.25309	23743.48645	8.339079008
Tulare	2017	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	783.5422564	58760195.67	5617809.929	9778.587565
Tulare	2017	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	774.226229	69472666.99	5551016.247	11612.16217
Tulare	2017	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	292.5352831	25238185.88	2097407.771	4220.850698
Tulare	2017	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	17.05414189	924821.983	87049.79751	162.6902763
Tulare	2017	T7 POAK Class 8	Aggregate	Aggregate	Diesel	67.86125599	2417249.426	346385.5662	433.7894162
Tulare	2017	T7 POLA Class 8	Aggregate	Aggregate	Diesel	76.85968977	3170415.917	392316.4517	565.198493
Tulare	2017	T7 Public Class 8	Aggregate	Aggregate	Diesel	304.7403836	4214026.046	487755.2683	865.3826002
Tulare	2017	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	15.66760259	342763.3811	46047.71071	57.9443835
Tulare	2017	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	107.2602476	2261858.882	315242.158	389.3630147
Tulare	2017	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	494.1101521	10904926.56	1452209.501	1874.533758
Tulare	2017	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	191.6040062	3951741.155	274990.0697	1655.764299
Tulare	2017	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1550.901589	38279895.32	7030795.226	6352.793557
Tulare	2017	T7 Utility Class 8	Aggregate	Aggregate	Diesel	13.86041421	208066.6158	55352.95018	37.35413269
Tulare	2018	PTO	Aggregate	Aggregate	Diesel	0	2677417.771	0	591.2110913
Tulare	2018	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	6.098166307	130863.6199	43722.38886	14.61828066
Tulare	2018	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	8.31389876	179521.3541	59608.65877	20.11590425
Tulare	2018	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	21.09847893	469094.4344	151271.0303	51.44758058
Tulare	2018	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	51.47166095	2942397.398	369039.4558	305.3340988
Tulare	2018	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	69.62469172	654563.5242	309985.8374	87.4323229
Tulare	2018	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	41.35574017	459686.7008	184125.6806	59.54907799
Tulare	2018	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	294.8834873	2796228.796	1312892.057	366.45629
Tulare	2018	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	74.44962081	843749.9495	331467.5798	112.2897044
Tulare	2018	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	426.2588061	4536114.77	1537396.161	563.731006
Tulare	2018	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	779.5500367	11281408.71	2811618.708	1348.791242
Tulare	2018	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	943.6511504	9993037.488	3403485.477	1224.143784
Tulare	2018	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	644.5737007	7080434.281	2324796.858	873.993416
Tulare	2018	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	17.89176282	188530.9341	64530.57881	23.34899454
Tulare	2018	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	414.4571856	5925390.263	1494831.021	671.8376304
Tulare	2018	T6 OOS Class 4	Aggregate	Aggregate	Diesel	3.530834001	75769.94383	25315.23239	8.463974214
Tulare	2018	T6 OOS Class 5	Aggregate	Aggregate	Diesel	4.813741532	103942.7377	34513.37149	11.6470944
Tulare	2018	T6 OOS Class 6	Aggregate	Aggregate	Diesel	12.21600445	271605.3474	87585.82007	29.78811295
Tulare	2018	T6 OOS Class 7	Aggregate	Aggregate	Diesel	29.80205547	1974908.614	213673.5852	204.7529207
Tulare	2018	T6 Public Class 4	Aggregate	Aggregate	Diesel	30.30797179	334677.5742	48509.72733	45.46317507
Tulare	2018	T6 Public Class 5	Aggregate	Aggregate	Diesel	55.53163991	679026.2892	88881.72157	90.26358328
Tulare	2018	T6 Public Class 6	Aggregate	Aggregate	Diesel	84.55763518	865268.8507	135339.5686	119.5217625
Tulare	2018	T6 Public Class 7	Aggregate	Aggregate	Diesel	114.4970682	1455370.865	183259.4275	200.7655615
Tulare	2018	T6 Utility Class 5	Aggregate	Aggregate	Diesel	20.22979094	256788.1788	80789.6931	29.9232357
Tulare	2018	T6 Utility Class 6	Aggregate	Aggregate	Diesel	4.226553978	48438.11894	16879.16597	5.819490137
Tulare	2018	T6 Utility Class 7	Aggregate	Aggregate	Diesel	5.076048627	67607.5518	20271.7078	8.052567399
Tulare	2018	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	838.9743994	57415946.8	6015245.09	9658.712
Tulare	2018	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	812.9138513	67883350.4	5828397.214	11480.27213
Tulare	2018	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	313.244856	24660815.39	2245890.439	4170.727567
Tulare	2018	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	17.65158058	903664.9583	90099.31581	158.7584167
Tulare	2018	T7 POAK Class 8	Aggregate	Aggregate	Diesel	72.82335963	2361950.345	371713.731	424.422036
Tulare	2018	T7 POLA Class 8	Aggregate	Aggregate	Diesel	77.0197072	3101680.977	393133.2319	551.7002446
Tulare	2018	T7 Public Class 8	Aggregate	Aggregate	Diesel	315.5187949	4100935.926	505006.7623	842.2130262
Tulare	2018	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	16.09991181	330312.8263	47318.28479	56.76973405
Tulare	2018	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	113.8994637	2194976.777	334755.0799	379.4739128
Tulare	2018	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	488.9174326	10644977.21	1436947.891	1829.655922

Tulare	2018	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	187.4460425	3852169.268	269022.5602	1610.45693
Tulare	2018	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1551.47574	37351631.46	7033398.06	6224.927031
Tulare	2018	T7 Utility Class 8	Aggregate	Aggregate	Diesel	13.11831949	203306.7046	52389.32072	36.32969555
Tulare	2019	PTO	Aggregate	Aggregate	Diesel	0	2686826.924	0	588.3855582
Tulare	2019	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	6.392290085	131323.5092	45831.18576	14.85774054
Tulare	2019	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	8.529589529	180152.2395	61155.10982	20.26821827
Tulare	2019	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	23.25538663	470742.9561	166735.5408	52.36981547
Tulare	2019	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	44.54994807	2952737.759	319412.4357	307.4979959
Tulare	2019	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	69.80181541	656863.8332	310774.4346	87.08080752
Tulare	2019	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	45.58989685	461302.1612	202977.1623	59.55205645
Tulare	2019	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	284.3140682	2806055.482	1265834.467	362.2481879
Tulare	2019	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	54.23532218	854636.4061	241468.6708	109.7498431
Tulare	2019	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	417.1984882	4552055.874	1504718.131	563.2991714
Tulare	2019	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	849.6809278	11321054.56	3064561.196	1358.847101
Tulare	2019	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	886.6701473	10028155.66	3197970.954	1220.973682
Tulare	2019	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	613.7776237	7095556.43	2213724.031	871.1390758
Tulare	2019	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	13.56588318	189193.4816	48928.3422	22.4777286
Tulare	2019	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	316.181054	5949762.962	1140376.531	665.4998843
Tulare	2019	T6 OOS Class 4	Aggregate	Aggregate	Diesel	3.701131461	76036.2194	26536.22431	8.602621317
Tulare	2019	T6 OOS Class 5	Aggregate	Aggregate	Diesel	4.938626336	104308.0199	35408.76556	11.73528412
Tulare	2019	T6 OOS Class 6	Aggregate	Aggregate	Diesel	13.46485249	272559.8403	96539.76079	30.3220863
Tulare	2019	T6 OOS Class 7	Aggregate	Aggregate	Diesel	25.79438858	1981848.964	184939.5755	206.170651
Tulare	2019	T6 Public Class 4	Aggregate	Aggregate	Diesel	31.27072542	335215.0155	50050.67228	45.45094735
Tulare	2019	T6 Public Class 5	Aggregate	Aggregate	Diesel	57.24385342	679296.8386	91622.22203	90.41752875
Tulare	2019	T6 Public Class 6	Aggregate	Aggregate	Diesel	85.43394405	867579.4474	136742.1535	119.9268972
Tulare	2019	T6 Public Class 7	Aggregate	Aggregate	Diesel	121.0554127	1458632.781	193756.4514	201.8841617
Tulare	2019	T6 Utility Class 5	Aggregate	Aggregate	Diesel	20.00701156	257698.6029	79900.00137	29.94022803
Tulare	2019	T6 Utility Class 6	Aggregate	Aggregate	Diesel	3.899393943	48592.07204	15572.61965	5.791723067
Tulare	2019	T6 Utility Class 7	Aggregate	Aggregate	Diesel	4.565144127	67833.96813	18231.35959	8.013962277
Tulare	2019	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	861.7571896	57617721.59	6178592.228	9764.836109
Tulare	2019	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	793.7159243	68121910.4	5690752.685	11524.07959
Tulare	2019	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	321.7368065	24747480	2306775.686	4216.931279
Tulare	2019	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	17.51478753	906840.6755	89401.08027	159.0969148
Tulare	2019	T7 POAK Class 8	Aggregate	Aggregate	Diesel	78.12768989	2370250.862	398788.7301	426.0300011
Tulare	2019	T7 POLA Class 8	Aggregate	Aggregate	Diesel	74.91295324	3115115.259	382379.6855	553.2367521
Tulare	2019	T7 Public Class 8	Aggregate	Aggregate	Diesel	334.494657	4101002.958	535378.7682	839.9211576
Tulare	2019	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	15.82986029	331181.9306	46524.59258	56.86410108
Tulare	2019	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	127.4394443	2195825.044	374549.6245	381.4034353
Tulare	2019	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	675.5931267	10716419.01	1985595.223	1860.438119
Tulare	2019	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	191.2188414	3852738.628	274437.2812	1610.024526
Tulare	2019	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1309.060158	37404385.26	5934440.96	6204.746431
Tulare	2019	T7 Utility Class 8	Aggregate	Aggregate	Diesel	12.74328238	204021.1781	50891.5725	36.3363601
Tulare	2020	PTO	Aggregate	Aggregate	Diesel	0	2731164.41	0	592.9046427
Tulare	2020	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	6.435896393	133953.2895	46143.83252	15.15735887
Tulare	2020	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	8.656538979	183759.8252	62065.30691	20.71918133
Tulare	2020	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	24.1851944	480169.6807	173402.0394	53.86298508
Tulare	2020	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	45.43801966	3011866.941	325779.6958	315.4426606
Tulare	2020	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	68.64792582	670017.6667	305637.0413	84.90602515
Tulare	2020	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	45.98886546	470539.832	204753.4663	59.51622982
Tulare	2020	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	277.2696231	2862247.321	1234470.907	359.9336719
Tulare	2020	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	54.40146953	870525.8205	242208.3987	105.233668
Tulare	2020	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	402.1166264	4643211.731	1450322.079	551.5681074
Tulare	2020	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	858.4030049	11547761.01	3096019.286	1364.846596
Tulare	2020	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	858.9248644	10228971.54	3097901.487	1207.326922
Tulare	2020	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	554.6190504	7250704.782	2000355.622	833.675896
Tulare	2020	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	13.09088291	192982.12	47215.14922	22.11696784
Tulare	2020	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	320.0583822	6066352.446	1154360.968	665.3555776
Tulare	2020	T6 OOS Class 4	Aggregate	Aggregate	Diesel	3.745172142	77558.86036	26851.98541	8.772286204
Tulare	2020	T6 OOS Class 5	Aggregate	Aggregate	Diesel	5.025969846	106396.8095	36034.99757	11.99346963
Tulare	2020	T6 OOS Class 6	Aggregate	Aggregate	Diesel	14.06697983	278017.9073	100856.8693	31.17929672
Tulare	2020	T6 OOS Class 7	Aggregate	Aggregate	Diesel	25.90238937	2021535.898	185713.9152	211.7119334
Tulare	2020	T6 Public Class 4	Aggregate	Aggregate	Diesel	31.3491968	335432.3356	50176.27043	45.33118837
Tulare	2020	T6 Public Class 5	Aggregate	Aggregate	Diesel	58.11840466	682076.2436	93021.99377	90.65694434
Tulare	2020	T6 Public Class 6	Aggregate	Aggregate	Diesel	82.91157765	863452.8137	132704.9547	117.6836667
Tulare	2020	T6 Public Class 7	Aggregate	Aggregate	Diesel	112.2408526	1446855.934	179648.219	196.0429295
Tulare	2020	T6 Utility Class 5	Aggregate	Aggregate	Diesel	20.31926973	260140.1151	81147.03559	30.36903576
Tulare	2020	T6 Utility Class 6	Aggregate	Aggregate	Diesel	3.945985095	49063.84629	15758.68607	5.850993208
Tulare	2020	T6 Utility Class 7	Aggregate	Aggregate	Diesel	4.608185711	68462.67755	18403.25045	8.089921263

Tulare	2020	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	886.9583722	58660439.47	6359278.659	9952.022691
Tulare	2020	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	818.8041461	69354724.4	5870629.215	11781.65841
Tulare	2020	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	331.1751757	25195339.43	2374446.528	4299.87795
Tulare	2020	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	18.20672285	946897.075	92932.93957	164.9194617
Tulare	2020	T7 POAK Class 8	Aggregate	Aggregate	Diesel	80.62746204	2431334.597	411548.367	433.5088836
Tulare	2020	T7 POLA Class 8	Aggregate	Aggregate	Diesel	79.390492	3264404.085	405234.4761	576.8346073
Tulare	2020	T7 Public Class 8	Aggregate	Aggregate	Diesel	316.389224	4089966.502	506399.9364	821.8722813
Tulare	2020	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	16.12443682	334230.2614	47390.36481	57.68862067
Tulare	2020	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	117.3437415	2200417.016	344877.9501	379.0583761
Tulare	2020	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	615.5500214	10758185.53	1809126.135	1845.928657
Tulare	2020	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	185.6277663	3752883.44	266412.9702	1552.563132
Tulare	2020	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1368.403015	38015479.92	6203463.49	6323.916202
Tulare	2020	T7 Utility Class 8	Aggregate	Aggregate	Diesel	13.3121157	205933.7544	53163.26527	36.70415231
Tulare	2021	PTO	Aggregate	Aggregate	Diesel	0	2755731.736	0	591.608914
Tulare	2021	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	6.46582606	136908.4479	46358.42105	15.62275985
Tulare	2021	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	8.731045489	187813.7711	62599.50071	21.33893853
Tulare	2021	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	25.29402199	490762.7572	181352.0671	55.4544814
Tulare	2021	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	46.51610214	3078312.071	333509.2885	323.3822873
Tulare	2021	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	66.36827233	684799.0006	295487.4768	85.19240446
Tulare	2021	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	45.57916586	480920.4633	202929.3854	59.9278476
Tulare	2021	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	275.3885642	2925391.676	1226095.981	362.2869038
Tulare	2021	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	54.03120863	889415.2238	240559.9083	106.2515998
Tulare	2021	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	388.5269121	4745646.139	1401307.785	563.7157468
Tulare	2021	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	855.3460625	11802517.44	3084993.751	1396.235516
Tulare	2021	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	828.534718	10454634.02	2988292.738	1234.561624
Tulare	2021	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	551.7902757	7414540.071	1990153.023	849.6578901
Tulare	2021	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	12.4978716	197239.5199	45076.32345	22.79838972
Tulare	2021	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	319.4768087	6201131.794	1152263.396	676.1485096
Tulare	2021	T6 OOS Class 4	Aggregate	Aggregate	Diesel	3.76934844	79269.89497	27025.32367	9.042627537
Tulare	2021	T6 OOS Class 5	Aggregate	Aggregate	Diesel	5.072119344	108744.0413	36365.87839	12.35471494
Tulare	2021	T6 OOS Class 6	Aggregate	Aggregate	Diesel	14.73092525	284151.2911	105617.1986	32.10699404
Tulare	2021	T6 OOS Class 7	Aggregate	Aggregate	Diesel	26.16593046	2066133.225	187603.4416	216.4500509
Tulare	2021	T6 Public Class 4	Aggregate	Aggregate	Diesel	31.32529085	335628.4091	50138.00753	44.95082611
Tulare	2021	T6 Public Class 5	Aggregate	Aggregate	Diesel	58.90517015	684399.8648	94281.25914	90.4455638
Tulare	2021	T6 Public Class 6	Aggregate	Aggregate	Diesel	82.09608639	862414.6519	131399.712	116.4759514
Tulare	2021	T6 Public Class 7	Aggregate	Aggregate	Diesel	108.8513265	1445516.944	174223.0792	192.9227156
Tulare	2021	T6 Utility Class 5	Aggregate	Aggregate	Diesel	20.57177261	262472.9481	82155.43111	30.3958608
Tulare	2021	T6 Utility Class 6	Aggregate	Aggregate	Diesel	3.947390271	49484.2457	15764.29779	5.761550103
Tulare	2021	T6 Utility Class 7	Aggregate	Aggregate	Diesel	4.525539927	68999.81215	18073.19625	7.940071601
Tulare	2021	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	909.2824534	59415655.46	6519336.963	10015.44266
Tulare	2021	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	826.7672907	70247622.53	5927723.05	11891.79354
Tulare	2021	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	339.6621015	25519713.46	2435295.749	4327.942661
Tulare	2021	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	18.74391152	987629.1543	95674.92242	170.4732569
Tulare	2021	T7 POAK Class 8	Aggregate	Aggregate	Diesel	82.42065706	2493992.52	420701.4082	440.4684302
Tulare	2021	T7 POLA Class 8	Aggregate	Aggregate	Diesel	83.61016768	3416876.543	426773.0511	600.6179089
Tulare	2021	T7 Public Class 8	Aggregate	Aggregate	Diesel	314.5816322	4105436.506	503506.7773	816.6886293
Tulare	2021	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	15.4015336	330802.9158	45265.7233	56.78281905
Tulare	2021	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	116.8474922	2180878.051	343419.4535	376.201048
Tulare	2021	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	622.8660404	10878726.25	1830628.208	1863.402697
Tulare	2021	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	181.3347043	3666677.642	260251.5676	1502.907061
Tulare	2021	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1435.469438	38479147.61	6507499.732	6394.42394
Tulare	2021	T7 Utility Class 8	Aggregate	Aggregate	Diesel	13.77670432	207786.8151	55018.64638	36.75407882
Tulare	2022	PTO	Aggregate	Aggregate	Diesel	0	2788815.797	0	590.7395033
Tulare	2022	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	6.640353859	139928.8002	47609.74348	15.86326137
Tulare	2022	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	8.937132837	191957.1513	64077.09753	21.70342032
Tulare	2022	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	27.04738773	501589.5284	193923.2786	56.16615801
Tulare	2022	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	47.95431366	3146223.053	343820.9199	329.7621401
Tulare	2022	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	66.65869186	699906.4267	296780.4943	86.63023175
Tulare	2022	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	46.19181461	491530.1026	205657.0447	60.92984493
Tulare	2022	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	279.3646771	2989929.063	1243798.59	368.7816218
Tulare	2022	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	53.95774329	906810.1715	240232.823	107.1519497
Tulare	2022	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	385.7129703	4850340.36	1391158.684	575.2254992
Tulare	2022	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	873.2031543	12062894.08	3149399.281	1425.510516
Tulare	2022	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	823.6488067	10685274.85	2970670.624	1260.339045
Tulare	2022	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	557.999286	7560157.528	2012547.185	864.597973
Tulare	2022	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	12.76234812	201590.8427	46030.2162	23.33611268
Tulare	2022	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	326.1754408	6322207.229	1176423.486	686.8645219
Tulare	2022	T6 OOS Class 4	Aggregate	Aggregate	Diesel	3.876568431	81018.67684	27794.06527	9.181271529

Tulare	2022	T6 OOS Class 5	Aggregate	Aggregate	Diesel	5.196946126	111143.0555	37260.85645	12.56500438
Tulare	2022	T6 OOS Class 6	Aggregate	Aggregate	Diesel	15.76284982	290419.984	113015.8501	32.51772658
Tulare	2022	T6 OOS Class 7	Aggregate	Aggregate	Diesel	26.64143797	2111714.418	191012.7163	220.9684825
Tulare	2022	T6 Public Class 4	Aggregate	Aggregate	Diesel	31.2546785	335845.7318	50024.98822	44.5781217
Tulare	2022	T6 Public Class 5	Aggregate	Aggregate	Diesel	59.62256114	686390.0005	95429.48645	90.15050045
Tulare	2022	T6 Public Class 6	Aggregate	Aggregate	Diesel	81.49045054	862183.147	130430.3555	115.2085829
Tulare	2022	T6 Public Class 7	Aggregate	Aggregate	Diesel	106.1271952	1444735.473	169862.9435	189.6896001
Tulare	2022	T6 Utility Class 5	Aggregate	Aggregate	Diesel	20.82088145	264732.05	83150.27217	30.48194517
Tulare	2022	T6 Utility Class 6	Aggregate	Aggregate	Diesel	3.967334128	49925.36795	15843.94557	5.772257851
Tulare	2022	T6 Utility Class 7	Aggregate	Aggregate	Diesel	4.532027696	69594.31985	18099.10581	7.953937702
Tulare	2022	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	935.6395261	60180594.32	6708310.848	10062.1929
Tulare	2022	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	839.4569044	71152016.1	6018704.535	11898.56789
Tulare	2022	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	349.6714673	25848263.58	2507060.499	4348.654441
Tulare	2022	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	19.10755144	1028972.669	97531.05696	175.8695165
Tulare	2022	T7 POAK Class 8	Aggregate	Aggregate	Diesel	83.47633106	2558265.202	426089.9062	447.14521
Tulare	2022	T7 POLA Class 8	Aggregate	Aggregate	Diesel	87.67695196	3571987.59	447531.2194	624.6327428
Tulare	2022	T7 Public Class 8	Aggregate	Aggregate	Diesel	313.9770948	4121807.978	502539.1789	811.4186609
Tulare	2022	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	15.19525361	333514.0596	44659.45816	57.0505895
Tulare	2022	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	117.3597671	2195559.52	344925.05	379.4394055
Tulare	2022	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	635.7482305	11014405.63	1868489.479	1882.360866
Tulare	2022	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	176.8904114	3576868.266	253873.1185	1450.619094
Tulare	2022	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1513.68575	38966027.83	6862082.43	6456.574801
Tulare	2022	T7 Utility Class 8	Aggregate	Aggregate	Diesel	14.23524231	209556.1288	56849.86367	36.83074486
Tulare	2023	PTO	Aggregate	Aggregate	Diesel	0	2818702.703	0	587.1227459
Tulare	2023	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	6.747487713	142918.0992	48377.8675	16.14721655
Tulare	2023	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	9.051314684	196078.1069	64895.75397	22.12533565
Tulare	2023	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	28.61914505	512039.7083	205192.4014	56.97161853
Tulare	2023	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	49.37615857	3213794.029	354015.2067	335.6962572
Tulare	2023	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	67.95002492	715011.59	302529.819	87.45285364
Tulare	2023	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	46.94267625	502162.9272	209000.0609	61.0488068
Tulare	2023	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	286.1497092	3054281.181	1274007.181	371.6942296
Tulare	2023	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	54.40259805	924545.7998	242213.4232	108.0800957
Tulare	2023	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	384.7410694	4955388.031	1387653.31	580.7850114
Tulare	2023	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	897.770931	12325682.15	3238008.372	1447.765699
Tulare	2023	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	835.691074	10915502.37	3014103.71	1278.011214
Tulare	2023	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	565.1523525	7706847.621	2038346.293	879.4584878
Tulare	2023	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	12.98318725	206037.4349	46826.7211	23.87758901
Tulare	2023	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	335.1532138	6444635.44	1208803.799	696.6933952
Tulare	2023	T6 OOS Class 4	Aggregate	Aggregate	Diesel	3.944451134	82806.03888	28280.76796	9.349265435
Tulare	2023	T6 OOS Class 5	Aggregate	Aggregate	Diesel	5.268837367	113594.9949	37776.2994	12.81387917
Tulare	2023	T6 OOS Class 6	Aggregate	Aggregate	Diesel	16.71381747	296826.9716	119834.06	32.99536644
Tulare	2023	T6 OOS Class 7	Aggregate	Aggregate	Diesel	27.13116414	2158301.184	194523.9354	224.2552201
Tulare	2023	T6 Public Class 4	Aggregate	Aggregate	Diesel	31.1673156	336023.0536	49885.15866	44.21348137
Tulare	2023	T6 Public Class 5	Aggregate	Aggregate	Diesel	60.28643502	687996.8787	96492.05643	89.79392288
Tulare	2023	T6 Public Class 6	Aggregate	Aggregate	Diesel	80.78258061	861501.9712	129297.3672	113.9360729
Tulare	2023	T6 Public Class 7	Aggregate	Aggregate	Diesel	104.0785477	1444408.114	166583.9603	186.9684874
Tulare	2023	T6 Utility Class 5	Aggregate	Aggregate	Diesel	20.99158257	266768.026	83831.98416	30.25897851
Tulare	2023	T6 Utility Class 6	Aggregate	Aggregate	Diesel	3.986203266	50311.55316	15919.30136	5.689706252
Tulare	2023	T6 Utility Class 7	Aggregate	Aggregate	Diesel	4.544869852	70068.01691	18150.39224	7.886749229
Tulare	2023	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	954.1281203	60886931.1	6840869.632	10082.09875
Tulare	2023	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	854.4062595	72068053.27	6125887.823	11826.47621
Tulare	2023	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	357.5234322	26181043.61	2563357.204	4343.918363
Tulare	2023	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	18.28523528	1070585.173	93333.69217	180.6025327
Tulare	2023	T7 POAK Class 8	Aggregate	Aggregate	Diesel	83.6037383	2623520.408	426740.2335	450.5234053
Tulare	2023	T7 POLA Class 8	Aggregate	Aggregate	Diesel	91.50757564	3753818.978	467083.9485	645.2769738
Tulare	2023	T7 Public Class 8	Aggregate	Aggregate	Diesel	312.6115069	4135094.348	500353.4735	805.1345292
Tulare	2023	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	15.43524213	334666.4111	45364.79404	56.91028554
Tulare	2023	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	119.2215127	2204318.329	350396.7947	381.397727
Tulare	2023	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	649.2049849	11169446.51	1908039.419	1899.756171
Tulare	2023	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	171.4364487	3467197.865	246045.5912	1388.61733
Tulare	2023	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1579.868686	39429035.09	7162113.508	6498.436871
Tulare	2023	T7 Utility Class 8	Aggregate	Aggregate	Diesel	14.60910772	211216.6679	58342.93261	36.49654356
Tulare	2024	PTO	Aggregate	Aggregate	Diesel	0	2842871.831	0	585.9512398
Tulare	2024	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	6.911020256	145289.8406	49550.35659	16.2740776
Tulare	2024	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	9.214684131	199463.5416	66067.0737	22.3396926
Tulare	2024	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	30.21713063	519520.3887	216649.5745	57.29905278
Tulare	2024	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	50.90996975	3274040.952	365012.2647	337.6411249
Tulare	2024	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	69.00592287	727734.6881	307230.93	88.2861044

Tulare	2024	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	47.86461268	511990.7064	213104.7432	61.92751721
Tulare	2024	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	292.52249	3112812.449	1302380.331	376.791567
Tulare	2024	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	55.9280192	943697.1738	249004.9642	110.1784685
Tulare	2024	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	386.7924425	5060041.234	1395052.038	591.243557
Tulare	2024	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	921.193932	12566934.54	3322488.578	1471.268954
Tulare	2024	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	846.2390969	11129759.66	3052147.476	1297.40275
Tulare	2024	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	587.8847499	7881966.618	2120335.685	898.8441161
Tulare	2024	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	13.57382206	209002.8997	48956.9755	24.11771428
Tulare	2024	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	349.2788235	6578064.254	1259750.918	707.3692831
Tulare	2024	T6 OOS Class 4	Aggregate	Aggregate	Diesel	4.059106289	84632.83209	29102.8179	9.431776408
Tulare	2024	T6 OOS Class 5	Aggregate	Aggregate	Diesel	5.38705935	116101.0266	38623.92264	12.94760343
Tulare	2024	T6 OOS Class 6	Aggregate	Aggregate	Diesel	17.75190085	303375.3043	127276.8686	33.23019073
Tulare	2024	T6 OOS Class 7	Aggregate	Aggregate	Diesel	27.80879511	2205915.706	199382.3869	225.8241556
Tulare	2024	T6 Public Class 4	Aggregate	Aggregate	Diesel	30.90056457	334608.822	49458.20763	43.66592784
Tulare	2024	T6 Public Class 5	Aggregate	Aggregate	Diesel	60.68439286	686237.1795	97129.01184	88.99706885
Tulare	2024	T6 Public Class 6	Aggregate	Aggregate	Diesel	79.76268531	858129.4196	127664.9636	112.3963903
Tulare	2024	T6 Public Class 7	Aggregate	Aggregate	Diesel	102.3416857	1437333.361	163804.0084	183.7374739
Tulare	2024	T6 Utility Class 5	Aggregate	Aggregate	Diesel	21.01697427	266599.6352	83933.38846	30.11147311
Tulare	2024	T6 Utility Class 6	Aggregate	Aggregate	Diesel	3.983534592	50300.86833	15908.64375	5.664326535
Tulare	2024	T6 Utility Class 7	Aggregate	Aggregate	Diesel	4.534066	69998.66782	18107.24598	7.833823617
Tulare	2024	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	971.4150522	61408058.76	6964812.785	10045.42864
Tulare	2024	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	869.4237284	72995883.77	6233559.471	11733.66849
Tulare	2024	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	366.1124128	26518107.95	2624938.133	4332.613496
Tulare	2024	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	19.34637486	1110977.768	98750.08813	186.9120081
Tulare	2024	T7 POAK Class 8	Aggregate	Aggregate	Diesel	86.81246038	2686853.58	443118.5778	460.4846261
Tulare	2024	T7 POLA Class 8	Aggregate	Aggregate	Diesel	98.78011325	3907226.778	504205.3076	673.2043718
Tulare	2024	T7 Public Class 8	Aggregate	Aggregate	Diesel	310.4554818	4127922.293	496902.6259	795.2941081
Tulare	2024	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	15.77355069	334946.9135	46359.09642	56.46517898
Tulare	2024	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	122.0373059	2217862.974	358672.5236	383.8208064
Tulare	2024	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	667.1213775	11276055.92	1960696.413	1912.507555
Tulare	2024	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	166.1011733	3359547.8	238388.4039	1329.901434
Tulare	2024	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1668.368144	39865877.73	7563313.41	6536.709354
Tulare	2024	T7 Utility Class 8	Aggregate	Aggregate	Diesel	15.00058817	212176.9691	59906.3489	36.52292909
Tulare	2025	PTO	Aggregate	Aggregate	Diesel	0	2859215.876	0	582.2534553
Tulare	2025	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	7.036309954	147120.2577	50448.65366	16.33879328
Tulare	2025	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	9.311654361	202159.4912	66762.32697	22.46516104
Tulare	2025	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	31.55341294	524660.1359	226230.3979	57.40110751
Tulare	2025	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	52.08840702	3326122.466	373461.3771	338.3078352
Tulare	2025	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	70.08974182	738353.4133	312056.3521	88.86885968
Tulare	2025	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	48.97433347	519768.3512	218045.4864	62.49131408
Tulare	2025	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	299.337432	3160524.946	1332722.088	380.314653
Tulare	2025	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	58.03153706	961752.1508	258370.3305	112.0368521
Tulare	2025	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	394.8256847	5135031.847	1424025.693	597.0020808
Tulare	2025	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	949.012765	12761960.1	3422823.32	1487.157663
Tulare	2025	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	863.2727108	11298564.88	3113582.951	1310.327604
Tulare	2025	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	615.4722064	8009722.356	2219835.916	910.1153913
Tulare	2025	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	14.02263974	211673.5604	50575.73522	24.28290304
Tulare	2025	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	365.9881699	6699695.72	1320016.852	715.064172
Tulare	2025	T6 OOS Class 4	Aggregate	Aggregate	Diesel	4.166581113	86499.9264	29873.3866	9.492193917
Tulare	2025	T6 OOS Class 5	Aggregate	Aggregate	Diesel	5.486513263	118662.3443	39336.98333	13.04687133
Tulare	2025	T6 OOS Class 6	Aggregate	Aggregate	Diesel	18.73183521	310068.1006	134302.7628	33.397538
Tulare	2025	T6 OOS Class 7	Aggregate	Aggregate	Diesel	28.3484305	2254580.657	203251.4431	227.3331742
Tulare	2025	T6 Public Class 4	Aggregate	Aggregate	Diesel	30.57057194	333044.1004	48930.03463	43.11531981
Tulare	2025	T6 Public Class 5	Aggregate	Aggregate	Diesel	60.93600572	683634.93	97531.73332	88.08802838
Tulare	2025	T6 Public Class 6	Aggregate	Aggregate	Diesel	78.67039246	853327.6137	125916.6834	110.729937
Tulare	2025	T6 Public Class 7	Aggregate	Aggregate	Diesel	101.0738717	1429268.417	161774.796	180.6935185
Tulare	2025	T6 Utility Class 5	Aggregate	Aggregate	Diesel	21.03189521	265766.0146	83992.97671	29.8748357
Tulare	2025	T6 Utility Class 6	Aggregate	Aggregate	Diesel	3.98469565	50147.39236	15913.28055	5.62024825
Tulare	2025	T6 Utility Class 7	Aggregate	Aggregate	Diesel	4.511918394	69656.43065	18018.7973	7.750180571
Tulare	2025	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	982.7521382	61812415.21	7046096.97	9976.508176
Tulare	2025	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	881.9487748	73935659.52	6323361.048	11598.91009
Tulare	2025	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	373.5895355	26859511.79	2678547.308	4315.995515
Tulare	2025	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	19.82602628	1148513.83	101198.3825	192.0591244
Tulare	2025	T7 POAK Class 8	Aggregate	Aggregate	Diesel	87.62533564	2721520.605	447267.7532	464.3071139
Tulare	2025	T7 POLA Class 8	Aggregate	Aggregate	Diesel	103.2359858	4059949.759	526949.5068	699.41851
Tulare	2025	T7 Public Class 8	Aggregate	Aggregate	Diesel	307.3274537	4111332.191	491896.0293	782.9562901
Tulare	2025	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	15.94264615	333789.7226	46856.07473	55.75819583
Tulare	2025	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	125.3259622	2214823.97	368338.016	381.6655271

Tulare	2025	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	684.3982251	11362668.16	2011473.759	1920.713467
Tulare	2025	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	160.9935677	3256447.488	231057.9683	1275.533107
Tulare	2025	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1751.477753	40256106.16	7940079.185	6556.592491
Tulare	2025	T7 Utility Class 8	Aggregate	Aggregate	Diesel	15.34763214	212546.4339	61292.30371	36.41519388
Tulare	2026	PTO	Aggregate	Aggregate	Diesel	0	2871690.871	0	577.6879345
Tulare	2026	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	7.118980007	148637.7231	51041.37809	16.37478581
Tulare	2026	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	9.36549924	204422.5198	67148.38183	22.5525315
Tulare	2026	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	32.64442604	528879.4514	234052.7	57.43767294
Tulare	2026	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	53.09490549	3371310.628	380677.7296	338.3753664
Tulare	2026	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	71.04321378	747967.4874	316301.4381	89.33985997
Tulare	2026	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	49.88228178	526790.1106	222087.8902	62.93619549
Tulare	2026	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	304.8557826	3203215.384	1357291.11	383.0449848
Tulare	2026	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	60.24597383	979470.4066	268229.5345	113.8906017
Tulare	2026	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	401.3815641	5200208.505	1447670.915	601.0832722
Tulare	2026	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	974.0008775	12933912.35	3512948.445	1499.058927
Tulare	2026	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	878.4604755	11446025.64	3168360.966	1319.942912
Tulare	2026	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	641.1592646	8128165.862	2312481.943	920.5743522
Tulare	2026	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	14.41940628	214027.9036	52006.76102	24.40624898
Tulare	2026	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	382.6409993	6816216.182	1380078.945	723.1598692
Tulare	2026	T6 OOS Class 4	Aggregate	Aggregate	Diesel	4.259245433	88408.21082	30537.76754	9.554707562
Tulare	2026	T6 OOS Class 5	Aggregate	Aggregate	Diesel	5.573779131	121280.1673	39962.65866	13.14803611
Tulare	2026	T6 OOS Class 6	Aggregate	Aggregate	Diesel	19.62693263	316908.5472	140720.3965	33.6023154
Tulare	2026	T6 OOS Class 7	Aggregate	Aggregate	Diesel	28.86691654	2304319.21	206968.8636	228.8120334
Tulare	2026	T6 Public Class 4	Aggregate	Aggregate	Diesel	30.2107005	331316.6949	48354.03879	42.55721335
Tulare	2026	T6 Public Class 5	Aggregate	Aggregate	Diesel	61.07734274	680366.337	97757.9517	87.09202476
Tulare	2026	T6 Public Class 6	Aggregate	Aggregate	Diesel	77.4800041	848180.115	124011.3954	109.0843244
Tulare	2026	T6 Public Class 7	Aggregate	Aggregate	Diesel	100.1932116	1421055.349	160365.2467	177.8850527
Tulare	2026	T6 Utility Class 5	Aggregate	Aggregate	Diesel	20.99097223	264426.905	83829.54669	29.57630975
Tulare	2026	T6 Utility Class 6	Aggregate	Aggregate	Diesel	3.974937573	49898.31188	15874.31069	5.564918353
Tulare	2026	T6 Utility Class 7	Aggregate	Aggregate	Diesel	4.472254323	69168.40085	17860.39486	7.652306493
Tulare	2026	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	990.2875845	62073808.77	7100124.312	9874.066673
Tulare	2026	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	892.9855908	74887534.26	6402492.369	11473.27988
Tulare	2026	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	380.6839139	27205310.97	2729412.299	4293.000155
Tulare	2026	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	19.921036	1184852.519	101683.3425	196.4313555
Tulare	2026	T7 POAK Class 8	Aggregate	Aggregate	Diesel	87.57484934	2752759.477	447010.055	466.8346792
Tulare	2026	T7 POLA Class 8	Aggregate	Aggregate	Diesel	105.7800943	4215531.908	539935.4509	725.0066136
Tulare	2026	T7 Public Class 8	Aggregate	Aggregate	Diesel	303.5194212	4087563.556	485801.0449	768.7417598
Tulare	2026	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	16.02954276	331522.9831	47111.46734	54.86330611
Tulare	2026	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	127.568022	2205986.169	374927.5195	378.1317593
Tulare	2026	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	700.6335772	11435927.52	2059190.109	1925.433052
Tulare	2026	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	155.6030575	3147878.771	223321.5081	1219.451277
Tulare	2026	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1827.841893	40609486.57	8286265.323	6566.542482
Tulare	2026	T7 Utility Class 8	Aggregate	Aggregate	Diesel	15.60496875	212639.302	62320.00319	36.24755303
Tulare	2027	PTO	Aggregate	Aggregate	Diesel	0	2874192.669	0	571.050662
Tulare	2027	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	7.156982092	149430.5892	51313.84392	16.34314419
Tulare	2027	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	9.357006839	205713.851	67087.49335	22.5457595
Tulare	2027	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	33.50387457	530483.4367	240214.7398	57.24108427
Tulare	2027	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	53.93094759	3405975.96	386671.9508	337.4045985
Tulare	2027	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	71.79506923	755070.9954	319648.879	89.54245926
Tulare	2027	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	50.60232195	532031.1144	225293.6819	63.1703495
Tulare	2027	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	309.1123519	3235200.428	1376242.378	384.4798663
Tulare	2027	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	62.61544803	994685.5499	278779.0023	115.504569
Tulare	2027	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	407.0978541	5245687.289	1468287.972	602.7646252
Tulare	2027	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	995.3039933	13054338.61	3589782.819	1504.266437
Tulare	2027	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	891.5300571	11550481.06	3215499.288	1324.271451
Tulare	2027	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	665.1176553	8222399.095	2398893.15	929.0732192
Tulare	2027	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	14.76735016	215323.1216	53261.69715	24.41307099
Tulare	2027	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	398.8336806	6919332.041	1438481.412	730.2448209
Tulare	2027	T6 OOS Class 4	Aggregate	Aggregate	Diesel	4.340339666	90358.59414	31119.19373	9.614390152
Tulare	2027	T6 OOS Class 5	Aggregate	Aggregate	Diesel	5.638490449	123955.7425	40426.62328	13.24355179
Tulare	2027	T6 OOS Class 6	Aggregate	Aggregate	Diesel	20.47745241	323899.9017	146818.4192	33.80958443
Tulare	2027	T6 OOS Class 7	Aggregate	Aggregate	Diesel	29.36599866	2355155.051	210547.1626	229.8184933
Tulare	2027	T6 Public Class 4	Aggregate	Aggregate	Diesel	29.78962188	328553.4143	47680.07719	41.88413055
Tulare	2027	T6 Public Class 5	Aggregate	Aggregate	Diesel	60.81918065	675821.5446	97344.74779	85.97921774
Tulare	2027	T6 Public Class 6	Aggregate	Aggregate	Diesel	76.12411417	840775.6583	121841.2122	107.1837781
Tulare	2027	T6 Public Class 7	Aggregate	Aggregate	Diesel	99.26643908	1408097.753	158881.8917	174.5944162
Tulare	2027	T6 Utility Class 5	Aggregate	Aggregate	Diesel	20.80465625	261356.6598	83085.4752	29.07863654
Tulare	2027	T6 Utility Class 6	Aggregate	Aggregate	Diesel	3.937408927	49320.79955	15724.43629	5.472143544

Tulare	2027	T6 Utility Class 7	Aggregate	Aggregate	Diesel	4.406245851	68228.25522	17596.78343	7.506449289
Tulare	2027	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	994.8747383	62134186.75	7133013.104	9724.767524
Tulare	2027	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	903.0741343	75851663.79	6474824.805	11341.30041
Tulare	2027	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	387.520627	27555562.11	2778429.891	4255.781583
Tulare	2027	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	19.69007771	1218296.904	100504.4574	199.5741184
Tulare	2027	T7 POAK Class 8	Aggregate	Aggregate	Diesel	86.8421794	2778485.684	443270.2732	467.0056152
Tulare	2027	T7 POLA Class 8	Aggregate	Aggregate	Diesel	106.8486646	4372344.072	545389.7758	749.6279664
Tulare	2027	T7 Public Class 8	Aggregate	Aggregate	Diesel	299.7339369	4050620.755	479742.1501	752.9907037
Tulare	2027	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	15.98175538	327007.0487	46971.01832	53.60456727
Tulare	2027	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	129.3513188	2185888.141	380168.7001	372.4738344
Tulare	2027	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	715.4751615	11472961.45	2102810.119	1922.902601
Tulare	2027	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	150.7933144	3051008.83	216418.5649	1170.993478
Tulare	2027	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1896.52549	40895711.12	8597632.796	6557.948681
Tulare	2027	T7 Utility Class 8	Aggregate	Aggregate	Diesel	15.74004409	211947.3545	62859.44008	35.93883528
Tulare	2028	PTO	Aggregate	Aggregate	Diesel	0	2862188.929	0	561.6802185
Tulare	2028	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	7.114909165	149012.0058	51012.19114	16.1946072
Tulare	2028	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	9.244982873	205360.0182	66284.30841	22.3715065
Tulare	2028	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	34.03450987	527547.5768	244019.2675	56.61507904
Tulare	2028	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	54.6216369	3429262.211	391624.0274	335.1317284
Tulare	2028	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	72.20825098	757748.5023	321488.4634	89.25872304
Tulare	2028	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	51.03266309	534127.8448	227209.6639	63.04429488
Tulare	2028	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	311.5818115	3248363.595	1387237.004	383.7426502
Tulare	2028	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	64.58036049	1007200.203	287527.2642	116.7979658
Tulare	2028	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	410.8323198	5256279.21	1481757.145	600.4022228
Tulare	2028	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	1010.456159	13087214.55	3644432.439	1499.032246
Tulare	2028	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	900.2106667	11579600.78	3246807.816	1319.792056
Tulare	2028	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	685.7199454	8272492.812	2473199.841	932.8743369
Tulare	2028	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	14.95202297	215408.909	53927.76029	24.26799598
Tulare	2028	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	413.195052	7009757.485	1490278.858	736.1254545
Tulare	2028	T6 OOS Class 4	Aggregate	Aggregate	Diesel	4.40145193	92352.00514	31557.35399	9.680069974
Tulare	2028	T6 OOS Class 5	Aggregate	Aggregate	Diesel	5.676354935	126690.344	40698.10256	13.34104073
Tulare	2028	T6 OOS Class 6	Aggregate	Aggregate	Diesel	21.27788598	331045.4934	152557.3358	34.04692054
Tulare	2028	T6 OOS Class 7	Aggregate	Aggregate	Diesel	29.85669056	2407112.389	214065.3057	230.7094417
Tulare	2028	T6 Public Class 4	Aggregate	Aggregate	Diesel	29.29746836	324241.2296	46892.35595	41.03816628
Tulare	2028	T6 Public Class 5	Aggregate	Aggregate	Diesel	60.2959314	668282.2609	96507.25595	84.51821108
Tulare	2028	T6 Public Class 6	Aggregate	Aggregate	Diesel	74.62135518	830537.2817	119435.9563	105.0270928
Tulare	2028	T6 Public Class 7	Aggregate	Aggregate	Diesel	98.20847287	1388563.55	157188.5533	170.6674324
Tulare	2028	T6 Utility Class 5	Aggregate	Aggregate	Diesel	20.42449544	255881.5242	81567.26498	28.31992098
Tulare	2028	T6 Utility Class 6	Aggregate	Aggregate	Diesel	3.863184732	48288.68659	15428.01455	5.330277838
Tulare	2028	T6 Utility Class 7	Aggregate	Aggregate	Diesel	4.30514057	66619.74616	17193.00938	7.29086058
Tulare	2028	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	996.2323852	61999624.8	7142747.106	9537.905938
Tulare	2028	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	912.5396135	76828205.89	6542690.019	11202.78136
Tulare	2028	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	393.7566646	27910322.5	2823140.783	4214.572147
Tulare	2028	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	19.19531605	1247549.985	97979.03562	200.8840138
Tulare	2028	T7 POAK Class 8	Aggregate	Aggregate	Diesel	85.63878612	2797570.444	437127.7688	463.8084868
Tulare	2028	T7 POLA Class 8	Aggregate	Aggregate	Diesel	106.7735757	4529004.488	545006.4979	772.3843479
Tulare	2028	T7 Public Class 8	Aggregate	Aggregate	Diesel	297.7050219	4006293.959	476494.7499	738.7991448
Tulare	2028	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	15.79431005	319793.195	46420.10901	51.9329687
Tulare	2028	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	130.5724046	2155885.325	383757.5201	365.0533027
Tulare	2028	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	727.7981346	11451809.57	2139027.83	1910.251171
Tulare	2028	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	145.4224642	2942917.823	208710.3206	1118.887884
Tulare	2028	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	1957.143855	41113366.22	8872437.668	6533.213524
Tulare	2028	T7 Utility Class 8	Aggregate	Aggregate	Diesel	15.73198322	210067.4275	62827.24819	35.43006819
Tulare	2029	PTO	Aggregate	Aggregate	Diesel	0	2835390.955	0	550.1772355
Tulare	2029	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	6.986670704	147114.2616	50092.75215	15.88264591
Tulare	2029	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	9.03782535	203014.3763	64799.03868	21.97509073
Tulare	2029	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	34.17163491	519360.228	245002.4211	55.44527092
Tulare	2029	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	55.02597012	3441425.171	394522.9996	332.0139815
Tulare	2029	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	72.19986141	755351.3984	321451.1109	88.41555903
Tulare	2029	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	51.13494525	532678.536	227665.0487	62.5137519
Tulare	2029	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	311.9323358	3239466.363	1388797.623	380.470605
Tulare	2029	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	65.98550146	1017001.123	293783.289	117.7990048
Tulare	2029	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	412.0948646	5227917.966	1486310.79	593.5886737
Tulare	2029	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	1018.227722	13020288.94	3672462.289	1482.221421
Tulare	2029	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	903.6798058	11523296.41	3259320.029	1305.61507
Tulare	2029	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	702.6714899	8272289.443	2534339.316	931.3308162
Tulare	2029	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	14.97054114	214066.6229	53994.55015	23.91649254
Tulare	2029	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	424.8168876	7089160.983	1532195.565	740.9436014

Tulare	2029	T6 OOS Class 4	Aggregate	Aggregate	Diesel	4.45058539	94389.39297	31909.6291		9.748994285
Tulare	2029	T6 OOS Class 5	Aggregate	Aggregate	Diesel	5.706186158	129485.2737	40911.98527		13.44127594
Tulare	2029	T6 OOS Class 6	Aggregate	Aggregate	Diesel	22.04701165	338348.7248	158071.7822		34.32962932
Tulare	2029	T6 OOS Class 7	Aggregate	Aggregate	Diesel	30.27357017	2460215.962	217054.2325		231.8611
Tulare	2029	T6 Public Class 4	Aggregate	Aggregate	Diesel	28.73542371	318416.0783	45992.76977		40.02510498
Tulare	2029	T6 Public Class 5	Aggregate	Aggregate	Diesel	59.47533183	657938.1272	95193.83712		82.72786427
Tulare	2029	T6 Public Class 6	Aggregate	Aggregate	Diesel	73.09971676	817468.1351	117000.4827		102.6377936
Tulare	2029	T6 Public Class 7	Aggregate	Aggregate	Diesel	96.93249156	1362150.976	155146.2687		166.0458743
Tulare	2029	T6 Utility Class 5	Aggregate	Aggregate	Diesel	19.86055727	248118.5188	79315.1215		27.31704257
Tulare	2029	T6 Utility Class 6	Aggregate	Aggregate	Diesel	3.754451438	46826.157	14993.77726		5.142652176
Tulare	2029	T6 Utility Class 7	Aggregate	Aggregate	Diesel	4.169340233	64351.98301	16650.67716		7.007340074
Tulare	2029	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	994.0147176	61690596.45	7126846.962		9326.947528
Tulare	2029	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	921.7490417	77817320.36	6608719.409		11097.00589
Tulare	2029	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	399.0122804	28269650.22	2860822.288		4175.273633
Tulare	2029	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	18.52828069	1272122.071	94574.27368		200.5960907
Tulare	2029	T7 POAK Class 8	Aggregate	Aggregate	Diesel	84.23384588	2809950.061	429956.5042		457.9477857
Tulare	2029	T7 POLA Class 8	Aggregate	Aggregate	Diesel	105.8702308	4684293.776	540395.5364		793.1036548
Tulare	2029	T7 Public Class 8	Aggregate	Aggregate	Diesel	295.4208964	3946998.332	472838.8699		722.8955776
Tulare	2029	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	15.45658037	309654.7722	45427.50798		49.83523056
Tulare	2029	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	130.8502629	2118361.854	384574.1568		356.3964977
Tulare	2029	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	734.8262987	11368723.63	2159683.885		1887.191582
Tulare	2029	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	138.9313752	2812253.525	199394.3097		1057.350664
Tulare	2029	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2010.590618	41274995.43	9114731.085		6496.079262
Tulare	2029	T7 Utility Class 8	Aggregate	Aggregate	Diesel	15.61873063	207161.2887	62374.96263		34.74973851
Tulare	2030	PTO	Aggregate	Aggregate	Diesel	0	2795739.832	0		537.2472836
Tulare	2030	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	6.805474434	143802.0626	48793.61838		15.4176029
Tulare	2030	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	8.756118486	198732.2752	62779.26808		21.3654947
Tulare	2030	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	34.02619731	506553.5045	243959.6684		53.798476
Tulare	2030	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	55.26011889	3443698.857	396201.79		328.3153678
Tulare	2030	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	71.76667687	747981.5304	319522.4694		87.03172598
Tulare	2030	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	50.88691869	527547.9179	226560.7748		61.56965258
Tulare	2030	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	310.255761	3208977.493	1381333.109		374.7795531
Tulare	2030	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	66.92750372	1025372.91	297977.3091		118.5005903
Tulare	2030	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	410.7558722	5160073.819	1481481.419		582.3460421
Tulare	2030	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	1018.745901	12854675.78	3674331.217		1454.297135
Tulare	2030	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	901.487575	11381339.82	3251413.266		1281.865253
Tulare	2030	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	716.1610312	8221603.135	2582992.314		924.0355108
Tulare	2030	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	14.90411406	210641.989	53754.96628		23.34236252
Tulare	2030	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	434.0153229	7163500.811	1565371.746		744.6212331
Tulare	2030	T6 OOS Class 4	Aggregate	Aggregate	Diesel	4.499856352	96471.7278	32262.89008		9.81974881
Tulare	2030	T6 OOS Class 5	Aggregate	Aggregate	Diesel	5.731768929	132341.8626	41095.4076		13.5390674
Tulare	2030	T6 OOS Class 6	Aggregate	Aggregate	Diesel	22.82275911	345813.0734	163633.7054		34.65893982
Tulare	2030	T6 OOS Class 7	Aggregate	Aggregate	Diesel	30.74208929	2514491.058	220413.4021		233.1816112
Tulare	2030	T6 Public Class 4	Aggregate	Aggregate	Diesel	28.0805137	311375.7892	44944.54701		38.87786583
Tulare	2030	T6 Public Class 5	Aggregate	Aggregate	Diesel	58.43679859	644349.3442	93531.60236		80.5568368
Tulare	2030	T6 Public Class 6	Aggregate	Aggregate	Diesel	71.38406725	800930.5438	114254.4827		99.84541029
Tulare	2030	T6 Public Class 7	Aggregate	Aggregate	Diesel	95.76926589	1332289.195	153284.4562		161.3120141
Tulare	2030	T6 Utility Class 5	Aggregate	Aggregate	Diesel	19.11929695	238327.4807	76354.82429		26.10195687
Tulare	2030	T6 Utility Class 6	Aggregate	Aggregate	Diesel	3.613229497	44976.41401	14429.79332		4.914642049
Tulare	2030	T6 Utility Class 7	Aggregate	Aggregate	Diesel	4.006344515	61521.12277	15999.73746		6.667776543
Tulare	2030	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	988.6639357	61225759.87	7088483.14		9101.607587
Tulare	2030	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	931.07519	78819169.06	6675585.655		11026.39004
Tulare	2030	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	403.6626745	28633604.06	2894164.497		4141.098637
Tulare	2030	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	17.79788741	1292075.043	90846.11264		199.1034919
Tulare	2030	T7 POAK Class 8	Aggregate	Aggregate	Diesel	82.81254824	2815349.291	422701.7463		449.827236
Tulare	2030	T7 POLA Class 8	Aggregate	Aggregate	Diesel	104.3851551	4836567.45	532815.2348		811.4256013
Tulare	2030	T7 Public Class 8	Aggregate	Aggregate	Diesel	291.6509168	3866206.668	466804.7914		703.0128598
Tulare	2030	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	14.99714449	297019.0771	44077.20756		47.3938985
Tulare	2030	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	130.3133409	2077414.376	382996.1216		347.2596281
Tulare	2030	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	736.0193563	11229120.28	2163190.329		1854.911544
Tulare	2030	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	133.3236168	2698612.004	191346.0548		1006.045311
Tulare	2030	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2056.281599	41380401.07	9321864.751		6445.09394
Tulare	2030	T7 Utility Class 8	Aggregate	Aggregate	Diesel	15.41811093	203197.7904	61573.76782		33.91202362
Tulare	2031	PTO	Aggregate	Aggregate	Diesel	0	2771636.499	0		527.8463337
Tulare	2031	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	6.615822422	140714.042	47433.85897		14.98242852
Tulare	2031	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	8.457952391	194647.0932	60641.48874		20.77588094
Tulare	2031	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	33.76489312	495178.4085	242086.1801		52.33691575
Tulare	2031	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	55.5769503	3464997.522	398473.3952		326.8747101

Tulare	2031	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	71.33498241	741312.9474	317600.4621	85.73719771
Tulare	2031	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	50.61440068	522927.5798	225347.4593	60.68202051
Tulare	2031	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	308.4151115	3181027.852	1373138.096	369.366058
Tulare	2031	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	67.81662949	1034301.248	301935.9105	119.1827881
Tulare	2031	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	409.2812434	5094691.471	1476162.846	571.2351256
Tulare	2031	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	1017.768418	12692407.21	3670805.71	1426.291812
Tulare	2031	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	899.2092331	11244704.41	3243195.925	1258.493741
Tulare	2031	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	723.9448921	8186575.757	2611066.521	917.4220115
Tulare	2031	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	14.73281439	208887.1722	53137.1363	23.0092354
Tulare	2031	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	442.3736637	7268932.126	1595517.94	750.9917978
Tulare	2031	T6 OOS Class 4	Aggregate	Aggregate	Diesel	4.563611495	99406.46993	32719.99915	9.981010547
Tulare	2031	T6 OOS Class 5	Aggregate	Aggregate	Diesel	5.77436124	136367.8011	41400.78424	13.75356394
Tulare	2031	T6 OOS Class 6	Aggregate	Aggregate	Diesel	23.66479036	356332.9658	169670.8673	35.34428066
Tulare	2031	T6 OOS Class 7	Aggregate	Aggregate	Diesel	31.34403755	2590983.757	224729.2267	236.8045787
Tulare	2031	T6 Public Class 4	Aggregate	Aggregate	Diesel	27.4168262	303660.2588	43882.27534	37.66821694
Tulare	2031	T6 Public Class 5	Aggregate	Aggregate	Diesel	57.246674	629775.851	91626.73654	78.27023234
Tulare	2031	T6 Public Class 6	Aggregate	Aggregate	Diesel	69.73629582	782808.6515	111617.1256	96.96024163
Tulare	2031	T6 Public Class 7	Aggregate	Aggregate	Diesel	94.65997824	1301880.857	151508.9748	156.7025104
Tulare	2031	T6 Utility Class 5	Aggregate	Aggregate	Diesel	18.31964616	227944.1871	73161.33889	24.83454935
Tulare	2031	T6 Utility Class 6	Aggregate	Aggregate	Diesel	3.460144452	43034.16135	13818.43288	4.67873459
Tulare	2031	T6 Utility Class 7	Aggregate	Aggregate	Diesel	3.831658724	58493.05644	15302.11228	6.310842036
Tulare	2031	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	985.8576301	61244537.6	7068362.602	8958.148847
Tulare	2031	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	945.8467566	80669150.4	6781494.242	11098.80126
Tulare	2031	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	410.274155	29305669.42	2941567.226	4155.916625
Tulare	2031	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	17.17333358	1308577.51	87658.19008	196.9076507
Tulare	2031	T7 POAK Class 8	Aggregate	Aggregate	Diesel	81.60885436	2814265.086	416557.7075	440.0204992
Tulare	2031	T7 POLA Class 8	Aggregate	Aggregate	Diesel	102.5353562	4985854.525	523373.2691	826.9828568
Tulare	2031	T7 Public Class 8	Aggregate	Aggregate	Diesel	287.1816931	3777229.608	459651.5307	681.7391261
Tulare	2031	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	14.46020824	283737.4261	42499.13044	44.90095539
Tulare	2031	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	129.1693941	2033250.99	379634.016	337.6095401
Tulare	2031	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	736.3057431	11166206.2	2164032.031	1834.25933
Tulare	2031	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	127.2227187	2575543.067	182590.0458	951.3667541
Tulare	2031	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2105.178271	41863266.92	9543530.966	6447.269338
Tulare	2031	T7 Utility Class 8	Aggregate	Aggregate	Diesel	15.15280517	198588.7948	60514.24273	32.97355427
Tulare	2032	PTO	Aggregate	Aggregate	Diesel	0	2740410.452	0	517.4759524
Tulare	2032	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	6.398417512	136924.6249	45875.11794	14.48316711
Tulare	2032	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	8.127681521	189474.8882	58273.52586	20.08479705
Tulare	2032	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	33.26542051	482006.9832	238505.0814	50.71125822
Tulare	2032	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	55.75011679	3479189.018	399714.9573	325.0867423
Tulare	2032	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	70.75770543	732995.6705	315030.2864	84.29251634
Tulare	2032	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	50.16887481	516767.3281	223363.8712	59.63176275
Tulare	2032	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	305.4497019	3143087.376	1359935.381	362.8596548
Tulare	2032	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	68.19569025	1037884.366	303623.58	119.1935401
Tulare	2032	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	406.3767653	5021894.638	1465687.207	559.321691
Tulare	2032	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	1012.097551	12503340.81	3650352.479	1395.263356
Tulare	2032	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	893.4630411	11085746.08	3222471.019	1232.668782
Tulare	2032	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	724.3985329	8136313.278	2612702.677	908.510172
Tulare	2032	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	14.52172592	206557.3448	52375.7993	22.63080294
Tulare	2032	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	447.7982625	7360442.674	1615082.949	756.0081897
Tulare	2032	T6 OOS Class 4	Aggregate	Aggregate	Diesel	4.625335957	102430.4891	33162.54873	10.15501098
Tulare	2032	T6 OOS Class 5	Aggregate	Aggregate	Diesel	5.817539922	140516.2116	41710.36503	13.98445305
Tulare	2032	T6 OOS Class 6	Aggregate	Aggregate	Diesel	24.47939249	367172.8811	175511.3691	36.0934301
Tulare	2032	T6 OOS Class 7	Aggregate	Aggregate	Diesel	31.9613221	2669803.421	229155.0087	240.8700707
Tulare	2032	T6 Public Class 4	Aggregate	Aggregate	Diesel	26.73647357	295497.4476	42793.33014	36.42072833
Tulare	2032	T6 Public Class 5	Aggregate	Aggregate	Diesel	55.95842456	613880.3859	89564.81602	75.83699397
Tulare	2032	T6 Public Class 6	Aggregate	Aggregate	Diesel	67.9476595	762514.8628	108754.3059	93.81683254
Tulare	2032	T6 Public Class 7	Aggregate	Aggregate	Diesel	93.409296	1269951.969	149507.1828	151.997788
Tulare	2032	T6 Utility Class 5	Aggregate	Aggregate	Diesel	17.47561261	217131.4246	69790.60652	23.53272422
Tulare	2032	T6 Utility Class 6	Aggregate	Aggregate	Diesel	3.299677067	41006.07652	13177.59034	4.435932356
Tulare	2032	T6 Utility Class 7	Aggregate	Aggregate	Diesel	3.65127603	55393.36696	14581.73595	5.949883508
Tulare	2032	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	982.8415005	61187008.51	7046737.677	8819.873267
Tulare	2032	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	961.4401752	82562553.06	6893295.311	11203.21099
Tulare	2032	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	417.0542411	29993508.97	2990178.815	4180.461707
Tulare	2032	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	16.729051	1325063.968	85390.42959	195.0534724
Tulare	2032	T7 POAK Class 8	Aggregate	Aggregate	Diesel	81.15661989	2838233.097	414249.358	434.2262385
Tulare	2032	T7 POLA Class 8	Aggregate	Aggregate	Diesel	100.5462035	5131090.047	513219.9972	839.7246059
Tulare	2032	T7 Public Class 8	Aggregate	Aggregate	Diesel	281.0755	3673432.306	449878.2022	657.3298569
Tulare	2032	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	13.88517731	270080.97	40809.09152	42.40802732

Tulare	2032	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	127.3530653	1987433.788	374295.7531	327.900077
Tulare	2032	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	732.1755621	11070938.38	2151893.264	1808.540196
Tulare	2032	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	120.9232517	2448219.341	173549.0508	895.882566
Tulare	2032	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2148.137942	42305978.55	9738282.62	6441.096362
Tulare	2032	T7 Utility Class 8	Aggregate	Aggregate	Diesel	14.84185918	193542.9168	59272.44883	31.96671253
Tulare	2033	PTO	Aggregate	Aggregate	Diesel	0	2700923.358	0	505.9533403
Tulare	2033	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	6.174405158	132625.7097	44269.00313	13.9404129
Tulare	2033	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	7.800423151	183532.74	55927.16189	19.32760031
Tulare	2033	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	32.56985451	467291.2761	233518.0401	48.93120576
Tulare	2033	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	55.91953624	3496877.014	400929.6542	323.8340715
Tulare	2033	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	69.9760783	722536.9475	311550.2948	82.62425482
Tulare	2033	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	49.58152028	509261.4171	220748.8278	58.43678734
Tulare	2033	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	301.5716308	3096347.23	1342669.277	355.4146207
Tulare	2033	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	67.95460322	1036366.362	302550.2026	118.6822778
Tulare	2033	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	401.8219968	4937632.271	1449259.432	546.0450348
Tulare	2033	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	1001.868794	12278177.28	3613460.216	1360.196455
Tulare	2033	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	884.2528164	10902003.18	3189252.318	1203.929256
Tulare	2033	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	718.2395854	8063400.266	2590489.078	896.7536433
Tulare	2033	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	14.28888547	203480.7821	51536.009	22.18065421
Tulare	2033	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	450.8862284	7452731.964	1626220.378	761.451129
Tulare	2033	T6 OOS Class 4	Aggregate	Aggregate	Diesel	4.708154839	105546.5012	33756.34024	10.35431177
Tulare	2033	T6 OOS Class 5	Aggregate	Aggregate	Diesel	5.889158297	144790.8198	42223.85159	14.247566
Tulare	2033	T6 OOS Class 6	Aggregate	Aggregate	Diesel	25.28410335	378342.5548	181280.9529	36.90428489
Tulare	2033	T6 OOS Class 7	Aggregate	Aggregate	Diesel	32.62765421	2751020.838	233932.4501	245.4070908
Tulare	2033	T6 Public Class 4	Aggregate	Aggregate	Diesel	25.96059892	286798.9503	41551.4962	35.11953853
Tulare	2033	T6 Public Class 5	Aggregate	Aggregate	Diesel	54.53410174	597558.677	87285.10188	73.39975209
Tulare	2033	T6 Public Class 6	Aggregate	Aggregate	Diesel	66.21000914	741581.0136	105973.0922	90.69727747
Tulare	2033	T6 Public Class 7	Aggregate	Aggregate	Diesel	92.23342531	1238457.13	147625.1312	147.5136588
Tulare	2033	T6 Utility Class 5	Aggregate	Aggregate	Diesel	16.60708317	205937.438	66322.04734	22.20710176
Tulare	2033	T6 Utility Class 6	Aggregate	Aggregate	Diesel	3.134320275	38921.52539	12517.22145	4.190630788
Tulare	2033	T6 Utility Class 7	Aggregate	Aggregate	Diesel	3.467265972	52261.98263	13846.87338	5.588990973
Tulare	2033	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	981.0131848	61265929.78	7033629.092	8715.941258
Tulare	2033	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	977.7297128	84500396.13	7010087.386	11337.91565
Tulare	2033	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	424.0381229	30697492.94	3040251.572	4215.125403
Tulare	2033	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	16.5150674	1344873.834	84298.18882	194.3619419
Tulare	2033	T7 POAK Class 8	Aggregate	Aggregate	Diesel	81.01823057	2861593.111	413542.9746	429.1727312
Tulare	2033	T7 POLA Class 8	Aggregate	Aggregate	Diesel	98.63070722	5274954.075	503442.6915	850.1890212
Tulare	2033	T7 Public Class 8	Aggregate	Aggregate	Diesel	277.3659929	3588286.475	443940.9136	638.3051652
Tulare	2033	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	13.27428357	256284.4947	39013.65038	39.9541939
Tulare	2033	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	125.0622338	1936322.032	367562.9075	317.5809494
Tulare	2033	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	724.3024354	10942183.4	2128753.83	1778.084999
Tulare	2033	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	115.5480774	2339285.138	165834.6007	850.4153988
Tulare	2033	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2186.926394	42766724.35	9914124.637	6435.665314
Tulare	2033	T7 Utility Class 8	Aggregate	Aggregate	Diesel	14.51150229	188340.7404	57953.13553	30.95054844
Tulare	2034	PTO	Aggregate	Aggregate	Diesel	0	2652035.552	0	492.9741446
Tulare	2034	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	5.960030983	128062.0832	42731.99174	13.38879203
Tulare	2034	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	7.485052673	177100.9054	53666.03125	18.54215042
Tulare	2034	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	31.73051783	451438.0101	227500.1975	47.06067298
Tulare	2034	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	56.22017471	3526027.089	403085.1598	323.9352722
Tulare	2034	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	68.95142764	709612.2144	306988.3042	80.70653587
Tulare	2034	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	48.77203023	499756.331	217144.7839	57.02574334
Tulare	2034	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	296.6489972	3039488.511	1320752.531	346.9480235
Tulare	2034	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	67.36000064	1031015.48	299902.8893	117.6575668
Tulare	2034	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	395.7880231	4838635.914	1427496.579	531.5111422
Tulare	2034	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	987.7088313	12025337.08	3562389.196	1323.107343
Tulare	2034	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	871.7329045	10685824.6	3144096.501	1172.452452
Tulare	2034	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	707.7557019	7967188.821	2552676.645	882.2896834
Tulare	2034	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	14.01101253	199111.016	50533.7991	21.59591907
Tulare	2034	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	452.9424511	7554477.128	1633636.597	767.0153997
Tulare	2034	T6 OOS Class 4	Aggregate	Aggregate	Diesel	4.815065737	108757.3047	34522.86572	10.58499963
Tulare	2034	T6 OOS Class 5	Aggregate	Aggregate	Diesel	5.988303652	149195.4649	42934.69999	14.54965496
Tulare	2034	T6 OOS Class 6	Aggregate	Aggregate	Diesel	26.09055684	389852.0185	187063.0308	37.78970173
Tulare	2034	T6 OOS Class 7	Aggregate	Aggregate	Diesel	33.32224726	2834708.951	238912.5155	250.357945
Tulare	2034	T6 Public Class 4	Aggregate	Aggregate	Diesel	25.23706688	278136.0261	40393.43976	33.87205784
Tulare	2034	T6 Public Class 5	Aggregate	Aggregate	Diesel	53.02443594	579891.1576	84868.79118	70.84003511
Tulare	2034	T6 Public Class 6	Aggregate	Aggregate	Diesel	64.50383155	719482.9029	103242.2526	87.52492019
Tulare	2034	T6 Public Class 7	Aggregate	Aggregate	Diesel	90.83807957	1205271.954	145391.7966	142.8912939
Tulare	2034	T6 Utility Class 5	Aggregate	Aggregate	Diesel	15.71696996	194452.6031	62767.29124	20.86746297

Tulare	2034	T6 Utility Class 6	Aggregate	Aggregate	Diesel	2.965898033	36769.95004	11844.61038	3.941032196
Tulare	2034	T6 Utility Class 7	Aggregate	Aggregate	Diesel	3.280158973	49110.09087	13099.64288	5.229228567
Tulare	2034	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	981.3756732	61529859.11	7036228.046	8654.483845
Tulare	2034	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	994.8235433	86483722.77	7132646.048	11498.76823
Tulare	2034	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	431.3038618	31418000.28	3092345.176	4260.249233
Tulare	2034	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	16.58636416	1370357.957	84662.11033	195.1879698
Tulare	2034	T7 POAK Class 8	Aggregate	Aggregate	Diesel	81.2462071	2887378.185	414706.6398	425.6030342
Tulare	2034	T7 POLA Class 8	Aggregate	Aggregate	Diesel	96.98218494	5419851.966	495028.1062	858.8176051
Tulare	2034	T7 Public Class 8	Aggregate	Aggregate	Diesel	272.1701312	3490439.423	435624.6252	616.6777738
Tulare	2034	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	12.63998606	242191.7143	37149.42462	37.50598533
Tulare	2034	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	121.913652	1877462.019	358309.0997	306.1426679
Tulare	2034	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	713.3572679	10776747.63	2096585.545	1742.12104
Tulare	2034	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	109.9621433	2226520.659	157817.6681	803.9107719
Tulare	2034	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2223.55997	43274269.69	10080197.83	6436.816405
Tulare	2034	T7 Utility Class 8	Aggregate	Aggregate	Diesel	14.14914308	182762.3862	56506.01782	29.88420992
Tulare	2035	PTO	Aggregate	Aggregate	Diesel	0	2595231.278	0	478.8545616
Tulare	2035	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	5.734619872	123210.5951	41115.84817	12.81355195
Tulare	2035	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	7.172466848	170301.7985	51424.86591	17.73082822
Tulare	2035	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	30.76772759	434708.6643	220597.2226	45.11644887
Tulare	2035	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	56.65590861	3567221.992	406209.2673	325.4011944
Tulare	2035	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	67.79649564	694911.0665	301846.2697	78.62397944
Tulare	2035	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	47.89739296	489247.5893	213250.6888	55.53122879
Tulare	2035	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	291.1724406	2975113.884	1296369.587	337.753608
Tulare	2035	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	66.5183973	1021540.693	296155.8692	116.1349253
Tulare	2035	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	388.7810346	4729020.723	1402224.333	516.1998853
Tulare	2035	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	970.2837521	11749031.64	3499541.814	1284.421187
Tulare	2035	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	856.9099305	10448092.94	3090634.184	1139.439306
Tulare	2035	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	693.2071346	7850981.177	2500204.036	865.7010365
Tulare	2035	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	13.74293016	193891.6692	49566.90105	20.93088321
Tulare	2035	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	454.2888688	7662808.438	1638492.749	772.6690069
Tulare	2035	T6 OOS Class 4	Aggregate	Aggregate	Diesel	4.928356129	112065.7833	35335.13064	10.83477077
Tulare	2035	T6 OOS Class 5	Aggregate	Aggregate	Diesel	6.110513224	153734.1026	43810.91329	14.88507979
Tulare	2035	T6 OOS Class 6	Aggregate	Aggregate	Diesel	26.86396242	401711.6084	192608.1632	38.7268665
Tulare	2035	T6 OOS Class 7	Aggregate	Aggregate	Diesel	34.04453458	2920942.917	244091.1423	255.7171103
Tulare	2035	T6 Public Class 4	Aggregate	Aggregate	Diesel	24.4784668	269050.0319	39179.25482	32.59951406
Tulare	2035	T6 Public Class 5	Aggregate	Aggregate	Diesel	51.43842834	560842.8566	82330.29086	68.15599085
Tulare	2035	T6 Public Class 6	Aggregate	Aggregate	Diesel	62.61788954	694817.8951	100223.6893	84.06034561
Tulare	2035	T6 Public Class 7	Aggregate	Aggregate	Diesel	89.19979265	1170375.967	142769.6201	138.104951
Tulare	2035	T6 Utility Class 5	Aggregate	Aggregate	Diesel	14.80870733	182794.8751	59140.0536	19.52595407
Tulare	2035	T6 Utility Class 6	Aggregate	Aggregate	Diesel	2.795111182	34564.20261	11162.55602	3.688222229
Tulare	2035	T6 Utility Class 7	Aggregate	Aggregate	Diesel	3.094784973	45985.90329	12359.33327	4.875584395
Tulare	2035	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	984.0680148	61981433.69	7055531.49	8636.531527
Tulare	2035	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1012.562112	88513600.45	7259827.329	11683.03824
Tulare	2035	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	438.829995	32155418.78	3146305.745	4316.134357
Tulare	2035	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	16.86832487	1401040.061	86101.32799	197.440845
Tulare	2035	T7 POAK Class 8	Aggregate	Aggregate	Diesel	81.7348676	2915540.11	417200.9194	423.8128335
Tulare	2035	T7 POLA Class 8	Aggregate	Aggregate	Diesel	95.71928876	5566648.495	488581.88	866.3329784
Tulare	2035	T7 Public Class 8	Aggregate	Aggregate	Diesel	266.4055017	3387610.123	426397.9898	594.4269946
Tulare	2035	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	12.00049457	228047.8061	35269.93356	35.09747942
Tulare	2035	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	118.5569336	1814482.421	348443.5702	294.2870195
Tulare	2035	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	700.648594	10577509.43	2059234.244	1701.343739
Tulare	2035	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	104.4700023	2115350.4	149935.3474	759.621484
Tulare	2035	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2257.85485	43826592.2	10235668.86	6445.760558
Tulare	2035	T7 Utility Class 8	Aggregate	Aggregate	Diesel	13.74880338	176726.6558	54907.2212	28.75331495
Tulare	2036	PTO	Aggregate	Aggregate	Diesel	0	2536542.828	0	464.6341637
Tulare	2036	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	5.512647825	118610.1353	39524.36187	12.27168599
Tulare	2036	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	6.880749551	163927.3984	49333.3229	16.97798065
Tulare	2036	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	29.76646292	418879.152	213418.3952	43.28257537
Tulare	2036	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	57.2569671	3620257.059	410518.7125	328.2015767
Tulare	2036	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	66.64643047	680686.6723	296725.9036	76.62156647
Tulare	2036	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	47.0093498	478925.4416	209296.9076	54.0736745
Tulare	2036	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	285.6565633	2911793.185	1271811.577	328.7925539
Tulare	2036	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	65.50987519	1010100.427	291665.6867	114.2491954
Tulare	2036	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	381.7715032	4630807.736	1376942.916	502.6509892
Tulare	2036	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	952.3841079	11497830.06	3434982.81	1249.649152
Tulare	2036	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	841.6243617	10224698.89	3035503.418	1108.919457
Tulare	2036	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	676.8874506	7747310.367	2441343.506	850.0124195
Tulare	2036	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	13.44986185	189235.4023	48509.88573	20.33928663

Tulare	2036	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	455.5721578	7778302.956	1643121.213	778.8991861
Tulare	2036	T6 OOS Class 4	Aggregate	Aggregate	Diesel	5.049655743	115474.9082	36204.81976	11.10370214
Tulare	2036	T6 OOS Class 5	Aggregate	Aggregate	Diesel	6.250950389	158410.809	44817.81406	15.25090956
Tulare	2036	T6 OOS Class 6	Aggregate	Aggregate	Diesel	27.63692434	413931.9761	198150.1146	39.71858937
Tulare	2036	T6 OOS Class 7	Aggregate	Aggregate	Diesel	34.83150165	3009800.186	249733.5073	261.535145
Tulare	2036	T6 Public Class 4	Aggregate	Aggregate	Diesel	23.75274572	259947.7179	38017.69469	31.3431122
Tulare	2036	T6 Public Class 5	Aggregate	Aggregate	Diesel	49.88949926	541786.652	79851.13694	65.50492669
Tulare	2036	T6 Public Class 6	Aggregate	Aggregate	Diesel	60.87985919	670493.2498	97441.86742	80.72850562
Tulare	2036	T6 Public Class 7	Aggregate	Aggregate	Diesel	87.45392873	1137668.356	139975.2602	133.6163386
Tulare	2036	T6 Utility Class 5	Aggregate	Aggregate	Diesel	13.98819241	172229.2373	55863.24519	18.31555644
Tulare	2036	T6 Utility Class 6	Aggregate	Aggregate	Diesel	2.641086074	32565.24172	10547.44134	3.460123473
Tulare	2036	T6 Utility Class 7	Aggregate	Aggregate	Diesel	2.923919618	43222.11375	11676.96539	4.563424191
Tulare	2036	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	989.3147779	62601208.72	7093149.522	8657.758042
Tulare	2036	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1031.254295	90591121.85	7393845.797	11888.42951
Tulare	2036	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	446.783224	32910145.4	3203328.488	4382.264357
Tulare	2036	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	16.96963318	1388307.102	86618.43803	194.2197649
Tulare	2036	T7 POAK Class 8	Aggregate	Aggregate	Diesel	82.32286651	2944806.279	420202.254	423.5092162
Tulare	2036	T7 POLA Class 8	Aggregate	Aggregate	Diesel	93.0496925	5498570.013	474955.4064	840.7275823
Tulare	2036	T7 Public Class 8	Aggregate	Aggregate	Diesel	261.381085	3298715.459	418356.1094	575.4490195
Tulare	2036	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	11.39736387	215436.0632	33497.30831	32.97260626
Tulare	2036	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	114.9387127	1752390.578	337809.4742	282.7745789
Tulare	2036	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	687.9199823	10366072.02	2021824.345	1658.961886
Tulare	2036	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	98.80815415	2000828.691	141809.4628	714.4925701
Tulare	2036	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2290.787397	44422885.01	10384963.95	6463.744951
Tulare	2036	T7 Utility Class 8	Aggregate	Aggregate	Diesel	13.34147873	170812.7047	53280.52946	27.65448214
Tulare	2037	PTO	Aggregate	Aggregate	Diesel	0	2479914.891	0	451.1055114
Tulare	2037	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	5.314844053	114696.4564	38106.1563	11.81194259
Tulare	2037	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	6.615313809	158409.5348	47430.21234	16.32700781
Tulare	2037	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	28.87439265	405672.0864	207022.4655	41.75631571
Tulare	2037	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	58.03261813	3683551.268	416079.9442	332.2168061
Tulare	2037	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	65.53362845	667678.6987	291771.4419	74.77161215
Tulare	2037	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	46.17058529	469627.1216	205562.5266	52.74336594
Tulare	2037	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	280.4936531	2854927.161	1248825.062	320.6334171
Tulare	2037	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	64.57320092	1001588.417	287495.3881	112.7205759
Tulare	2037	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	374.8368617	4540495.782	1351931.606	490.1913045
Tulare	2037	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	934.8461489	11275228.31	3371728.302	1218.704581
Tulare	2037	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	826.809931	10020603.92	2982071.914	1081.052503
Tulare	2037	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	661.8163478	7676371.858	2386986.258	838.0038465
Tulare	2037	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	13.19149064	184777.4372	47578.01313	19.77510767
Tulare	2037	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	457.0525955	7907010.343	1648460.737	785.3344606
Tulare	2037	T6 OOS Class 4	Aggregate	Aggregate	Diesel	5.179456714	118987.7414	37135.46157	11.39364623
Tulare	2037	T6 OOS Class 5	Aggregate	Aggregate	Diesel	6.401411892	163229.7843	45896.58693	15.64469936
Tulare	2037	T6 OOS Class 6	Aggregate	Aggregate	Diesel	28.44340547	426524.0965	203932.3908	40.78386898
Tulare	2037	T6 OOS Class 7	Aggregate	Aggregate	Diesel	35.67615944	3101360.559	255789.5009	267.8687821
Tulare	2037	T6 Public Class 4	Aggregate	Aggregate	Diesel	23.02036695	250586.8134	36845.47853	30.06307469
Tulare	2037	T6 Public Class 5	Aggregate	Aggregate	Diesel	48.38603852	523167.5288	77444.75781	62.94266429
Tulare	2037	T6 Public Class 6	Aggregate	Aggregate	Diesel	59.24758298	646608.6473	94829.31141	77.5018232
Tulare	2037	T6 Public Class 7	Aggregate	Aggregate	Diesel	85.66231545	1107304.846	137107.6756	129.4285391
Tulare	2037	T6 Utility Class 5	Aggregate	Aggregate	Diesel	13.24645018	162723.1126	52901.02345	17.23097291
Tulare	2037	T6 Utility Class 6	Aggregate	Aggregate	Diesel	2.502755139	30773.52125	9995.002924	3.256481392
Tulare	2037	T6 Utility Class 7	Aggregate	Aggregate	Diesel	2.771450507	40866.20862	11068.06475	4.297396768
Tulare	2037	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	997.132352	63365317.56	7149199.652	8713.032126
Tulare	2037	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1051.221015	92717405.18	7537002.384	12111.76227
Tulare	2037	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	455.2745208	33682586.36	3264209.048	4457.947889
Tulare	2037	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	17.0568543	1378101.356	87063.64254	191.7390051
Tulare	2037	T7 POAK Class 8	Aggregate	Aggregate	Diesel	82.81378257	2973093.563	422708.0467	423.8808977
Tulare	2037	T7 POLA Class 8	Aggregate	Aggregate	Diesel	90.91129076	5432336.486	464040.3196	816.5658708
Tulare	2037	T7 Public Class 8	Aggregate	Aggregate	Diesel	256.162698	3214047.898	410003.768	557.2598805
Tulare	2037	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	10.8555163	204320.3416	31904.79661	31.10882474
Tulare	2037	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	111.1765617	1694210.691	326752.3619	272.0797706
Tulare	2037	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	674.787644	10159604.5	1983227.877	1617.962018
Tulare	2037	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	93.00075799	1883362.536	133474.6879	668.6511627
Tulare	2037	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2323.706802	45061968.83	10534199.47	6489.707893
Tulare	2037	T7 Utility Class 8	Aggregate	Aggregate	Diesel	12.94756855	165277.6779	51707.40976	26.62466206
Tulare	2038	PTO	Aggregate	Aggregate	Diesel	0	2426277.145	0	438.5070978
Tulare	2038	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	5.141272811	111489.2496	36861.69215	11.43408019
Tulare	2038	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	6.38358212	153860.5404	45768.75174	15.78904456
Tulare	2038	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	28.07910673	394980.4491	201320.4563	40.51525056

Tulare	2038	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	58.94397116	3755035.348	422614.1267	337.1993876
Tulare	2038	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	64.48751994	656211.5052	287113.9158	73.11751262
Tulare	2038	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	45.37979824	461326.0168	202041.7529	51.53918841
Tulare	2038	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	275.6617695	2804050.215	1227312.357	313.2401416
Tulare	2038	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	63.91629144	996672.1841	284570.6694	111.5345016
Tulare	2038	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	368.5375605	4459687.654	1329211.79	479.0429487
Tulare	2038	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	918.6386093	11079142.06	3313272.245	1191.384086
Tulare	2038	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	813.0644784	9834976.956	2932495.915	1055.742637
Tulare	2038	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	649.8313603	7639802.577	2343759.764	829.4358159
Tulare	2038	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	12.96582173	180512.5333	46764.08856	19.23783691
Tulare	2038	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	460.2770086	8053649.187	1660090.292	793.1065284
Tulare	2038	T6 OOS Class 4	Aggregate	Aggregate	Diesel	5.315357799	122607.4374	38109.83973	11.70085852
Tulare	2038	T6 OOS Class 5	Aggregate	Aggregate	Diesel	6.562435631	168195.3564	47051.08849	16.06367952
Tulare	2038	T6 OOS Class 6	Aggregate	Aggregate	Diesel	29.26950178	439499.2785	209855.3031	41.90805563
Tulare	2038	T6 OOS Class 7	Aggregate	Aggregate	Diesel	36.58510737	3195706.267	262306.4394	274.6324078
Tulare	2038	T6 Public Class 4	Aggregate	Aggregate	Diesel	22.36441199	241661.201	35795.58326	28.86411813
Tulare	2038	T6 Public Class 5	Aggregate	Aggregate	Diesel	46.9000655	504894.1519	75066.36883	60.44949974
Tulare	2038	T6 Public Class 6	Aggregate	Aggregate	Diesel	57.5715586	622394.3128	92146.73384	74.25433338
Tulare	2038	T6 Public Class 7	Aggregate	Aggregate	Diesel	83.92778608	1079706.371	134331.4573	125.6305976
Tulare	2038	T6 Utility Class 5	Aggregate	Aggregate	Diesel	12.5963186	154416.1148	50304.65796	16.28703943
Tulare	2038	T6 Utility Class 6	Aggregate	Aggregate	Diesel	2.379506956	29187.27625	9502.79898	3.076896708
Tulare	2038	T6 Utility Class 7	Aggregate	Aggregate	Diesel	2.635784941	38865.92612	10526.27074	4.071709637
Tulare	2038	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	1007.359566	64254086.79	7222526.322	8796.989089
Tulare	2038	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1072.584527	94893594.96	7690173.64	12351.36775
Tulare	2038	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	464.3159527	34473157.46	3329033.945	4541.939712
Tulare	2038	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	17.15015663	1369714.642	87539.88749	189.8497585
Tulare	2038	T7 POAK Class 8	Aggregate	Aggregate	Diesel	83.34405212	3001147.423	425414.7121	425.2491356
Tulare	2038	T7 POLA Class 8	Aggregate	Aggregate	Diesel	89.27603803	5368488.454	455693.4664	794.450203
Tulare	2038	T7 Public Class 8	Aggregate	Aggregate	Diesel	249.9717911	3125322.443	400094.8499	538.1016327
Tulare	2038	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	10.37024948	194833.7575	30478.57803	29.52604707
Tulare	2038	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	107.6542398	1638704	316400.117	261.9860586
Tulare	2038	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	662.1303427	9963903.164	1946027.562	1579.682427
Tulare	2038	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	86.43365929	1750650.21	124049.5878	616.4926105
Tulare	2038	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2356.370224	45734932.21	10682274.52	6524.794734
Tulare	2038	T7 Utility Class 8	Aggregate	Aggregate	Diesel	12.57626817	160174.9859	50224.58455	25.67800618
Tulare	2039	PTO	Aggregate	Aggregate	Diesel	0	2375188.649	0	426.4890391
Tulare	2039	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.993408072	108998.6248	35801.53746	11.13454336
Tulare	2039	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	6.186729252	150302.7895	44357.36392	15.36006975
Tulare	2039	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	27.39598813	386804.2	196422.6599	39.54376627
Tulare	2039	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	59.98449379	3833614.674	430074.4242	342.9813127
Tulare	2039	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	63.54855062	646410.6041	282933.399	71.67637566
Tulare	2039	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	44.68675253	454335.0529	198956.1471	50.5012303
Tulare	2039	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	271.4783801	2761551.509	1208686.903	306.9180255
Tulare	2039	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	63.59181936	995809.1836	283126.0418	110.8394462
Tulare	2039	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	362.7995254	4385155.018	1308516.304	468.7798079
Tulare	2039	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	903.9258354	10904079.39	3260207.389	1166.966928
Tulare	2039	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	800.7519319	9676177.254	2888088.008	1033.963633
Tulare	2039	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	641.8426494	7636888.674	2314946.721	824.7775909
Tulare	2039	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	12.77263581	176407.9185	46067.32102	18.7245468
Tulare	2039	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	465.3284783	8217503.808	1678309.529	802.8023793
Tulare	2039	T6 OOS Class 4	Aggregate	Aggregate	Diesel	5.457953974	126337.2474	39132.22009	12.02272671
Tulare	2039	T6 OOS Class 5	Aggregate	Aggregate	Diesel	6.732215568	173311.985	48268.36989	16.50282444
Tulare	2039	T6 OOS Class 6	Aggregate	Aggregate	Diesel	30.12786657	452869.1755	216009.5727	43.08422677
Tulare	2039	T6 OOS Class 7	Aggregate	Aggregate	Diesel	37.55007241	3292922.043	269225.0072	281.7697511
Tulare	2039	T6 Public Class 4	Aggregate	Aggregate	Diesel	21.65856806	232726.3081	34665.83769	27.66761882
Tulare	2039	T6 Public Class 5	Aggregate	Aggregate	Diesel	45.47583429	487504.685	72786.80133	58.10214852
Tulare	2039	T6 Public Class 6	Aggregate	Aggregate	Diesel	55.94263684	600476.857	89539.54682	71.34591733
Tulare	2039	T6 Public Class 7	Aggregate	Aggregate	Diesel	82.06976706	1052957.127	131357.5864	121.9409062
Tulare	2039	T6 Utility Class 5	Aggregate	Aggregate	Diesel	12.02386045	147232.9817	48018.48908	15.47501223
Tulare	2039	T6 Utility Class 6	Aggregate	Aggregate	Diesel	2.273106102	27836.97672	9077.876529	2.924752803
Tulare	2039	T6 Utility Class 7	Aggregate	Aggregate	Diesel	2.516814149	37189.17036	10051.14899	3.883062664
Tulare	2039	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	1019.857715	65256072.38	7312135.049	8905.238059
Tulare	2039	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1095.340584	97120862.55	7853329.109	12605.69438
Tulare	2039	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	473.8931711	35282284.21	3397700.303	4632.886729
Tulare	2039	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	17.24541044	1362772.095	88026.09343	188.4055838
Tulare	2039	T7 POAK Class 8	Aggregate	Aggregate	Diesel	83.9403233	3029819.291	428458.271	427.5366097
Tulare	2039	T7 POLA Class 8	Aggregate	Aggregate	Diesel	88.09634416	5307827.145	449671.9314	774.7959957
Tulare	2039	T7 Public Class 8	Aggregate	Aggregate	Diesel	245.3074168	3054862.796	392629.2391	523.2329416

Tulare	2039	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	9.941905063	186800.0639	29219.65666	28.18779569
Tulare	2039	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	104.20914	1582946.574	306274.8309	251.8808148
Tulare	2039	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	649.3108567	9778583.339	1908350.58	1543.07174
Tulare	2039	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	81.05650968	1641490.042	116332.3027	575.5491172
Tulare	2039	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2389.272348	46437774.46	10831431.69	6568.106028
Tulare	2039	T7 Utility Class 8	Aggregate	Aggregate	Diesel	12.23534983	155561.8671	48863.09307	24.8185162
Tulare	2040	PTO	Aggregate	Aggregate	Diesel	0	2328139.644	0	415.3282296
Tulare	2040	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.874298802	107221.091	34947.55258	10.91458076
Tulare	2040	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	6.028304781	147740.6079	43221.49849	15.04263016
Tulare	2040	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	26.84851413	381116.7327	192497.4026	38.84617476
Tulare	2040	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	61.16479288	3919179.972	438536.8854	349.5821397
Tulare	2040	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	62.71672102	638240.7483	279229.894	70.4449575
Tulare	2040	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	44.05851112	448356.0995	196159.0656	49.59394854
Tulare	2040	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	267.5983389	2724497.301	1191412.028	301.2940656
Tulare	2040	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	63.3997099	995962.5512	282270.7244	110.2170666
Tulare	2040	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	357.6943942	4325975.981	1290103.525	460.5138584
Tulare	2040	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	890.7446726	10752187.11	3212666.625	1145.668711
Tulare	2040	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	789.4217329	9541074.09	2847223.152	1015.29552
Tulare	2040	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	635.3471819	7654654.863	2291519.388	822.3073227
Tulare	2040	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	12.59745921	173393.6624	45435.50807	18.33044437
Tulare	2040	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	471.651425	8395298.276	1701114.627	813.8025162
Tulare	2040	T6 OOS Class 4	Aggregate	Aggregate	Diesel	5.606956308	130180.521	40200.53106	12.36159033
Tulare	2040	T6 OOS Class 5	Aggregate	Aggregate	Diesel	6.912164207	178584.2652	49558.55844	16.96581984
Tulare	2040	T6 OOS Class 6	Aggregate	Aggregate	Diesel	31.02172333	466645.7944	222418.311	44.3214412
Tulare	2040	T6 OOS Class 7	Aggregate	Aggregate	Diesel	38.57673712	3393095.194	276585.9467	289.3539386
Tulare	2040	T6 Public Class 4	Aggregate	Aggregate	Diesel	21.03447132	224797.5391	33666.93341	26.61516181
Tulare	2040	T6 Public Class 5	Aggregate	Aggregate	Diesel	44.13379528	471226.7481	70638.78737	55.91955801
Tulare	2040	T6 Public Class 6	Aggregate	Aggregate	Diesel	54.27542967	579399.6944	86871.08171	68.54655732
Tulare	2040	T6 Public Class 7	Aggregate	Aggregate	Diesel	80.23083463	1027912.654	128414.2647	118.4944078
Tulare	2040	T6 Utility Class 5	Aggregate	Aggregate	Diesel	11.53160201	141142.6809	46052.60578	14.78663069
Tulare	2040	T6 Utility Class 6	Aggregate	Aggregate	Diesel	2.179561896	26679.79561	8704.298388	2.794152429
Tulare	2040	T6 Utility Class 7	Aggregate	Aggregate	Diesel	2.414272023	35798.40864	9641.636751	3.725642541
Tulare	2040	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	1034.735466	66368111.62	7418804.957	9035.465264
Tulare	2040	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1119.601319	99400406.83	8027272.752	12873.45533
Tulare	2040	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	484.0627459	36110402.16	3470613.713	4729.880548
Tulare	2040	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	17.34814983	1357622.575	88550.50812	187.3687935
Tulare	2040	T7 POAK Class 8	Aggregate	Aggregate	Diesel	84.6572281	3060978.449	432117.5825	430.6615557
Tulare	2040	T7 POLA Class 8	Aggregate	Aggregate	Diesel	87.33367716	5252413.069	445779.035	757.9699263
Tulare	2040	T7 Public Class 8	Aggregate	Aggregate	Diesel	240.2173694	2984191.073	384482.3127	508.3630527
Tulare	2040	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	9.568302274	180081.1413	28121.62312	27.06977302
Tulare	2040	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	100.9587771	1528780.701	296721.8842	242.1181052
Tulare	2040	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	636.7546037	9610372.703	1871447.25	1509.382914
Tulare	2040	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	75.42092338	1527578.149	108244.1092	532.9144668
Tulare	2040	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2422.621874	47168152.62	10982617.1	6618.938987
Tulare	2040	T7 Utility Class 8	Aggregate	Aggregate	Diesel	11.88992542	151076.0296	47483.60614	23.99352092
Tulare	2041	PTO	Aggregate	Aggregate	Diesel	0	2286116.063	0	405.2770682
Tulare	2041	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.785870432	106137.6511	34313.54239	10.77137254
Tulare	2041	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	5.909537981	146142.1906	42369.96904	14.8321625
Tulare	2041	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	26.450264	377829.081	189642.0448	38.41109777
Tulare	2041	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	62.48986387	4011685.093	448037.3264	356.9752699
Tulare	2041	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	61.97333076	631567.8049	275920.1422	69.3980185
Tulare	2041	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	43.51212449	443535.9121	193726.4211	48.82906183
Tulare	2041	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	264.3602595	2695613.519	1176995.322	296.6915889
Tulare	2041	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	63.32328817	997362.4486	281930.4765	109.7542269
Tulare	2041	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	353.2835654	4272737.697	1274194.901	453.0124744
Tulare	2041	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	879.4426888	10617906.39	3171903.534	1126.641087
Tulare	2041	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	779.7033716	9420233.885	2812171.744	998.462663
Tulare	2041	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	630.1575143	7680215.938	2272801.71	820.9077117
Tulare	2041	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	12.43961549	171175.3559	44866.20997	18.02454132
Tulare	2041	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	479.2517647	8584927.064	1728526.925	826.2550379
Tulare	2041	T6 OOS Class 4	Aggregate	Aggregate	Diesel	5.765372856	134140.7098	41336.33969	12.71587724
Tulare	2041	T6 OOS Class 5	Aggregate	Aggregate	Diesel	7.102896831	184016.9322	50926.06558	17.44975789
Tulare	2041	T6 OOS Class 6	Aggregate	Aggregate	Diesel	31.96033055	480841.5086	229147.8995	45.61266577
Tulare	2041	T6 OOS Class 7	Aggregate	Aggregate	Diesel	39.67459882	3496315.689	284457.3516	297.3520154
Tulare	2041	T6 Public Class 4	Aggregate	Aggregate	Diesel	20.41857248	217318.1112	32681.15037	25.62296441
Tulare	2041	T6 Public Class 5	Aggregate	Aggregate	Diesel	42.81917781	455742.2769	68534.66324	53.84822505
Tulare	2041	T6 Public Class 6	Aggregate	Aggregate	Diesel	52.62862174	559578.9726	84235.26681	65.91545409
Tulare	2041	T6 Public Class 7	Aggregate	Aggregate	Diesel	78.4142768	1004513.295	125506.7549	115.2763287

Tulare	2041	T6 Utility Class 5	Aggregate	Aggregate	Diesel	11.1039965	135994.8339	44344.92043	14.20633593
Tulare	2041	T6 Utility Class 6	Aggregate	Aggregate	Diesel	2.100055719	25714.28459	8386.782521	2.685791024
Tulare	2041	T6 Utility Class 7	Aggregate	Aggregate	Diesel	2.328273137	34673.1596	9298.191599	3.599114161
Tulare	2041	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	1052.073933	67588306.07	7543117.602	9185.928215
Tulare	2041	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1145.454707	101733454.7	8212635.343	13153.74382
Tulare	2041	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	494.8620247	36957957.02	3548041.95	4832.199038
Tulare	2041	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	17.46632633	1354448.38	89153.71879	186.7306492
Tulare	2041	T7 POAK Class 8	Aggregate	Aggregate	Diesel	85.56722503	3097423.275	436762.498	434.969013
Tulare	2041	T7 POLA Class 8	Aggregate	Aggregate	Diesel	86.93194183	5203491.17	443728.4493	744.0175857
Tulare	2041	T7 Public Class 8	Aggregate	Aggregate	Diesel	235.9555731	2924544.804	377661.0521	495.9233314
Tulare	2041	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	9.246120942	174594.2976	27174.71929	26.15634404
Tulare	2041	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	97.97667134	1477143.719	287957.3561	232.8586897
Tulare	2041	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	624.7330865	9462774.827	1836115.53	1479.299522
Tulare	2041	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	69.73140735	1412462.436	100078.5158	490.0641972
Tulare	2041	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2456.682868	47930318.37	11137027.85	6678.389998
Tulare	2041	T7 Utility Class 8	Aggregate	Aggregate	Diesel	11.57220367	147035.2813	46214.75258	23.24658357
Tulare	2042	PTO	Aggregate	Aggregate	Diesel	0	2250157.83	0	396.4872519
Tulare	2042	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.727143326	105691.5349	33892.48313	10.69759892
Tulare	2042	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	5.828969386	145431.7858	41792.31154	14.71877617
Tulare	2042	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	26.19912441	376732.4387	187841.4342	38.21240697
Tulare	2042	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	63.95202422	4111186.08	458520.6652	365.110908
Tulare	2042	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	61.3136466	626266.451	272983.0699	68.51731628
Tulare	2042	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	43.0356099	439716.633	191604.8638	48.18830271
Tulare	2042	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	261.574654	2673068.687	1164593.137	292.882136
Tulare	2042	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	63.22725452	998462.1707	281502.9117	109.2888818
Tulare	2042	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	349.6303037	4227390.101	1261018.609	446.4935081
Tulare	2042	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	870.1275275	10508808.61	3138306.356	1110.659042
Tulare	2042	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	771.6818228	9318041.448	2783240.264	983.916348
Tulare	2042	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	625.6182603	7710299.824	2256429.892	820.3099818
Tulare	2042	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	12.30556138	169772.8652	44382.71433	17.80836366
Tulare	2042	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	487.163614	8781435.986	1757062.75	839.6618816
Tulare	2042	T6 OOS Class 4	Aggregate	Aggregate	Diesel	5.932653322	138221.3705	42535.70048	13.08414961
Tulare	2042	T6 OOS Class 5	Aggregate	Aggregate	Diesel	7.304027008	189614.8649	52368.12068	17.95276706
Tulare	2042	T6 OOS Class 6	Aggregate	Aggregate	Diesel	32.93813108	495469.067	236158.4947	46.95204782
Tulare	2042	T6 OOS Class 7	Aggregate	Aggregate	Diesel	40.83197073	3602676.227	292755.4304	305.7271737
Tulare	2042	T6 Public Class 4	Aggregate	Aggregate	Diesel	19.78779971	210087.7044	31671.56071	24.66251792
Tulare	2042	T6 Public Class 5	Aggregate	Aggregate	Diesel	41.57735626	441416.7728	66547.05333	51.94171748
Tulare	2042	T6 Public Class 6	Aggregate	Aggregate	Diesel	51.0046496	540949.6692	81636.00197	63.44629655
Tulare	2042	T6 Public Class 7	Aggregate	Aggregate	Diesel	76.63017083	982484.0962	122651.1862	112.2593352
Tulare	2042	T6 Utility Class 5	Aggregate	Aggregate	Diesel	10.73307158	131664.7998	42863.59466	13.71922099
Tulare	2042	T6 Utility Class 6	Aggregate	Aggregate	Diesel	2.031172979	24904.07549	8111.692408	2.595075238
Tulare	2042	T6 Utility Class 7	Aggregate	Aggregate	Diesel	2.253951739	33740.52421	9001.381665	3.494501465
Tulare	2042	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	1071.587072	68915841.6	7683022.125	9354.879946
Tulare	2042	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1172.546376	104121262.1	8406876.101	13445.54781
Tulare	2042	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	506.1496453	37825405.02	3628971.481	4939.176207
Tulare	2042	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	17.59835722	1353166.88	89827.64673	186.4412004
Tulare	2042	T7 POAK Class 8	Aggregate	Aggregate	Diesel	86.68138293	3139981.96	442449.5165	440.4775917
Tulare	2042	T7 POLA Class 8	Aggregate	Aggregate	Diesel	86.80825154	5161579.5	443097.0945	732.7375057
Tulare	2042	T7 Public Class 8	Aggregate	Aggregate	Diesel	231.1176107	2862403.888	369917.603	483.0102707
Tulare	2042	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	8.972173487	170246.4651	26369.57676	25.43017528
Tulare	2042	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	95.29069038	1430449.23	280063.1507	224.4687657
Tulare	2042	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	613.3397303	9338440.63	1802630.001	1453.004906
Tulare	2042	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	64.60238582	1308546.083	92717.34413	452.1286341
Tulare	2042	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2492.092531	48731505.38	11297552.6	6747.247297
Tulare	2042	T7 Utility Class 8	Aggregate	Aggregate	Diesel	11.27203601	143304.8897	45016.003	22.56098083
Tulare	2043	PTO	Aggregate	Aggregate	Diesel	0	2221267.905	0	389.1294979
Tulare	2043	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.697438325	105841.4002	33679.50541	10.68870045
Tulare	2043	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	5.785800189	145556.7338	41482.79876	14.69657855
Tulare	2043	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	26.09641848	377697.5609	187105.0574	38.2364184
Tulare	2043	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	65.54674312	4217449.721	469954.417	373.9675035
Tulare	2043	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	60.8291866	622983.3246	270826.1378	67.88376899
Tulare	2043	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	42.68767777	437345.7172	190055.7865	47.72504784
Tulare	2043	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	259.4662927	2658555.124	1155206.207	290.0443265
Tulare	2043	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	63.26495449	1001322.236	281670.761	109.0584598
Tulare	2043	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	346.9317727	4199853.009	1251285.763	441.9870021
Tulare	2043	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	862.9893667	10438859.81	3112561.009	1099.145752
Tulare	2043	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	765.5663197	9255359.949	2761183.357	973.8032225
Tulare	2043	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	623.2592622	7754356.304	2247921.646	821.5046416

Tulare	2043	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	12.19118273	169146.8883	43970.18257	17.67636035
Tulare	2043	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	495.9037268	8986739.008	1788585.889	854.2091883
Tulare	2043	T6 OOS Class 4	Aggregate	Aggregate	Diesel	6.106897338	142426.168	43784.98826	13.46726218
Tulare	2043	T6 OOS Class 5	Aggregate	Aggregate	Diesel	7.515393048	195383.0909	53883.56446	18.47669577
Tulare	2043	T6 OOS Class 6	Aggregate	Aggregate	Diesel	33.95523693	510541.6065	243450.8995	48.34440836
Tulare	2043	T6 OOS Class 7	Aggregate	Aggregate	Diesel	42.04853472	3712272.332	301477.9023	314.5071089
Tulare	2043	T6 Public Class 4	Aggregate	Aggregate	Diesel	19.19630113	203484.443	30724.83174	23.78846206
Tulare	2043	T6 Public Class 5	Aggregate	Aggregate	Diesel	40.38324152	428053.457	64635.80105	50.16729691
Tulare	2043	T6 Public Class 6	Aggregate	Aggregate	Diesel	49.45893045	523799.7983	79161.98572	61.1779793
Tulare	2043	T6 Public Class 7	Aggregate	Aggregate	Diesel	74.83340797	961257.8114	119775.3595	109.3580811
Tulare	2043	T6 Utility Class 5	Aggregate	Aggregate	Diesel	10.42659995	128155.9555	41639.66956	13.32688989
Tulare	2043	T6 Utility Class 6	Aggregate	Aggregate	Diesel	1.972610103	24235.03991	7877.815709	2.520323469
Tulare	2043	T6 Utility Class 7	Aggregate	Aggregate	Diesel	2.190480516	32974.82202	8747.90299	3.408760309
Tulare	2043	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	1093.187459	70340841.24	7837891.719	9539.947437
Tulare	2043	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1200.781179	106565114.2	8609312.867	13748.1399
Tulare	2043	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	517.9651289	38713213.07	3713685.662	5050.4235
Tulare	2043	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	17.73552082	1353454.589	90527.77362	186.4179844
Tulare	2043	T7 POAK Class 8	Aggregate	Aggregate	Diesel	88.00266092	3188702.806	449193.7422	447.0288845
Tulare	2043	T7 POLA Class 8	Aggregate	Aggregate	Diesel	86.86010882	5126380.804	443361.7907	723.7446442
Tulare	2043	T7 Public Class 8	Aggregate	Aggregate	Diesel	226.09375	2800790.602	361876.6125	470.244302
Tulare	2043	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	8.743558187	166884.512	25697.66725	24.86596723
Tulare	2043	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	92.77498007	1391111.89	272669.3774	217.3058845
Tulare	2043	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	602.8476324	9240308.804	1771793.306	1431.176716
Tulare	2043	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	59.08361328	1196943.798	84796.80178	410.9782485
Tulare	2043	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2529.62462	49577265.44	11467699.07	6826.923182
Tulare	2043	T7 Utility Class 8	Aggregate	Aggregate	Diesel	11.00005608	139970.2364	43929.82398	21.95362431
Tulare	2044	PTO	Aggregate	Aggregate	Diesel	0	2198980.424	0	383.0989114
Tulare	2044	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.695622574	106545.9201	33666.4869	10.73975484
Tulare	2044	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	5.778102762	146455.8017	41427.61006	14.75826529
Tulare	2044	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	26.13822183	380582.4621	187404.7774	38.46665419
Tulare	2044	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	67.26826857	4330375.642	482297.3413	383.5112588
Tulare	2044	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	60.47217035	621291.0747	269236.6157	67.44078883
Tulare	2044	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	42.4312293	436096.074	188914.0163	47.39870353
Tulare	2044	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	257.9776151	2651368.771	1148578.257	288.108041
Tulare	2044	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	63.46325409	1006555.7	282553.6384	109.1054426
Tulare	2044	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	344.949825	4182984.469	1244137.433	438.7110651
Tulare	2044	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	857.922053	10401145.92	3094284.627	1091.328555
Tulare	2044	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	761.2232277	9221721.948	2745519.04	967.0052239
Tulare	2044	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	623.501566	7815375.422	2248795.568	824.6010963
Tulare	2044	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	12.11702425	169284.3018	43702.71372	17.62974347
Tulare	2044	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	505.3489763	9200697.23	1822652.26	869.5461389
Tulare	2044	T6 OOS Class 4	Aggregate	Aggregate	Diesel	6.287608249	146758.8786	45080.64212	13.86398617
Tulare	2044	T6 OOS Class 5	Aggregate	Aggregate	Diesel	7.734929095	201326.7907	55457.58523	19.01942233
Tulare	2044	T6 OOS Class 6	Aggregate	Aggregate	Diesel	35.00865708	526072.6642	251003.6692	49.78530822
Tulare	2044	T6 OOS Class 7	Aggregate	Aggregate	Diesel	43.32017304	3825202.434	310595.2438	323.6596361
Tulare	2044	T6 Public Class 4	Aggregate	Aggregate	Diesel	18.58573866	197040.6995	29747.58986	22.93011885
Tulare	2044	T6 Public Class 5	Aggregate	Aggregate	Diesel	39.18510201	415269.4469	62718.10688	48.46317295
Tulare	2044	T6 Public Class 6	Aggregate	Aggregate	Diesel	47.9350756	507660.0555	76722.9646	59.03855886
Tulare	2044	T6 Public Class 7	Aggregate	Aggregate	Diesel	72.99089442	940374.9857	116826.306	106.5001579
Tulare	2044	T6 Utility Class 5	Aggregate	Aggregate	Diesel	10.16957396	125314.3858	40613.21058	13.00936774
Tulare	2044	T6 Utility Class 6	Aggregate	Aggregate	Diesel	1.923388413	23692.7414	7681.243967	2.45974572
Tulare	2044	T6 Utility Class 7	Aggregate	Aggregate	Diesel	2.137142495	32354.40962	8534.892266	3.339331065
Tulare	2044	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	1116.671926	71854086.57	8006269.708	9739.067099
Tulare	2044	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1229.987011	109066326.5	8818711.675	14060.94734
Tulare	2044	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	530.2839394	39621859.07	3802008.577	5165.631595
Tulare	2044	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	17.87285367	1355019.743	91228.76442	186.6036616
Tulare	2044	T7 POAK Class 8	Aggregate	Aggregate	Diesel	89.52502655	3243336.012	456964.3835	454.5487128
Tulare	2044	T7 POLA Class 8	Aggregate	Aggregate	Diesel	87.00374132	5097115.257	444094.9369	716.5629693
Tulare	2044	T7 Public Class 8	Aggregate	Aggregate	Diesel	220.5515764	2736211.767	353006.0311	456.8536169
Tulare	2044	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	8.556515995	164370.3247	25147.94277	24.4407438
Tulare	2044	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	90.41293289	1357445.56	265727.2263	211.1042872
Tulare	2044	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	593.0541163	9167478.487	1743009.77	1413.586998
Tulare	2044	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	54.27689568	1099444.169	77898.20069	375.9000438
Tulare	2044	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2569.452624	50470312.81	11648253.75	6917.15099
Tulare	2044	T7 Utility Class 8	Aggregate	Aggregate	Diesel	10.7524531	136976.8141	42940.99669	21.40720949
Tulare	2045	PTO	Aggregate	Aggregate	Diesel	0	2183266.555	0	378.3611492
Tulare	2045	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.719852257	107752.9197	33840.20792	10.84460773
Tulare	2045	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	5.803228334	148053.8207	41607.75438	14.89495098

Tulare	2045	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	26.31491582	385197.5554	188671.6309	38.88111171
Tulare	2045	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	69.10534712	4449795.396	495468.7535	393.7029159
Tulare	2045	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	60.32154938	621738.6908	268566.015	67.26134858
Tulare	2045	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	42.31712527	436326.2143	188405.9978	47.25293635
Tulare	2045	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	257.3016136	2652794.387	1145568.536	287.2203789
Tulare	2045	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	63.82279461	1013960.986	284154.3991	109.3941869
Tulare	2045	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	344.1406736	4185241.699	1241219.05	437.5820395
Tulare	2045	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	855.4673924	10405650.91	3085431.354	1088.264732
Tulare	2045	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	759.2773134	9226860.825	2738500.672	964.5631946
Tulare	2045	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	625.3306766	7892522.472	2255392.658	829.4210591
Tulare	2045	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	12.0793587	170065.0612	43566.86462	17.65586308
Tulare	2045	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	515.8184171	9425329.67	1860412.601	885.9537183
Tulare	2045	T6 OOS Class 4	Aggregate	Aggregate	Diesel	6.478044964	151223.3935	46446.02766	14.27498209
Tulare	2045	T6 OOS Class 5	Aggregate	Aggregate	Diesel	7.965282722	207451.3023	57109.16545	19.58134679
Tulare	2045	T6 OOS Class 6	Aggregate	Aggregate	Diesel	36.10540685	542076.1883	258867.1018	51.2748875
Tulare	2045	T6 OOS Class 7	Aggregate	Aggregate	Diesel	44.64003181	3941567.955	320058.3145	333.1723057
Tulare	2045	T6 Public Class 4	Aggregate	Aggregate	Diesel	18.03811219	191364.9742	28871.08085	22.18079683
Tulare	2045	T6 Public Class 5	Aggregate	Aggregate	Diesel	38.09226059	403879.168	60968.94861	46.95463776
Tulare	2045	T6 Public Class 6	Aggregate	Aggregate	Diesel	46.50027751	492928.1916	74426.48418	57.0950341
Tulare	2045	T6 Public Class 7	Aggregate	Aggregate	Diesel	71.26063621	920980.1991	114056.9239	103.8707148
Tulare	2045	T6 Utility Class 5	Aggregate	Aggregate	Diesel	9.953924179	123015.3115	39751.9916	12.75251692
Tulare	2045	T6 Utility Class 6	Aggregate	Aggregate	Diesel	1.882396111	23256.47464	7517.53711	2.411052435
Tulare	2045	T6 Utility Class 7	Aggregate	Aggregate	Diesel	2.092735773	31850.42483	8357.549585	3.283034185
Tulare	2045	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	1141.775215	73449073.91	8186254.265	9950.66401
Tulare	2045	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1259.902424	111626245.2	9033198.001	14383.4292
Tulare	2045	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	543.0316659	40551832.07	3893406.717	5284.538732
Tulare	2045	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	18.0065565	1357581.007	91911.22649	186.9441046
Tulare	2045	T7 POAK Class 8	Aggregate	Aggregate	Diesel	91.22845454	3303349.092	465659.2251	462.9135478
Tulare	2045	T7 POLA Class 8	Aggregate	Aggregate	Diesel	87.17113429	5072793.253	444949.3642	710.7211325
Tulare	2045	T7 Public Class 8	Aggregate	Aggregate	Diesel	215.0005455	2672732.351	344121.2731	443.8144709
Tulare	2045	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	8.406974543	162562.0369	24708.43446	24.13094152
Tulare	2045	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	88.14169621	1328533.711	259051.9708	205.7113329
Tulare	2045	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	584.3333727	9121443.411	1717379.156	1400.419298
Tulare	2045	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	49.4335671	1001382.544	70947.05551	340.4109632
Tulare	2045	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2611.897021	51413665.59	11840669.48	7017.671842
Tulare	2045	T7 Utility Class 8	Aggregate	Aggregate	Diesel	10.53368639	134327.743	42067.32995	20.92853949
Tulare	2046	PTO	Aggregate	Aggregate	Diesel	0	2173719.799	0	374.8727799
Tulare	2046	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.766923089	109386.5506	34177.69449	10.99510037
Tulare	2046	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	5.857256233	150247.7683	41995.12145	15.09552292
Tulare	2046	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	26.61161677	391288.9	190798.9055	39.45276454
Tulare	2046	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	71.04984739	4575442.237	509410.3538	404.511962
Tulare	2046	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	60.34609763	624018.6209	268675.3097	67.30197977
Tulare	2046	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	42.32359415	437824.1731	188434.7988	47.26002849
Tulare	2046	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	257.3698327	2662034.474	1145872.264	287.2771165
Tulare	2046	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	64.26812991	1022340.007	286137.1387	109.7794415
Tulare	2046	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	344.275536	4203751.187	1241705.461	438.2704766
Tulare	2046	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	855.4984569	10450443.24	3085543.395	1089.733751
Tulare	2046	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	759.427992	9267429.37	2739044.127	966.0750385
Tulare	2046	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	627.8623247	7979324.575	2264523.604	835.220376
Tulare	2046	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	12.0773918	171435.9386	43559.77056	17.74800269
Tulare	2046	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	527.1582802	9659728.684	1901312.312	903.290173
Tulare	2046	T6 OOS Class 4	Aggregate	Aggregate	Diesel	6.6753948	155823.7223	47860.97862	14.6999005
Tulare	2046	T6 OOS Class 5	Aggregate	Aggregate	Diesel	8.204439758	213762.1261	58823.864	20.16250476
Tulare	2046	T6 OOS Class 6	Aggregate	Aggregate	Diesel	37.23781765	558566.5514	266986.2155	52.81345059
Tulare	2046	T6 OOS Class 7	Aggregate	Aggregate	Diesel	46.00698457	4061473.4	329859.0377	343.0487221
Tulare	2046	T6 Public Class 4	Aggregate	Aggregate	Diesel	17.48742436	185931.7638	27989.67194	21.45834205
Tulare	2046	T6 Public Class 5	Aggregate	Aggregate	Diesel	37.04726507	393381.6242	59296.37058	45.56196013
Tulare	2046	T6 Public Class 6	Aggregate	Aggregate	Diesel	45.17758665	479762.7591	72309.4381	55.3634144
Tulare	2046	T6 Public Class 7	Aggregate	Aggregate	Diesel	69.62522874	902930.6591	111439.3561	101.4349707
Tulare	2046	T6 Utility Class 5	Aggregate	Aggregate	Diesel	9.778660437	121222.663	39052.05832	12.55184543
Tulare	2046	T6 Utility Class 6	Aggregate	Aggregate	Diesel	1.848550351	22912.41341	7382.370683	2.372493222
Tulare	2046	T6 Utility Class 7	Aggregate	Aggregate	Diesel	2.055942836	31445.95482	8210.613308	3.23769947
Tulare	2046	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	1168.316405	75116697.86	8376548.227	10173.1321
Tulare	2046	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1290.447022	114246248.3	9252195.442	14715.24059
Tulare	2046	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	556.1974001	41503632.67	3987801.872	5406.985548
Tulare	2046	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	18.13422153	1360841.522	92562.86966	187.3851877
Tulare	2046	T7 POAK Class 8	Aggregate	Aggregate	Diesel	93.08918516	3367948.746	475156.9896	471.940207
Tulare	2046	T7 POLA Class 8	Aggregate	Aggregate	Diesel	87.31428538	5052347.366	445680.0532	705.8009212

Tulare	2046	T7 Public Class 8	Aggregate	Aggregate	Diesel	209.8996254	2614766.581	335956.9445	432.0640118
Tulare	2046	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	8.2906379	161329.3236	24366.51641	23.91535088
Tulare	2046	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	85.94969339	1303237.231	252609.5869	200.9402343
Tulare	2046	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	576.9098504	9101277.378	1695561.127	1391.670987
Tulare	2046	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	44.7846756	907205.9647	64274.96642	306.2949656
Tulare	2046	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2657.325694	52409404.36	12046614.01	7128.661784
Tulare	2046	T7 Utility Class 8	Aggregate	Aggregate	Diesel	10.34050864	131992.383	41295.85531	20.51043535
Tulare	2047	PTO	Aggregate	Aggregate	Diesel	0	2169317.499	0	372.4165195
Tulare	2047	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.834493062	111386.9127	34662.15497	11.18471763
Tulare	2047	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	5.937141799	152953.7447	42567.88178	15.35082614
Tulare	2047	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	27.0167647	398650.5748	193703.7189	40.15942419
Tulare	2047	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	73.09181366	4706936.918	524050.7619	415.8904637
Tulare	2047	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	60.54320499	628062.1138	269552.879	67.55262857
Tulare	2047	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	42.45505162	440591.6231	189020.079	47.41927337
Tulare	2047	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	258.2070083	2679077.648	1149599.57	288.2717151
Tulare	2047	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	64.79287143	1031364.876	288473.4139	110.2748776
Tulare	2047	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	345.3952307	4237878.38	1245743.887	440.6926751
Tulare	2047	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	858.1285651	10534493.41	3095029.458	1095.599062
Tulare	2047	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	761.7798452	9342238.179	2747526.603	971.3931879
Tulare	2047	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	631.0456283	8075990.692	2276004.889	842.282047
Tulare	2047	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	12.11537455	173348.9039	43696.76369	17.90202717
Tulare	2047	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	539.296572	9903641.052	1945091.732	921.8523545
Tulare	2047	T6 OOS Class 4	Aggregate	Aggregate	Diesel	6.879439248	160563.9964	49323.92834	15.13879355
Tulare	2047	T6 OOS Class 5	Aggregate	Aggregate	Diesel	8.452098265	220264.9299	60599.51605	20.76295706
Tulare	2047	T6 OOS Class 6	Aggregate	Aggregate	Diesel	38.4050037	575558.5637	275354.6593	54.40127621
Tulare	2047	T6 OOS Class 7	Aggregate	Aggregate	Diesel	47.41887617	4185026.458	339981.9616	353.2834118
Tulare	2047	T6 Public Class 4	Aggregate	Aggregate	Diesel	16.97383576	180995.1279	27167.64256	20.80367825
Tulare	2047	T6 Public Class 5	Aggregate	Aggregate	Diesel	36.04452259	383619.1406	57691.42108	44.26650465
Tulare	2047	T6 Public Class 6	Aggregate	Aggregate	Diesel	43.88564545	467328.3562	70241.60869	53.72439728
Tulare	2047	T6 Public Class 7	Aggregate	Aggregate	Diesel	68.10944761	886219.4391	109013.2575	99.2021644
Tulare	2047	T6 Utility Class 5	Aggregate	Aggregate	Diesel	9.638897791	119837.0529	38493.90222	12.39729342
Tulare	2047	T6 Utility Class 6	Aggregate	Aggregate	Diesel	1.821748478	22647.91521	7275.334724	2.342983131
Tulare	2047	T6 Utility Class 7	Aggregate	Aggregate	Diesel	2.026888657	31130.66182	8094.58254	3.202595954
Tulare	2047	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	1196.055559	76848780.48	8575431.304	10405.08249
Tulare	2047	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1321.55291	116927746.2	9475217.194	15056.14281
Tulare	2047	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	569.7324455	42477773.2	4084844.898	5532.84008
Tulare	2047	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	18.25457563	1364546.045	93177.19548	187.8898118
Tulare	2047	T7 POAK Class 8	Aggregate	Aggregate	Diesel	95.08219908	3436320.215	485329.9704	481.5088508
Tulare	2047	T7 POLA Class 8	Aggregate	Aggregate	Diesel	87.40447989	5034839.475	446140.4348	701.4766306
Tulare	2047	T7 Public Class 8	Aggregate	Aggregate	Diesel	205.38965	2563040.228	328738.4582	421.7940042
Tulare	2047	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	8.203285657	160556.9118	24109.78468	23.77523071
Tulare	2047	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	83.78810658	1280163.702	246256.5968	196.5757587
Tulare	2047	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	570.5883336	9103382.684	1676981.936	1386.619999
Tulare	2047	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	40.54000984	821203.112	58183.02212	275.5438433
Tulare	2047	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2705.774591	53457083.61	12266250.3	7249.631332
Tulare	2047	T7 Utility Class 8	Aggregate	Aggregate	Diesel	10.16274509	129854.3255	40585.93881	20.12740862
Tulare	2048	PTO	Aggregate	Aggregate	Diesel	0	2169739.186	0	370.9292263
Tulare	2048	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	4.920436952	113720.8111	35278.35204	11.40978273
Tulare	2048	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	6.040137358	156124.6392	43306.33522	15.65562274
Tulare	2048	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	27.51972033	407171.576	197309.79	40.98893738
Tulare	2048	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	75.22512545	4844112.349	539346.0954	427.8131586
Tulare	2048	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	60.91501307	633845.4277	271208.2578	68.01082204
Tulare	2048	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	42.71164358	444602.9032	190162.488	47.72807076
Tulare	2048	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	259.8193718	2703806.524	1156778.2	290.1927879
Tulare	2048	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	65.41953469	1041805.561	291263.4691	110.9558854
Tulare	2048	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	347.5282603	4286672.9	1253437.127	444.7588885
Tulare	2048	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	863.3708252	10655299.94	3113936.823	1105.607409
Tulare	2048	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	766.4005079	9449284.517	2764192.04	980.3247972
Tulare	2048	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	635.5219484	8186375.396	2292149.722	850.9734699
Tulare	2048	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	12.19216756	175773.7576	43973.73457	18.11435878
Tulare	2048	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	552.5261599	10159916.78	1992807.152	941.9031006
Tulare	2048	T6 OOS Class 4	Aggregate	Aggregate	Diesel	7.090008968	165448.4733	50833.6627	15.59196526
Tulare	2048	T6 OOS Class 5	Aggregate	Aggregate	Diesel	8.708019496	226965.5538	62434.40986	21.38310817
Tulare	2048	T6 OOS Class 6	Aggregate	Aggregate	Diesel	39.60631267	593067.4857	283967.7563	56.03955626
Tulare	2048	T6 OOS Class 7	Aggregate	Aggregate	Diesel	48.87371162	4312338.093	350412.7827	363.8743545
Tulare	2048	T6 Public Class 4	Aggregate	Aggregate	Diesel	16.50006676	176545.6085	26409.34685	20.21528077
Tulare	2048	T6 Public Class 5	Aggregate	Aggregate	Diesel	35.06586264	374390.3192	56125.0171	43.03729112
Tulare	2048	T6 Public Class 6	Aggregate	Aggregate	Diesel	42.6291844	455566.4645	68230.56738	52.16909945

Tulare	2048	T6 Public Class 7	Aggregate	Aggregate	Diesel	66.62693466	870075.34	106640.4065	97.04692775
Tulare	2048	T6 Utility Class 5	Aggregate	Aggregate	Diesel	9.530712624	118799.8952	38061.85394	12.28140222
Tulare	2048	T6 Utility Class 6	Aggregate	Aggregate	Diesel	1.801244839	22451.7855	7193.45139	2.321060488
Tulare	2048	T6 Utility Class 7	Aggregate	Aggregate	Diesel	2.004631395	30891.74689	8005.69594	3.175980853
Tulare	2048	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	1224.75173	78638443.93	8781175.965	10645.37598
Tulare	2048	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1353.168547	119672181.9	9701893.718	15405.99116
Tulare	2048	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	583.5792427	43474777.97	4184123.111	5662.008779
Tulare	2048	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	18.36692062	1368494.419	93750.64023	188.4291554
Tulare	2048	T7 POAK Class 8	Aggregate	Aggregate	Diesel	97.17991259	3507708.973	496037.3714	491.5086646
Tulare	2048	T7 POLA Class 8	Aggregate	Aggregate	Diesel	87.43154225	5019582.995	446278.5697	697.5350821
Tulare	2048	T7 Public Class 8	Aggregate	Aggregate	Diesel	200.8364581	2511740.657	321450.8014	411.6565737
Tulare	2048	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	8.140815668	160146.5011	23926.18288	23.69458126
Tulare	2048	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	81.76535533	1259530.109	240311.6499	192.6636625
Tulare	2048	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	565.5261365	9126044.093	1662103.936	1384.997509
Tulare	2048	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	36.35509272	736440.5906	52176.82907	245.023011
Tulare	2048	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2757.227239	54555508.73	12499503.68	7379.909376
Tulare	2048	T7 Utility Class 8	Aggregate	Aggregate	Diesel	9.99231158	127840.6024	39905.29552	19.77140303
Tulare	2049	PTO	Aggregate	Aggregate	Diesel	0	2174923.576	0	370.4195569
Tulare	2049	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	5.022835504	116354.4771	36012.52508	11.66661055
Tulare	2049	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	6.163773501	159712.7657	44192.77669	16.00469148
Tulare	2049	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	28.11079203	416737.8423	201547.6323	41.92897054
Tulare	2049	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	77.44696699	4986756.038	555276.1661	440.2539312
Tulare	2049	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	61.46394101	641360.5048	273652.2167	68.6745522
Tulare	2049	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	43.09663993	449864.1042	191876.5842	48.186513
Tulare	2049	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	262.2118071	2736142.564	1167429.896	293.0249004
Tulare	2049	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	66.13154493	1053447.675	294433.5096	111.787053
Tulare	2049	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	350.6907095	4349026.527	1264843.196	450.3495118
Tulare	2049	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	871.2158882	10810087.84	3142231.768	1119.449405
Tulare	2049	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	773.3172078	9586219.63	2789138.64	992.6156434
Tulare	2049	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	640.5927832	8306320.681	2310438.803	860.7522089
Tulare	2049	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	12.30793078	178682.6968	44391.26011	18.38161103
Tulare	2049	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	566.5192863	10426119.99	2043276.44	963.0493128
Tulare	2049	T6 OOS Class 4	Aggregate	Aggregate	Diesel	7.307350789	170481.5397	52391.95139	16.05974099
Tulare	2049	T6 OOS Class 5	Aggregate	Aggregate	Diesel	8.972476251	233870.0158	64330.50133	22.02339052
Tulare	2049	T6 OOS Class 6	Aggregate	Aggregate	Diesel	40.84344917	611109.0424	292837.7281	57.72957124
Tulare	2049	T6 OOS Class 7	Aggregate	Aggregate	Diesel	50.37382213	4443522.646	361168.2149	374.8223218
Tulare	2049	T6 Public Class 4	Aggregate	Aggregate	Diesel	16.07915086	172633.7861	25735.6457	19.70216682
Tulare	2049	T6 Public Class 5	Aggregate	Aggregate	Diesel	34.15816568	365984.1984	54672.19367	41.9203385
Tulare	2049	T6 Public Class 6	Aggregate	Aggregate	Diesel	41.51493689	445219.2027	66447.14738	50.81259366
Tulare	2049	T6 Public Class 7	Aggregate	Aggregate	Diesel	65.3245042	855742.7932	104555.7884	95.15905018
Tulare	2049	T6 Utility Class 5	Aggregate	Aggregate	Diesel	9.447839759	118027.6218	37730.89286	12.19500582
Tulare	2049	T6 Utility Class 6	Aggregate	Aggregate	Diesel	1.785455928	22305.13522	7130.396793	2.304646886
Tulare	2049	T6 Utility Class 7	Aggregate	Aggregate	Diesel	1.987454355	30708.52562	7937.097713	3.155572336
Tulare	2049	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	1254.25414	80478524.62	8992701.163	10892.99893
Tulare	2049	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1385.369433	122481033	9932766.344	15764.79855
Tulare	2049	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	597.7286398	44495183.66	4285570.893	5794.468925
Tulare	2049	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	18.47031233	1372510.662	94278.38463	188.9789876
Tulare	2049	T7 POAK Class 8	Aggregate	Aggregate	Diesel	99.35423226	3581411.692	507135.7948	501.8385087
Tulare	2049	T7 POLA Class 8	Aggregate	Aggregate	Diesel	87.42979629	5006604.441	446269.6578	694.0266534
Tulare	2049	T7 Public Class 8	Aggregate	Aggregate	Diesel	196.0917988	2459218.961	313856.6894	401.2623588
Tulare	2049	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	8.099380924	160021.0648	23804.40451	23.66080984
Tulare	2049	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	79.94124114	1241579.303	234950.5054	189.2502611
Tulare	2049	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	561.9012262	9169072.379	1651450.18	1386.94452
Tulare	2049	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	33.18917875	672227.3873	47633.10935	223.0706127
Tulare	2049	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2811.616145	55701803.17	12746068.17	7519.024307
Tulare	2049	T7 Utility Class 8	Aggregate	Aggregate	Diesel	9.818253268	125845.1278	39210.17625	19.42016428
Tulare	2050	PTO	Aggregate	Aggregate	Diesel	0	2184335.901	0	370.7543027
Tulare	2050	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	5.139224707	119249.4154	36847.00773	11.95100974
Tulare	2050	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	6.304936554	163664.1946	45204.88191	16.39214888
Tulare	2050	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	28.77697121	427216.7729	206323.9771	42.96514914
Tulare	2050	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	79.75261034	5134747.937	571807.0755	453.1958276
Tulare	2050	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	62.17970189	650494.564	276838.956	69.5292164
Tulare	2050	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	43.60115993	456283.1825	194122.8283	48.78232033
Tulare	2050	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	265.323775	2775475.086	1181285.124	296.6870586
Tulare	2050	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	66.90252034	1066050.227	297866.0772	112.7215865
Tulare	2050	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	354.839402	4423539.606	1279806.368	457.3089787
Tulare	2050	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	881.5161922	10995108.52	3179382.081	1136.702348
Tulare	2050	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	782.3583048	9749522.007	2821747.345	1007.865716

Tulare	2050	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	646.2441789	8435639.162	2330821.805	871.5445346
Tulare	2050	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	12.45983276	182031.2825	44939.128	18.69836623
Tulare	2050	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	581.2653725	10702588.3	2096461.444	985.2575398
Tulare	2050	T6 OOS Class 4	Aggregate	Aggregate	Diesel	7.531432129	175667.7156	53998.56082	16.54246834
Tulare	2050	T6 OOS Class 5	Aggregate	Aggregate	Diesel	9.245403624	240984.5166	66287.32509	22.68426949
Tulare	2050	T6 OOS Class 6	Aggregate	Aggregate	Diesel	42.11643386	629699.4366	301964.7229	59.47265564
Tulare	2050	T6 OOS Class 7	Aggregate	Aggregate	Diesel	51.91779893	4578697.928	372238.158	386.1303757
Tulare	2050	T6 Public Class 4	Aggregate	Aggregate	Diesel	15.67488937	168969.5479	25088.60093	19.21955382
Tulare	2050	T6 Public Class 5	Aggregate	Aggregate	Diesel	33.31508681	358329.1506	53322.79535	40.90309392
Tulare	2050	T6 Public Class 6	Aggregate	Aggregate	Diesel	40.45162191	435546.1285	64745.24796	49.53837739
Tulare	2050	T6 Public Class 7	Aggregate	Aggregate	Diesel	64.10767365	842409.5514	102608.1781	93.40659796
Tulare	2050	T6 Utility Class 5	Aggregate	Aggregate	Diesel	9.388083097	117492.9189	37492.24865	12.13502019
Tulare	2050	T6 Utility Class 6	Aggregate	Aggregate	Diesel	1.774140699	22204.03968	7085.208297	2.29330089
Tulare	2050	T6 Utility Class 7	Aggregate	Aggregate	Diesel	1.975102968	30579.00992	7887.771213	3.141126386
Tulare	2050	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	1284.381712	82365640.88	9208708.626	11147.34148
Tulare	2050	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1418.154399	125355811.1	10167826.69	16132.5756
Tulare	2050	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	612.1284833	45539539.49	4388814.315	5930.183495
Tulare	2050	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	18.56395081	1376493.849	94756.3454	189.5250369
Tulare	2050	T7 POAK Class 8	Aggregate	Aggregate	Diesel	101.5785934	3656915.605	518489.6457	512.4229863
Tulare	2050	T7 POLA Class 8	Aggregate	Aggregate	Diesel	87.41155584	4995682.156	446176.5527	690.8986771
Tulare	2050	T7 Public Class 8	Aggregate	Aggregate	Diesel	191.0087528	2404308.461	305720.9693	390.286999
Tulare	2050	T7 Single Concrete/Transit Mix Class 8	Aggregate	Aggregate	Diesel	8.075393948	160116.7817	23733.90583	23.66345669
Tulare	2050	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	78.23874142	1225427.534	229946.7906	186.1645319
Tulare	2050	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	559.60373	9230506.474	1644697.747	1392.016766
Tulare	2050	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	30.73022136	617266.2649	44104.0137	204.4131964
Tulare	2050	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2868.851289	56893784.93	13005535.68	7666.333015
Tulare	2050	T7 Utility Class 8	Aggregate	Aggregate	Diesel	9.637305442	123846.6076	38487.54301	19.0663024
Region	Calendar Y	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	Trips	Fuel Consumption
							15,088,212,683		2,227,301,475
								gallons/mile	
								0.147618643	

ATTACHMENT B

CALEEMOD REPORTS

Treehouse California - WWTF Custom Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Treehouse California - WWTF
Construction Start Date	3/1/2024
Operational Year	2024
Lead Agency	Tulare County RMA
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.10
Precipitation (days)	23.0
Location	6914 Rd 160, Earlimart, CA 93219, USA
County	Tulare
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2738
EDFZ	9
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.26

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
Manufacturing	0.00	1000sqft	10.0	0.00	0.00	—	—	—

Other Non-Asphalt Surfaces	1.40	1000sqft	0.03	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.67	3.81	44.2	33.8	0.11	1.60	19.8	21.4	1.48	10.1	11.6	—	14,513	14,513	0.45	1.28	19.1	14,926
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.43	3.73	36.0	33.6	0.05	1.60	19.8	21.4	1.47	10.1	11.6	—	5,391	5,391	0.22	0.05	0.01	5,411
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.50	0.41	4.66	3.67	0.01	0.17	1.48	1.65	0.16	0.63	0.79	—	1,340	1,340	0.04	0.11	0.68	1,374
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.09	0.08	0.85	0.67	< 0.005	0.03	0.27	0.30	0.03	0.11	0.14	—	222	222	0.01	0.02	0.11	227
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	10.0	10.0	100	27.0	15.0	15.0	15.0	15.0	15.0	15.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	No	No	No	No	No	No	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	4.67	3.81	44.2	33.8	0.11	1.60	19.8	21.4	1.48	10.1	11.6	—	14,513	14,513	0.45	1.28	19.1	14,926
2025	1.04	0.88	7.50	10.7	0.01	0.35	0.08	0.43	0.32	0.02	0.34	—	1,602	1,602	0.07	0.02	0.35	1,609
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	4.43	3.73	36.0	33.6	0.05	1.60	19.8	21.4	1.47	10.1	11.6	—	5,391	5,391	0.22	0.05	0.01	5,411
2025	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.50	0.41	4.66	3.67	0.01	0.17	1.48	1.65	0.16	0.63	0.79	—	1,340	1,340	0.04	0.11	0.68	1,374
2025	0.06	0.05	0.41	0.58	< 0.005	0.02	< 0.005	0.02	0.02	< 0.005	0.02	—	87.4	87.4	< 0.005	< 0.005	0.01	87.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.09	0.08	0.85	0.67	< 0.005	0.03	0.27	0.30	0.03	0.11	0.14	—	222	222	0.01	0.02	0.11	227
2025	0.01	0.01	0.08	0.11	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.5	14.5	< 0.005	< 0.005	< 0.005	14.5

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	105	206	311	10.8	0.26	0.00	657
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	105	206	311	10.8	0.26	0.00	657
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	105	206	311	10.8	0.26	0.00	657
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.4	34.1	51.5	1.78	0.04	0.00	109
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	10.0	10.0	100	27.0	15.0	15.0	15.0	15.0	15.0	15.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	No	No	No	No	No	No	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	< 0.005	< 0.005	0.00	0.00	0.00	0.00	—	0.00	0.00	—	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	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	105	206	311	10.8	0.26	—	657
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	105	206	311	10.8	0.26	0.00	657
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Area	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	105	206	311	10.8	0.26	—	657
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	105	206	311	10.8	0.26	0.00	657
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	< 0.005	< 0.005	0.00	0.00	0.00	0.00	—	0.00	0.00	—	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	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	105	206	311	10.8	0.26	—	657
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	105	206	311	10.8	0.26	0.00	657
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	< 0.005	< 0.005	0.00	0.00	0.00	0.00	—	0.00	0.00	—	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	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	17.4	34.1	51.5	1.78	0.04	—	109
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.4	34.1	51.5	1.78	0.04	0.00	109

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.34	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.34	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.99	0.90	< 0.005	0.04	—	0.04	0.04	—	0.04	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.54	0.54	—	0.28	0.28	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.18	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.06	0.91	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	108	108	0.01	< 0.005	0.44	110
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.07	0.71	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	95.4	95.4	0.01	< 0.005	0.01	97.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.71	2.71	< 0.005	< 0.005	0.01	2.76
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.46

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.19	3.52	34.3	30.2	0.06	1.45	—	1.45	1.33	—	1.33	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	9.28	9.28	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.29	2.82	2.48	0.01	0.12	—	0.12	0.11	—	0.11	—	542	542	0.02	< 0.005	—	544
Dust From Material Movement	—	—	—	—	—	—	0.76	0.76	—	0.30	0.30	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.51	0.45	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.8	89.8	< 0.005	< 0.005	—	90.1
Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.07	1.04	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	123	123	0.01	0.01	0.50	126
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.36	0.18	9.89	2.43	0.05	0.14	2.01	2.15	0.14	0.55	0.69	—	7,791	7,791	0.17	1.23	18.6	8,179
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.30	9.30	< 0.005	< 0.005	0.02	9.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	0.01	0.85	0.20	< 0.005	0.01	0.16	0.18	0.01	0.04	0.06	—	641	641	0.01	0.10	0.66	672
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.54	1.54	< 0.005	< 0.005	< 0.005	1.57
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.16	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	106	106	< 0.005	0.02	0.11	111

3.5. Paving (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.41	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.05	0.71	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	90.5	90.5	0.01	< 0.005	0.35	92.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.55	4.55	< 0.005	< 0.005	0.01	4.63
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.75	0.75	< 0.005	< 0.005	< 0.005	0.77
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipm	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	105	206	311	10.8	0.26	—	657
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	105	206	311	10.8	0.26	—	657
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	105	206	311	10.8	0.26	—	657
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	105	206	311	10.8	0.26	—	657
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	17.4	34.1	51.5	1.78	0.04	—	109
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	17.4	34.1	51.5	1.78	0.04	—	109

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	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

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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
Site Preparation	Site Preparation	3/30/2024	4/13/2024	5.00	10.0	—
Grading	Grading	4/14/2024	5/26/2024	5.00	30.0	—
Paving	Paving	7/22/2025	8/19/2025	5.00	20.0	—

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
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41

Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	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
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	—	6.80	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	6.80	HHDT,MHDT
Grading	Hauling	108	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	7.70	LDA,LDT1,LDT2
Paving	Vendor	—	6.80	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	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)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	15.0	0.00	—
Grading	26,000	26,000	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.03

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Manufacturing	0.00	0%
Other Non-Asphalt Surfaces	0.03	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O

2024	0.00	532	0.03	< 0.005
2025	0.00	532	0.03	< 0.005

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
Manufacturing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

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)
0	0.00	0.00	0.00	84.0

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)
Manufacturing	0.00	349	0.0330	0.0040	0.00
Other Non-Asphalt Surfaces	0.00	349	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)
Manufacturing	54,750,000	0.00
Other Non-Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Manufacturing	0.00	—
Other Non-Asphalt Surfaces	0.00	—

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
Manufacturing	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

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)

8. User Changes to Default Data

Screen	Justification
Land Use	There are no buildings in this phase, only concrete pads for WWTF equipment.
Construction: Construction Phases	No buildings onsite so no demolition; no buildings constructed so no building or coatings phases.
Operations: Vehicle Data	There are no operational trips with this phase - this is earthmoving activity only for the facility's ponds
Operations: Energy Use	—
Operations: Water and Waste Water	Assumes the WWTF will process 150,000 gallons/day, 365 days

Treehouse California - Phase 1 Custom Report

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5.18.2. Sequestration

5.18.2.1. Unmitigated

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Treehouse California - Phase 1
Construction Start Date	1/1/2025
Operational Year	2026
Lead Agency	Tulare County RMA
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.10
Precipitation (days)	23.0
Location	6914 Rd 160, Earlimart, CA 93219, USA
County	Tulare
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2738
EDFZ	9
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.26

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
Manufacturing	18.2	1000sqft	0.42	18,190	0.00	—	—	—

Other Non-Asphalt Surfaces	8.05	1000sqft	0.18	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	17.5	17.5	5.25	7.34	0.01	0.22	0.10	0.29	0.20	0.02	0.22	—	1,415	1,415	0.06	0.02	0.40	1,423
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.33	1.12	10.1	10.3	0.02	0.46	5.35	5.82	0.43	2.58	3.00	—	1,754	1,754	0.07	0.02	0.01	1,760
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.44	0.41	1.58	2.16	< 0.005	0.07	0.05	0.11	0.06	0.02	0.08	—	413	413	0.02	0.01	0.04	416
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.08	0.07	0.29	0.39	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	68.4	68.4	< 0.005	< 0.005	0.01	68.8
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	10.0	10.0	100	27.0	15.0	15.0	15.0	15.0	15.0	15.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	No	No	No	No	No	No	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	17.5	17.5	5.25	7.34	0.01	0.22	0.10	0.29	0.20	0.02	0.22	—	1,415	1,415	0.06	0.02	0.40	1,423
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.33	1.12	10.1	10.3	0.02	0.46	5.35	5.82	0.43	2.58	3.00	—	1,754	1,754	0.07	0.02	0.01	1,760
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.44	0.41	1.58	2.16	< 0.005	0.07	0.05	0.11	0.06	0.02	0.08	—	413	413	0.02	0.01	0.04	416
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.08	0.07	0.29	0.39	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	68.4	68.4	< 0.005	< 0.005	0.01	68.8

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.97	0.90	1.42	6.90	0.02	0.04	1.59	1.62	0.04	0.40	0.44	20.2	2,543	2,563	2.13	0.17	11.4	2,677
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.79	0.74	1.55	4.42	0.02	0.04	1.59	1.62	0.03	0.40	0.44	20.2	2,377	2,397	2.13	0.17	4.91	2,506
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	0.83	0.78	1.17	3.78	0.02	0.03	1.09	1.13	0.03	0.28	0.31	20.2	1,871	1,891	2.11	0.13	6.76	1,988
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.15	0.14	0.21	0.69	< 0.005	0.01	0.20	0.21	0.01	0.05	0.06	3.35	310	313	0.35	0.02	1.12	329
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	10.0	10.0	100	27.0	15.0	15.0	15.0	15.0	15.0	15.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	No	No	No	No	No	No	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.39	0.35	1.19	5.92	0.02	0.02	1.59	1.61	0.02	0.40	0.42	—	2,086	2,086	0.04	0.14	6.69	2,137
Area	0.55	0.54	0.01	0.79	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.25	3.25	< 0.005	< 0.005	—	3.26
Energy	0.02	0.01	0.22	0.18	< 0.005	0.02	—	0.02	0.02	—	0.02	—	438	438	0.04	< 0.005	—	440
Water	—	—	—	—	—	—	—	—	—	—	—	8.06	15.7	23.8	0.83	0.02	—	50.4
Waste	—	—	—	—	—	—	—	—	—	—	—	12.2	0.00	12.2	1.21	0.00	—	42.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.73	4.73
Total	0.97	0.90	1.42	6.90	0.02	0.04	1.59	1.62	0.04	0.40	0.44	20.2	2,543	2,563	2.13	0.17	11.4	2,677
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.36	0.31	1.33	4.24	0.02	0.02	1.59	1.61	0.02	0.40	0.42	—	1,923	1,923	0.05	0.15	0.17	1,969
Area	0.41	0.41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.02	0.01	0.22	0.18	< 0.005	0.02	—	0.02	0.02	—	0.02	—	438	438	0.04	< 0.005	—	440
Water	—	—	—	—	—	—	—	—	—	—	—	8.06	15.7	23.8	0.83	0.02	—	50.4
Waste	—	—	—	—	—	—	—	—	—	—	—	12.2	0.00	12.2	1.21	0.00	—	42.5

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.73	4.73
Total	0.79	0.74	1.55	4.42	0.02	0.04	1.59	1.62	0.03	0.40	0.44	20.2	2,377	2,397	2.13	0.17	4.91	2,506
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.32	0.29	0.95	3.20	0.01	0.01	1.09	1.11	0.01	0.28	0.29	—	1,416	1,416	0.03	0.10	2.02	1,449
Area	0.48	0.48	< 0.005	0.39	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.60	1.60	< 0.005	< 0.005	—	1.61
Energy	0.02	0.01	0.22	0.18	< 0.005	0.02	—	0.02	0.02	—	0.02	—	438	438	0.04	< 0.005	—	440
Water	—	—	—	—	—	—	—	—	—	—	—	8.06	15.7	23.8	0.83	0.02	—	50.4
Waste	—	—	—	—	—	—	—	—	—	—	—	12.2	0.00	12.2	1.21	0.00	—	42.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.73	4.73
Total	0.83	0.78	1.17	3.78	0.02	0.03	1.09	1.13	0.03	0.28	0.31	20.2	1,871	1,891	2.11	0.13	6.76	1,988
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.06	0.05	0.17	0.58	< 0.005	< 0.005	0.20	0.20	< 0.005	0.05	0.05	—	234	234	0.01	0.02	0.34	240
Area	0.09	0.09	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.27	0.27	< 0.005	< 0.005	—	0.27
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	72.5	72.5	0.01	< 0.005	—	72.8
Water	—	—	—	—	—	—	—	—	—	—	—	1.33	2.60	3.94	0.14	< 0.005	—	8.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.01	0.00	2.01	0.20	0.00	—	7.04
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Total	0.15	0.14	0.21	0.69	< 0.005	0.01	0.20	0.21	0.01	0.05	0.06	3.35	310	313	0.35	0.02	1.12	329

3. Construction Emissions Details

3.1. 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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.47	4.16	5.57	0.01	0.21	—	0.21	0.20	—	0.20	—	859	859	0.03	0.01	—	862
Dust From Material Movement	—	—	—	—	—	—	0.53	0.53	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.35	2.35	< 0.005	< 0.005	—	2.36
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	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	—	< 0.005	< 0.005	—	< 0.005	—	0.39	0.39	< 0.005	< 0.005	—	0.39
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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.19	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	26.7	26.7	< 0.005	< 0.005	< 0.005	27.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.08	0.08	< 0.005	< 0.005	< 0.005	0.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.29	1.09	10.1	10.0	0.02	0.46	—	0.46	0.43	—	0.43	—	1,714	1,714	0.07	0.01	—	1,720
Dust From Material Movement	—	—	—	—	—	—	5.31	5.31	—	2.57	2.57	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.39	9.39	< 0.005	< 0.005	—	9.42
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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.55	1.55	< 0.005	< 0.005	—	1.56
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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.03	0.28	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	40.0	40.0	< 0.005	< 0.005	< 0.005	40.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.23	0.23	< 0.005	< 0.005	< 0.005	0.23
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.04	0.04	< 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	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. 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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	0.52	5.14	6.94	0.01	0.22	—	0.22	0.20	—	0.20	—	1,305	1,305	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.62	0.52	5.14	6.94	0.01	0.22	—	0.22	0.20	—	0.20	—	1,305	1,305	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.41	1.90	< 0.005	0.06	—	0.06	0.05	—	0.05	—	357	357	0.01	< 0.005	—	359
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.26	0.35	< 0.005	0.01	—	0.01	0.01	—	0.01	—	59.2	59.2	< 0.005	< 0.005	—	59.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.36	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	46.1	46.1	< 0.005	< 0.005	0.18	46.9
Vendor	< 0.005	< 0.005	0.09	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	64.1	64.1	< 0.005	0.01	0.17	67.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.29	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	40.8	40.8	< 0.005	< 0.005	< 0.005	41.5
Vendor	< 0.005	< 0.005	0.10	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	64.1	64.1	< 0.005	0.01	< 0.005	67.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.6	11.6	< 0.005	< 0.005	0.02	11.8
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.6	17.6	< 0.005	< 0.005	0.02	18.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.92	1.92	< 0.005	< 0.005	< 0.005	1.95
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.91	2.91	< 0.005	< 0.005	< 0.005	3.04
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Paving (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.61	0.51	4.37	5.31	0.01	0.19	—	0.19	0.18	—	0.18	—	823	823	0.03	0.01	—	826
Paving	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.3
Paving	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.87	1.87	< 0.005	< 0.005	—	1.87
Paving	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.05	0.83	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	106	106	0.01	< 0.005	0.40	108
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.33	1.33	< 0.005	< 0.005	< 0.005	1.35
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.22	0.22	< 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	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Architectural Coating (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	17.3	17.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.83	1.83	< 0.005	< 0.005	—	1.84
Architectural Coatings	0.24	0.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.30	0.30	< 0.005	< 0.005	—	0.30

Architectural Coating	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.22	9.22	< 0.005	< 0.005	0.04	9.39
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.12	0.12	< 0.005	< 0.005	< 0.005	0.12
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.02	0.02	< 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	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.39	0.35	1.19	5.92	0.02	0.02	1.59	1.61	0.02	0.40	0.42	—	2,086	2,086	0.04	0.14	6.69	2,137
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.39	0.35	1.19	5.92	0.02	0.02	1.59	1.61	0.02	0.40	0.42	—	2,086	2,086	0.04	0.14	6.69	2,137
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.36	0.31	1.33	4.24	0.02	0.02	1.59	1.61	0.02	0.40	0.42	—	1,923	1,923	0.05	0.15	0.17	1,969
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.36	0.31	1.33	4.24	0.02	0.02	1.59	1.61	0.02	0.40	0.42	—	1,923	1,923	0.05	0.15	0.17	1,969
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.06	0.05	0.17	0.58	< 0.005	< 0.005	0.20	0.20	< 0.005	0.05	0.05	—	234	234	0.01	0.02	0.34	240
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.06	0.05	0.17	0.58	< 0.005	< 0.005	0.20	0.20	< 0.005	0.05	0.05	—	234	234	0.01	0.02	0.34	240

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	176	176	0.02	< 0.005	—	177
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	176	176	0.02	< 0.005	—	177
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	176	176	0.02	< 0.005	—	177
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	176	176	0.02	< 0.005	—	177
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	29.1	29.1	< 0.005	< 0.005	—	29.3
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	29.1	29.1	< 0.005	< 0.005	—	29.3

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Manufacturing	0.02	0.01	0.22	0.18	< 0.005	0.02	—	0.02	0.02	—	0.02	—	262	262	0.02	< 0.005	—	263
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.02	0.01	0.22	0.18	< 0.005	0.02	—	0.02	0.02	—	0.02	—	262	262	0.02	< 0.005	—	263
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.02	0.01	0.22	0.18	< 0.005	0.02	—	0.02	0.02	—	0.02	—	262	262	0.02	< 0.005	—	263
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.02	0.01	0.22	0.18	< 0.005	0.02	—	0.02	0.02	—	0.02	—	262	262	0.02	< 0.005	—	263
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	43.4	43.4	< 0.005	< 0.005	—	43.5
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	43.4	43.4	< 0.005	< 0.005	—	43.5

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consumer Products	0.39	0.39	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.14	0.13	0.01	0.79	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.25	3.25	< 0.005	< 0.005	—	3.26
Total	0.55	0.54	0.01	0.79	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.25	3.25	< 0.005	< 0.005	—	3.26
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.39	0.39	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.41	0.41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.07	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.27	0.27	< 0.005	< 0.005	—	0.27

Total	0.09	0.09	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.27	0.27	< 0.005	< 0.005	—	0.27

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	8.06	15.7	23.8	0.83	0.02	—	50.4
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	8.06	15.7	23.8	0.83	0.02	—	50.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	8.06	15.7	23.8	0.83	0.02	—	50.4
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	8.06	15.7	23.8	0.83	0.02	—	50.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	1.33	2.60	3.94	0.14	< 0.005	—	8.34
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.33	2.60	3.94	0.14	< 0.005	—	8.34

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	12.2	0.00	12.2	1.21	0.00	—	42.5
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	12.2	0.00	12.2	1.21	0.00	—	42.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	12.2	0.00	12.2	1.21	0.00	—	42.5
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	12.2	0.00	12.2	1.21	0.00	—	42.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	2.01	0.00	2.01	0.20	0.00	—	7.04
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.01	0.00	2.01	0.20	0.00	—	7.04

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.73	4.73
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.73	4.73
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.73	4.73
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.73	4.73
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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
Site Preparation	Site Preparation	1/16/2025	1/17/2025	5.00	1.00	—
Grading	Grading	1/18/2025	1/20/2025	5.00	2.00	—
Building Construction	Building Construction	1/21/2025	6/10/2025	5.00	100	—
Paving	Paving	6/11/2025	6/18/2025	5.00	5.00	—
Architectural Coating	Architectural Coating	6/19/2025	6/26/2025	5.00	5.00	—

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
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
Grading	Graders	Diesel	Average	1.00	6.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	6.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	7.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	—	6.80	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT

Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	7.50	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	6.80	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	7.64	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	2.98	6.80	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	7.70	LDA,LDT1,LDT2
Paving	Vendor	—	6.80	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	1.53	7.70	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.80	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	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	0.00	0.00	27,285	9,095	483

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)
Site Preparation	—	—	0.50	0.00	—
Grading	—	—	1.50	0.00	—
Paving	0.00	0.00	0.00	0.00	0.18

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Manufacturing	0.00	0%
Other Non-Asphalt Surfaces	0.18	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	349	0.03	< 0.005

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
Manufacturing	71.5	117	92.6	29,552	1,224	1,999	1,585	505,875
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

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)
0	0.00	27,285	9,095	483

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)
Manufacturing	185,344	346	0.0330	0.0040	817,700
Other Non-Asphalt Surfaces	0.00	346	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)
Manufacturing	4,206,438	0.00
Other Non-Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Manufacturing	22.6	—
Other Non-Asphalt Surfaces	0.00	—

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
Manufacturing	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

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)

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	No structures to be demolished
Operations: Fleet Mix	Fleet mix per existing operations

Treehouse California - Phase 2 Custom Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Treehouse California - Phase 2
Construction Start Date	1/1/2028
Operational Year	2029
Lead Agency	Tulare County RMA
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.10
Precipitation (days)	23.0
Location	6914 Rd 160, Earlimart, CA 93219, USA
County	Tulare
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2738
EDFZ	9
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.26

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
Manufacturing	14.1	1000sqft	0.32	14,071	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	13.2	13.2	4.38	7.15	0.01	0.15	0.10	0.25	0.14	0.02	0.16	—	1,385	1,385	0.06	0.02	0.30	1,392
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.19	1.00	8.44	9.81	0.02	0.38	5.35	5.73	0.35	2.58	2.92	—	1,753	1,753	0.07	0.02	0.01	1,759
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.35	0.33	1.32	2.11	< 0.005	0.05	0.04	0.09	0.04	0.02	0.06	—	405	405	0.02	0.01	0.03	407
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.06	0.06	0.24	0.39	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	67.1	67.1	< 0.005	< 0.005	< 0.005	67.4
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	10.0	10.0	100	27.0	15.0	15.0	15.0	15.0	15.0	15.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	No	No	No	No	No	No	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	13.2	13.2	4.38	7.15	0.01	0.15	0.10	0.25	0.14	0.02	0.16	—	1,385	1,385	0.06	0.02	0.30	1,392
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	1.19	1.00	8.44	9.81	0.02	0.38	5.35	5.73	0.35	2.58	2.92	—	1,753	1,753	0.07	0.02	0.01	1,759
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.35	0.33	1.32	2.11	< 0.005	0.05	0.04	0.09	0.04	0.02	0.06	—	405	405	0.02	0.01	0.03	407
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.06	0.06	0.24	0.39	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	67.1	67.1	< 0.005	< 0.005	< 0.005	67.4

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.67	0.63	0.97	4.23	0.01	0.03	1.11	1.14	0.03	0.28	0.31	15.6	1,759	1,774	1.64	0.12	7.08	1,857
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.55	0.51	1.05	2.64	0.01	0.03	1.11	1.14	0.03	0.28	0.31	15.6	1,651	1,667	1.64	0.12	3.75	1,747
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.54	0.51	0.76	2.31	0.01	0.02	0.76	0.78	0.02	0.19	0.22	15.6	1,275	1,290	1.63	0.09	4.69	1,362
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	0.10	0.09	0.14	0.42	< 0.005	< 0.005	0.14	0.14	< 0.005	0.04	0.04	2.59	211	214	0.27	0.01	0.78	225
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	10.0	10.0	100	27.0	15.0	15.0	15.0	15.0	15.0	15.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	No	No	No	No	No	No	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.23	0.20	0.80	3.48	0.01	0.01	1.11	1.13	0.01	0.28	0.30	—	1,405	1,405	0.03	0.10	3.42	1,439
Area	0.43	0.42	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.52	2.52	< 0.005	< 0.005	—	2.53
Energy	0.02	0.01	0.17	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	339	339	0.03	< 0.005	—	340
Water	—	—	—	—	—	—	—	—	—	—	—	6.24	12.2	18.4	0.64	0.02	—	39.0
Waste	—	—	—	—	—	—	—	—	—	—	—	9.40	0.00	9.40	0.94	0.00	—	32.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.66	3.66
Total	0.67	0.63	0.97	4.23	0.01	0.03	1.11	1.14	0.03	0.28	0.31	15.6	1,759	1,774	1.64	0.12	7.08	1,857
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.21	0.18	0.88	2.49	0.01	0.01	1.11	1.13	0.01	0.28	0.30	—	1,300	1,300	0.03	0.10	0.09	1,332
Area	0.32	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.02	0.01	0.17	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	339	339	0.03	< 0.005	—	340
Water	—	—	—	—	—	—	—	—	—	—	—	6.24	12.2	18.4	0.64	0.02	—	39.0
Waste	—	—	—	—	—	—	—	—	—	—	—	9.40	0.00	9.40	0.94	0.00	—	32.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.66	3.66
Total	0.55	0.51	1.05	2.64	0.01	0.03	1.11	1.14	0.03	0.28	0.31	15.6	1,651	1,667	1.64	0.12	3.75	1,747

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.15	0.13	0.58	1.87	0.01	0.01	0.76	0.77	0.01	0.19	0.20	—	922	922	0.02	0.07	1.02	945
Area	0.37	0.37	< 0.005	0.30	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.24	1.24	< 0.005	< 0.005	—	1.25
Energy	0.02	0.01	0.17	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	339	339	0.03	< 0.005	—	340
Water	—	—	—	—	—	—	—	—	—	—	—	6.24	12.2	18.4	0.64	0.02	—	39.0
Waste	—	—	—	—	—	—	—	—	—	—	—	9.40	0.00	9.40	0.94	0.00	—	32.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.66	3.66
Total	0.54	0.51	0.76	2.31	0.01	0.02	0.76	0.78	0.02	0.19	0.22	15.6	1,275	1,290	1.63	0.09	4.69	1,362
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.03	0.02	0.11	0.34	< 0.005	< 0.005	0.14	0.14	< 0.005	0.04	0.04	—	153	153	< 0.005	0.01	0.17	156
Area	0.07	0.07	< 0.005	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.21	0.21	< 0.005	< 0.005	—	0.21
Energy	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	56.1	56.1	0.01	< 0.005	—	56.3
Water	—	—	—	—	—	—	—	—	—	—	—	1.03	2.01	3.05	0.11	< 0.005	—	6.45
Waste	—	—	—	—	—	—	—	—	—	—	—	1.56	0.00	1.56	0.16	0.00	—	5.45
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.61	0.61
Total	0.10	0.09	0.14	0.42	< 0.005	< 0.005	0.14	0.14	< 0.005	0.04	0.04	2.59	211	214	0.27	0.01	0.78	225

3. Construction Emissions Details

3.1. Site Preparation (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.47	0.40	3.19	5.57	0.01	0.15	—	0.15	0.14	—	0.14	—	859	859	0.03	0.01	—	862
Dust From Material Movement	—	—	—	—	—	—	0.53	0.53	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.35	2.35	< 0.005	< 0.005	—	2.36
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	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	—	< 0.005	< 0.005	—	< 0.005	—	0.39	0.39	< 0.005	< 0.005	—	0.39
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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	25.1	25.1	< 0.005	< 0.005	< 0.005	25.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.16	0.97	8.42	9.59	0.02	0.38	—	0.38	0.35	—	0.35	—	1,715	1,715	0.07	0.01	—	1,721

Dust From Material Movement	—	—	—	—	—	—	5.31	5.31	—	2.57	2.57	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.40	9.40	< 0.005	< 0.005	—	9.43
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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.56	1.56	< 0.005	< 0.005	—	1.56
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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.22	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	37.7	37.7	< 0.005	< 0.005	< 0.005	38.3

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.21	0.21	< 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	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.04	0.04	< 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	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.55	0.46	4.30	6.91	0.01	0.15	—	0.15	0.14	—	0.14	—	1,305	1,305	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.55	0.46	4.30	6.91	0.01	0.15	—	0.15	0.14	—	0.14	—	1,305	1,305	0.05	0.01	—	1,309

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.18	1.89	< 0.005	0.04	—	0.04	0.04	—	0.04	—	357	357	0.01	< 0.005	—	359
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.22	0.35	< 0.005	0.01	—	0.01	0.01	—	0.01	—	59.2	59.2	< 0.005	< 0.005	—	59.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.01	0.22	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	33.5	33.5	< 0.005	< 0.005	0.10	34.1
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	46.5	46.5	< 0.005	0.01	0.09	48.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.17	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	29.7	29.7	< 0.005	< 0.005	< 0.005	30.2
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	46.5	46.5	< 0.005	0.01	< 0.005	48.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.43	8.43	< 0.005	< 0.005	0.01	8.57
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.01	13.3

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.40	1.40	< 0.005	< 0.005	< 0.005	1.42
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.11	2.11	< 0.005	< 0.005	< 0.005	2.21
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Paving (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.47	4.05	5.31	0.01	0.15	—	0.15	0.14	—	0.14	—	823	823	0.03	0.01	—	826
Paving	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.3
Paving	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.87	1.87	< 0.005	< 0.005	—	1.87
Paving	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.04	0.65	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	99.2	99.2	0.01	< 0.005	0.30	101
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.25	1.25	< 0.005	< 0.005	< 0.005	1.27
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.21
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Architectural Coating (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	13.0	13.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.83	1.83	< 0.005	< 0.005	—	1.84
Architectural Coatings	0.18	0.18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.30	0.30	< 0.005	< 0.005	—	0.30
Architectural Coatings	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.70	6.70	< 0.005	< 0.005	0.02	6.81
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.08	0.08	< 0.005	< 0.005	< 0.005	0.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.23	0.20	0.80	3.48	0.01	0.01	1.11	1.13	0.01	0.28	0.30	—	1,405	1,405	0.03	0.10	3.42	1,439
Total	0.23	0.20	0.80	3.48	0.01	0.01	1.11	1.13	0.01	0.28	0.30	—	1,405	1,405	0.03	0.10	3.42	1,439
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.21	0.18	0.88	2.49	0.01	0.01	1.11	1.13	0.01	0.28	0.30	—	1,300	1,300	0.03	0.10	0.09	1,332
Total	0.21	0.18	0.88	2.49	0.01	0.01	1.11	1.13	0.01	0.28	0.30	—	1,300	1,300	0.03	0.10	0.09	1,332
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.03	0.02	0.11	0.34	< 0.005	< 0.005	0.14	0.14	< 0.005	0.04	0.04	—	153	153	< 0.005	0.01	0.17	156
Total	0.03	0.02	0.11	0.34	< 0.005	< 0.005	0.14	0.14	< 0.005	0.04	0.04	—	153	153	< 0.005	0.01	0.17	156

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	136	136	0.01	< 0.005	—	137
Total	—	—	—	—	—	—	—	—	—	—	—	—	136	136	0.01	< 0.005	—	137
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	136	136	0.01	< 0.005	—	137

Total	—	—	—	—	—	—	—	—	—	—	—	—	136	136	0.01	< 0.005	—	137
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	22.5	22.5	< 0.005	< 0.005	—	22.6
Total	—	—	—	—	—	—	—	—	—	—	—	—	22.5	22.5	< 0.005	< 0.005	—	22.6

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.02	0.01	0.17	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	203	203	0.02	< 0.005	—	203
Total	0.02	0.01	0.17	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	203	203	0.02	< 0.005	—	203
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.02	0.01	0.17	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	203	203	0.02	< 0.005	—	203
Total	0.02	0.01	0.17	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	203	203	0.02	< 0.005	—	203
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	33.6	33.6	< 0.005	< 0.005	—	33.7
Total	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	33.6	33.6	< 0.005	< 0.005	—	33.7

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.30	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.11	0.10	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.52	2.52	< 0.005	< 0.005	—	2.53
Total	0.43	0.42	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.52	2.52	< 0.005	< 0.005	—	2.53
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.30	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.32	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landsca Equipment	0.01	0.01	< 0.005	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.21	0.21	< 0.005	< 0.005	—	0.21
Total	0.07	0.07	< 0.005	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.21	0.21	< 0.005	< 0.005	—	0.21

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufac turing	—	—	—	—	—	—	—	—	—	—	—	6.24	12.2	18.4	0.64	0.02	—	39.0
Total	—	—	—	—	—	—	—	—	—	—	—	6.24	12.2	18.4	0.64	0.02	—	39.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufac turing	—	—	—	—	—	—	—	—	—	—	—	6.24	12.2	18.4	0.64	0.02	—	39.0
Total	—	—	—	—	—	—	—	—	—	—	—	6.24	12.2	18.4	0.64	0.02	—	39.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufac turing	—	—	—	—	—	—	—	—	—	—	—	1.03	2.01	3.05	0.11	< 0.005	—	6.45
Total	—	—	—	—	—	—	—	—	—	—	—	1.03	2.01	3.05	0.11	< 0.005	—	6.45

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	9.40	0.00	9.40	0.94	0.00	—	32.9
Total	—	—	—	—	—	—	—	—	—	—	—	9.40	0.00	9.40	0.94	0.00	—	32.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	9.40	0.00	9.40	0.94	0.00	—	32.9
Total	—	—	—	—	—	—	—	—	—	—	—	9.40	0.00	9.40	0.94	0.00	—	32.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	1.56	0.00	1.56	0.16	0.00	—	5.45
Total	—	—	—	—	—	—	—	—	—	—	—	1.56	0.00	1.56	0.16	0.00	—	5.45

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.66	3.66
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.66	3.66
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Manufac	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.66	3.66
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.66	3.66
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.61	0.61
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.61	0.61

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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
Site Preparation	Site Preparation	1/16/2028	1/17/2028	5.00	1.00	—
Grading	Grading	1/18/2028	1/20/2028	5.00	2.00	—
Building Construction	Building Construction	1/21/2028	6/9/2028	5.00	100	—
Paving	Paving	6/10/2028	6/17/2028	5.00	5.00	—
Architectural Coating	Architectural Coating	6/18/2028	6/25/2028	5.00	5.00	—

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
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
Grading	Graders	Diesel	Average	1.00	6.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	6.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37

Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	7.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	—	6.80	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	7.50	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	6.80	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	5.91	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	2.31	6.80	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	7.70	LDA,LDT1,LDT2

Paving	Vendor	—	6.80	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	1.18	7.70	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.80	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	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	0.00	0.00	21,107	7,036	—

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)
Site Preparation	—	—	0.50	0.00	—
Grading	—	—	1.50	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Manufacturing	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2028	0.00	346	0.03	< 0.005

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
Manufacturing	55.3	90.3	71.6	22,860	947	1,546	1,226	391,323

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

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)
0	0.00	21,107	7,036	—

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)
Manufacturing	143,374	346	0.0330	0.0040	632,538

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Manufacturing	3,253,919	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Manufacturing	17.4	—

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
Manufacturing	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

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)

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	demolition is not needed in this phase
Operations: Fleet Mix	fleet per current operations

Treehouse California - Phase 3 Custom Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Treehouse California - Phase 3
Construction Start Date	1/1/2032
Operational Year	2033
Lead Agency	Tulare County RMA
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.10
Precipitation (days)	23.0
Location	6914 Rd 160, Earlimart, CA 93219, USA
County	Tulare
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2738
EDFZ	9
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.26

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
Manufacturing	162	1000sqft	3.72	162,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.32	1.12	8.57	14.9	0.03	0.23	0.52	0.75	0.21	0.13	0.34	—	3,229	3,229	0.11	0.11	1.35	3,265
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	41.9	41.9	22.3	26.1	0.05	0.93	19.8	20.7	0.85	10.1	11.0	—	5,378	5,378	0.22	0.11	0.03	5,397
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.12	2.11	5.90	9.73	0.02	0.17	0.75	0.91	0.15	0.29	0.44	—	2,126	2,126	0.08	0.07	0.36	2,148
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.39	0.38	1.08	1.78	< 0.005	0.03	0.14	0.17	0.03	0.05	0.08	—	352	352	0.01	0.01	0.06	356
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	—	—	—	—	—	—	—	Yes	—	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Threshold	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	—	—	—	—	—	—	—	Yes	—	—	—	—	—	—	—	—	—	—
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	10.0	10.0	100	27.0	15.0	15.0	15.0	15.0	15.0	15.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	No	No	No	No	No	No	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2032	1.32	1.12	8.57	14.9	0.03	0.23	0.52	0.75	0.21	0.13	0.34	—	3,229	3,229	0.11	0.11	1.35	3,265
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2032	3.27	2.75	22.3	26.1	0.05	0.93	19.8	20.7	0.85	10.1	11.0	—	5,378	5,378	0.22	0.11	0.03	5,397
2033	41.9	41.9	8.40	14.4	0.03	0.21	0.52	0.73	0.19	0.13	0.32	—	3,170	3,170	0.12	0.10	0.03	3,203
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2032	0.89	0.75	5.90	9.73	0.02	0.17	0.75	0.91	0.15	0.29	0.44	—	2,126	2,126	0.08	0.07	0.36	2,148
2033	2.12	2.11	0.40	0.69	< 0.005	0.01	0.01	0.03	0.01	< 0.005	0.01	—	118	118	< 0.005	< 0.005	0.01	119
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2032	0.16	0.14	1.08	1.78	< 0.005	0.03	0.14	0.17	0.03	0.05	0.08	—	352	352	0.01	0.01	0.06	356
2033	0.39	0.38	0.07	0.13	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	19.6	19.6	< 0.005	< 0.005	< 0.005	19.7

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.28	6.85	10.1	42.8	0.16	0.30	12.8	13.1	0.29	3.26	3.55	180	18,602	18,783	18.8	1.23	65.0	19,685
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.87	5.53	10.8	26.1	0.15	0.28	12.8	13.1	0.28	3.26	3.54	180	17,443	17,623	18.8	1.26	42.8	18,513
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.89	5.58	7.90	23.4	0.11	0.25	8.76	9.01	0.24	2.23	2.47	180	13,444	13,624	18.7	0.93	49.0	14,417
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.07	1.02	1.44	4.28	0.02	0.05	1.60	1.64	0.04	0.41	0.45	29.8	2,226	2,256	3.10	0.15	8.12	2,387
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	10.0	10.0	100	27.0	15.0	15.0	15.0	15.0	15.0	15.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	No	No	No	No	No	No	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.14	1.91	8.07	34.2	0.14	0.13	12.8	13.0	0.13	3.26	3.39	—	14,955	14,955	0.23	1.03	22.9	15,292
Area	4.93	4.83	0.06	7.05	< 0.005	0.01	—	0.01	0.01	—	0.01	—	29.0	29.0	< 0.005	< 0.005	—	29.1
Energy	0.22	0.11	1.96	1.64	0.01	0.15	—	0.15	0.15	—	0.15	—	3,513	3,513	0.36	0.02	—	3,529
Water	—	—	—	—	—	—	—	—	—	—	—	71.8	105	177	7.37	0.18	—	414

Waste	—	—	—	—	—	—	—	—	—	—	—	108	0.00	108	10.8	0.00	—	379
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	42.2	42.2
Total	7.28	6.85	10.1	42.8	0.16	0.30	12.8	13.1	0.29	3.26	3.55	180	18,602	18,783	18.8	1.23	65.0	19,685
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.98	1.75	8.86	24.4	0.13	0.13	12.8	13.0	0.13	3.26	3.39	—	13,824	13,824	0.26	1.06	0.59	14,149
Area	3.67	3.67	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.22	0.11	1.96	1.64	0.01	0.15	—	0.15	0.15	—	0.15	—	3,513	3,513	0.36	0.02	—	3,529
Water	—	—	—	—	—	—	—	—	—	—	—	71.8	105	177	7.37	0.18	—	414
Waste	—	—	—	—	—	—	—	—	—	—	—	108	0.00	108	10.8	0.00	—	379
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	42.2	42.2
Total	5.87	5.53	10.8	26.1	0.15	0.28	12.8	13.1	0.28	3.26	3.54	180	17,443	17,623	18.8	1.26	42.8	18,513
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.38	1.22	5.91	18.3	0.09	0.09	8.76	8.85	0.09	2.23	2.32	—	9,811	9,811	0.17	0.73	6.85	10,039
Area	4.29	4.24	0.03	3.47	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	14.3	14.3	< 0.005	< 0.005	—	14.3
Energy	0.22	0.11	1.96	1.64	0.01	0.15	—	0.15	0.15	—	0.15	—	3,513	3,513	0.36	0.02	—	3,529
Water	—	—	—	—	—	—	—	—	—	—	—	71.8	105	177	7.37	0.18	—	414
Waste	—	—	—	—	—	—	—	—	—	—	—	108	0.00	108	10.8	0.00	—	379
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	42.2	42.2
Total	5.89	5.58	7.90	23.4	0.11	0.25	8.76	9.01	0.24	2.23	2.47	180	13,444	13,624	18.7	0.93	49.0	14,417
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.25	0.22	1.08	3.34	0.02	0.02	1.60	1.62	0.02	0.41	0.42	—	1,624	1,624	0.03	0.12	1.13	1,662
Area	0.78	0.77	0.01	0.63	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.37	2.37	< 0.005	< 0.005	—	2.37
Energy	0.04	0.02	0.36	0.30	< 0.005	0.03	—	0.03	0.03	—	0.03	—	582	582	0.06	< 0.005	—	584
Water	—	—	—	—	—	—	—	—	—	—	—	11.9	17.5	29.3	1.22	0.03	—	68.6
Waste	—	—	—	—	—	—	—	—	—	—	—	17.9	0.00	17.9	1.79	0.00	—	62.7
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.98	6.98

Total	1.07	1.02	1.44	4.28	0.02	0.05	1.60	1.64	0.04	0.41	0.45	29.8	2,226	2,256	3.10	0.15	8.12	2,387

3. Construction Emissions Details

3.1. Site Preparation (2032) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.22	2.70	22.3	25.7	0.05	0.93	—	0.93	0.85	—	0.85	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.31	0.35	< 0.005	0.01	—	0.01	0.01	—	0.01	—	72.5	72.5	< 0.005	< 0.005	—	72.8
Dust From Material Movement	—	—	—	—	—	—	0.27	0.27	—	0.14	0.14	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.0	12.0	< 0.005	< 0.005	—	12.1
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.03	0.37	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	81.8	81.8	< 0.005	< 0.005	< 0.005	83.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.16	1.16	< 0.005	< 0.005	< 0.005	1.18
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2032) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.64	1.38	11.4	16.4	0.03	0.45	—	0.45	0.41	—	0.41	—	2,959	2,959	0.12	0.02	—	2,969
Dust From Material Movement	—	—	—	—	—	—	7.08	7.08	—	3.42	3.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.25	0.36	< 0.005	0.01	—	0.01	0.01	—	0.01	—	64.9	64.9	< 0.005	< 0.005	—	65.1
Dust From Material Movement	—	—	—	—	—	—	0.16	0.16	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.7	10.7	< 0.005	< 0.005	—	10.8
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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.32	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	70.1	70.1	< 0.005	< 0.005	< 0.005	71.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.59	1.59	< 0.005	< 0.005	< 0.005	1.62
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.26	0.26	< 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	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2032) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	0.90	7.87	12.8	0.02	0.22	—	0.22	0.21	—	0.21	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	0.90	7.87	12.8	0.02	0.22	—	0.22	0.21	—	0.21	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	0.56	4.88	7.93	0.01	0.14	—	0.14	0.13	—	0.13	—	1,487	1,487	0.06	0.01	—	1,492
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.89	1.45	< 0.005	0.03	—	0.03	0.02	—	0.02	—	246	246	0.01	< 0.005	—	247
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.21	0.10	1.84	0.00	0.00	0.37	0.37	0.00	0.09	0.09	—	359	359	0.01	0.02	0.73	365
Vendor	0.03	0.02	0.61	0.24	< 0.005	0.01	0.15	0.16	< 0.005	0.04	0.05	—	474	474	0.01	0.07	0.61	496
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.19	0.12	1.44	0.00	0.00	0.37	0.37	0.00	0.09	0.09	—	318	318	0.01	0.02	0.02	323
Vendor	0.03	0.01	0.65	0.25	< 0.005	0.01	0.15	0.16	< 0.005	0.04	0.05	—	474	474	0.01	0.07	0.02	496
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.07	0.92	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	205	205	0.01	0.01	0.20	208
Vendor	0.02	0.01	0.39	0.15	< 0.005	< 0.005	0.09	0.10	< 0.005	0.03	0.03	—	294	294	< 0.005	0.04	0.16	308
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.17	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	33.9	33.9	< 0.005	< 0.005	0.03	34.4
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	48.7	48.7	< 0.005	0.01	0.03	50.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2033) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.05	0.88	7.67	12.8	0.02	0.20	—	0.20	0.19	—	0.19	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	28.1	28.1	< 0.005	< 0.005	—	28.2
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.66	4.66	< 0.005	< 0.005	—	4.68
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.18	0.11	1.34	0.00	0.00	0.37	0.37	0.00	0.09	0.09	—	313	313	0.01	0.02	0.02	318
Vendor	0.02	0.01	0.63	0.24	< 0.005	< 0.005	0.15	0.16	< 0.005	0.04	0.05	—	459	459	0.01	0.07	0.01	480
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.81	3.81	< 0.005	< 0.005	< 0.005	3.88
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.39	5.39	< 0.005	< 0.005	< 0.005	5.63
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.63	0.63	< 0.005	< 0.005	< 0.005	0.64
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.89	0.89	< 0.005	< 0.005	< 0.005	0.93
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2033) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	0.55	5.34	8.75	0.01	0.16	—	0.16	0.14	—	0.14	—	1,350	1,350	0.05	0.01	—	1,354
Paving	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.26	0.43	< 0.005	0.01	—	0.01	0.01	—	0.01	—	66.6	66.6	< 0.005	< 0.005	—	66.8
Paving	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.05	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.0	11.0	< 0.005	< 0.005	—	11.1
Paving	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.03	0.40	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	92.1	92.1	< 0.005	< 0.005	< 0.005	93.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.71	4.71	< 0.005	< 0.005	< 0.005	4.79
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.78	0.78	< 0.005	< 0.005	< 0.005	0.79
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2033) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.76	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	41.7	41.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.58	6.58	< 0.005	< 0.005	—	6.61
Architectural Coatings	2.06	2.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.09	1.09	< 0.005	< 0.005	—	1.09

Architectural Coating	0.38	0.38	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.27	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	62.7	62.7	< 0.005	< 0.005	< 0.005	63.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.20	3.20	< 0.005	< 0.005	< 0.005	3.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.54
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	2.14	1.91	8.07	34.2	0.14	0.13	12.8	13.0	0.13	3.26	3.39	—	14,955	14,955	0.23	1.03	22.9	15,292
Total	2.14	1.91	8.07	34.2	0.14	0.13	12.8	13.0	0.13	3.26	3.39	—	14,955	14,955	0.23	1.03	22.9	15,292
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	1.98	1.75	8.86	24.4	0.13	0.13	12.8	13.0	0.13	3.26	3.39	—	13,824	13,824	0.26	1.06	0.59	14,149
Total	1.98	1.75	8.86	24.4	0.13	0.13	12.8	13.0	0.13	3.26	3.39	—	13,824	13,824	0.26	1.06	0.59	14,149
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.25	0.22	1.08	3.34	0.02	0.02	1.60	1.62	0.02	0.41	0.42	—	1,624	1,624	0.03	0.12	1.13	1,662
Total	0.25	0.22	1.08	3.34	0.02	0.02	1.60	1.62	0.02	0.41	0.42	—	1,624	1,624	0.03	0.12	1.13	1,662

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	1,179	1,179	0.15	0.02	—	1,189
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,179	1,179	0.15	0.02	—	1,189
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Manufac	—	—	—	—	—	—	—	—	—	—	—	—	1,179	1,179	0.15	0.02	—	1,189
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,179	1,179	0.15	0.02	—	1,189
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufac turing	—	—	—	—	—	—	—	—	—	—	—	—	195	195	0.02	< 0.005	—	197
Total	—	—	—	—	—	—	—	—	—	—	—	—	195	195	0.02	< 0.005	—	197

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufac turing	0.22	0.11	1.96	1.64	0.01	0.15	—	0.15	0.15	—	0.15	—	2,334	2,334	0.21	< 0.005	—	2,340
Total	0.22	0.11	1.96	1.64	0.01	0.15	—	0.15	0.15	—	0.15	—	2,334	2,334	0.21	< 0.005	—	2,340
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufac turing	0.22	0.11	1.96	1.64	0.01	0.15	—	0.15	0.15	—	0.15	—	2,334	2,334	0.21	< 0.005	—	2,340
Total	0.22	0.11	1.96	1.64	0.01	0.15	—	0.15	0.15	—	0.15	—	2,334	2,334	0.21	< 0.005	—	2,340
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufac turing	0.04	0.02	0.36	0.30	< 0.005	0.03	—	0.03	0.03	—	0.03	—	386	386	0.03	< 0.005	—	387
Total	0.04	0.02	0.36	0.30	< 0.005	0.03	—	0.03	0.03	—	0.03	—	386	386	0.03	< 0.005	—	387

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	3.47	3.47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.21	0.21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.25	1.16	0.06	7.05	< 0.005	0.01	—	0.01	0.01	—	0.01	—	29.0	29.0	< 0.005	< 0.005	—	29.1
Total	4.93	4.83	0.06	7.05	< 0.005	0.01	—	0.01	0.01	—	0.01	—	29.0	29.0	< 0.005	< 0.005	—	29.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	3.47	3.47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.21	0.21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	3.67	3.67	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.63	0.63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landsca Equipment	0.11	0.10	0.01	0.63	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.37	2.37	< 0.005	< 0.005	—	2.37
Total	0.78	0.77	0.01	0.63	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.37	2.37	< 0.005	< 0.005	—	2.37

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufac turing	—	—	—	—	—	—	—	—	—	—	—	71.8	105	177	7.37	0.18	—	414
Total	—	—	—	—	—	—	—	—	—	—	—	71.8	105	177	7.37	0.18	—	414
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufac turing	—	—	—	—	—	—	—	—	—	—	—	71.8	105	177	7.37	0.18	—	414
Total	—	—	—	—	—	—	—	—	—	—	—	71.8	105	177	7.37	0.18	—	414
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufac turing	—	—	—	—	—	—	—	—	—	—	—	11.9	17.5	29.3	1.22	0.03	—	68.6
Total	—	—	—	—	—	—	—	—	—	—	—	11.9	17.5	29.3	1.22	0.03	—	68.6

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	108	0.00	108	10.8	0.00	—	379
Total	—	—	—	—	—	—	—	—	—	—	—	108	0.00	108	10.8	0.00	—	379
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	108	0.00	108	10.8	0.00	—	379
Total	—	—	—	—	—	—	—	—	—	—	—	108	0.00	108	10.8	0.00	—	379
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	17.9	0.00	17.9	1.79	0.00	—	62.7
Total	—	—	—	—	—	—	—	—	—	—	—	17.9	0.00	17.9	1.79	0.00	—	62.7

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	42.2	42.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	42.2	42.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Manufac	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	42.2	42.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	42.2	42.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufac turing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.98	6.98
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.98	6.98

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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
Site Preparation	Site Preparation	1/30/2032	2/6/2032	5.00	5.00	—
Grading	Grading	2/7/2032	2/18/2032	5.00	8.00	—
Building Construction	Building Construction	2/19/2032	1/6/2033	5.00	230	—
Paving	Paving	1/7/2033	2/1/2033	5.00	18.0	—
Architectural Coating	Architectural Coating	2/2/2033	2/27/2033	5.00	18.0	—

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
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
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	8.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	2.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	6.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	6.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	—	6.80	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	6.80	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	68.0	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	26.6	6.80	HHDT,MHDT

Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	20.0	7.70	LDA,LDT1,LDT2
Paving	Vendor	—	6.80	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	13.6	7.70	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.80	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	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	0.00	0.00	243,000	81,000	—

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)
Site Preparation	—	—	7.50	0.00	—
Grading	—	—	8.00	0.00	—

Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Manufacturing	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2032	0.00	261	0.03	< 0.005
2033	0.00	261	0.03	< 0.005

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
Manufacturing	637	1,040	824	263,187	10,897	17,802	14,114	4,505,319

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

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)
0	0.00	243,000	81,000	—

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)
Manufacturing	1,650,673	261	0.0330	0.0040	7,282,434

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Manufacturing	37,462,500	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Manufacturing	201	—

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
Manufacturing	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

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)

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	no demolition required in this phase
Operations: Fleet Mix	fleet based on current operations

Treehouse California - Phase 4 Custom Report

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5.18.2.1. Unmitigated

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Treehouse California - Phase 4
Construction Start Date	1/1/2032
Operational Year	2033
Lead Agency	Tulare County RMA
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.10
Precipitation (days)	23.0
Location	6914 Rd 160, Earlimart, CA 93219, USA
County	Tulare
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2738
EDFZ	9
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.26

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
Parking Lot	111	Space	1.00	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.10	1.01	4.99	8.81	0.02	0.13	0.10	0.22	0.12	0.02	0.14	—	1,643	1,643	0.07	0.01	0.19	1,649
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.04	0.88	6.76	9.09	0.02	0.30	5.35	5.65	0.28	2.58	2.86	—	1,749	1,749	0.07	0.02	< 0.005	1,755
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.18	0.16	1.46	2.56	< 0.005	0.04	0.03	0.07	0.03	0.01	0.05	—	475	475	0.02	< 0.005	< 0.005	476
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.03	0.03	0.27	0.47	< 0.005	0.01	0.01	0.01	0.01	< 0.005	0.01	—	78.6	78.6	< 0.005	< 0.005	< 0.005	78.9
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	10.0	10.0	100	27.0	15.0	15.0	15.0	15.0	15.0	15.0	—	—	1.00	—	—	—	—
Unmit.	—	No	No	No	No	No	No	No	No	No	No	—	—	Yes	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2032	1.10	1.01	4.99	8.81	0.02	0.13	0.10	0.22	0.12	0.02	0.14	—	1,643	1,643	0.07	0.01	0.19	1,649
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2032	1.04	0.88	6.76	9.09	0.02	0.30	5.35	5.65	0.28	2.58	2.86	—	1,749	1,749	0.07	0.02	< 0.005	1,755
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2032	0.18	0.16	1.46	2.56	< 0.005	0.04	0.03	0.07	0.03	0.01	0.05	—	475	475	0.02	< 0.005	< 0.005	476
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2032	0.03	0.03	0.27	0.47	< 0.005	0.01	0.01	0.01	0.01	< 0.005	0.01	—	78.6	78.6	< 0.005	< 0.005	< 0.005	78.9

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.2	27.2	< 0.005	< 0.005	0.00	27.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.2	27.2	< 0.005	< 0.005	0.00	27.4
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.2	27.2	< 0.005	< 0.005	0.00	27.4
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.51	4.51	< 0.005	< 0.005	0.00	4.54
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	10.0	10.0	100	27.0	15.0	15.0	15.0	15.0	15.0	15.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	No	No	No	No	No	No	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.01	0.01	0.00	0.00	0.00	0.00	—	0.00	0.00	—	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	—	0.00	0.00	—	0.00	—	27.2	27.2	< 0.005	< 0.005	—	27.4
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.2	27.2	< 0.005	< 0.005	0.00	27.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	27.2	27.2	< 0.005	< 0.005	—	27.4
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.2	27.2	< 0.005	< 0.005	0.00	27.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Area	0.01	0.01	0.00	0.00	0.00	0.00	—	0.00	0.00	—	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	—	0.00	0.00	—	0.00	—	27.2	27.2	< 0.005	< 0.005	—	27.4
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.2	27.2	< 0.005	< 0.005	0.00	27.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	< 0.005	< 0.005	0.00	0.00	0.00	0.00	—	0.00	0.00	—	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	—	0.00	0.00	—	0.00	—	4.51	4.51	< 0.005	< 0.005	—	4.54
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.51	4.51	< 0.005	< 0.005	0.00	4.54

3. Construction Emissions Details

3.1. Site Preparation (2032) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	0.35	2.59	5.56	0.01	0.12	—	0.12	0.11	—	0.11	—	858	858	0.03	0.01	—	861

Dust From Material Movement	—	—	—	—	—	—	0.53	0.53	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.35	2.35	< 0.005	< 0.005	—	2.36
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	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	—	< 0.005	< 0.005	—	< 0.005	—	0.39	0.39	< 0.005	< 0.005	—	0.39
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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	23.4	23.4	< 0.005	< 0.005	< 0.005	23.8

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2032) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.02	0.86	6.74	8.93	0.02	0.30	—	0.30	0.28	—	0.28	—	1,714	1,714	0.07	0.01	—	1,720
Dust From Material Movement	—	—	—	—	—	—	5.31	5.31	—	2.57	2.57	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.39	9.39	< 0.005	< 0.005	—	9.42
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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.55	1.55	< 0.005	< 0.005	—	1.56
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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.16	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	35.1	35.1	< 0.005	< 0.005	< 0.005	35.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.20	0.20	< 0.005	< 0.005	< 0.005	0.20

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.03	0.03	< 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	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2032) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	0.50	4.99	8.81	0.02	0.12	—	0.12	0.11	—	0.11	—	1,643	1,643	0.07	0.01	—	1,649
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	0.50	4.99	8.81	0.02	0.12	—	0.12	0.11	—	0.11	—	1,643	1,643	0.07	0.01	—	1,649
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.16	0.14	1.37	2.41	< 0.005	0.03	—	0.03	0.03	—	0.03	—	450	450	0.02	< 0.005	—	452
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.25	0.44	< 0.005	0.01	—	0.01	0.01	—	0.01	—	74.5	74.5	< 0.005	< 0.005	—	74.8
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Paving (2032) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.51	0.43	3.79	5.28	0.01	0.13	—	0.13	0.12	—	0.12	—	823	823	0.03	0.01	—	826
Paving	0.52	0.52	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.3
Paving	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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.87	1.87	< 0.005	< 0.005	—	1.87

Paving	< 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	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.02	0.47	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	92.3	92.3	< 0.005	< 0.005	0.19	93.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.16	1.16	< 0.005	< 0.005	< 0.005	1.18
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	27.2	27.2	< 0.005	< 0.005	—	27.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	27.2	27.2	< 0.005	< 0.005	—	27.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	27.2	27.2	< 0.005	< 0.005	—	27.4

Total	—	—	—	—	—	—	—	—	—	—	—	—	27.2	27.2	< 0.005	< 0.005	—	27.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	4.51	4.51	< 0.005	< 0.005	—	4.54
Total	—	—	—	—	—	—	—	—	—	—	—	—	4.51	4.51	< 0.005	< 0.005	—	4.54

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	0.01	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landsca Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	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

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	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

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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
Site Preparation	Site Preparation	1/16/2032	1/17/2032	5.00	1.00	—
Grading	Grading	1/18/2032	1/20/2032	5.00	2.00	—
Building Construction	Building Construction	1/21/2032	6/9/2032	5.00	100	—
Paving	Paving	6/10/2032	6/17/2032	5.00	5.00	—

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
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
Grading	Graders	Diesel	Average	1.00	6.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	6.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Building Construction	Aerial Lifts	Diesel	Average	1.00	8.00	46.0	0.31
Building Construction	Bore/Drill Rigs	Diesel	Average	1.00	4.00	83.0	0.50
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37

Paving	Cement and Mortar Mixers	Diesel	Average	4.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	7.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	7.00	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
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	—	6.80	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	7.50	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	6.80	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	0.00	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	0.00	6.80	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	7.70	LDA,LDT1,LDT2
Paving	Vendor	—	6.80	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	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)

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)
Site Preparation	—	—	0.50	0.00	—
Grading	—	—	1.50	0.00	—
Paving	0.00	0.00	0.00	0.00	1.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Parking Lot	1.00	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2032	0.00	261	0.03	< 0.005

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
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

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)
0	0.00	0.00	0.00	2,611

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)
Parking Lot	38,120	261	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)
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Parking Lot	0.00	—

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

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)

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	no demolition or coatings needed in this phase
Construction: Off-Road Equipment	added bore rigs and aerial lifts to account for construction of the solar panels

Operations: Fleet Mix	fleet per current operations

ATTACHMENT "B"

BIOLOGICAL RESOURCES EVALUATION TECHNICAL REPORT

RESOURCE MANAGEMENT AGENCY

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REED SCHENKE, DIRECTOR — MICHAEL WASHAM, ASSOCIATE DIRECTOR

TECHNICAL MEMORANDUM
BIOLOGICAL RESOURCES EVALUATION

DATE: June 17, 2024

TO: Gary Mills, Chief Environmental Planner

FROM: Brenda Alcantar, Planning Technician I

SUBJECT: Biological Resources Evaluation for Treehouse California Almonds PSP 23-064, CEQ 23-005

PROJECT DESCRIPTION

The Project proponent, Treehouse California Almonds, sells a full range of roasted and manufactured almonds, including blanched whole, sliced, and diced almonds, almond meal, almond butter, and natural whole almonds. The almonds are hulled and shelled in the Treehouse Almonds plant near Delano in Kern County. This shelled raw product is then trucked to the Earlimart site for processing. The proposed project consists of an expansion of the existing almond processing and packaging facility in four (4) phases.

- **Phase 1**: Construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. as additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

  Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

  The two anaerobic ponds (88’ x 88’ x 19’) will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280’ x 87’ x 13’) where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

  The clarifier (24’ diameter x 12’) will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466’ x 280’ x 27’) for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the High Density Polyethylene (HDPE) double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

- **Phase 2:** Construction of a 5,176 sq. ft. canopy, a 6,263 sq. ft. fumigation room building with a 1,127 sq. ft. canopy for a total of 7,390 sq. ft., and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

- **Phase 3:** Construction of a 162,000 sq. ft. warehouse.

- **Phase 4:** Construction of a 4,433 sq. ft. solar panel canopy, a 6,975 sq. ft. solar panel canopy, and a 7,182 sq. ft. solar panel canopy.

The facility currently operates two (2) 10-hour shifts, four (4) to five (5) days a week, depending on the season, with 87 employees working the day shift and 49 employees working the night shift. The proposed Project is anticipated to add eight (8) employees.

PROJECT LOCATION

The project site contains two separate sites and is located northeast community of Earlimart at 6914 Road 160, Earlimart, CA 93219. The project is comprised of Tulare County Assessor Parcels 319-060-019, 022 & 037 (northern site) and 318-290-005 & 006 (southern site). The northern site is located south of Avenue 72 and east of Road 160. The southern site is located north of Avenue 64 and west of Road 160. (see Attachment A).

Assessor Parcel Number(s):	318-290-005 & 006; 319-060-019, 022, & 037 (see Attachment A)
USGS 7.5-minute Quadrangle):	Sausalito School (see Attachment C)
Surrounding Quadrangles:	(Tulare County) Tipton NW, Woodville, Porterville, Pixley, Ducor, Delano West, Delano East (Kern County) Richgrove (see Attachment C)
Public Land Survey System:	Section 19 & 24, Township 23 South, Range 25 & 26 East, Mount Diablo Base and Meridian
Latitude/Longitude:	35° 54’ 49.26” N / 119° 12’ 52.94” W

BIOLOGICAL RESOURCES DATABASE SEARCH

The most recent California Department of Fish and Wildlife's California Natural Diversity Database (CNDDB), RareFind 5 and Biogeographic Information and Observation System (BIOS) mapping applications were accessed on March 11, 2024.[1,2]

Based on the information in the CNDDB and BIOS, there are 41 special status species and 3 natural communities recorded within the 9-quadrangle project area (see Attachment G). These species include: 17 plant species; 1 invertebrate species; 6 insect species; 1 amphibian species, 5 reptile species; 1 fish species; 4 bird species; and 6 mammal species.

The CNDDB and BIOS indicated that there are 15 special status species and 1 natural community, Northern Claypan Vernal Pool, recorded within the Sausalito School quadrangle (see Attachment F). These species include: 9 plant species; 1 amphibian species, 1 invertebrate species, 1 reptile species; 1 bird species; and 2 mammal species.

The results from the CNDDB and BIOS also indicated that there are 5 special status species recorded within half a mile of the project site (see Attachment E). These species include: 3 plant species; 1 reptile species; and 1 bird species. These species are identified as: *Agelaius tricolor* (tricolored blackbird), *Atriplex subtilis* (subtle orache), *Delphinium recurvatum* (recurved larkspur), *Gambelia sila* (blunt-nosed leopard lizard), *Lasthenia chrysantha* (alkali-sink goldfields) (see Attachment E).

However, among these species, three (3) special status species, namely the subtle orache, recurved larkspur, and alkali-sink goldfields, have historically been observed within the project site and adjacent parcels (see Attachment D). According to the CNDDB data, subtle orache is categorized as 'Presumed Extant', recurved larkspur is labeled as 'Extirpated', and alkali-sink goldfields is classified as 'Possibly Extirpated'. 'Presumed Extant' indicates that the occurrence is assumed to still exist until evidence proves otherwise to the CNDDB. 'Possibly Extirpated' suggests that reports of habitat destruction or population loss have been submitted to the CNDDB, but uncertainties remain regarding the element's current existence. 'Extirpated' is applied when there has been no sighting of the element for an extended period or when its habitat at the site has been destroyed.[3] The most recent site year recorded for the three species was in 1975.

To ensure the project will have a less than significant impact on special status species, the following mitigations measure requiring pre-construction surveys will be implemented.

Pre-construction Surveys

BIO-1: ***(Pre-construction Survey – Plant Species)*** A qualified biologist/botanist shall conduct pre-construction surveys for special status plant species in accordance with the California Department of Fish and Wildlife (CDFW) *Protocols for Surveying and Evaluating Impacts*

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[1] California Department of Fish and Wildlife. Biogeographic Information and Observation System (BIOS). Accessed March 11, 2024, at: https://wildlife.ca.gov/Data/BIOS.

[2] California Department of Fish and Wildlife. CDFW BIOS Viewer. Accessed March 11, 2024, at: https://apps.wildlife.ca.gov/bios6/.

[3] California Department of Fish and Wildlife. Metadata Description of CNDDB fields (see Presence). Accessed June 24, 2024, at: https://map.dfg.ca.gov/rarefind/view/RF_FieldDescriptions.htm#:~:text=Presumed%20Extant%3A%20The%20most%20common,is%20received%20by%20the%20CNDDB.

to Special Status Native Plant Populations and Natural Communities (2009). This protocol includes identification of reference populations to facilitate the likelihood of field investigation occurring during the appropriate floristic period. Surveys should be timed to coincide with flowering periods for species that could occur (March-May). In the absence of protocol-level surveys being performed, additional surveys may be necessary.

- If special status plant species are not identified during pre-construction surveys, no further action is required.
- If special status plant species are detected during pre-construction surveys, the biologist/botanist will supervise establishment of a minimum 50-foot no disturbance buffer from the outer edge of the plant population. If buffers cannot be maintained, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be contacted immediately to identify the appropriate minimization actions to be taken as appropriate for the species identified and to determine incidental take permitting needs.

BIO-2: ***(Pre-construction Survey – Animal Species)*** A qualified biologist will conduct pre-construction surveys during the appropriate periods for special status animal species in accordance with the CDFW guidance and recommendations identified below (see measures BIO-4 and BIO-9). In the absence of protocol-level surveys being performed, additional surveys may be necessary. If special status animal species are not identified during pre-construction surveys, no further action is required. If special status animal species are detected during pre-construction surveys, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be contacted immediately to identify the appropriate avoidance and minimization actions to be taken as applicable for the species identified and to determine incidental take permitting needs.

Measures to be Implemented if Special Status Species are Identified

To ensure the proposed project will have a less than significant impact on special status species within the project area, the following mitigations measures will be implemented if special status species are identified during pre-construction surveys.

All Identified Special Status Species

BIO-3: ***(Employee Education Program***) Prior to the start of construction or decommissioning, the applicant shall retain a qualified biologist/botanist to conduct a tailgate meeting to train all construction staff that will be involved with the project on the special status species that occur, or may occur, on the project site. This training will include a description of the species and its habitat needs; a report of the occurrence of the species in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during project construction and implementation.

Nesting Raptors and Migratory Birds (including Loggerhead Shrike and Tricolored Blackbird)

BIO-4: ***(Pre-construction Survey)*** If project activities must occur during the nesting season (February 1-August 31), the project proponent and/or their contractor is responsible for ensuring that implementation does not violate the Migratory Bird Treaty Act or relevant Fish and Game Code. A qualified biologist shall conduct pre-construction surveys for active bird nests within 10 days of the onset of these activities. Nest surveys will include all accessible areas on the project site and within 250 feet of the site for tricolored blackbird, loggerhead shrike and other migratory birds, and within 500 feet for all nesting raptors and migratory birds; with the exception of Swainson's hawk. The Swainson's hawk survey will utilize the Swainson's Hawk Technical Advisory Committee *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (2000) methodology and will extend to ½-mile outside of work area boundaries. Inaccessible areas will be scanned with binoculars or spotting scope, as appropriate. If no nesting pairs are found within the survey area, no further mitigation is required.

BIO-5: ***(Avoidance)*** In order to avoid impacts to nesting birds, construction will occur, where possible, outside the nesting season (between September 1st and January 31st).

BIO-6: ***(Buffers)*** If active nests are found within the survey areas a qualified biologist will establish appropriate no-disturbance buffers based on species tolerance of human disturbance (for example, for tricolored blackbird, no less than 60 feet), baseline levels of disturbance, and barriers that may separate the nest from construction disturbance. These buffers will remain in place until the breeding season has ended or until the qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.

BIO 7: ***(Compensatory Mitigation)*** If Swainson's hawks are determined to be nesting within ½ mile of alfalfa fields, wheat fields, or other high-quality foraging habitat on an individual project site, as determined by nesting surveys conducted during the nesting season immediately prior to the start of construction (Mitigation Measure 3.3.1a), loss of foraging habitat will be compensated through the purchase of credits from an approved mitigation bank, the preservation of on-site habitats, or the acquisition and preservation of off-site habitats. Habitat suitable for the Swainson's hawk will be preserved at a ratio of one acre of habitat preserved for each acre of habitat permanently disturbed by project construction within ½ mile of the nest. The preservation lands will be protected in perpetuity by conservation easement.

BIO-8: ***(Mortality Reporting)*** The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be contacted immediately by phone and in writing within three days in the event of accidental death or injury of a special status bird species during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.

Blunt Nosed-Leopard Lizard

BIO-9: ***(Pre-construction Survey)*** A qualified biologist shall conduct a pre-construction survey to determine if suitable habitat for blunt-nosed leopard exists on the project site within 30 days of the onset of project-related construction activities. If suitable habitat is identified, the qualified biologist shall conduct further surveys utilizing the CDFW *Approved Survey Methodology for the Blunt-Nosed Leopard Lizard* (2019) methodology. If no blunt-nosed leopard lizards are identified within the survey area, no further mitigation is required.

BIO-10: ***(Avoidance and Minimization)*** Construction activities shall be carried out in a manner that minimizes disturbance to blunt-nosed leopard lizard. If a blunt-nosed leopard lizard is detected during pre-construction surveys, prior to the onset of project-related construction activities the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be contacted to determine the best course of action and if required, to initiate the take authorization/permit process.

BIO-11: ***(Mortality Reporting)*** The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be contacted immediately by phone and in writing within three days in the event of accidental death or injury of a blunt-nosed leopard lizard during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.

JURISDICTIONAL WATERS

Waters of the State

"Waters of the State" is a term that encompasses all the various aquatic resources (surface or groundwater, wetlands, and Waters of the U.S.) within the State regulated by various state agencies. It includes rivers, streams, lakes, wetlands, mudflats, vernal pools, and other aquatic sites.

Deer Creek flows in a southwest direction such that it is located approximately one (1) mile north of and two (2) miles west of the project site (see Attachment A). This segment of Deer Creek is located within the jurisdictional boundaries of the Pixley Irrigation District. Based on the BIOS mapping data, this creek is a jurisdictional water of the State. There are no rivers, streams, lakes, mudflats, or vernal pools within the site itself. An existing stormwater ponding basin will be filled in to accommodate the project; however, another basin is currently being constructed within the same APN 319-060-037. The project also includes the construction of a three-pond wastewater treatment system which is regulated by the State Water Resources Control Board (SWRCB).

Waters of the U.S.

"Waters of the U.S." includes essentially all surface waters such as all navigable waters (lakes, rivers, streams, intermittent streams) and their tributaries, all interstate waters and their tributaries, all wetlands adjacent to these waters, and all impoundments of these waters.

The most recent United States Geological Survey (USGS) National Water Information System (NWIS) and United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping applications were accessed on March 11, 2024.[4,5] Other than Deer Creek to the north of the project site, the NWIS mapper does not identify any other water bodies within a 1-mile vicinity (see Attachment H). The NWI mapper identifies many freshwater ponds and emergent wetlands within the 1-mile project vicinity. Freshwater ponds classified as PUBFx[6] were recorded on the northwest corners of APNs 319-060-037 and 318-290-005 and along the eastern border of APN 319-060-022 (see Attachment I), however, as of 2017 the tentative parcel map, PPM 16-043 was finalized with no mentioned of the wetland existing. Since 2017 the construction of metal buildings and a warehouse have been completed through the use of building permits and special use permits.

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[4] United States Geological Survey. National Water Information System: Mapper. https://maps.waterdata.usgs.gov/mapper/index.html

[5] United States Fish and Wildlife Service. National Wetlands Inventory: Mapper. https://www.fws.gov/wetlands/data/mapper.HTML

[6] The NWI Mapper, defines classification PUBFx as: Palustrine, Unconsolidated Bottom, Freshwater, Excavated.

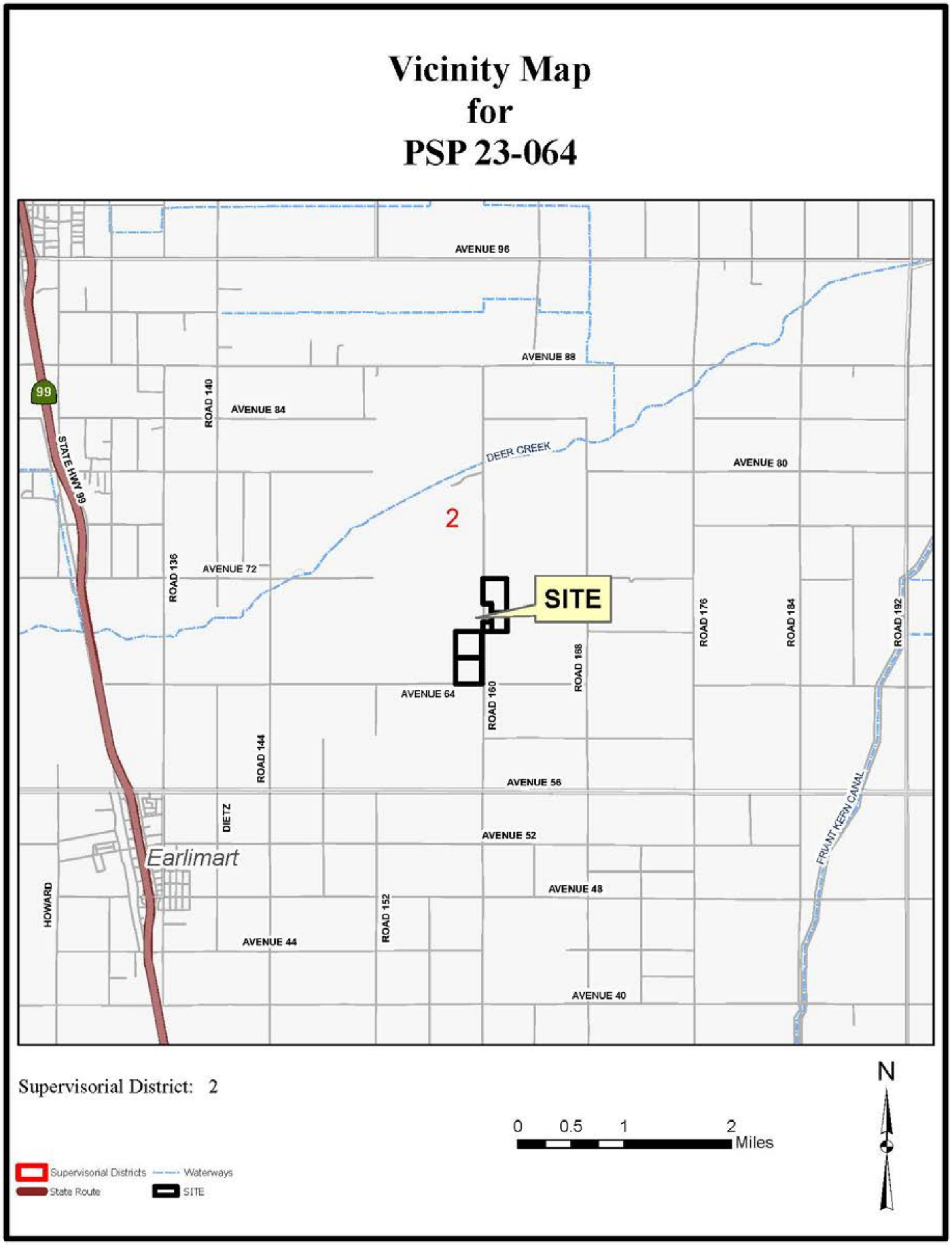
The project also includes the construction of a three-pond wastewater treatment system; however, these ponds are not considered Waters of the U.S. The project must comply with all applicable SWRCB rules and regulations, including Best Management Practices (BMP), as well as Waste Discharge Requirements (WDR), National Pollutant Discharge Elimination System (NPDES), and Stormwater Pollution Prevention Plan (SWPPP) permits. Compliance with the State's permitting requirements will reduce impacts, if any, to biological species, riparian habitats, or other protected wetlands. As such, mitigation measures that would reduce impacts to jurisdictional waters have not been proposed, nor would any measures be warranted.

SUMMARY AND CONCLUSION

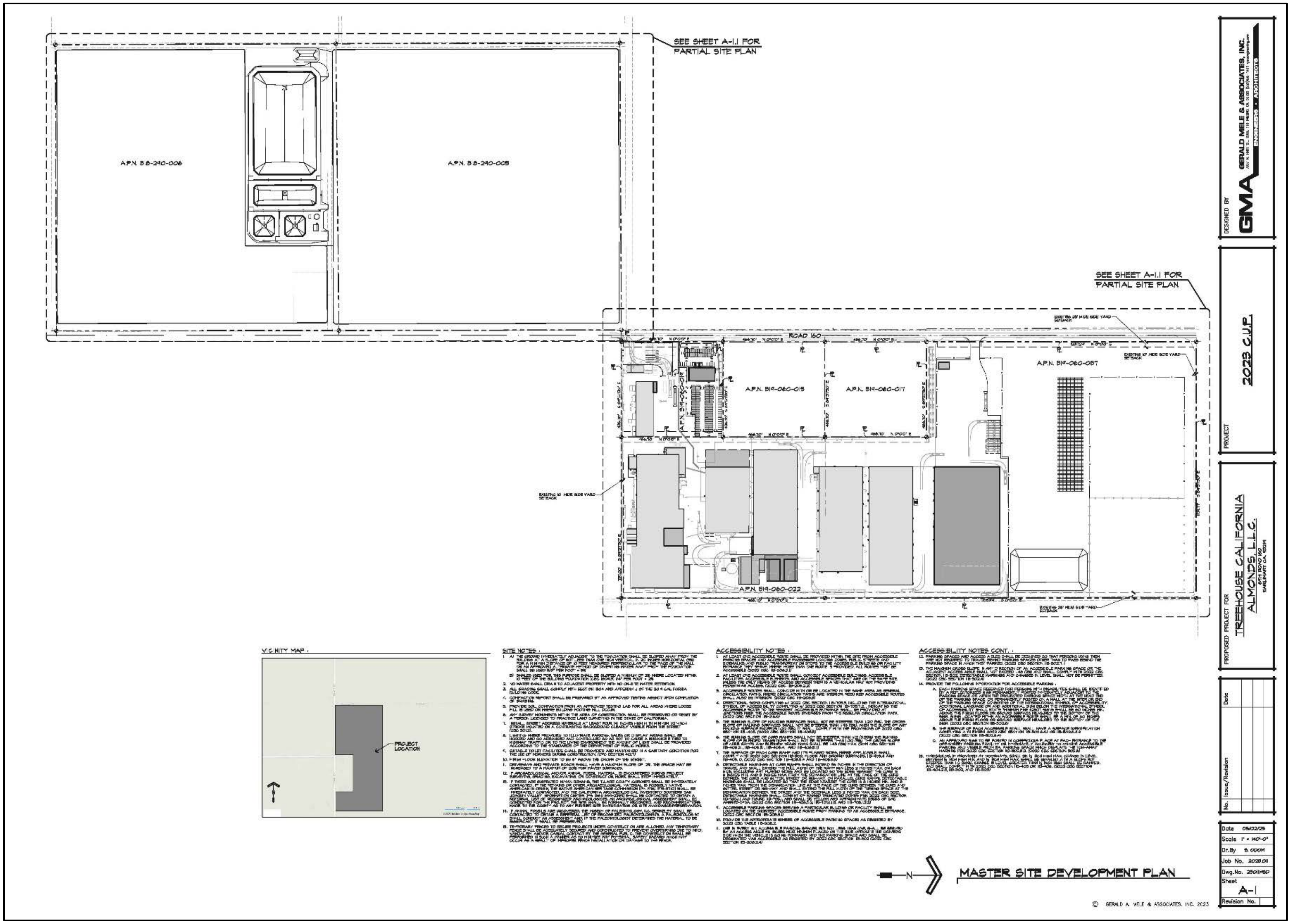
Three (3) special status species have been recorded within the project site and the immediate vicinity (i.e., the parcels adjacent to the site); five (5) special status species have been recorded within one-half (0.5) a mile of the project site. As such, Mitigation Measures BIO-1, BIO-2, BIO-4, and BIO-9, which require pre-construction surveys for special status plant and animal species, respectively, will be implemented prior to the onset of project-related activities. If no special status species are identified within the project site during pre-construction surveys, no further action would be required; however, in the event that special status species are identified, Mitigation Measures BIO-3 through BIO-11 would be implemented as appropriate and in consultation with the CDFW and/or USFWS. Specifically, Mitigation Measure BIO-3 would apply to all identified special status species (plant or animal); Mitigation Measures BIO-4 through BIO-8 would apply to nesting raptors and migratory birds, including loggerhead shrike and tricolored blackbird; and Mitigation Measures BIO-9 and BIO-11 would apply to blunt-nosed leopard lizard. With implementation of Mitigation Measures BIO-1 through BIO-11, impacts to special status plant and animal species will be less than significant with mitigation.

No riparian habitats or other natural communities are located within the Project site. With implementation of a condition of approval requiring compliance with the applicable SWRCB requirements, including BMP, and submittal of a SWPPP and WDR permits, and submittal of a grading and drainage plan to the Tulare County RMA Engineering Branch, impacts to onsite, adjacent and nearby wetlands will be less than significant.

Attachment A. Project Vicinity

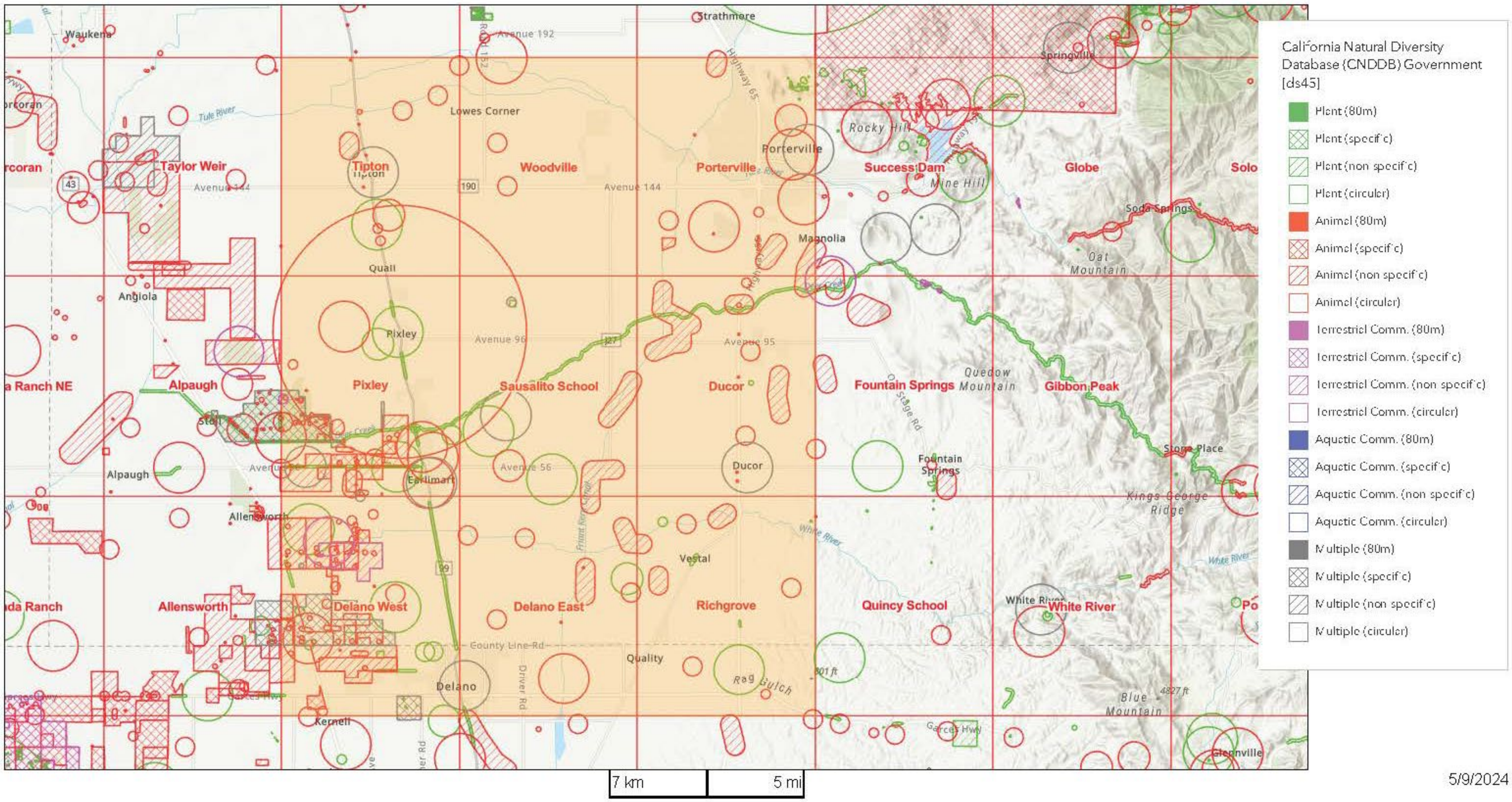


Attachment B. Site Map



Attachment C. 9-Quad Project Area Map

BIOS Map (Treehouse California Almonds PSP 23-064, CEQ 23-005)



((Tulare County) Tipton NW, Woodville, Porterville, Pixley, Ducor, Delano West, Delano East (Kern County) Richgrove)

Attachment D. Project Site Species List

(Species recorded within the Project boundaries)

OBJECTID	Scientific_Name	Common_Name	Element_Code	Occ_Number	MAPNDX	EONDX	Key_Quad_Code	Key_Quad_Name	Key_County_Code	Accuracy	Presence	Occ_Type	Occ_Rank	Sensitive	Site_Date	Elm_Date	Owner_Management	Federal_Status	State_Status	Global_Rank	State_Rank	Rare_Plant_Rank	CDFW_Status	Other_Status	Symbology	Taxon_Group	GlobalID
60273	Atriplex subtilis	subtle orache	PDCHE042T0	15	39014	34021	3511982	Sausalito School	TUL	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	N	19750711	19750711	UNKNOWN	None	None	G1	S1	1B.2			104	Dicots	4b9c5d04-227d-46dc-bacf-8803a4045b25
88019	Lasthenia chrysantha	alkali-sink goldfields	PDAST5L030	9	82166	118492	3511982	Sausalito School	TUL	1 mile	Possibly Extirpated	Natural/Native occurrence	None	N	19730320	19730320	UNKNOWN	None	None	G2	S2	1B.1			804	Dicots	864e05c5-f6a1-42ca-b73c-2e86b89c0113
50644	Delphinium recurvatum	recurved larkspur	PDRAN0B1J0	96	82166	83129	3511982	Sausalito School	TUL	1 mile	Extirpated	Natural/Native occurrence	None	N	19730320	19730320	UNKNOWN	None	None	G2?	S2?	1B.2		BLM_S; SB_SBBG	804	Dicots	a0b62114-04ef-4ae5-856d-10213a4a72b2

Attachment E. Project Vicinity Species List

(Species recorded within half a mile of Project site)

OBJECTID	Scientific_Name	Common_Name	Element_Code	Occ_Number	MAPNDX	EONDX	Key_Quad_Code	Key_Quad_Name	Key_County_Code	Accuracy	Presence	Occ_Type	Occ_Rank	Sensitive	Site_Date	Elm_Date	Owner_Management	Federal_Status	State_Status	Global_Rank	State_Rank	Rare_Plant_Rank	CDFW_Status	Other_Status	Symbology	Taxon_Group	GlobalID
60273	Atriplex subtilis	subtle orache	PDCHE042T0	15	39014	34021	3511982	Sausalito School	TUL	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	N	19750711	19750711	UNKNOWN	None	None	G1	S1	1B.2			104	Dicots	4b9c5d04-227d-46dc-bacf-8803a4045b25
93392	Gambelia sila	blunt-nosed leopard lizard	ARACF07010	455	B3798	116717	3511982	Sausalito School	TUL	3/5 mile	Possibly Extirpated	Natural/Native occurrence	None	N	1974XXXX	1974XXXX	PVT	Endangered	Endangered	G1	S2		FP	IUCN_EN	204	Reptiles	ed222e7a-f7db-445e-a830-bc9e0e6fac87
88019	Lasthenia chrysantha	alkali-sink goldfields	PDAST5L030	9	82166	118492	3511982	Sausalito School	TUL	1 mile	Possibly Extirpated	Natural/Native occurrence	None	N	19730320	19730320	UNKNOWN	None	None	G2	S2	1B.1			804	Dicots	864e05c5-f6a1-42ca-b73c-2e86b89c0113
50644	Delphinium recurvatum	recurved larkspur	PDRAN0B1J0	96	82166	83129	3511982	Sausalito School	TUL	1 mile	Extirpated	Natural/Native occurrence	None	N	19730320	19730320	UNKNOWN	None	None	G2?	S2?	1B.2		BLM_S; SB_SBBG	804	Dicots	a0b62114-04ef-4ae5-856d-10213a4a72b2
71849	Agelaius tricolor	tricolored blackbird	ABPBXB0020	687	97599	98925	3511983	Pixley	TUL	5 miles	Possibly Extirpated	Natural/Native occurrence	None	N	19350513	19350513	UNKNOWN	None	Threatened	G1G2	S2		SSC	BLM_S; IUCN_EN; USFWS_BCC	204	Birds	39d0c2f1-067c-4e21-ab47-9188ed7a9d9d

Attachment F. Project Area Species List

(Species recorded within the Sausalito School Quadrangle)

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Sausalito School (3511982))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Atriplex cordulata var. erecticaulis Earlimart orache	PDCHE042V0	None	None	G3T1	S1	1B.2
Atriplex coronata var. vallicola Lost Hills crownscale	PDCHE04371	None	None	G4T3	S3	1B.2
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Atriplex persistens vernal pool smallscale	PDCHE042P0	None	None	G2	S2	1B.2
Atriplex subtilis subtle orache	PDCHE042T0	None	None	G1	S1	1B.2
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Caulanthus californicus California jewelflower	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
Gambelia sila blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S2	FP
Lasthenia chrysantha alkali-sink goldfields	PDAST5L030	None	None	G2	S2	1B.1
Monolopia congdonii San Joaquin woollythreads	PDASTA8010	Endangered	None	G2	S2	1B.2
Northern Claypan Vernal Pool Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
Perognathus inornatus San Joaquin pocket mouse	AMAFD01060	None	None	G2G3	S2S3	
Spea hammondii western spadefoot	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S3	

Record Count: 16

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Attachment G. 9-Quad Project Area Species List

(Species recorded within the 9-quadrangle Project area)

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Tipton (3611913) OR Woodville (3611912) OR Porterville (3611911) OR Pixley (3511983) OR Ducor (3511981) OR Delano East (3511972) OR Delano West (3511973) OR Richgrove (3511971) OR Sausalito School (3511982))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Andrena macswaini An andrenid bee	IIHYM35130	None	None	G2	S2	
Anniella grinnelli Bakersfield legless lizard	ARACC01050	None	None	G2G3	S2S3	SSC
Anniella pulchra Northern California legless lizard	ARACC01020	None	None	G3	S2S3	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S2	SSC
Atriplex cordulata var. erecticaulis Earlimart orache	PDCHE042V0	None	None	G3T1	S1	1B.2
Atriplex coronata var. vallicola Lost Hills crownscale	PDCHE04371	None	None	G4T3	S3	1B.2
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Atriplex minuscula lesser saltscale	PDCHE042M0	None	None	G2	S2	1B.1
Atriplex persistens vernal pool smallscale	PDCHE042P0	None	None	G2	S2	1B.2
Atriplex subtilis subtle orache	PDCHE042T0	None	None	G1	S1	1B.2
Bombus crotchii Crotch's bumble bee	IIHYM24480	None	Candidate Endangered	G2	S2	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S4	
Calochortus striatus alkali mariposa-lily	PMLIL0D190	None	None	G3	S2S3	1B.2
Caulanthus californicus California jewelflower	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
Cicindela tranquebarica joaquinensis San Joaquin tiger beetle	IICOL0220E	None	None	G5T1	S1	
Clarkia springvillensis Springville clarkia	PDONA05120	Threatened	Endangered	G2	S2	1B.2
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2

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Information Expires 9/1/2024

9-Quad Project Area Species List (continued)

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Dipodomys nitratoides nitratoides Tipton kangaroo rat	AMAFD03152	Endangered	Endangered	G3T1T2	S2	
Eremalche parryi ssp. kernensis Kern mallow	PDMAL0C031	Endangered	None	G3G4T3	S3	1B.2
Eryngium spinosepalum spiny-sepaled button-celery	PDAPI0Z0Y0	None	None	G2	S2	1B.2
Fritillaria striata striped adobe-lily	PMLIL0V0K0	None	Threatened	G1	S1	1B.1
Gambelia sila blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S2	FP
Lampetra hubbsi Kern brook lamprey	AFBAA02040	None	None	G1G2	S1S2	SSC
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Lasiurus cinereus hoary bat	AMACC05032	None	None	G3G4	S4	
Lasthenia chrysantha alkali-sink goldfields	PDAST5L030	None	None	G2	S2	1B.1
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Lytta hoppingi Hopping's blister beetle	IICOL4C010	None	None	G1G2	S2	
Lytta molesta molestan blister beetle	IICOL4C030	None	None	G2	S2	
Lytta morrisoni Morrison's blister beetle	IICOL4C040	None	None	G1G2	S2	
Masticophis flagellum ruddocki San Joaquin coachwhip	ARADB21021	None	None	G5T2T3	S3	SSC
Monolopia congdonii San Joaquin woollythreads	PDASTA8010	Endangered	None	G2	S2	1B.2
Northern Claypan Vernal Pool Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
Onychomys torridus tularensis Tulare grasshopper mouse	AMAFF06021	None	None	G5T1T2	S1S2	SSC
Perognathus inornatus San Joaquin pocket mouse	AMAFD01060	None	None	G2G3	S2S3	
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G4	S4	SSC
Pseudobahia peirsonii San Joaquin adobe sunburst	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
Spea hammondii western spadefoot	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC

Government Version -- Dated March, 1 2024 -- Biogeographic Data Branch

Page 2 of 3

Report Printed on Monday, March 11, 2024

Information Expires 9/1/2024

9-Quad Project Area Species List (continued)

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Valley Saltbush Scrub Valley Saltbush Scrub	CTT36220CA	None	None	G2	S2.1	
Valley Sink Scrub Valley Sink Scrub	CTT36210CA	None	None	G1	S1.1	
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S3	

Record Count: 44

Government Version -- Dated March, 1 2024 -- Biogeographic Data Branch

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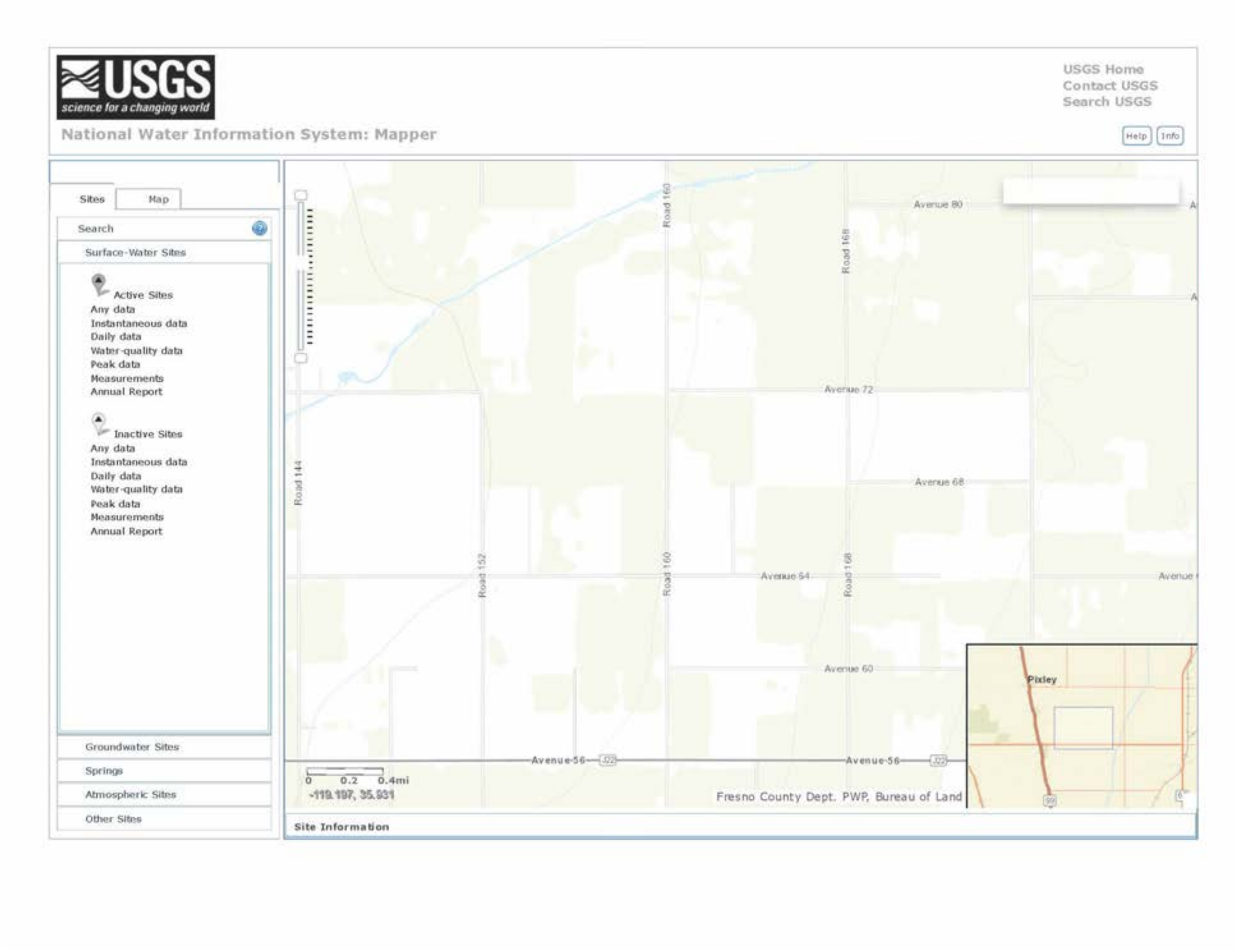
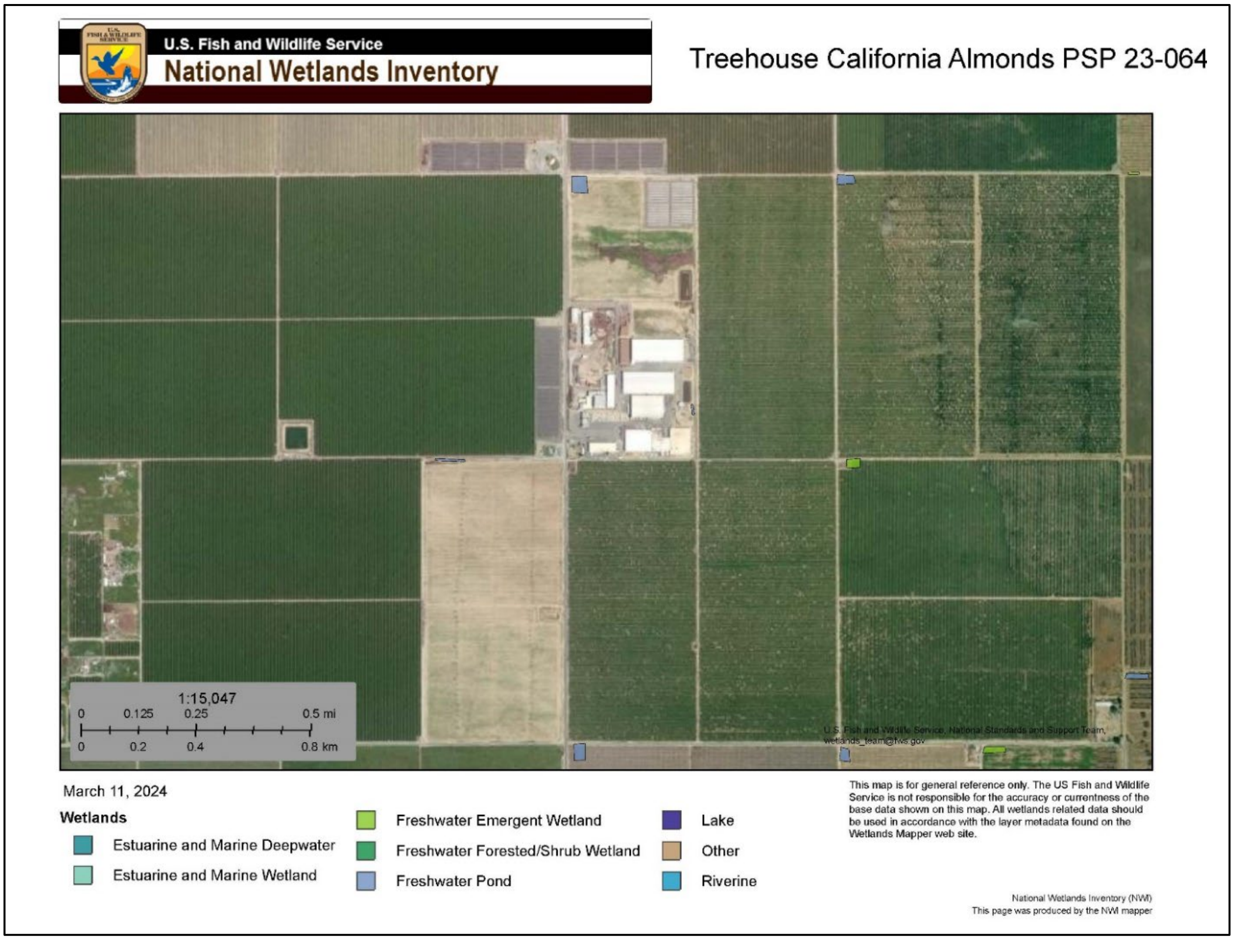
Report Printed on Monday, March 11, 2024

Information Expires 9/1/2024

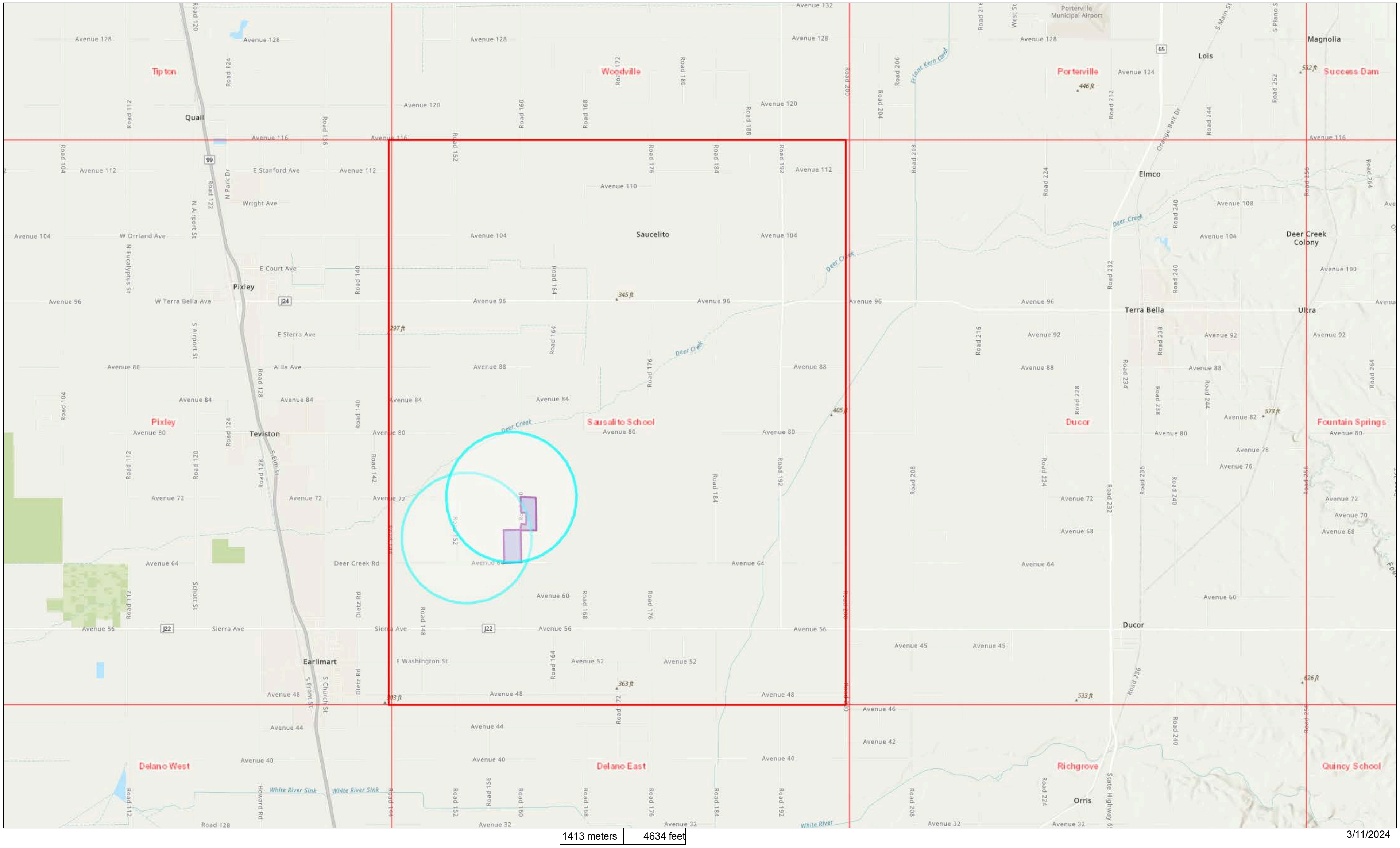
Attachment H. USGS National Water Information System (NWIS) Map



Attachment I. USFW National Wetland Inventory (NWI) Map



BIOS Map (Treehouse California Almonds PSP 23-064, CEQ 23-005)



On Site

Map Legend

GeoReference

24K Quads (New)

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Tipton (3611913) OR Woodville (3611912) OR Porterville (3611911) OR Pixley (3511983) OR Ducor (3511981) OR Delano East (3511972) OR Delano West (3511973) OR Richgrove (3511971) OR Sausalito School (3511982))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Andrena macswaini An andrenid bee	IIHYM35130	None	None	G2	S2	
Anniella grinnelli Bakersfield legless lizard	ARACC01050	None	None	G2G3	S2S3	SSC
Anniella pulchra Northern California legless lizard	ARACC01020	None	None	G3	S2S3	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S2	SSC
Atriplex cordulata var. erecticaulis Earlimart orache	PDCHE042V0	None	None	G3T1	S1	1B.2
Atriplex coronata var. vallicola Lost Hills crownscale	PDCHE04371	None	None	G4T3	S3	1B.2
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Atriplex minuscula lesser saltscale	PDCHE042M0	None	None	G2	S2	1B.1
Atriplex persistens vernal pool smallscale	PDCHE042P0	None	None	G2	S2	1B.2
Atriplex subtilis subtle orache	PDCHE042T0	None	None	G1	S1	1B.2
Bombus crotchii Crotch's bumble bee	IIHYM24480	None	Candidate Endangered	G2	S2	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S4	
Calochortus striatus alkali mariposa-lily	PMLIL0D190	None	None	G3	S2S3	1B.2
Caulanthus californicus California jewelflower	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
Cicindela tranquebarica joaquinensis San Joaquin tiger beetle	IICOL0220E	None	None	G5T1	S1	
Clarkia springvillensis Springville clarkia	PDONA05120	Threatened	Endangered	G2	S2	1B.2
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Dipodomys nitratoides nitratoides Tipton kangaroo rat	AMAFD03152	Endangered	Endangered	G3T1T2	S2	
Eremalche parryi ssp. kernensis Kern mallow	PDMAL0C031	Endangered	None	G3G4T3	S3	1B.2
Eryngium spinosepalum spiny-sepaled button-celery	PDAPI0Z0Y0	None	None	G2	S2	1B.2
Fritillaria striata striped adobe-lily	PMLIL0V0K0	None	Threatened	G1	S1	1B.1
Gambelia sila blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S2	FP
Lampetra hubbsi Kern brook lamprey	AFBAA02040	None	None	G1G2	S1S2	SSC
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Lasiurus cinereus hoary bat	AMACC05032	None	None	G3G4	S4	
Lasthenia chrysantha alkali-sink goldfields	PDAST5L030	None	None	G2	S2	1B.1
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Lytta hoppingi Hopping's blister beetle	IICOL4C010	None	None	G1G2	S2	
Lytta molesta molestan blister beetle	IICOL4C030	None	None	G2	S2	
Lytta morrisoni Morrison's blister beetle	IICOL4C040	None	None	G1G2	S2	
Masticophis flagellum ruddocki San Joaquin coachwhip	ARADB21021	None	None	G5T2T3	S3	SSC
Monolopia congdonii San Joaquin woollythreads	PDASTA8010	Endangered	None	G2	S2	1B.2
Northern Claypan Vernal Pool Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
Onychomys torridus tularensis Tulare grasshopper mouse	AMAFF06021	None	None	G5T1T2	S1S2	SSC
Perognathus inornatus San Joaquin pocket mouse	AMAFD01060	None	None	G2G3	S2S3	
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G4	S4	SSC
Pseudobahia peirsonii San Joaquin adobe sunburst	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
Spea hammondii western spadefoot	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Valley Saltbush Scrub Valley Saltbush Scrub	CTT36220CA	None	None	G2	S2.1	
Valley Sink Scrub Valley Sink Scrub	CTT36210CA	None	None	G1	S1.1	
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S3	

Record Count: 44

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Sausalito School (3511982))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Atriplex cordulata var. erecticaulis Earlimart orache	PDCHE042V0	None	None	G3T1	S1	1B.2
Atriplex coronata var. vallicola Lost Hills crownscale	PDCHE04371	None	None	G4T3	S3	1B.2
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Atriplex persistens vernal pool smallscale	PDCHE042P0	None	None	G2	S2	1B.2
Atriplex subtilis subtle orache	PDCHE042T0	None	None	G1	S1	1B.2
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Caulanthus californicus California jewelflower	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
Gambelia sila blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S2	FP
Lasthenia chrysantha alkali-sink goldfields	PDAST5L030	None	None	G2	S2	1B.1
Monolopia congdonii San Joaquin woollythreads	PDASTA8010	Endangered	None	G2	S2	1B.2
Northern Claypan Vernal Pool Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
Perognathus inornatus San Joaquin pocket mouse	AMAFD01060	None	None	G2G3	S2S3	
Spea hammondii western spadefoot	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S3	

Record Count: 16

OBJECTID	Scientific_Name	Common_Name	Element_Code	Occ_Number	MAPNDX	EONDX	Key_Quad_Code	Key_Quad_Name	Key_County_Code	Accuracy	Presence	Occ_Type	Occ_Rank	Sensitive	Site_Date	Elm_Date	Owner_Management	Federal_Status	State_Status	Global_Rank	State_Rank	Rare_Plant_Rank	CDFW_Status	Other_Status	Symbology	Taxon_Group	GlobalID
60273	Atriplex subtilis	subtle orache	PDCHE042T0	15	39014	34021	3511982	Sausalito School	TUL	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	N	19750711	19750711	UNKNOWN	None	None	G1	S1	1B.2			104	Dicots	4b9c5d04-227d-46dc-bacf-8803a4045b25
88019	Lasthenia chrysantha	alkali-sink goldfields	PDAST5L030	9	82166	118492	3511982	Sausalito School	TUL	1 mile	Possibly Extirpated	Natural/Native occurrence	None	N	19730320	19730320	UNKNOWN	None	None	G2	S2	1B.1			804	Dicots	864e05c5-f6a1-42ca-b73c-2e86b89c0113
50644	Delphinium recurvatum	recurved larkspur	PDRAN0B1J0	96	82166	83129	3511982	Sausalito School	TUL	1 mile	Extirpated	Natural/Native occurrence	None	N	19730320	19730320	UNKNOWN	None	None	G2?	S2?	1B.2		BLM_S; SB_SBBG	804	Dicots	a0b62114-04ef-4ae5-856d-10213a4a72b2

OBJECTID	Scientific_Name	Common_Name	Element_Code	Occ_Number	MAPNDX	EONDX	Key_Quad_Code	Key_Quad_Name	Key_County_Code	Accuracy	Presence	Occ_Type	Occ_Rank	Sensitive	Site_Date	Elm_Date	Owner_Management	Federal_Status	State_Status	Global_Rank	State_Rank	Rare_Plant_Rank	CDFW_Status	Other_Status	Symbology	Taxon_Group	GlobalID
60273	Atriplex subtilis	subtle orache	PDCHE042T0	15	39014	34021	3511982	Sausalito School	TUL	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	N	19750711	19750711	UNKNOWN	None	None	G1	S1	1B.2			104	Dicots	4b9c5d04-227d-46dc-bacf-8803a4045b25
93392	Gambelia sila	blunt-nosed leopard lizard	ARACF07010	455	B3798	116717	3511982	Sausalito School	TUL	3/5 mile	Possibly Extirpated	Natural/Native occurrence	None	N	1974XXXX	1974XXXX	PVT	Endangered	Endangered	G1	S2		FP	IUCN_EN	204	Reptiles	ed222e7a-f7db-445e-a830-bc9e0e6fac87
88019	Lasthenia chrysantha	alkali-sink goldfields	PDAST5L030	9	82166	118492	3511982	Sausalito School	TUL	1 mile	Possibly Extirpated	Natural/Native occurrence	None	N	19730320	19730320	UNKNOWN	None	None	G2	S2	1B.1			804	Dicots	864e05c5-f6a1-42ca-b73c-2e86b89c0113
50644	Delphinium recurvatum	recurved larkspur	PDRAN0B1J0	96	82166	83129	3511982	Sausalito School	TUL	1 mile	Extirpated	Natural/Native occurrence	None	N	19730320	19730320	UNKNOWN	None	None	G2?	S2?	1B.2		BLM_S; SB_SBBG	804	Dicots	a0b62114-04ef-4ae5-856d-10213a4a72b2
71849	Agelaius tricolor	tricolored blackbird	ABPBXB0020	687	97599	98925	3511983	Pixley	TUL	5 miles	Possibly Extirpated	Natural/Native occurrence	None	N	19350513	19350513	UNKNOWN	None	Threatened	G1G2	S2		SSC	BLM_S; IUCN_EN; USFWS_BCC	204	Birds	39d0c2f1-067c-4e21-ab47-9188ed7a9d9d

ATTACHMENT "C"

CULTURAL AND TRIBAL CULTURAL RESOURCES

California
Historical
Resources
Information
System

Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

To: Gary A. Mills
Tulare County Resource Management Agency
5961 South Mooney Blvd.
Visalia, CA 93277

Record Search 24-055

Date: February 12, 2024

Re: Treehouse California Almond Expansion Project (PSP 23-064)

County: Tulare

Map(s): Sausalito School 7.5'

CULTURAL RESOURCES RECORDS SEARCH

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

The following are the results of a search of the cultural resource files at the Southern San Joaquin Valley Information Center. These files include known and recorded cultural resources sites, inventory and excavation reports filed with this office, and resources listed on the National Register of Historic Places, the OHP Built Environment Resources Directory, California State Historical Landmarks, California Register of Historical Resources, California Inventory of Historic Resources, and California Points of Historical Interest. Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the OHP are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area.

PRIOR CULTURAL RESOURCE STUDIES CONDUCTED WITHIN THE PROJECT AREA AND THE ONE-HALF MILE RADIUS

According to the information in our files, there have been no previous cultural resource studies completed within the project area. There have been three cultural resource studies within the one-half mile radius: TU-00753, 00754, 01009.

Record Search 24-055

KNOWN/RECORDED CULTURAL RESOURCES WITHIN THE PROJECT AREA AND THE ONE-HALF MILE RADIUS

According to the information in our files, there are no recorded resources within the project area. There are no recorded resources within the one-half mile radius.

There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, for the California State Historic Landmarks.

COMMENTS AND RECOMMENDATIONS

We understand the project proposes expand the existing Treehouse California Almonds plant in a six-phase development. Further, we understand this project area is agricultural land. Please note that agriculture does not constitute previous development, as it does not destroy cultural resources, but merely moves them around within the plow zone. Because this project area has not been previously studied for cultural resources, it is unknown if any are present. As such, prior to ground disturbance activities, we recommend a qualified, professional consultant conduct a field survey to determine if cultural resources are present. A list of qualified consultants can be found at www.chrisinfo.org.

We also recommend that you contact the Native American Heritage Commission in Sacramento. They will provide you with a current list of Native American individuals/organizations that can assist you with information regarding cultural resources that may not be included in the CHRIS Inventory and that may be of concern to the Native groups in the area. The Commission can consult their "Sacred Lands Inventory" file to determine what sacred resources, if any, exist within this project area and the way in which these resources might be managed. Finally, please consult with the lead agency on this project to determine if any other cultural resource investigation is required. If you need any additional information or have any questions or concerns, please contact our office at (661) 654-2289.

By:

Jeremy E David, Assistant Coordinator **Date**: February 12, 2024

Please note that invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento, California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

February 8, 2024

Jessica Willis
Tulare County Resource Management Agency

Via Email to: ***jwillis@tularecounty.ca.gov***

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Treehouse California Almond Expansion Project (PSP 23-064), Tulare County

Dear Ms. Willis:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measures.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Cameron.vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Tulare County
2/8/2024

County	Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
Tulare	Santa Rosa Rancheria Tachi Yokut Tribe	F	Nichole Escalon, Cultural Specialist I	P.O. Box 8 Lemoore, CA, 93245	(559) 924-1278		nescalone@tachi-yokut-nsn.gov	Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	10/3/2023
	Santa Rosa Rancheria Tachi Yokut Tribe	F	Samantha McCarty, Cultural Specialist II	P.O. Box 8 Lemoore, CA, 93245	(559) 633-3440		smccarty@tachi-yokut-nsn.gov	Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	10/3/2023
	Santa Rosa Rancheria Tachi Yokut Tribe	F	Shana Powers, THPO	P.O. Box 8 Lemoore, CA, 93245	(559) 423-3900		spowers@tachi-yokut-nsn.gov	Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	10/3/2023
	Tule River Indian Tribe	F	Neil Peyron, Chairperson	P.O. Box 589 Porterville, CA, 93258	(559) 781-4271	(559) 781-4610	neil.peyron@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San Benito,San Joaquin,San Luis Obispo,Stanislaus,Tulare,Tuolumne	
	Wuksachi Indian Tribe/Eshom Valley Band	N	Kenneth Woodrow, Chairperson	1179 Rock Haven Ct. Salinas, CA, 93906	(831) 443-9702		kwood8934@aol.com	Foothill Yokut Mono	Alameda,Calaveras,Contra Costa,Fresno,Inyo,Kings,Madera,Marin,Mariposa,Merced,Mono,Monterey,San Benito,San Francisco,San Joaquin,San Mateo,Santa Clara,Santa Cruz,Stanislaus,Tulare,Tuolumne	6/19/2023

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Treehouse California Almond Expansion Project (PSP 23-064), Tulare County.

Record: PROJ-2024-000623
Report Type: AB52 GIS
Counties: Tulare
NAHC Group: All

TRIBAL CONSULTATION NOTICE AND TRACKING TABLE TREEHOUSE CALIFORNIA ALMONDS EXPANSION, CEQ 23-005 PSP 23-064													
TRIBE CONTACTED	**REQUEST TYPE**			**ITEMS & DOCUMENTS SUBMITTED**					**DELIVERY METHOD**		**CONSULTATION PERIOD**		**CONSULTATION / ACTIONS**
	AB 52	**SB 18**	**Sec 106**	**Project Notification Form/Letter**	**Maps**	**SLF Search Results**	**CHRIS Results**	**Other**	**E-mail**	**Certified US Mail**	**Return Receipt**	**Period Ends**	**Summary**
SACRED LAND FILE (SLF) REQUEST													
Native American Heritage Commission NAHC@nahc.ca.gov	X			X	X			Search Request Form	2/1/24				2/8/24, SLF results letter and tribal listing received with Negative results
CONSULTATION REQUEST LETTERS													
Big Sandy Rancheria of Western Mono Indians Elizabeth D. Kipp, Chairperson PO. Box 337 Auberry, CA 93602 lkipp@bsrnnation.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0677	02/06/24	3/7/24	4/29/24 Follow up email.
Big Sandy Rancheria of Western Mono Indians Joel Marvin, Vice Chairperson PO. Box 337 Auberry, CA 93602 jmarvin@bsrnation.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0660	2/6/24	3/7/24	4/29/24 Follow up email.
Big Sandy Rancheria of Western Mono Indians Tom Zizzo, Tribal Administrator PO. Box 337 Auberry, CA 93602 tzizzo@bsrnation.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0653	02/06/24	3/7/24	4/29/24 Follow up email.
Dunlap Band of Mono Indians Benjamin Charley Jr., Tribal Chair P.O. Box 14 Dunlap, CA 93621 ben.charley@yahoo.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0646	2/16/24	03/17/24	4/29/24 Follow up email.
Dunlap Band of Mono Indians Dirk Charley, Tribal Liaison 5509 E. McKenzie Avenue Fresno, CA 93727 dcharley2016@gmail.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0639	02/05/24	03/06/24	4/29/24 Follow up email.
Kern Valley Indian Community Robert Robinson, Co-Chairperson P.O. Box 1010 Lake Isabella, CA 93240 bbutterbredt@gmail.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0622	2/7/24	3/8/24	4/29/24 Follow up email.

TRIBAL CONSULTATION NOTICE AND TRACKING TABLE TREEHOUSE CALIFORNIA ALMONDS EXPANSION, CEQ 23-005 PSP 23-064													
TRIBE CONTACTED	REQUEST TYPE			ITEMS & DOCUMENTS SUBMITTED					DELIVERY METHOD		CONSULTATION PERIOD		CONSULTATION / ACTIONS
	AB 52	SB 18	Sec 106	Project Notification Form/Letter	Maps	SLF Search Results	CHRIS Results	Other	E-mail	Certified US Mail	Return Receipt	Period Ends	Summary
Kern Valley Indian Community Julie Turner, Secretary P. Box 1010 Lake Isabella, CA 93240 meindiangirl@sbcglobal.net	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0615	02/07/24	03/08/24	4/29/24 Follow up email.
Kern Valley Indian Community Brandi Kendricks 30741 Foxridge Court Tehachapi, CA 93561 krazykendricks@hotmail.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0608	02/05/24	03/06/24	4/29/24 Follow up email.
North Fork Mono Tribe Ron Goode, Chairperson 13396 Tollhouse Road Clovis, CA 93619 rwgoode911@hotmail.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0592	02/05/24	3/6/24	Email Reply, R Goode- 2/3/24- No Comment
North Fork Mono Tribe Anna Phipps, Tribal Secretary 6051 Bear Creek Rd. Garden Valley, CA, 95633 Aphipps01@att.net	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0585	X	X	Undeliverable
North Fork Mono Tribe Jesse Valdez, Council Member - Archaeological Dir. 120 Monte Vista St. Lindsey, CA, 93247 ariesgoathead@gmail.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0554	X	X	Return to sender, unclaimed, unable to forward
Santa Rosa Rancheria Tachi Yokut Tribe Leo Sisco, Chairperson 16835 Alkali Drive Lemoore, CA 93245 LSisco@tachi-yokut-nsn.gov	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0547	02/05/24	3/6/24	
Santa Rosa Rancheria Tachi Yokut Tribe Cultural Department Shana Powers, Director 16835 Alkali Drive Lemoore, CA 93245 SPowers@tachi-yokut-nsn.gov	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0530	02/05/24	3/6/24	Email Reply, S. Powers- 2/6/24- Requesting SLF & cultural presentation be required for all staff involved with ground disturbing activities.

TRIBAL CONSULTATION NOTICE AND TRACKING TABLE TREEHOUSE CALIFORNIA ALMONDS EXPANSION, CEQ 23-005 PSP 23-064														
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	AB 52	SB 18	Sec 106	Project Notification Form/Letter	Maps	SLF Search Results	CHRIS Results	Other	E-mail	Certified US Mail	Return Receipt	Period Ends	Summary
Santa Rosa Rancheria Tachi Yokut Tribe Cultural Department Staff Samantha McCarty SMcCarty@tachi-yokut-nsn.gov Paige Berggren PBerggren@tachi-yokut-nsn.gov Nichole Escalon Berggren nescalone@tachi-yokut-nsn.gov	X			X	X	X	X		2/2/24				
Tubatulabals of Kern Valley Robert L. Gomez, Jr., Chairperson P.O. Box 833 Weldon, CA 93283-0833 rgomez@tubatulabal.org	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0523	02/07/24	03/08/24	4/29/24 Follow up email.
Tule River Indian Tribe Neil Peyron, Chairperson P. O. Box 589 Porterville, CA 93258 neil.peyron@tulerivertribe-nsn.gov	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0516	2/8/24	3/9/24	4/29/24 Follow up email.
Tule River Indian Tribe Dept. of Environmental Protection Kerri Vera, Director P. O. Box 589 Porterville, CA 93258 tuleriverenv@yahoo.com keri.vera@tulerivertribe-nsn.gov	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 0509	2/8/24	3/9/24	4/29/24 Follow up email.
Tule River Indian Tribe Joey Garfield, Tribal Archaeologist P. O. Box 589 Porterville, CA 93258 joey.garfield@tulerivertribe-nsn.gov									2/2/24				
Tule River Indian Tribe Felix Christman, Council Member P. O. Box 589 Porterville, CA 93258 tuleriverarchmon1@gmail.com felix.christman@tulerivertribe-nsn.gov	X			X	X	X	X		2/2/24				4/29/24 Follow up email.

TRIBAL CONSULTATION NOTICE AND TRACKING TABLE TREEHOUSE CALIFORNIA ALMONDS EXPANSION, CEQ 23-005 PSP 23-064														
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Wuksache Indian Tribe/Eshom Valley Band Kenneth Woodrow, Chairperson 1179 Rock Haven Ct. Salinas, CA 93906 kwood8934@aol.com	X			X	X	X	X		2/2/24	2/1/24 7020 2450 0001 9280 2435	X	X	4/29/24 Follow up email. 02/09/24 Undeliverable

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock Economic Development and Planning
Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Tule River Indian Tribe
Dept. of Environmental Protection
Kerri Vera, Director
P. O. Box 589
Porterville, CA 93258

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Ms. Vera,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

- Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine; and
- Native American historic, cultural, or sacred site that is listed or may be eligible for listing in the California Register of Historical Resources including historic or prehistoric ruins and any burial ground, archaeological, or historic site.

In accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (RMA) will be preparing a Mitigated Negative Declaration (MND) to evaluate the environmental effects associated with the Project.

<u>Sacred Lands File Search</u>

The County requested a Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC) on February 1, 2024, for the Project. Results of the SLF search have not yet been received by the County. As such, the SLF search results will be made available upon the release of the MND for public review. However, the results may be made available to your Tribal Representatives if a written request for consultation is submitted to the County within thirty (30) days of receipt of this letter.

California Historical Resources Information System

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Consultation Request

If your Tribe desires to consult with the County on the review of this project, please respond in writing within thirty (30) days regarding AB 52. Written correspondence can be mailed to the address provided above or e-mailed to the addresses provided below.

If the County does not receive a response to this notification, it will be presumed that your Tribe has declined the opportunity to consult on this project pursuant to AB 52.

Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail should you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact, Gary Mills, Chief of Environmental Planning by phone at (559) [illegible] or by e-mail at gmills@tularecounty.ca.gov.

Sincerely,

Danielle Folk
Planner III
(559) [illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Tule River Indian Tribe
Neil Peyron, Chairperson
P. O. Box 589
Porterville, CA 93258

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Chairperson Peyron,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Tubatulabals of Kern Valley
Robert L. Gomez, Jr., Chairperson
P.O. Box 833
Weldon, CA 93283-0833

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Chairperson Gomez,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR — MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Kern Valley Indian Community
Julie Turner, Secretary
P. Box 1010
Lake Isabella, CA 93240

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Ms. Turner,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
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Aaron R. Bock   Economic Development and Planning
Reed Schenke   Public Works
Sherman Dix   Fiscal Services

REED SCHENKE, DIRECTOR   MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

North Fork Mono Tribe
Jesse Valdez, Council Member - Archaeological Dir.
120 Monte Vista St.
Lindsey, CA, 93247

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Mr. Valdez,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
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Aaron R. Bock — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR — MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Santa Rosa Rancheria Tachi Yokut Tribe
Cultural Department
Shana Powers, Director
16835 Alkali Drive
Lemoore, CA 93245

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Ms. Powers,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
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Aaron R. Bock Economic Development and Planning
Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Big Sandy Rancheria of Western Mono Indians
Elizabeth D. Kipp, Chairperson
PO. Box 337
Auberry, CA 93602

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Chairperson Kipp,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

- Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine; and
- Native American historic, cultural, or sacred site that is listed or may be eligible for listing in the California Register of Historical Resources including historic or prehistoric ruins and any burial ground, archaeological, or historic site.

In accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (RMA) will be preparing a Mitigated Negative Declaration (MND) to evaluate the environmental effects associated with the Project.

<u>Sacred Lands File Search</u>

The County requested a Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC) on February 1, 2024, for the Project. Results of the SLF search have not yet been received by the County. As such, the SLF search results will be made available upon the release of the MND for public review. However, the results may be made available to your Tribal Representatives if a written request for consultation is submitted to the County within thirty (30) days of receipt of this letter.

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<u>Consultation Request</u>

If your Tribe desires to consult with the County on the review of this project, please respond in writing within thirty (30) days regarding AB 52. Written correspondence can be mailed to the address provided above or e-mailed to the addresses provided below.

If the County does not receive a response to this notification, it will be presumed that your Tribe has declined the opportunity to consult on this project pursuant to AB 52.

Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail should you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact, Gary Mills, Chief of Environmental Planning by phone at (559) [illegible] or by e-mail at gmills@tularecounty.ca.gov.

Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR — MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Wukasche Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA 93906

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Chairperson Woodrow,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]9
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
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Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Big Sandy Rancheria of Western Mono Indians
Joel Marvin, Vice Chairperson
PO. Box 337
Auberry, CA 93602

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Vice Chair Marvin,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

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FAX (559) 615-3002

Aaron R. Bock Economic Development and Planning
Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

North Fork Mono Tribe
Ron Goode, Chairperson
13396 Tollhouse Road
Clovis, CA 93619

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Chairperson Goode,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Consultation Request

If y Trib desires to co u t with th Co y on th rev ew o th s p o ect, p ease resp in writi within th rty ( ) d y reg r i g AB 52. Written co resp nce can b mailed to th ad ess pro ded abo o e-mailed t h ad esses pro d d b low.

If the County does not receive a response to this notification, it will be presumed that your Tribe has declined the opportunity to consult on this project pursuant to AB 52.

Th k y fo y co id ratio o th s matter a d p ease d o h sitate to co act me b p o o e-mail sh d y h e a y q stio o e ed ad tio l inf o matio If you need immediate assistance and I am unavailable, please contact, Gary Mills, Ch ef o Env ro en al Plan b p at (55 4 9 o by e mail at g ills@tularec y a.g .

Sincerely,

Danielle Folk

Danielle Folk
Planner III
(55 4 2 9
f l @ tu arec yc ag v

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR
MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Santa Rosa Rancheria Tachi Yokut Tribe
Leo Sisco, Chairperson
16835 Alkali Drive
Lemoore, CA 93245

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Chairperson Sisco,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

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Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR

MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Big Sandy Rancheria of Western Mono Indians
Tom Zizzo, Tribal Administrator
PO. Box 337
Auberry, CA 93602

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Mr. Zizzo,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

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Aaron R. Bock Economic Development and Planning
Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Dunlap Band of Mono Indians
Benjamin Charley Jr., Tribal Chair
P.O. Box 14
Dunlap, CA 93621

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Chairperson Charley,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
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Aaron R. Bock Economic Development and Planning
Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

North Fork Mono Tribe
Anna Phipps, Tribal Secretary
6051 Bear Creek Rd.
Garden Valley, CA, 95633

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Ms. Phipps,

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) 624-7029
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

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PHONE (559) 624-7000
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Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR

MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Kern Valley Indian Community
Robert Robinson, Co-Chairperson
P.O. Box 1010
Lake Isabella, CA 93240

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Chairperson Robinson,

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Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) 624-7[illegible]9
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

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Visalia, CA 93277
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Aaron R. Bock	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR

MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Kern Valley Indian Community
Brandi Kendricks
30741 Foxridge Court
Tehachapi, CA 93561

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Ms. Kendricks,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

- Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine; and
- Native American historic, cultural, or sacred site that is listed or may be eligible for listing in the California Register of Historical Resources including historic or prehistoric ruins and any burial ground, archaeological, or historic site.

In accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (RMA) will be preparing a Mitigated Negative Declaration (MND) to evaluate the environmental effects associated with the Project.

Sacred Lands File Search

The County requested a Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC) on February 1, 2024, for the Project. Results of the SLF search have not yet been received by the County. As such, the SLF search results will be made available upon the release of the MND for public review. However, the results may be made available to your Tribal Representatives if a written request for consultation is submitted to the County within thirty (30) days of receipt of this letter.

California Historical Resources Information System

A California Historical Resources Information System (CHRIS) search for the project area was requested through the Southern San Joaquin Valley Information Center (SSJVIC) on February 1, 2024. Results of the CHRIS search has not yet been received by the County. As such, the CHRIS search results will be made available upon the release of the MND for public review. However, the results may be made available to your Tribal Representatives if a written request for consultation is submitted to the County within thirty (30) days of receipt of this letter.

Consultation Request

If your Tribe desires to consult with the County on the review of this project, please respond in writing within thirty (30) days regarding AB 52. Written correspondence can be mailed to the address provided above or e-mailed to the addresses provided below.

If the County does not receive a response to this notification, it will be presumed that your Tribe has declined the opportunity to consult on this project pursuant to AB 52.

Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail should you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact, Gary Mills, Chief of Environmental Planning by phone at (559) [illegible] or by e-mail at gmills@tularecounty.ca.gov.

Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) [illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Aaron R. Bock Economic Development and Planning
Reed Schenke Public Works
Sherman Dix Fiscal Services

REED SCHENKE, DIRECTOR MICHAEL WASHAM, ASSOCIATE DIRECTOR

Thursday, February 1, 2024

Dunlap Band of Mono Indians
Dirk Charley, Tribal Liaison
5509 E. McKenzie Avenue
Fresno, CA 93727

RE: Project Notification and Consultation Request Pursuant to Assembly Bill (AB) 52 for the Treehouse California Almond Expansion Project Project (PSP 23-064)

Dear Mr. Charley,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Treehouse California Almond Expansion Project (PSP 23-064) to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

- Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine; and
- Native American historic, cultural, or sacred site that is listed or may be eligible for listing in the California Register of Historical Resources including historic or prehistoric ruins and any burial ground, archaeological, or historic site.

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Consultation Request

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If the County does not receive a response to this notification, it will be presumed that your Tribe has declined the opportunity to consult on this project pursuant to AB 52.

Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail should you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact, Gary Mills, Chief of Environmental Planning by phone at (559) 624-[illegible] or by e-mail at gmills@tularecounty.ca.gov.

Sincerely,

Danielle Folk

Danielle Folk
Planner III
(559) 624-[illegible]
dfolk@tularecounty.ca.gov

Attachment(s): AB 52 Project Notification and Tribal Consultation Request

From:	Danielle Folk
To:	lkipp@bsrnation.com; jmarvin@bsrnation.com; tzizzo@bsrnation.com
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)
Date:	Friday, February 2, 2024 1:03:16 PM
Attachments:	Project Notification and Consult Request_AB52_Tree House Almonds.pdf Tribal_AB52 + SB18_Consultation_Letter_Tree House Almonds_Kipp_BSRWMI.pdf PSP 23-064 Site Plan Reduced Size PDF.pdf CA_Sausalito_School_2021.pdf PSP 23-064. Aerial Photograph.pdf PSP 23-064. Vicinity Map.pdf

Good afternoon.

Pursuant to AB 52, please find attached the cover letter, Project Notification and Tribal Consultation Request form, project vicinity map, and project site plan maps for the Treehouse California Almonds Expansion Project (PSP 23-064) The hard copies of these documents were sent to you via Certified Mail on Thursday, February 1, 2024.

Please feel free to contact me by phone or email if you would like to begin the consultation process. Also, if your tribe would like to decline the opportunity to consult or defer to another tribe, an email stating so would be greatly appreciated.

Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Dirk Charley; Ben Charley
Cc:	Jessica R Willis; Gary Mills
Subject:	Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)
Date:	Friday, February 2, 2024 1:04:46 PM
Attachments:	Project Notification and Consult Request_AB52_Tree House Almonds.pdf PSP 23-064 Site Plan Reduced Size PDF.pdf CA_Sausalito_School_2021.pdf PSP 23-064. Aerial Photograph.pdf PSP 23-064. Vicinity Map.pdf Tribal_AB52 + SB18_Consultation_Letter_Tree House Almonds_BCharley_DBMI.pdf

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Robert Robinson (bbutterbredt@gmail.com); Julie Turner (meindiangirl@sbcglobal.net); Brandy Kendricks (krazykendricks@hotmail.com)
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)
Date:	Friday, February 2, 2024 1:06:10 PM
Attachments:	Project Notification and Consult Request_AB52_Tree House Almonds.pdf PSP 23-064 Site Plan Reduced Size PDF.pdf CA_Sausalito_School_2021.pdf PSP 23-064. Aerial Photograph.pdf PSP 23-064. Vicinity Map.pdf Tribal_AB52 + SB18_Consultation_Letter_Tree House Almonds_Robinson_KVIC.pdf

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Ron W. Goode; aphipps01@att.net; ariesgoathead@gmail.com
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)
Date:	Friday, February 2, 2024 1:07:15 PM
Attachments:	Project Notification and Consult Request_AB52_Tree House Almonds.pdf PSP 23-064 Site Plan Reduced Size PDF.pdf CA_Sausalito_School_2021.pdf PSP 23-064. Aerial Photograph.pdf PSP 23-064. Vicinity Map.pdf Tribal_AB52 + SB18_Consultation_Letter_Tree House Almonds_Goode_NFMT.pdf

Good afternoon.

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Leo Sisco (LSisco@tachi-yokut-nsn.gov); Shana Powers (SPowers@tachi-yokut-nsn.gov); Samantha McCarty; Paige Berggren; nescalone@tachi-yokut-nsn.gov
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)
Date:	Friday, February 2, 2024 1:10:25 PM
Attachments:	Project Notification and Consult Request_AB52_Tree House Almonds.pdf PSP 23-064 Site Plan Reduced Size PDF.pdf CA_Sausalito_School_2021.pdf PSP 23-064. Aerial Photograph.pdf PSP 23-064. Vicinity Map.pdf Tribal_AB52 + SB18_Consultation_Letter_Tree House Almonds_Sisco_SRRTYT.pdf

Good afternoon.

Pursuant to AB 52, please find attached the cover letter, Project Notification and Tribal Consultation Request form, project vicinity map, and project site plan maps for the Treehouse California Almonds Expansion Project (PSP 23-064) The hard copies of these documents were sent to you via Certified Mail on Thursday, February 1, 2024.

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Robert L. Gomez (rgomez@tubatulabal.org)
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)
Date:	Friday, February 2, 2024 1:12:36 PM
Attachments:	Tribal_AB52 + SB18_Consultation_Letter_Tree House Almonds_Gomez_TKV.pdf PSP 23-064 Site Plan Reduced Size PDF.pdf CA_Sausalito_School_2021.pdf PSP 23-064. Aerial Photograph.pdf PSP 23-064. Vicinity Map.pdf Project Notification and Consult Request_AB52_Tree House Almonds.pdf

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Neil Peyron (neil.peyron@tulerivertribe-nsn.gov); Kerri Vera (tuleriverenv@yahoo.com); joey.garfield@tulerivertribe-nsn.gov; Felix Christman (tuleriverarchmon1@gmail.com)
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)
Date:	Friday, February 2, 2024 1:17:10 PM
Attachments:	Project Notification and Consult Request_AB52_Tree House Almonds.pdf CA_Sausalito_School_2021.pdf PSP 23-064. Vicinity Map.pdf PSP 23-064. Aerial Photograph.pdf PSP 23-064 Site Plan Reduced Size PDF.pdf Tribal_AB52 + SB18_Consultation_Letter_Tree House Almonds_Peyron_TRIT.pdf

Good afternoon.

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Ken Woodrow (Kwood8934@aol.com)
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)
Date:	Friday, February 2, 2024 1:18:43 PM
Attachments:	Project Notification and Consult Request_AB52_Tree House Almonds.pdf PSP 23-064. Vicinity Map.pdf PSP 23-064 Site Plan Reduced Size PDF.pdf Tribal_AB52 + SB18_Consultation_Letter_Tree House Almonds_Woodrow_WIT.pdf PSP 23-064. Aerial Photograph.pdf CA_Sausalito_School_2021.pdf

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Ron W. Goode
To:	Danielle Folk
Subject:	Re: Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)
Date:	Saturday, February 3, 2024 2:19:47 PM

This Message Is From an External Sender
This message came from outside your organization.

No Comment
Chairman Goode

From: Danielle Folk <DFolk@tularecounty.ca.gov>
Sent: Friday, February 2, 2024 2:07 PM
To: Ron W. Goode <rwgoode911@hotmail.com>; aphipps01@att.net <Aphipps01@att.net>; ariesgoathead@gmail.com <ariesgoathead@gmail.com>
Cc: Jessica R Willis <JWillis@tularecounty.ca.gov>
Subject: Project Notification and Tribal Consultation for Treehouse California Almonds Expansion Project (PSP 23-064)

Good afternoon.

Pursuant to AB 52, please find attached the cover letter, Project Notification and Tribal Consultation Request form, project vicinity map, and project site plan maps for the Treehouse California Almonds Expansion Project (PSP 23-064) The hard copies of these documents were sent to you via Certified Mail on Thursday, February 1, 2024.

Please feel free to contact me by phone or email if you would like to begin the consultation process. Also, if your tribe would like to decline the opportunity to consult or defer to another tribe, an email stating so would be greatly appreciated.

Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Jessica R Willis
To:	Shana Powers ; Samantha McCarty ; Nichole Escalon
Cc:	Gary Mills; Danielle Folk; Sandy Roper
Subject:	RE: Treehouse Almond Expansion Project
Date:	Thursday, February 8, 2024 9:10:00 AM

Good morning, Shana.

Thank you for your quick response regarding the proposed Treehouse Almond Expansion Project. The County will provide your Tribe with the results of the SLF search once it is received. Also, we will include Tribal Resources Sensitivity training for all staff related to ground-disturbing activities as a mitigation measure in the Mitigated Negative Declaration.

Best Regards,

Jessica R. Willis

Jessica Willis, Planner IV
Environmental Planning
Phone: 559-624-7122
jwillis@tularecounty.ca.gov

From: Gary Mills <gmills@tularecounty.ca.gov>
Sent: Tuesday, February 6, 2024 4:01 PM
To: Jessica R Willis <JWillis@tularecounty.ca.gov>
Subject: FW: Treehouse Almond Expansion Project

FYI

From: Shana Powers <SPowers@tachi-yokut-nsn.gov>
Sent: Tuesday, February 6, 2024 3:15 PM
To: Gary Mills <gmills@tularecounty.ca.gov>; Danielle Folk <DFolk@tularecounty.ca.gov>
Cc: Nichole Escalon <nescalon@tachi-yokut-nsn.gov>; Samantha McCarty <SMcCarty@tachi-yokut-nsn.gov>
Subject: Treehouse Almond Expansion Project

Dear Gary and Danielle,
Thank you for contacting Santa Rosa Rancheria about the proposed project. We do have concerns about the project’s adverse effects on cultural resources and or burial. The Tribe is requesting the SLF and a cultural presentation be required for all staff that will be involved with ground disturbing activities.

Sincerely,

Shana Powers M.S.
Tribal Historic Preservation Officer (THPO)/Cultural Director
SPowers@tachi-yokut-nsn.gov
Office: (559)924-1278 Ext: 4093
Cell: (559)423-3900

ATTACHMENT "D"

REPORTS OF WASTE DISCHARGE APPLICATION

CALIFORNIA Water Boards

GAVIN NEWSOM
GOVERNOR

JARED BLUMENFELD
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State of California
Regional Water Quality Control Board

APPLICATION/REPORT OF WASTE DISCHARGE GENERAL INFORMATION FORM FOR WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT

I. FACILITY INFORMATION

A. FACILITY:

Name Treehouse California Almonds LLC

Address 6914 Road 160

City/County/State/Zip Code Earlimart, Tulare County, CA 93219

Contact Person Brian Ball

Telephone Number (559) 757-5020 Email Brian@treehousealmonds.com

B. FACILITY OWNER:

Name Treehouse California Almonds LLC

Address 6914 Road 160

City/State/Zip Code Earlimart, Tulare County, CA 93219

Contact Person Brian Ball

Telephone Number (559) 757-5020 Email Brian@treehousealmonds.com

Federal Tax ID __________

Owner Type (*Mark one*):

Individual Corporation Governmental Agency Partnership

Other: __________

C. FACILITY OPERATOR (The agency or business, not the person):

Name Same

Address __________

City/State/Zip Code __________

Contact Person __________

Telephone Number __________ Email __________

Operator Type (*Mark one*):

Individual Corporation Governmental Agency Partnership

☐ Other: __________

D. OWNER OF THE LAND

Name Same

Address

City/State/Zip Code

Contact Person

Telephone Number Email

Owner Type (*Mark one*):

Individual Corporation Governmental Agency Partnership

Other:

E. ADDRESS WHERE LEGAL NOTICE MAY BE SERVED

Address Same

City/State/Zip Code

Contact Person

Telephone Number Email

F. BILLING ADDRESS

Address Same

City/State/Zip Code

Contact Person

Telephone Number Email

II. TYPE OF DISCHARGE

Check Type of Discharge(s) Described in this Application:

- [x] **Waste Discharge to Land**
- [ ] **Waste Discharge to Surface Water**

Check all that apply:

- [ ] Animal or Aquacultural Wastewater
- [ ] Animal Waste Solids
- [ ] Biosolids/Residual
- [ ] Cooling Water
- [ ] Domestic/ Municipal Wastewater Treatment and Disposal
- [ ] Dredge Material Disposal
- [ ] Hazardous Waste (*see instructions*)
- [x] Industrial Process Wastewater
- [ ] Land Treatment Unit
- [ ] Landfill (*see instructions*)
- [ ] Mining
- [x] Storm Water
- [ ] Surface Impoundment
- [ ] Waste Pile
- [ ] Wastewater Reclamation
- [ ] Other, *please describe*

III. LOCATION OF THE FACILITY

Describe the physical location of the facility:

1. Assessor's Parcel Number(s)
   Facility: 319-060-019, 319-060-022, 319-060-037, 318-290-005, 318-290-006
   Discharge Point: 318-290-005, 318-290-006, 319-060-037
2. Latitude
   Facility: 35°54'51.32"N
   Discharge Point: 35°54'35.91"N
3. Longitude
   Facility: 119°12'46.64"W
   Discharge Point: 119°13'1.39"W

IV. REASON FOR FILING

Check all that apply:

- ☐ New Discharge or Facility
- ☐ Change in Design or Operation
- ☑ Change in Quantity/Type of Discharge   Existing WDR R5-2018-0066
- ☐ Changes in Ownership/Operator (see instructions)
- ☑ Waste Discharge Requirements Update or NPDES Permit Reissuance
- ☐ Other: ______

V. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Name of Lead Agency Tulare County, Nebeyu Menkir - Planner

Has a public agency determined that the proposed project is exempt from CEQA?

☐ Yes   ☑ No

If yes, state the basis for the exemption and the name of the agency supplying the exemption on the line below:

Special use permit application has been submitted - PSP 23-064. A CEQA mitigated negative declaration is needed for this project - CEQ 23-005. No determination has been made at this time.

Has a "Notice of Determination" been filed under CEQA?

☐ Yes   ☑ No

If Yes, enclose a copy of the CEQA document, Environmental Impact Report (EIR), or Negative Declaration. If No, identify the expected type of CEQA document and expected date of completion.

Expected CEQA Documents: ☐ EIR   ☑ Negative Declaration

Expected CEQA Completion Date: Unknown at this time

VI. OTHER REQUIRED INFORMATION

Please provide a COMPLETE characterization of your discharge. A complete characterization includes, but is not limited to, design and actual flows, a list of constituents and the discharge concentration of each constituent, a list of other appropriate waste discharge characteristics, a description and schematic drawing of all treatment processes, a description of any Best Management Practices (BMPs) used, and a description of disposal methods.

Also include a site map showing the location of the facility and, if you are submitting this application for an NPDES permit, identify the surface water to which you propose to discharge. Please try to limit your maps to a scale of 1:24,000 (7.5' USGS Quadrangle) or a street map, if more appropriate.

VII. OTHER

Attach additional sheets to explain any responses which need clarification. List attachments with titles and dates below:

See attached RWD Technical Report to provide requested items in
WDR R5-2018-0066 and to request revision to the WDR.

You will be notified by a representative of the RWQCB within 30 days of receipt of your application. The notice will state if your application is complete or if there is additional information you must submit to complete your Application/Report of Waste Discharge, pursuant to Division 7, Section 13260 of the California Water Code.

VIII. CERTIFICATION

"I certify under penalty of law that this document, including all attachments and supplemental information, were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Print Name Brian Ball Title Manager/Owner

Signature B Ball Date 2 June 2023

FOR OFFICE USE ONLY

Date Form 200 Received:	Letter to Discharger:	Fee Amount Received:	Check #:

Report of Waste Discharge Technical Report

To Revise WDR R5-2018-0066

Treehouse California Almonds, LLC

6914 Road 160

Earlimart, California

June 5, 2023

Prepared by:

Provost & Pritchard Consulting Group

Visalia, California

Report Prepared for:

Treehouse California Almonds, LLC
6914 Road 160
Earlimart, California 93219

Contact:

Brian Ball
(559) 757-5020
Brian@treehousealmonds.com

Report Prepared by:

Provost & Pritchard Consulting Group
400 E. Main Street, Suite 300
Visalia, California 93291

Contact:

Project Manager

Steven Bommelje
sbommelje@ppeng.com

Civil Engineer

Ed Caminata, PE, AG
ecaminata@ppeng.com

Wastewater Treatment Civil Engineer

Jerry Teng, Ph. D., PE
jteng@ppeng.com

Senior Scientist / Agronomist

D. Ryan Dodd, CPSS, CPAg, CCA, TSP
rdodd@ppeng.com

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1 Introduction

Waste Discharge Requirements (**WDR**) R5-2018-0066 was issued to Treehouse California Almonds, LLC (**Treehouse**). The WDR authorizes the use of ponds for treatment and storage of the wastewater it produces and then application to fields for nutrient uptake by crops. The WDR requests a Pond Design Work Plan, a Nutrient and Wastewater Management Plan, and a Salinity Control and Minimization Plan. These requested items are provided in this submittal.

Recently Treehouse experienced a fire within the production area. The reconstruction design plans include an increase in the number of production lines which will increase the amount of wastewater produced. To offset that, additional farmable ground has been purchased to align with the increase in wastewater produced. This RWD is to revise the existing WDR for the water production of this plant and the inclusion of additional land for farming. The remainder of the issued WDR is intended to remain in effect.

HDPE double lined ponds with a leakage collection system (R5-2013-0122 Existing Dairy General Order Tier I design requirements) are planned for both treatment and storage ponds. Treatment ponds upstream of storage are being included to reduce BOD and the potential for odors coming from the stored water.

APNs 318-290-005 (39.24 ac) and 318-290-006 (38.95 ac) to the west of Road 160 yet adjacent to the Treehouse plant were purchased for land application and nutrient uptake of the wastewater. This new land is presented in the Proposed Site Map in **Appendix A**. A portion will be used for the treatment and storage ponds. Approximately 66 acres will be available for land application.

The Nutrient and Wastewater Management Plan provided shows that the 66 farmable acres is sufficient to agronomically apply the planned wastewater such that the land to the north of the plant is not intended to be farmed. This area will be reserved for plant warehouse expansion and additional solar power generation.

2 Wastewater Process Description

2.1 Process Flow

The remodeled process flow within the plant remains similar to what was reviewed for the issued WDR. There will be an increase in parallel processing lines from two to four with similar equipment.

Solids collected from the equipment within the plant (culls, skins, almond pieces, etc.) will continue to be hauled off site for use as cattle feed. Solids loading will occur over a concrete pad and directly load into a truck.

In the remodel of the plant there will be a single wastewater collection sump located to the south of the process building receiving water from the plant drains. A pump will send the wastewater to the treatment pond area.

At the treatment area wastewater will flow over a screen to separate out remaining solids, again the same condition as prior. The solids collected from this screen will continue to be combined with solids captured at the plant and will be shipped off-site for animal feed.

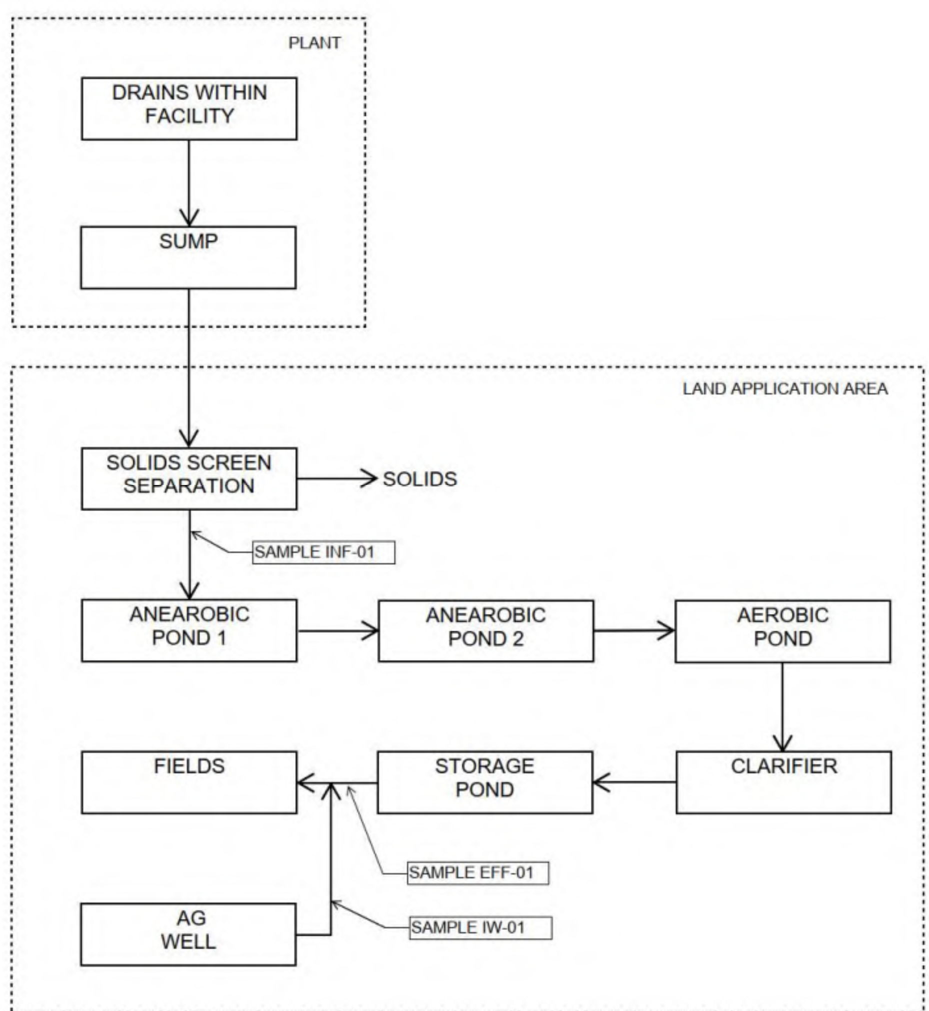
Wastewater will then gravity flow into two lined anaerobic ponds in series. These ponds will mix in the lower portion activating the sludge. Mixing water will be taken from the floor area of the second pond and mixed within both ponds.

Wastewater will then gravity flow into one lined aerobic pond where it will be mechanically aerated.

The discharge from the aeration pond will go into a clarifier. Clarified water will discharge to the storage pond while the remaining wastewater will be returned primarily to the aeration pond and some to the first anaerobic pond.

From the storage pond the water will be applied to the fields for crop nutrient uptake.

Figure 1. Process Wastewater Flow Diagram at Treehouse California Almonds



2.2 Wastewater Characterization

Wastewater created by the additional production lines will be of similar equipment and should have the same characteristic of the ongoing monitoring. Table 1 provides some recent sample data.

Table 1. Average Wastewater Samples 2020 Through 2022

Constituent	Influent (mg/L)	Effluent (mg/L)
Ammonia		12.7
Nitrate	8.2	0.4
TKN		128
Boron	1.9	1.6
Sodium	86	188
Chloride	70	136
BOD	2,744	2,112
TDS	3,101	1,507
FDS	673	737

New treatment is planned, both anaerobic and aerobic, and then clarified prior to placing the wastewater in the storage pond. The purpose of the treatment is to reduce the BOD and some of the nitrogen.

These are the anticipated characteristics of the wastewater after treatment and to be applied to the land application area. Sampling will also occur within the treatment process to monitor the performance of the treatment.

Table 2. Anticipated Effluent After Treatment

Constituent	Treated Effluent – EFF-01 (mg/L)
Ammonia	0 - 10
Nitrate	60 - 75
Total N	60 - 85
Boron	1 - 2
Sodium	200
Chloride	150
BOD	40 - 60
TDS	1200
FDS	730

2.3 Daily Wastewater Volumes

Table 3 provides the anticipated volume flows of wastewater from the remodeled plant.

Table 3. Daily Wastewater Volumes

Wastewater Produced	Remodeled Plant (gal)
Average Daily	123,000
Maximum Average Daily	150,000

The planned operations are 24 hours a day for 5 days a week with occasional weekend work. To account for potential weekend work, 6 days a week at the maximum average daily rate was used to determine needed storage capacity. Anticipated annual wastewater production under these design conditions is 46.8 million gallons.

2.4 Storm Water Comingled with Wastewater

Direct rainfall onto the ponds was considered in the storm water volume calculations for the storage pond.

A portion of storm water from the southwest plant entry area (driveway, parking, and roof) will be collected and pumped to the lined storage pond. This additional water will reduce the use of the agricultural well for crop irrigation and aid in ground water sustainability issues.

Approximately 434,600 ft^2 of pavement and roof from the production area will have its rainfall directed to a sump which will pump it to the lined storage pond. The remainder of the rainfall onto the facility will remain separate from the wastewater and routed to a soil lined pond. Volumes calculated of the remaining stormwater are presented in Section 5.

This 434,600 ft^2 of rainfall capture will be pumped separately from the wastewater and be routed directly to the lined storage pond bypassing the treatment ponds. Rainfall runoff factors for surfaced areas were used in storage calculations.

The WDR requires wastewater storage capacity to be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns. The Western Regional Climate Center Delano Station reports the 100-year return total at 15.71 inches while the average annual rainfall is 7.23 inches. Table 4 shows the conversion of the historical monthly average to the 100-year return along with the CIMIS evaporation rates of the area (Zone 12).

Table 4. Delano Area Weather

Month	Precipitation Average (in.)	Precipitation 100-yr (in)	CIMIS ETo (in.)
January	1.35	2.93	1.24
February	1.27	2.76	1.96
March	1.24	2.69	3.41
April	0.73	1.59	5.10
May	0.31	0.67	6.82
June	0.07	0.15	7.80
July	0.00	0.00	8.06
August	0.01	0.02	7.13
September	0.15	0.33	5.40
October	0.34	0.74	3.72
November	0.83	1.80	1.80
December	0.93	2.02	0.93
Total	7.23	15.71	53.37

Storage and use of the collected wastewater is further described in the Nutrient and Wastewater Management Plan and the Pond Design Report.

3 Flood Zone

This facility lies within an undetermined elevation (Zone A) 100-yr flood zone. Two FEMA maps are provided in **Appendix B**.

Flooding in the area of Treehouse is a result of a limitation of Deer Creek passing by the Friant Kern Canal (Friant Kern Canal goes underneath Deer Creek) 7.2 miles to the northeast of Treehouse. There is anticipated to be excess flow from Deer Creek at this crossing that overtops the banks and routes south along the eastern side of the canal. 3.6 miles to the east of Treehouse are two conduits placed under the Friant Kern Canal to relieve some of this potential flooding pressure, resulting in flood flow alignment towards Treehouse.

Gerald Mele & Associates Inc. working on facility improvements for Treehouse and needing flood proofing for building permits conservatively determined a flood elevation of 2 feet to adjacent grade and a flood proofing elevation of 2.5 feet (copy of a certificate provided in **Appendix B**).

The treatment and storage pond area located in the southern new parcel (APN 310-290-006) is outside of flood Zone A as shown in the second FEMA map of **Appendix B** and by that the ponds do not need flood protection.

4 Lined Treatment and Storage Ponds

Three lined treatment ponds and one lined storage pond will be constructed in the newly acquired land, APN 318-290-006 (see **Appendix A**).

4.1 Treatment Ponds

The first two ponds will provide anaerobic treatment. Each pond will have a volume of approximately two and a half days of wastewater generation at the maximum daily production. Water will gravity flow through these ponds in series. Mixing will be provided near the floors to break up the potential for channelizing flow and activate digestion of the almond particles in the lower zone. These ponds will have a large anchor trench in case they need to be covered to reduce odors.

The third treatment pond will be an extended aeration treatment process that has a treatment volume of approximately eight days of wastewater generation at maximum daily production. Fine-bubble diffused aeration will be provided.

4.2 Storage Pond

The designed storage capacity of the pond was calculated based on a 120-day period of November 1 through March 1 using the 6 days per week of maximum average daily wastewater generation, 100-year annual return rainfall, and evaporation. This resulted in a storage capacity of 17.1 million gallons. Results of the calculations for storage capacity are provided in the Pond Design Report (**Appendix C**).

Subsequently the irrigation schedule/water balance was prepared considering the planned crops not necessarily needing a 120-day storage period. **Section 6** goes into detail of the irrigation plan for providing nutrients during irrigation.

4.3 Liner Design

The liner design for these ponds will be 60 mil HDPE double lined with a leakage collection system to monitor for any leakage through the primary layer. This design is based on the Tier 1 requirements identified in the Existing Dairy General Order R5-2013-0122. By lining the wastewater ponds, groundwater monitoring wells will not be required as identified in the WDR.

A Lined Pond Design Report and a Pond Operation & Maintenance Plan are included with this report (see **Appendix C and D**).

5 Storm Water Basin

Wastewater and storm water are separate stream flows at Treehouse. The almonds are stored and processed indoors resulting in the storm water being free of product.

The existing storm water basin located on the east side of the plant is planned to be removed. A new soil lined storm water basin will be added to the north of the facility to provide the storage needed to capture rainfall runoff.

As identified earlier, approximately 434,600 ft^2 of the rainfall footprint will be collected and stored in the lined storage pond. There is a remainder of approximately 1,177,300 ft^2 of roof and pavement of the current plant and the future warehousing plans.

The Industrial General Permit Order identifies under a NONA classification sufficient storm water capacity of a pond being capable of containment of the maximum historic precipitation event.

For the Delano weather station there was a maximum storm event of 5.43 inches. For a significant storm, event runoff coefficients were not considered resulting in a calculated needed storm volume of 532,722 ft^3.

A new storm pond of 330' x 210' x 13' @ 3:1 side slope will provide 585,792 ft^3 at 1 foot of freeboard. This volume exceeds the calculated capacity needed.

6 Nutrient and Wastewater Management Plan (NMP)

This section generally describes and demonstrates the management of the LAA to beneficially reuse and treat wastewater from the facility while maintaining crop viability, controlling soil salinity, applying wastewater and nutrients at agronomic rates, and protecting environmental quality.

6.1 Land Application Area Cropping and Irrigation Management

The proposed LAA crop rotation is corn silage in the summer and small grain silage such as wheat, triticale, barley, and mixes of each in the winter. Corn silage is grown during the summer months and is harvested (chopped) once. Small winter grains are fall/winter/spring (generally October through May) crops that are also harvested once. Details of LAA cropping, assumed yields, and nitrogen and salt removal rates are summarized in Table 5. Other crops like corn such as sorghum and sudangrass are also options for LAA cropping and generally have the same nutrient and salt removal rates in addition to similar management practices.

For the NMP soil-water and nutrient balance calculations, it was assumed that the entire LAA will be cropped with a rotation of corn and winter forage, and that both fields will generally be harvested at similar times, due to the relatively small acreage.

The LAA will be irrigated via border-check surface irrigation. The estimated irrigation efficiency factor used in this NMP was 70% to generally account for evaporative loss (Solomon, 1998 and PG&E, 1993). The LAA will be managed such that no offsite runoff occurs. There will be a tailwater system to pump water back up to the head of the field.

Air gaps and/or backflow prevention devices are used on the irrigation well, and connection points to prevent back siphoning of wastewater.

6.2 Soil-Water and Nutrient Balances

Design parameters, including crop selection, potential crop evapotranspiration (**ETc**), precipitation rates, wastewater flow, storage ponds, supplemental irrigation water, and soil available water holding capacity were used to calculate daily soil-water balances for the LAA. In general, soil-water balances evaluate all hydraulic inputs (effective precipitation, freshwater irrigation, effluent irrigation), outputs (crop water use), soil moisture, and estimated deep percolation beyond the root zone. These soil-water balances generally maintain a maximum/management allowable depletion (**MAD**) of 70% in the crop root zone, where possible. The soil-water balances were developed with the following objectives:

Table 5. Land application area crop Information.
Treehouse California Almonds, LLC, Earlimart, California

Field	Crop	Harvest Method	Harvest Unit	Approximate Harvest Interval	Number of Cuttings	As Harvested Yield Goals	Dry Matter Yield Goals	Moisture	Typical Protein	Approximate Nutrient Removal Rates [1]			
										N	P	K	Salt
						tons/acre	lbs/acre			pounds/acre			
All Fields	Corn Silage	Silage	tons	n/a	1	32.0	19,200	70%	10%	241	--	--	1,920
All Fields	Wheat Forage	Silage	tons	n/a	1	25.0	15,000	70%	11%	263	--	--	1,500
TOTAL FOR CORN-WHEAT ROTATION:					**2**	**57.0**	**34,200**	**--**	**--**	**503**	**--**	**--**	**3,420**
All Fields	Alfalfa	Hay	100 lb bales	~30 days	7-8	10.0	17,600	12.0%	21%	623	50	384	2,200

NOTES:

Abbreviations: K = potassium; lb = pound; N = nitrogen; P = phosphorus.

1 Nutrient removal rates derived from: Crop Nutrient Harvest Removal. 2009. University of California Cooperative Extension Manure Technical Bulletin Series. http://manuremanagement.ucdavis.edu. G.S. Pettygrove, Cooperative Extension Soils Specialist, and Ian Bay, Department of Land, Air, and Water Resources, University of California, Davis; and Geisseler, D. 2016. Nitrogen Concentrations in harvested plant parts - a literature overview. Department of Land, Air, and Water Resources, University of California, Davis.

- Evaluate LAA Loading Rates:
    - Apply irrigation water at agronomic rates.
    - Minimize deep percolation of water below the root zone.
    - Supply adequate irrigation water and soil moisture to meet crop ETc rates while accounting for an irrigation system efficiency factor (70%) and a MAD of 70%.
    - Manage soil salinity by matching leaching fractions to leaching requirements to maintain land treatment capacity (to maintain the potential for high crop yields and associated crop nutrient removal).
    - Match net nitrogen application rates to crop nitrogen removal rates.
    - Manage salt loading within appropriate rates.
    - Balance the above factors with the available storage pond capacity to ensure minimum freeboard requirements are always maintained.

One soil-water balance scenario was developed for this NMP. The specifics of the soil-water balance variables are provided below:

- 66 design net farmable acres planted to a crop rotation of corn and winter grain silage (Table 5)
- Projected effluent flow to the LAA of 0.150 MGD (Table 3) for 312 days per year.
- Estimated effluent quality (Table 2).
- 100-year return rainfall (Table 4).

6.3 Evapotranspiration

Average reference evapotranspiration (**ETo**) values were multiplied by the appropriate crop coefficients (**Kc**) to calculate potential crop evapotranspiration (**ETc**). The values used in the soil-water balances are tabulated in Table 6.

6.4 Effluent Storage Pond

Details on the storage pond are provided in **Appendix C**.

6.5 Soil-Water Balance Results

The irrigation results from the soil-water balances are summarized in Table 7. Substantial freshwater supplementary irrigation is needed to maintain crop productivity and nutrient removal capacity for the summer crop. On average across the crop rotation, facility wastewater will likely provide approximately 46% of the total crop water demand (Table 7). Leaching Requirements to maintain soil salinity were met and the MAD was mostly maintained around 70%. The daily soil-water balances are provided in **Appendix E1** and associated loading rates are provided as **Appendix E2**.

6.6 Pond Capacity

A storage pond water balance completed in tandem with the soil-water balances. A daily pond water balance included the following variables using a 100-year return rainfall amount:

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
Jan	1	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	2	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	3	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	4	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	5	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	6	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	7	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	8	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	9	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	10	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	11	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	12	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	13	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	14	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	15	0.09	0.08	**0.04**		0.62	1.10		0.02	0.04	0.04	0.02
	16	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	17	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	18	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	19	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	20	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	21	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	22	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	23	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	24	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	25	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	26	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	27	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	28	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	29	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	30	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04
	31	0.09	0.08	**0.04**		0.80	1.10		0.03	0.04	0.04	0.04

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
Feb	**1**	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	2	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	3	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	4	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	5	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	6	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	7	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	8	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	9	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	10	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	11	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	12	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	13	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	14	0.10	0.08	**0.07**		0.95	1.10		0.07	0.05	0.08	0.07
	15	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	16	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	17	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	18	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	19	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	20	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	21	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	22	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	23	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	24	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	25	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	26	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	27	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10
	28	0.10	0.08	**0.07**		1.15	1.10		0.08	0.05	0.08	0.10

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
March	1	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	2	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	3	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	4	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	5	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	6	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	7	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	8	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	9	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	10	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	11	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	12	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	13	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	14	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	15	0.09	0.07	**0.11**		1.15	1.10		0.13	0.05	0.12	0.13
	16	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	17	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	18	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	19	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	20	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	21	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	22	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	23	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	24	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	25	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	26	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	27	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	28	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	29	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	30	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16
	31	0.09	0.07	**0.11**		1.20	1.10		0.13	0.05	0.12	0.16

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
April	1	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	2	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	3	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	4	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	5	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	6	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	7	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	8	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	9	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	10	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	11	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	12	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	13	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	14	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	15	0.05	0.04	**0.17**		1.20	1.10		0.20	0.05	0.19	0.20
	16	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	17	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	18	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	19	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	20	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	21	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	22	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	23	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	24	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	25	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	26	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	27	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	28	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	29	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24
	30	0.05	0.04	**0.17**		1.15	1.10		0.20	0.05	0.19	0.24

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
May	**1**	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	2	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	3	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	4	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	5	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	6	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	7	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	8	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	9	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	10	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	11	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	12	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	13	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	14	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	15	0.02	0.01	**0.22**			1.10			0.05	0.24	0.05
	16	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	17	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	18	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	19	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	20	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	21	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	22	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	23	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	24	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	25	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	26	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	27	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	28	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	29	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	30	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12
	31	0.02	0.01	**0.22**	Plant		1.10	0.11		0.05	0.24	0.12

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
June	**1**	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	2	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	3	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	4	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	5	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	6	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	7	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	8	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	9	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	10	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	11	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	12	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	13	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	14	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	15	0.01	0.00	**0.26**	0.14		1.10	0.04		0.05	0.29	0.04
	16	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	17	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	18	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	19	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	20	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	21	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	22	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	23	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	24	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	25	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	26	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	27	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	28	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	29	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07
	30	0.01	0.00	**0.26**	0.25		1.10	0.07		0.05	0.29	0.07

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
July	1	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	2	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	3	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	4	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	5	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	6	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	7	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	8	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	9	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	10	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	11	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	12	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	13	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	14	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	15	0.00	0.00	**0.26**	0.56		1.10	0.15		0.05	0.29	0.16
	16	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	17	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	18	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	19	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	20	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	21	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	22	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	23	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	24	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	25	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	26	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	27	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	28	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	29	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	30	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27
	31	0.00	0.00	**0.26**	1.00		1.10	0.26		0.05	0.29	0.27

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
Aug	1	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	2	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	3	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	4	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	5	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	6	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	7	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	8	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	9	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	10	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	11	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	12	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	13	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	14	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	15	0.00	0.00	**0.23**	1.15		1.10	0.26		0.04	0.25	0.31
	16	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	17	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	18	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	19	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	20	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	21	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	22	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	23	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	24	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	25	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	26	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	27	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	28	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	29	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	30	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27
	31	0.00	0.00	**0.23**	1.20		1.10	0.28		0.04	0.25	0.27

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
Sept	1	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	2	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	3	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	4	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	5	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	6	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	7	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	8	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	9	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	10	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	11	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	12	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	13	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	14	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	15	0.01	0.00	0.18	1.20		1.10	0.22		0.04	0.20	0.25
	16	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	17	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	18	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	19	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	20	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	21	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	22	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	23	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	24	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	25	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	26	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	27	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	28	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	29	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19
	30	0.01	0.00	0.18	1.06		1.10	0.19		0.04	0.20	0.19

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
Oct	**1**	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	2	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	3	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	4	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	5	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	6	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	7	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	8	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	9	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	10	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	11	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	12	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	13	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	14	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	15	0.02	0.01	**0.12**	0.98		1.10	0.12		0.03	0.13	0.14
	16	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	17	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	18	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	19	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	20	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	21	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	22	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	23	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	24	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	25	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	26	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	27	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	28	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	29	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	30	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02
	31	0.02	0.01	**0.12**			1.10			0.03	0.13	0.02

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
Nov	**1**	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	2	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	3	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	4	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	5	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	6	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	7	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	8	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	9	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	10	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	11	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	12	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	13	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	14	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	15	0.06	0.05	**0.06**		Plant	1.10		0.03	0.03	0.07	0.04
	16	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	17	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	18	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	19	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	20	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	21	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	22	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	23	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	24	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	25	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	26	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	27	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	28	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	29	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01
	31	0.06	0.05	**0.06**		0.25	1.10		0.02	0.03	0.07	0.01

Table 6. Precipitation and Crop Evapotranspiration Data.
Treehouse California Almonds, LLC, Earlimart, California

Date		100-year Return Precipitation (inches)	100-Year Return Effective Precip (inches)	ETo SSJV (inches) [1]	Crop Coefficients (Kc) [2]			Normal Year Crop ETc (inches) [3]				Combined Crop Rotations ETc (inches)
					Corn Silage 2	Winter Forage	Pond Evap	Corn Silage 2	Winter Forage	Bare Soil	Pond Evap	Corn/Winter Forage
Dec	1	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	2	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	3	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	4	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	5	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	6	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	7	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	8	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	9	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	10	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	11	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	12	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	13	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	14	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	15	0.07	0.05	**0.03**		0.36	1.10		0.01	0.03	0.03	0.02
	16	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	17	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	18	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	19	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	20	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	21	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	22	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	23	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	24	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	25	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	26	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	27	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	28	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	29	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	30	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
	31	0.07	0.05	**0.03**		0.52	1.10		0.02	0.03	0.03	0.02
Total		**15.71**	**11.53**	**53.37**	**--**	**--**	**--**	**25.87**	**14.03**	**15.39**		**44.91**
Planting				**--**	**15-Jun**	**1-Nov**	**--**	**--**	**--**	**--**	**--**	**--**
Harvesting				**--**	**15-Oct**	**1-May**	**--**	**--**	**--**	**--**	**--**	**--**

NOTES:

1 Weather data from CIMIS station 15 in Stratford, California.

2 Crop coefficients adapted from: http://cekern.ucanr.edu/Irrigation_Management/ and UCCE, 1994. Using reference evapotranspiration (ETo) and crop coefficients to estimate crop evapotranspiration (ETc) for agronomic crops, grasses, and vegetable crops. Leaflet 21427. Cooperative Extension, University of California Division of Agriculture and Natural Resources.

Table 7. Irrigation Summary of soil-water balances.
Treehouse California Almonds, LLC, Earlimart, California

CROP ROTATION	COMMODITY ACRES	GROSS IRRIGATION TOTALS [1]								NET IRRIGATION TOTALS [2]								CROP EVAPO TRANS PIRATION (ETc)	EST. LEACHING VARIABLES	
		Effluent			Freshwater			Total		Effluent [1]			Freshwater [1]			Total		Potential	Leaching Requirement	Leaching Fraction
		MG	inches	% of total	MG	inches	% of total	MG	inches	MG	inches	% of total	MG	inches	% of total	MG	inches	inches		
Scenario 1 - 100% Corn-Wheat Rotation																				
Corn Silage	66	**20.853**	11.6	30%	49.679	27.7	70%	70.532	39.4	14.597	8.1	30%	34.775	19.4	70%	49.372	27.5	28.7	4.2	0.1
Winter Forage	66	**22.423**	12.5	100%	0.000	0.0	0%	22.423	12.5	15.696	8.8	100%	0.000	0.0	0%	15.696	8.8	16.2		2.8
Totals	**132**	**43.276**	**24.1**	**47%**	**49.679**	**27.7**	**53%**	**92.955**	**51.9**	**30.293**	**16.9**	**47%**	**34.775**	**19.4**	**53%**	**65.068**	**36.3**	**44.9**	**4.2**	**2.9**
Acreage-weighted Site-Wide Averages		**21.638**	**12.1**	**--**	**24.839**	**13.9**	**--**	**46.477**	**25.9**	**15.147**	**8.5**	**--**	**17.388**	**9.7**	**--**	**32.534**	**18.2**	**22.5**	**--**	**1.5**

NOTES:
Abbreviations: MG = million gallons.
All values summarized from more detailed soil-water balances.
1 Gross irrigation is before adjusting for irrigation efficiency.
2 Net irrigation accounts for an irrigation efficiency factor.

- Inputs to ponds (Details in **Appendix C**):
    - o Direct pond surface precipitation
    - o Facility precipitation runoff from approximately
    - o Facility wastewater influent flow (Table 3).
- Outputs from ponds:
    - o Effluent flow for LAA irrigation (from the soil-water balances in Appendix E1).
    - o Pond evaporation (Appendix F).
    - o Percolation (assumed to be zero due to plastic pond liners – Appendix F).

Appendix G is an illustration of the pond water balance and **Appendix F** includes the daily pond water balance values used the generate **Appendix G**. It was assumed that the ponds will generally be empty around October 1 annually to prepare for the next winter's rainfall.

From October through early March, there is generally a net accumulation of stored water due to winter rains, stormwater runoff, and lower crop water demand. From early March through September, stored water is drawn down due to less rainfall and high crop water demand in the summer months.

The maximum modeled volume of water stored is approximately 15.0 MG, which is less than the minimum 2 feet freeboard volume of 17.1 MG. Additional pond capacity up to the rim of the pond is available for emergency situations but will not be utilized. Ultimately, the Treehouse Almonds wastewater system has significant flexibility to manage pond water volumes due to the LAA fields.

Actual pond water volumes will vary daily than the modeled values provided in this report based on management, rainfall, and logistics, but this evaluation demonstrates that the system has capacity to manage the design flows.

6.7 Mass Loading and Balances

This section will describe the capabilities of the LAA to treat nitrogen, salt, and BOD loading from the facility's wastewater discharge. Projected effluent flow volumes are summarized in Table 3 and projected effluent water quality data are provided in Table 2. Daily soil-water balance calculations and mass loading rates for corn-wheat rotations are provided as **Appendix E1** and **Appendix E2**, respectively. Daily irrigation rates from the soil-water balances (**Appendix E1**) and effluent water quality data (Table 2) were used to calculate daily mass loading rates (**Appendix E2**). The following concentrations were used for the loading rate calculations: 85 mg/L (Total N), 730 mg/L (FDS), and 60 mg/L (BOD).

6.8 Nitrogen Loading and Nitrogen Balances

6.8.1 Background Information on Nitrogen Balances

6.8.1.1 Background Information on Nitrogen Balances

Nitrogen is often the focus of land treatment systems and regulatory requirements because it is subject to environmental losses that can impair water quality. Nitrogen management is difficult because negatively charged nitrate ions are mobile in soil and move through the root zone and vadose zone with water. Nitrogen applied as ammonium (e.g., ammonia rich wastewater, ammonium sulfate, and ammonium/phosphorus combinations such as MAP, DAP, and 10-34-0) rapidly nitrifies to nitrate. This process generally happens in less than two weeks in California, and in the San Joaquin Valley (WPHA, 2002), it can occur within a few days. To efficiently manage nitrogen, one must carefully manage irrigation and root zone soil moisture. Nitrogen applied to dry soil as ammonia can volatilize ("off-gas") and be lost to the atmosphere. This NMP considered these factors and evaluated nitrogen balances and ratios to determine the potential nitrogen dynamics of the Treehouse Almonds LAA.

Due to the mobility of nitrate in soil, nitrogen balances need to be evaluated in conjunction with soil-water balances that evaluate soil moisture and leaching fractions. It is not as simple as evaluating total nitrogen applied vs. theoretical or measured crop nitrogen removal rates. Timing and irrigation are critical to this process. If all nitrogen is applied early in the season and excessive irrigation results in deep percolation before the crop can consume the water and nutrients, much of the applied nitrogen could be lost beyond the root zone. Moreover, if parts of the root zone are kept excessively moist, substantial amounts of nitrate may be lost via soil micropore denitrification, which may not be desirable for crop production. Gaseous losses of nitrogen can be regulated by many factors, but primarily by environmental conditions such as temperature, soil moisture, pH, and the availability of soil carbon.

6.8.1.2 Crop Nitrogen Removal Rates

Nitrogen removal rates were derived from a comprehensive literature review completed by Dr. Daniel Geisseler[1] that was funded by the California Department of Food and Agriculture Fertilizer Research and Education Program (CDFA FREP) and originally published in 2016 (Geisseler, 2016) and updated in 2021 (Geisseler, 2021). According to the author: "*The final report identifies the best available nitrogen removed estimates for close to 99% of the crop acreage in the Central Valley . . .".* Snippets from Geisseler (2021) are included below for the crop rotation used in this report.

[1] University of California Cooperative Extension Specialist in the Department of Land, Air, and Water Resources at the University of California, Davis

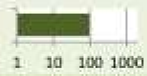
Corn – Silage

N removal

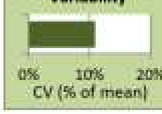
7.53

lbs N/ton
@ 70% moisture

Observations



Variability



Data sources

A total of 96 observations from three California sources were included in the report. In summer 2014, Heguy and Silva-del-Rio from UC Cooperative Extension visited 20 San Joaquin Valley dairy farms during corn silage harvest, and collected a composite sample from five truckloads of corn silage for nutrient analysis. From 1997 to 2011, Peter Robinson, Cooperative Extension Specialist for Dairy Nutrition and Management at UC Davis, collected samples from commercial dairy farms. In both cases, the silage was analyzed for crude protein. The values from these two sources were already included in the 2016 report.

In addition, we received and analyzed samples from a field trial in Fresno County where two varieties, different N application rates and deficit irrigation treatments were compared. The trial was managed by Bob Hutmacher, UCCE Extension Specialist, and Nick Clark, UCCE Farm Advisor for Kings, Tulare and Fresno counties.

Data sources and number of observations.

Source	Sites		Years sampled		Observations
	Location	n	Years	n	
Heguy and Silva-del-Rio, 2014	California	20	2014	1	20
Robinson, 2011	California		1997-2011		52
Irrigation & N trial	California	1	2017	1	12
Irrigation & N trial	California	1	2018	1	12
Overall					**96**

Summary statistics of corn silage N removal data.

Source	Summary (lbs N/ton @ 70% moisture)			CV (%)
	mean	SD	Range	
Heguy and Silva-del-Rio, 2014	7.39	0.58	6.0 - 8.4	7.8
Robinson, 2011	7.62	0.87	5.0 - 10.4	11.3
Irrigation & N trial 2017	7.59	0.78	6.8 - 9.5	10.3
Irrigation & N trial 2018	7.32	1.00	5.9 - 8.9	13.6
Overall	**7.53**	**0.82**	**5.0 - 10.4**	**10.9**

Variability

The variability of the data is intermediate with a CV of 10.9% of the mean. Since the samples were collected from a large number of farms in different years, such variability can be expected. A factor that will contribute to variability across field is the moisture content of the silage, since it ranged from 60 to 81% in the two datasets from dairy farms. For this report, the N concentration was calculated for a moisture content of 70%.

In the irrigation and N rate trial, the factors year, irrigation level (ranging from 50 to 100% of ET), and variety had no effect on N concentration in the plants. The trial also included three N application rates, namely 0, 120 and 240 lbs N/acre. Nitrogen concentration in the plants was significantly lower in the zero N treatment, while the other two N treatments did not differ significantly. Since the production of silage corn without N applications is not a common practice in California, the values from the zero N treatment were not included in this report.

Discussion

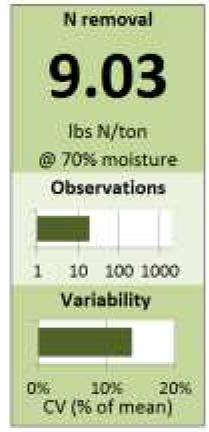
72 samples were collected from dairy farms in the Central Valley. The dairy farms were not selected based on their silage quality. In addition, the 24 samples from the irrigation and N rate trial provide insight into the effects of different factors on N concentration in silage corn. Therefore, the estimate for N removed can be considered a very good estimate of Central Valley corn silage.

References

Robinson, P., 2011. Assays of individual samples of California feedstuffs. Available online at: http://animalscience.ucdavis.edu/faculty/robinson/Projects_folder/pdf/assays_2010_12.pdf

Heguy, J., Silva-del-Rio, N., 2014. 2014 Corn Silage Audit. Available online at: http://corn.ucanr.edu/files/221127.pdf

Triticale – Silage



Data sources

The data included in this report are from a small grain variety trial conducted over multiple years in the Southern San Joaquin Valley by a team led by Steve Wright, UCCE Farm Advisor in Kings and Tulare Counties. Triticale was grown during the winter. Little additional information is available about crop management.

Relevance

The trial was completed in Tulare and Kings Counties with several relevant varieties over a period of four years. Even though the trial was completed at only one site each year, the average N concentration can be considered a good estimate of N concentrations found in triticale silage produced in the Central Valley, as varieties and crop management are likely similar across the valley.

Data sources and number of observations.

Source	Sites		Years sampled		Observations
	Location	n	Years	n	
Wright et al., 2014	Tulare/Kings	1	2014	1	5
Wright et al., 2012	Tulare	1	2011	1	4
Wright et al., 2009	Tulare	1	2009	1	6
Wright et al., 2009	Tulare	1	2008	1	4
Overall	**Tulare**			**4**	**19**

Summary statistics of triticale silage N removal data.

Source	Summary (lbs N/ton at 70% moisture)			CV (%)
	Mean	SD	Range	
Wright et al., 2014	10.64	0.59	10.0 - 11.5	5.5
Wright et al., 2012	9.62	0.12	9.5 - 9.8	1.3
Wright et al., 2009	7.79	0.29	7.4 - 8.2	3.7
Wright et al., 2009	8.30	0.24	8.0 - 8.5	2.9
Overall	**9.03**	**1.24**	**7.4 - 11.5**	**13.7**

Variability

The dataset reveals that year has a large effect on the N concentration in triticale silage. Other factors that may contribute to the variability of silage N contents include growth stage when cut and N fertilization level. With the present trial, the effect of these factors may not have been fully captured.

Discussion

The trial likely provides a good estimate of the average N concentration in triticale silage produced in the Central Valley. The results may not capture the variability of silage produced in growers' fields, as factors such as N application rate and growth stage when harvested likely vary much more among growers' fields. For a better and robust estimate, a relatively large number of samples would need to be collected from fields across the Central Valley over a period of several years.

References

Wright, S., Silva-del-Rio, N., Collar, C., Banuelos, L., 2009. Small grain silage variety study. UC ANR Small Grain News Tulare County October 2009, 11-12. Available online at: http://cetulare.ucanr.edu/newsletters/Small_Grain_News41326.pdf

Wright, S., Banuelos, L., Silva-del-Rio, N., Collar, C., Hernandez, K., Stambach, H., 2012. Small grain silage variety trial 2011. UC ANR Small Grain News Tulare County 6(3), 10. Available online at: http://cetulare.ucanr.edu/newsletters/Small_Grain_News44749.pdf

Wright, S., Banuelos, L., Souza, Collar, C., 2014. Small grain silage variety trial 2014. UC ANR Small Grain News Tulare County 10(3), 7-9. Available online at: http://cetulare.ucanr.edu/newsletters/Small_Grain_News52831.pdf

6.8.2 Nitrogen Balance Results

Nitrogen loading rates, crop nitrogen removal, and associated metrics are summarized in Table 8. Crop information and removal rates are provided in Table 5. Gross nitrogen loading is the amount of nitrogen applied with the wastewater and freshwater irrigation before accounting for likely losses including volatilization of ammonia and denitrification of nitrate. Considering ammonium-nitrogen fraction of the treated wastewater, volatilization will occur. Ammonia volatilization from fertilized soils can be up to 33 to 50% of applied ammonia-nitrogen (IPNIa, undated; Pettygrove and Eagle, 2009; Havlin et al., 2005). Denitrification rates can range from 2 to 25% of nitrogen applied to well-drained soils (Havlin et al., 2005; IPNIb, undated; Pettygrove and Eagle, 2009). For this NMP, gaseous ammonia loss via volatilization was assumed to be a conservatively low 10% and denitrification losses of nitrate-nitrogen were assumed to be only 5%. However, nitrogen loading should still be within agronomic rates even if zero nitrogen gaseous loss was assumed, as represented by gross nitrogen loading rates summarized in Table 8. Net nitrogen loading represents net loading after accounting for potential gaseous losses. Nitrogen applied is represented by the letter "A" and nitrogen removed is represented by the letter "R".

To evaluate the performance of LAA, a nitrogen balance (**A-R**) and the ratio of applied nitrogen to nitrogen removed (**A/R**) were examined. Nitrogen loading is not a limiting factor for the capacity of the LAA. Using the yield goals specified in this NMP, more nitrogen is likely to be removed via crop harvest than will likely be applied via effluent irrigation. For A-R, this is represented by a negative net nitrogen balance (less than 0 pounds/acre). A negative nitrogen balance indicates that more nitrogen was removed via crop harvest than was applied, and a positive nitrogen balance indicates more nitrogen was applied than removed. For A/R, a balanced system is represented by a ratio of approximately 1.00. A ratio of less than 1.00 indicates that less nitrogen was applied than was removed, and a ratio of greater than 1.00 indicates more nitrogen was applied than removed.

As shown in Table 8, <u>net</u> nitrogen balances were less than 0 pounds/acre, and all ratios were less than 1.00. These metrics in combination with an adequate soil-water balance indicate that nitrogen applications should be within agronomic rates at the LAA. Overall gross and net

Table 8. Nitrogen balances from soil-water balances.
Treehouse California Almonds, LLC, Earlimart, California

CROP ROTATION	COMMODITY ACRES	GROSS NITROGEN LOADING 1				NET NITROGEN LOADING [3]				CROP NITROGEN REMOVAL (R) [4]	NET AR METRICS	
		Effluent	Freshwater	Commercial Fertilizer [2]	Total N Applied (A)	Effluent	Freshwater	Commercial Fertilizer [2]	Total N Applied (A)		Nitrogen Balance (A-R) [5]	Nitrogen Applied ÷ Nitrogen Removed (A/R) [6]
		Total N	NO_3-N			Total N	NO_3-N					
		pounds of nitrogen per acre				pounds of nitrogen per acre						
Scenario 1 - 100% Corn-Wheat Rotation												
Corn Silage	66	224	31	0	**255**	211	30	0	**241**	241	**0**	**1.00**
Winter Forage	66	241	0	0	**241**	227	0	0	**227**	263	**-35**	**0.87**
Total	**132**	**465**	**31**	**0**	**496**	**439**	**30**	**0**	**469**	**503**	**-35**	**0.93**
Acreage-Weighted Average	**--**	**232**	**16**	**0**	**248**	**219**	**15**	**0**	**234**	**252**	**-17**	**0.93**

NOTES:
Abbreviations: NO_2-N = nitrite-nitrogen, NO_3-N = nitrate-nitrogen, NH_4-N = ammonium-nitrogen, Total N = TKN + NO_3-N, and
TKN = total Kjeldahl nitrogen (organic N + ammonium N).
1 Gross nitrogen additions represent nitrogen applied before crop removal or atmospheric losses due to ammonium volatilization or micropore denitrification.
2 Nitrogen balance assumes no commercial nitrogen added. Soil testing and crop observation will determine need for nitrogen fertilization.
3 Assumes gaseous loss of 10% of applied nitrogen via ammonia volatilization and 5% loss of nitrate via soil micropore denitrification.
4 Removal rates are described in Table 9.
5 Applied nitrogen (A) minus nitrogen removed (R). A negative balance indicates that more nitrogen was removed than was applied.
6 A ratio of less than 1.00 indicates that less nitrogen was applied than was removed.

nitrogen applied is less than nitrogen removed and leaching beyond the crop root zone was limited to the winter rainfall periods from an assumed 100-year Return rainfall year and the amount required to maintain root zone salinity.

6.9 Soil Loading and Balances

Salt loading is another important item to consider when designing and managing a land application system. Design of these systems should not be based only on hydraulic, nitrogen, or BOD loading. Excessive salt loading can have detrimental impacts to crops with diminishes the treatment capacity of the land treatment system, and it can also degrade groundwater quality if excessive mass is leached beyond the root zone.

The Salinity Control and Minimization Plan described below evaluates individual sources of salinity that contribute to the overall wastewater salinity and summarizes options to minimize salinity contributions.

6.9.1 Agronomic Rates for Salt Loading

Agronomic rates for salt loading are not well known. Soil scientists and agronomists can evaluate nutrient demand, fertilizer requirements, and nutrient removal rates for essential macro- and micronutrients. Essential *macronutrients* include structural nutrients (carbon, hydrogen, oxygen), primary nutrients (nitrogen, phosphorus, potassium), and secondary nutrients (calcium, magnesium, and sulfur). Essential *micronutrients* include iron, boron, copper, chloride, manganese, molybdenum, zinc, cobalt, and nickel. Many of these nutrients are salts that contribute to the overall salt loading from wastewater irrigation.

It is known that more salt is applied to root zones in irrigated agriculture in the semi-arid western United States than is removed by crop harvests. That is why periodic leaching of salt is a necessary management practice to maintain productive irrigated agriculture. There are various methods to calculate leaching requirements based on crop salinity tolerances and irrigation water electrical conductivity (ECw). These leaching requirements do not directly inform the impact leaching may have on groundwater quality on a landscape level. Determining the impact of salt leaching on groundwater quality requires complex analysis based on various hydrogeologic properties. As a result, simple and clear regulatory guidelines for salt loading that are technically justified are generally lacking.

Waste Discharge Requirements Order R5-2010-0130 – General Order for Dairies with Manure Anaerobic Digesters of Co-digester Facilities (Digester General Order) provides one regulatory reference point. It differentiates “nutrient salts” (nitrogen, phosphorus, and potassium) and “non-nutrient” salts (sodium, calcium, magnesium, carbonate, bicarbonate, chloride, and sulfate). The Digester General Order limits non-nutrient salt loading to 2,000 pounds/acre/year for single-cropped fields and 3,000 pounds/acre/year for multi-cropped fields. Nutrient salt loading can be determined by analyzing crop tissue samples for ash content and using those results to calculate salt removal rates. Total salt load is calculated form all relevant inputs (irrigation water and wastewater) and salt removal from crop harvest is subtracted from that amount. The remaining “non-nutrient” salt loading is compared to the 2,000 to 3,000 pounds/acre/year limit. Other sources of salt “losses” or “removal” above the 2,000 to 3,000 pounds /acre crop removal rates include precipitation as insoluble carbonates, fixation by soil clay minerals, and other complex soil chemistry processes but these factors were not considered in this analysis.

Undoubtedly, more work on appropriate salt loading rates is needed in California. Central Valley Salinity Alternatives for Long-Term Sustainability (**CV-SALTS**) Salt Control Program is a discharger-led collaborative to develop long-term solutions for salinity management. As that program develops, better and more scientifically based salt loading strategies will likely become available. In the meantime, the provisions in the Digester General Order were used as a reference point for general guidance but are not necessarily considered adequate as an explicit salt loading limit for land application systems. Routine monitoring of salt loading, soil-water balances, and soil salinity (via soil testing) are effective methods to manage salt loading.

6.9.2 Salt Balance Results

Salt loading rates were based on projected fixed dissolved solids (**FDS**) concentrations of the wastewater (Table 2) and estimated supplemental freshwater irrigation quality. Daily salt loading rates were calculated from the soil-water balances (**Appendix E1** and **Appendix E2**). Crop salt removal rates were adapted from Brown and Caldwell, Kennedy/Jenks Consultants (2007). Salt loading and balances are summarized in Table 9. Results indicate the salt applications to the LAA should be within appropriate rates. The non-nutrient salt balance was less than to the 3,000 pounds/acre guideline for a double crop rotation. Approximately 76% of the salt loading comes from the effluent, and the remaining 24% comes from supplemental freshwater irrigation.

6.9.3 CV-SALTS Nitrate and Salt Control Programs

Treehouse Almonds filed a Notice of Intent with the CVRWQCB and all required documents to join the Tule Basin Management Zone. Treehouse Almonds is pursuing Pathway B (nitrate management zone pathway) for the CVRWQCB Central Valley Salinity Alternatives for Long-term Sustainability (CV-SALTS) Nitrate Control Program. Treehouse Almonds is also pursuing Option 2 (alternative option for salt permitting) for the Salt Control Program and participating in the Prioritization & Optimization Study (P&O Study). Under Option 2, the following Common Salt Requirements will be implemented, as applicable:

- Continued implementation of salinity management practices and/or source control efforts.
- Implementation of pollution prevention plans, watershed plans, and/or salt reduction plans.
- Maintain current discharge levels of salinity to the extent feasible, reasonable, and practicable, while accounting for conservation, salinity levels in the water supply source, and some appropriate increment of growth.
- Comply with interim permit limits, to the extent that the CVRWQCB finds appropriate and necessary to adopt such limits.

6.10 Biochemical Oxygen Demand Loading

The appropriate metric to evaluate BOD loading is cycle average BOD loading rates. To calculate cycle average BOD loading rates, irrigation cycles must be known for each LAA field. To determine irrigation cycles, the following information for each irrigation and field must be known: the start date of an irrigation, end date of the irrigation, and the beginning date of the next irrigation. Total volume of effluent applied to that field during that interval must also be known, in addition BOD concentrations (typically three-to-four sample rolling average concentrations).

Table 9. Salt loading and balances from soil-water balances.
Treehouse California Almonds, LLC, Earlimart, California

CROP ROTATION	COMMODITY ACRES	SALT/FIXED DISSOLVED SOLIDS (FDS) LOADING, REMOVAL, AND BALANCES						
		Effluent	Freshwater	Total (A)	Est. Crop Removal (R)	Non-Nutrient Salt Balance	Generally Recommended Maximum Non-Nutrient Salt Loading Guideline [1]	Salt Loading at Agronomic Rates?
		pounds / acre						
Scenario 1 - 100% Corn-Wheat Rotation								
Corn Silage	66	1,924	1,256	3,179	1,920	**1,259**	--	--
Winter Forage	66	2,068	0	2,068	1,500	**568**		
Total	**132**	**3,992**	**1,256**	**5,248**	**3,420**	**1,828**	**3,000**	**Yes**
Acreage-weighted Averages	**--**	**1,996**	**628**	**2,624**	**--**	**914**	**--**	**--**

NOTES:
1 From: California Regional Board Waste Discharge Requirements Order R5-2010-0130 – General Order for Dairies with Manure Anaerobic Digesters of Co-digester Facilities (Digester General Order).

For this NMP, a generalized irrigation schedule for the LAA was developed via the soil-water balance in **Appendix E1**. Daily BOD loading rates calculated from irrigation events in the soil-water balance are also provided in **Appendix E2** and were only up to a maximum of 13 pounds/acre/day.

A cycle average BOD loading matrix is provided as Table 10. This matrix shows BOD cycle average loading rates based on a range of irrigation cycle days (from 1 to 40) and depth of irrigation applied per irrigation event (from 0.1 to 5.0 inches). According to Table 11, a broad range of total cycle days (irrigation + rest) and depth of effluent applied are possible while maintaining appropriate BOD cycle average loading rates. All possible cycle average loading rates shown in the table are less than 100 pounds/acre/cycle days.

To better demonstrate how BOD loading can be managed, an example daily irrigation plan was developed for each field. The following information is provided:

- Appendix H1 – Daily irrigation plan (inches and MG applied)
    - The total daily volume of effluent applied was taken from the daily soil-water balance (Appendix E1)
- Appendix H2 – BOD loading based on the irrigation plan (pounds/acre and pounds applied)
- Appendix H3 – Nitrogen loading based on the irrigation plan (gross and net loading, pounds/acre)
- Appendix H4 – Salt loading based on the irrigation plan (pounds/acre)
-

A summary of the cycle average BOD loading rates based on the irrigation plan (**Appendix H**) is provided as Table 11. Cycle average loading rates range from 0.2to 37.1pounds per acre per cycle days and are less than the generally recommended 100 pounds per acre per cycle day maximum limit. Actual irrigation schedules and BOD loading rates will vary daily based on management, rainfall, and logistics, but this evaluation demonstrates that the system has capacity to manage BOD loading.

6.11 Recommended Management Practices

The following sections generally describe the recommended management practices to be utilized under this NMP.

6.11.1 Irrigation Management Scheduling

For effective irrigation management, detailed knowledge of the following items is critical:

- Volume of water applied to each field (ideally measured with a flow meter with a totalizer)
- Total time and dates of irrigation events
- Knowledge of soil variability
- Soil AWHC
- Soil bulk density
- Soil infiltration rates and saturated hydraulic conductivity rates (ksat)
- Irrigation system application rates

Table 10. Matrix of biochemical oxygen demand cycle average loading rates.
Treehouse California Almonds, LLC, Earlimart, California

Basic Information:

Average BOD:	60	mg/L
LAA Acres:	1.0	acres
Operational Days:	312	days
Effluent Flow:	0.150	MGD

Flow and Loading Rates:

BOD/day:	75	lbs BOD/day
Daily BOD loading rate:	75.1	lbs BOD/acre/day
Annual BOD Mass Loading:	23,419	lbs BOD/year
Annual BOD Loading Rate:	23419	lbs BOD/acre
Average Daily Annual Loading Rate:	75.1	lbs/acre/day

Applied Numbers

163	lbs BOD/ac-ft
14	lbs BOD/ac-in
500	lbs BOD/MG
0.001	lbs BOD/gal

Total Cycle Days (Irrigation + Rest)	Depth Applied Per Effluent Irrigation Event (inches)																				
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.3	1.5	1.6	1.7	1.8	1.9	2.0	3.0	3.5	4.0	5.0
	Biochemical Oxygen Demand Cycle Average Loading Rate (pounds/acre/cycle days)																				
1	1	3	4	5	7	8	10	11	12	14	18	20	22	23	24	26	27	41	48	54	68
2	1	1	2	3	3	4	5	5	6	7	9	10	11	12	12	13	14	20	24	27	34
3	0	1	1	2	2	3	3	4	4	5	6	7	7	8	8	9	9	14	16	18	23
4	0	1	1	1	2	2	2	3	3	3	4	5	5	6	6	6	7	10	12	14	17
5	0	1	1	1	1	2	2	2	2	3	4	4	4	5	5	5	5	8	10	11	14
6	0	0	1	1	1	1	2	2	2	2	3	3	4	4	4	4	5	7	8	9	11
7	0	0	1	1	1	1	1	2	2	2	3	3	3	3	3	4	4	6	7	8	10
8	0	0	1	1	1	1	1	1	2	2	2	3	3	3	3	3	3	5	6	7	8
9	0	0	0	1	1	1	1	1	1	2	2	2	2	3	3	3	3	5	5	6	8
10	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2	3	3	4	5	5	7
11	0	0	0	0	1	1	1	1	1	1	2	2	2	2	2	2	2	4	4	5	6
12	0	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2	2	3	4	5	6
13	0	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2	2	3	4	4	5
14	0	0	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2	3	3	4	5
15	0	0	0	0	0	1	1	1	1	1	1	1	1	2	2	2	2	3	3	4	5
16	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2	2	2	3	3	3	4
17	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2	2	2	3	3	4
18	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	2	2	3	3	4
19	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	2	3	3	4
20	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	2	2	3	3
25	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	2	2	3
30	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	2	2
35	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2	2
40	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2

NOTES:

Abbreviations: BOD = biochemical oxygen demand.

Table 11. Cycle Average Biochemical Oxygen Demand (BOD) Loading Summary Based on Irrigation Plan.
Treehouse California Almonds, LLC, Earlimart, California

Field	Acres	Effluent Irrigation Dates			Days of Irrigation	Days of Rest	Total Cycle Days	Estimated Biochemical Oxygen Demand (BOD) Loading [2]	
		Start	End	Start of Next Irrigation				lbs/acre	lbs/acre/cycle days (Limit:100)
1	38.00	10/22	10/25	11/5	4	10	14	12	**0.9**
		11/5	11/12	3/1	8	108	116	21	**0.2**
		3/1	3/8	3/15	8	6	14	22	**1.6**
		3/15	3/22	3/29	8	6	14	23	**1.6**
		3/29	4/5	4/11	8	5	13	37	**2.9**
		4/11	4/21	5/20	11	28	39	70	**1.8**
		5/20	5/27	6/1	8	4	12	11	**0.9**
		6/1	6/2	6/5	2	2	4	3	**0.7**
		6/5	6/10	6/21	6	10	16	8	**0.5**
		6/21	6/28	7/6	8	7	15	11	**0.7**
		7/6	7/14	7/20	9	5	14	21	**1.5**
		7/20	7/28	8/3	9	5	14	21	**1.5**
		8/3	8/11	8/17	9	5	14	17	**1.2**
		8/17	8/25	8/31	9	5	14	17	**1.2**
		8/31	9/8	9/14	9	5	14	17	**1.2**
		9/14	9/22	9/28	9	5	14	17	**1.2**
		9/28	9/30	10/22	3	21	24	6	**0.2**
2	28.00	10/22	10/25	11/13	4	18	22	12	**0.5**
		11/13	11/17	3/9	5	111	116	18	**0.2**
		3/9	3/14	3/23	6	8	14	21	**1.5**
		3/23	3/28	4/6	6	8	14	25	**1.8**
		4/6	4/10	5/7	5	26	31	38	**1.2**
		5/7	5/9	5/28	3	18	21	97	**4.6**
		5/28	5/31	6/15	4	14	18	7	**0.4**
		6/15	6/20	6/29	6	8	14	11	**0.8**
		6/29	6/30	7/3	2	2	4	4	**0.9**
		7/3	7/5	7/15	3	9	12	10	**0.8**
		7/15	7/19	7/29	5	9	14	16	**1.1**
		7/29	8/2	8/12	5	9	14	15	**1.0**
		8/12	8/16	8/26	5	9	14	13	**0.9**
		8/26	8/30	9/9	5	9	14	13	**0.9**
		9/9	9/13	9/23	5	9	14	13	**0.9**
		9/23	9/27	10/22	5	24	29	13	**0.4**

- Crop water requirements
- Crop salinity tolerance
- Leaching fractions and leaching requirements
- Irrigation efficiency
- Distribution Uniformity

Flow meters with totalizers will record the volume of influent that is produced by the facility and discharged to the LAA. Meter readings and dates will be recorded on a log sheet so that daily flows can be calculated. It is recommended that flow meters with built-in data loggers be utilized to automatically log daily flow volumes. The total irrigation run times, field numbers, and flow rates will be recorded. This information will be used to calculate the volume and depth of water applied to each field daily.

The NRCS Web Soil Survey Custom Soil Resource Report for the LAA will be routinely referenced to gain an understanding of the geographic distribution and impact of the predominant soil series located within the LAA. Information on soil AWHC, bulk density, and soil infiltration rates is also included in this information and has been evaluated in this NMP.

Soil moisture status should be monitored on an as-needed basis using the NRCS "feel and appearance" method, which with proper experience can estimate soil moisture conditions to an accuracy of five percent. A soil push probe or auger should be used to evaluate the soil moisture status at various depths throughout the root zone. This information will be used to guide future irrigation sets.

Irrigation system application rates will be based on the discharge flow rate from the storage pond. Border check surface irrigation will be used to apply irrigation water to the fields. Visual observations, grower knowledge of the LAAs, irrigation water volumes applied, and soil moisture status will help determine the appropriate irrigation schedule. Crop water requirements will be derived from the closets CIMIS station (or a similar source) and the appropriate crop coefficients.

Corn forage is rated as "moderately sensitive" of salinity and has a threshold soil EC (**ECe**) value of 1,800 µmhos/cm above which salinity will limit growth or yield (Havlin et al., 2005). Winter forages such as wheat are generally "moderately tolerant" and have threshold ECe values around 6,000 µmhos/cm above which salinity will limit growth or yield.

Deep percolation will be limited to or less than the soil salinity leaching requirements and will only be necessary as soil salinity exceeds crop thresholds (i.e., only occasionally based on observations and data). General trends of soil salinity will be monitored by soil monitoring and field scouting. Farm staff will survey the field on a regular basis to evaluate crop health and the general conditions of the LAA. Farm staff will also maintain the irrigation systems and mitigate issues that may occur, such as nozzle plugging and leaks. Proper upkeep and maintenance of the irrigation systems will help achieve sufficient distribution uniformity values, and adequate irrigation scheduling will help achieve reasonably high irrigation efficiencies.

6.11.2 Blending of Effluent and Freshwater

Effluent discharged from the storage pond should be occasionally blended with supplemental freshwater. Supplemental freshwater can be pumped into standpipes and comingled with the effluent in the system before irrigating the LAA. Measurements or flow rates and run times will be used to determine the flow contribution from each supplemental freshwater irrigation source, and all sources will be tested via an irrigation suitability analysis. This will allow calculation of constituent loading rates from each water source. irrigation.

6.11.3 Management of Objectionable Odors

Odors are not anticipated to be a problem at this facility or LAA due to the pretreatment system. This process reduces the amount of nutrients and organics which reduces odor producing compounds. Blending of the effluent with supplemental freshwater may also help reduce odors.

When possible, irrigation events are limited to days with dry and slightly breezy conditions and the fields will be graded to encourage good distribution and drainage. The LAA soils should transmit water into the soil quickly which will limit standing water and odors. Irrigations are cycled through the fields to allow adequate drying and rest times. Cycle average BOD loading demand loading is withing appropriate rates (Table 11).

Where possible, irrigation lines will be flushed with freshwater after each effluent irrigation to minimize solids left in pipelines that may produce odors. Wind breaks such as trees or bushes may also be used in select locations to better manage possible odors.

Dissolved oxygen concentrations in the storage pond should be maintained at a minimum of 1.0 mg/L. If dissolved oxygen concentrations are less than 1.0 mg/L for 3 consecutive sampling events, the issue must be resolved as soon as possible.

Visual observations of the ponds such as algae, vegetation, or scum accumulating on the surface of the ponds will be noted. The LAA will also be inspected daily for evidence of erosion, field saturation, or the presence of nuisance conditions such as flies and ponding. If any nuisance conditions are observed, a swift action plan to mitigate the issues will be developed and implemented, as appropriate.

6.11.4 Sediment and Erosion Control Plan

A sediment and erosion control plan (**SECP**) is another important component of a NMP. Certain nutrients such as phosphorus are generally immobile in the soil profile and not a primary concern for groundwater quality. However, if significant erosion is occurring across the LAA, phosphorus will move with the soil particles and organic matter and may reach surface water bodies. As phosphorus moves to surface water bodies, it becomes a water quality concern because it contributes to eutrophication.

Treehouse Almonds will implement effective sediment and erosion control practices to guide management of erosion, runoff, and minimize possible surface water quality issues.

Frequent observations of any erosion issues will be noted and the SECP practices will be reevaluated as necessary. The SECP for the LAA will include the following practices, which should be sufficient to minimize any water quality issues from erosion:

- Timing irrigation events to crop need (irrigation scheduling).
- Field borders to capture runoff and supplement irrigation.
- Land grading to increase irrigation efficiency and improve drainage control.
- Time between pesticide applications and the next irrigation is as long as possible. Weather is tracked to determine appropriate spray days.

- Improved soil infiltration rates from amendments such as compost and gypsum, and deep ripping.
- Farm roads are graded to reduce erosion, and roads are avoided as much as possible when wet.
- Decomposed granite used on some roads.
- Pocket gopher, ground squirrel, and other rodent management.

6.11.5 The 4Rs of Nutrient Management

The 4Rs of nutrient management is a concept that can maximize crop yields while minimizing environmental impacts. The principles of the 4Rs were considered in development of this NMP and will be considered throughout the management of the LAA. The 4Rs are as follows:

- **R**ight source at the
- **R**ight rate at the
- **R**ight time and in the
- **R**ight place

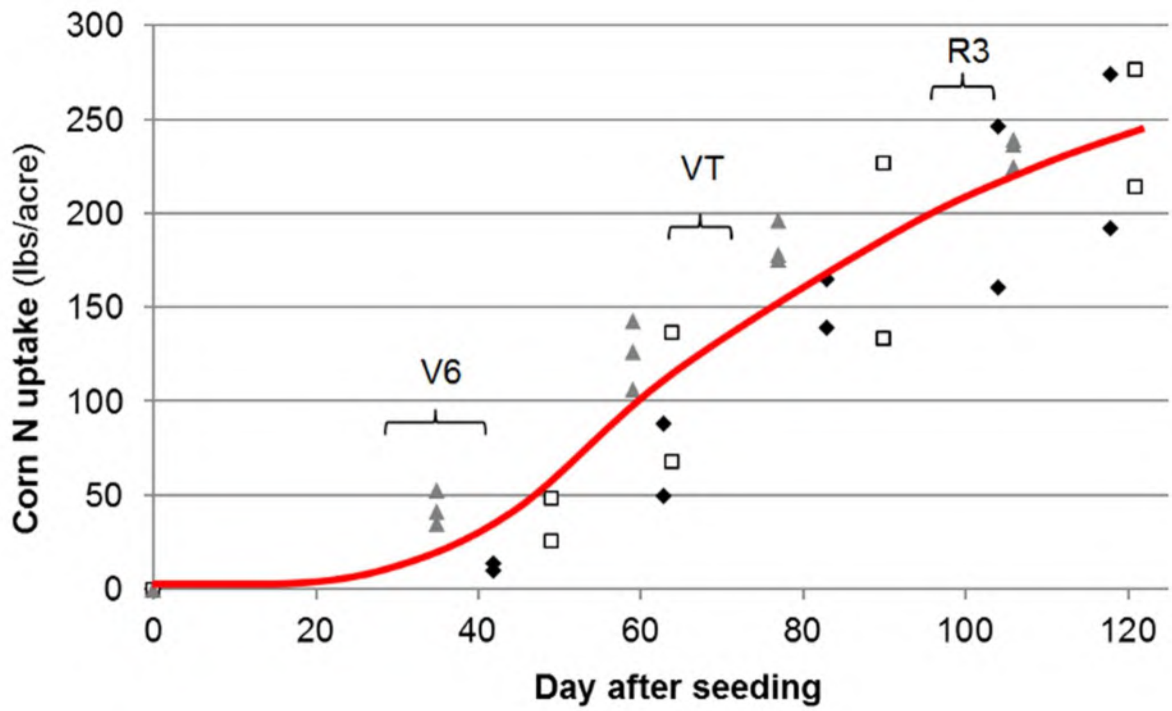
Additional California-specific information on fertilization guidelines can be found via the California Fertilization Guidelines website. Links to information about the recommended LAA crops are provided below. This information and similar sources should be used to guide nutrient management activities.

- Corn silage: http://geisseler.ucdavis.edu/Guidelines/Corn.html
- Wheat: http://geisseler.ucdavis.edu/Guidelines/Wheat.html
- Barley: http://geisseler.ucdavis.edu/Guidelines/Barley.html

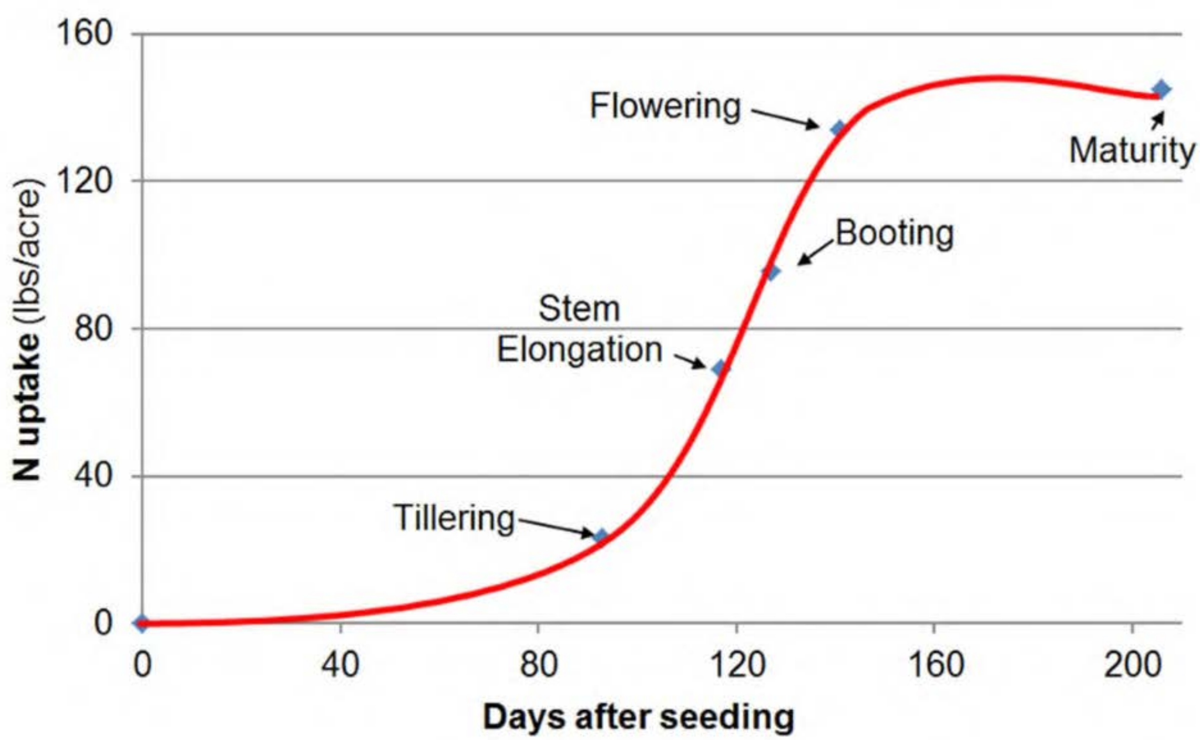
6.11.5.1 Nitrogen

Only small amounts of commercial fertilizer nitrogen should be needed on an occasional basis for the LAA crops. The effluent-, atmospheric-, soil organic matter mineralization-, and residual soil-nitrogen should generally be sufficient to sustain forage crops. Occasionally, 20 to 40 lbs/ac of a starter fertilizer such as monoammonium phosphate may be useful if the residual soil nitrogen concentrations are low, which should be determined from soil samples, farmer judgement, and CCA recommendations. Tissue samples can further guide nitrogen sufficiency evaluations. The soil-water balances (Table 7 and **Appendix E1**) evaluated the timing of nitrogen application and determined that the nitrogen should be available in the crop root zone when it is needed, and leaching is limited to only what is necessary to maintain soil salinity.

The following information from the California Fertilization Guidelines website summarizes nitrogen uptake and partitioning in the recommended LAA crops. This information is useful to time effluent applications to match crop demand:



Picture 1. Nitrogen uptake and partitioning curve for corn silage (http://geisseler.ucdavis.edu/Guidelines/N_Corn_Silage.html)



Picture 2. Nitrogen uptake and partitioning curve for wheat (http://geisseler.ucdavis.edu/Guidelines/N_Wheat.html)

6.11.5.2 Phosphorus

No phosphorus fertilizer is recommended at this time. More information on effluent phosphorus and soil phosphorus concentrations is needed to determine additional phosphorus requirements. Soil and tissue tests should guide phosphorus management. Some phosphorus (30 to 60 lbs/ac) may be applied using monoammonium phosphate when establishing new forage fields. Phosphorus can be incorporated into the top two-to-four inches of the soil surface with a double disk or applied as a band on the soil surface. Application can generally occur at any time, but applications in October through February will generally result in the best response.

6.11.5.3 Potassium

Potassium deficiency in the San Joaquin Valley is generally not an issue, but it can be diagnosed with soil and tissue tests. Potassium requirements for many crops are often similar to nitrogen requirements. The most economical source of potassium is muriate of potash (0-0-60) or potassium sulfate (0-0-52-18) if sulfur is also needed. Applications can be made at any time, but October through February will generally result in the best response. Applications can be made to the soil surface and should not exceed 200-300 pounds of K_2O per acre (166 to 249 pounds of potassium per acre).

For the LAA, potassium fertilizer is not currently recommended. Soil and tissue tests will guide potassium management, and potassium management will be routinely reevaluated as more data is collected.

6.11.5.4 7Rs of Nutrient Management and Conservation

Although the 4Rs are a great starting point, Delgado (2016) states that 4Rs are not enough and that 7Rs are needed. Delgado found that incorporating the 4Rs without considering soil and water conservation does not address soil quality, soil carbon sequestration, sustainability, and maintaining productivity. The principles of both the 4Rs and 7Rs will be considered during the management of this LAA.

6.11.6 Soil Testing

Soil testing should be completed at least once per year. Preferably, soil samples should be collected and analyzed after harvest and before planting of each crop (e.g., once in May and once in October), or presidedress. Soil testing can provide insights into nitrate and salt movement throughout the root zone, and will also be useful to track soil pH, phosphorus, potassium, and other constituents. The goal will be to generally maintain soil test phosphorus levels between 10 to 30 milligrams per kilogram (mg/kg), and soil test potassium levels between 80 to 150 mg/kg. Boron levels should be around 0.2 to 0.4 mg/kg.

6.11.7 Plant Tissue Testing

Crop samples should be collected to determine nutrient removal rates.

6.11.8 Integrated Pest Management

Integrated pest management (IPM) involves the use of all available strategies to properly manage pests, such as selecting pest resistant varieties, timing of cutting schedules, habitat modification such as strip-border cutting, use of biological controls, and careful use of pesticides when necessary. Pest management is important because pest pressures can reduce crop yield and water and nutrient use efficiency. Major forage pests may include weeds, and several diseases and insects. Preplant or postemergence herbicide applications may be necessary because weeds complete with light, moisture, and nutrients. Soil pests are not common, but can include armyworm, wireworms, white grubs, corn rootworms, and cutworms. Spider mites can also damage young plants. Of particular concern, rodents such as pocket gophers and ground squirrels must be managed to protect crop health and minimize erosion issues. A licensed California Pest Control Adviser (PCA) should develop and oversee the IPM program to minimize pest issues while also limiting pesticide use. Site specific monitoring, trapping, and development of economic thresholds will be used as necessary.

6.11.9 Water Source Protection

Effluent should not be applied within a minimum of 100 feet of any irrigation sources, such as irrigation wells and turn outs. Effluent and all chemicals shall be prevented from entering the wellhead. The link provided below provides useful wellhead protection and maintenance practices that should be utilized:

https://agmpep.com/mpep/wp-content/uploads/Wellhead_Protection_V9.pdf

7 Sampling, Analysis, and Record Keeping Plan

The following section describes the sampling and analysis program that should be utilized for this NMP. All laboratory analyses should be completed by a laboratory that is accepted in the Environmental Laboratory Accreditation Program (**ELAP**), the North American Proficiency Testing Program (**NAPT**) by the Soil Science Society of America, or laboratories whose tests are accepted by the University of California.

- Acceptable Laboratories: Analyses shall be performed by laboratories that are accepted in one or more of the following programs:
    - Environmental Laboratory Accreditation Program (ELAP), http://www.dhs.ca.gov/ps/ls/elap/elapindex.htm for appropriate categories:
    - The North American Proficiency Testing Program (NAPT) by Soil Science Society of America http://www.naptprogram.org/about/participants/
    - Laboratories whose tests are accepted by the University of California.

Recommendations provided in this NMP should not be considered regulatory requirements but practical on farm management practices.

7.1 Effluent Monitoring

Effluent samples should be collected from a sampling port from the storage pond immediately prior to irrigation of the LAA. A magnetic flow meter with a totalizer and data logger functionality should be used to monitor effluent flow. The constituents to monitor are listed below:

Frequency	**Constituent**	**Units**	**Sample Type**	**Notes**
Continuous	Flow	MGD	Flow Meter	

Weekly	pH	pH units	Grab	
Weekly	Electrical Conductivity (ECw)	µmhos/cm	Grab	
Monthly	Total Dissolved Solids (TDS)	mg/L	Grab	
Monthly	Fixed Dissolved Solids (FDS)	mg/L	Grab	
Monthly	Biochemical Oxygen Demand (BOD)	mg/L	Grab	
Monthly	Chemical Oxygen Demand (COD)	mg/L	Grab	
Monthly	Total Suspended Solids (TSS)	mg/L	Grab	
Monthly	Nitrite-Nitrogen (NO_2-N)	mg/L	Grab	
Monthly	Nitrate-Nitrogen (NO_3-N)	mg/L	Grab	
Monthly	Ammonium-Nitrogen (NH_4-N)	mg/L	Grab	
Monthly	Total Kjeldahl Nitrogen (TKN)	mg/L	Grab	
Monthly	Boron (B)	mg/L	Grab	
Quarterly	Total Organic Carbon (TOC)	mg/L	Grab	
Quarterly	General Minerals[1]	mg/L	Grab	

[1] Alkalinity (as CaCO3), bicarbonate (as CaCO3), calcium, carbonate (as CaCO3), chloride, iron, magnesium, manganese, phosphate, potassium, sodium, sulfate, zinc, and MBAS.

7.2 Supplemental Freshwater Irrigation Monitoring

All supplemental freshwater irrigation sources should be monitored for water quality twice annually, when possible and only when actively being used for irrigation. The first sample should be collected near the beginning of the irrigation season (e.g., March to May), and the second sample should be collected near the end of the irrigation season (e.g., October). Ideally, samples will be collected from a sampling port or from water going into a standpipe. Irrigation wells should run for a minimum of 30-minutes prior to sample collection. Trends in water quality results should be monitored.

Magnetic flow meters with totalizers and data logger functionality should be used to monitor flow from each source.

Frequency	**Constituent**	**Units**	**Sample Type**	**Notes**
Continuous	Flow	MGD	Flow Meter	

Twice per Year	<u>Agricultural Suitability Analysis</u> (pH, EC, Cl, B, HCO_3+CO_3, SO_4, NO_3-N, SAR, Langelier Index, Dissolved: Ca, Mg, B, Na, Fe, Mn)	mg/L	Grab	
Twice per Year	Total Dissolved Solids (TDS)	mg/L	Grab	
Twice per Year	Fixed Dissolved Solids (FDS)	mg/L	Grab	
Twice per Year	Ammonium-Nitrogen (NH_4-N)	mg/L	Grab	

7.3 Soil Monitoring

Representative soil monitoring locations should be established in each field. Soil monitoring locations should be based on soil variability, field boundaries, and other practical considerations. Soil samples should be collected using manually propelled soil augers, and each sample should be a composite of at least two bore holes. Samples should be collected from the following depths to adequate characterize the crop root zone:

- 0 to 1 foot
- 1 to 2 feet
- 3 to 4 feet
- 4 to 5 feet

Samples should ideally be collected twice per year after harvest of each crop but before planting of the next crop or just prior to any fertilization events. For example, if winter forage is harvested in late-April, soil samples should be collected soon after harvest once the field is accessible. If corn silage is harvested mid-October, soil samples should be collected soon after harvest once the field is accessible. This sampling program will provide current information on residual fertility going into each new crop. Fertility plans can be adjusted based on the soil test results, as needed.

Soil monitoring locations should be established with reasonably accurate GPS units (± 20 feet), and the same locations should be sampled each event. Trends in soil test results should be monitored, especially for less dynamic constituents such as pH, organic matter, P, and K.

It is also recommended that soil backhoe pits be excavated so that soil profile descriptions can be completed across the LAA to better understand site-specific vertical and horizontal soil variability, in addition to any soil limitations such as hard pans (duripans). Another option is to develop soil maps using the electromagnetic induction (EMI) techniques, which are fast and relatively low-cost surveys. One example of this technology can be reviewed at the Veris Technologies website (www.veristech.com). These surveys will produce detailed soil maps that will help inform site-specific management.

Frequency	**Constituent**	**Units**	**Sample Type**	**Notes**
Twice per year	<u>Standard Fertility Assay</u> (Saturation percentage, pH, EC, Ca, Mg, Na, ESP, B, gypsum requirement or lime requirement (buffer pH), NO_3-N, PO_4-P, K, Zn, Cl)	Various	Composite	
Twice per year	Organic Matter	Percent	Composite	
Twice per year	Ammonium-nitrogen (NH_4-N)	mg/kg	Composite	
Twice per year	Total Kjeldahl Nitrogen (TKN)	Mg/kg	Composite	
Twice per year	USDA NRCS Soil Texture by feel	n/a	Grab	

7.4 Crop and Plant Tissue Monitoring

The following crop information should be collected from all crops grown each season. **Only crop type, planting and harvest dates, and crop yield should be a component of regulatory monitoring reports**. Crop yield is an extremely important factor to evaluate LAA performance. Treehouse Almonds and any custom harvesters must maintain clear records of crop yield by field.

Frequency	Constituent	Units	Sample Type	Notes
Once per crop	**Crop Type (e.g., corn silage)**	**n/a**	**n/a**	
Once per crop	**Crop plant date**	**Date**	**n/a**	
Once per crop	Seed Cultivar	n/a	n/a	
Once per crop	Seeding Rate	pounds/acre	n/a	
Weekly	Crop status, growth stage, and health	n/a	Observation	
Each cutting	**Crop harvest date (all cuttings)**	**Date**	**n/a**	
Each cutting	**Crop yield (all cuttings)**	**tons/acre**	**n/a**	
Each cutting	If a crop removal sample was collected	yes/no	Composite	
Once per crop	Crop destination (e.g., buyer)	n/a		

Leaf and petiole analysis can be conducted on an as-needed basis based on farmer and Certified Crop Adviser (CCA) judgement. The following crop removal analysis should be completed:

Frequency	Constituent	Units	Sample Type	Notes
Each cutting	<u>Crop Removal Analysis</u> (moisture, N, P, K, Ash)	percent	Composite	

7.5 Land Application Area Monitoring

To adequality monitor and assess the performance of the land treatment system, comprehensive loading rate information is needed, including loading from irrigation, nitrogen, salt, and BOD.

Frequency	**Constituent**	**Units**	**Sample Type**	**Notes**
Daily	What LAA fields were irrigated with effluent	Field #s	n/a	
Daily	What LAA fields were irrigated with supplemental freshwater irrigation	Field #s	n/a	
Daily	Precipitation	inches	Rain gauge	
Daily	Hydraulic loading (all sources)	inches	Calculation	
Daily	Nitrogen loading from effluent	pounds/acre	Calculation	
Daily	Nitrogen loading from supplemental freshwater irrigation	pounds/acre	Calculation	
Daily	Nitrogen loading from fertilizers or other sources (e.g., compost, solids, sludge, etc.)	pounds/acre	Calculation	
Daily	Salt (FDS) loading from effluent	pounds/acre	Calculation	
Daily	Salt (FDS) loading from supplemental freshwater irrigation	pounds/acre	Calculation	
Daily	BOD loading from effluent	pounds/acre	Calculation	
Cycle	Cycle average BOD loading rates	pounds/acre/ cycle days	Calculation	
Daily	Visual Observations (Wind conditions, erosion, standing water, runoff, odors, insects, etc.)	n/a	n/a	
Annual	Soil-water balance (reporting annually at least on a monthly basis)	n/a	n/a	
Annual	Nitrogen mass balance	n/a	n/a	
Annual	Salt mass balance	n/a	n/a	

Annual	<u>Annual cropping plan</u> Evaluate crops to be planted for the calendar year, water and nutrient requirements, and a general plan to ensure crop yield is maximized while applying all inputs at agronomic rates.	n/a	n/a	

7.6 Annual Audit Process

The information collected according to the Sampling, Analysis, and Record Keeping Plan should be compiled into an annual LAA audit report. This report will evaluate the performance of the land treatment system and identify opportunities for process improvements in the following year. The audit should be completed by a Certified Crop Adviser (CCA) or Certified Professional Soil Scientist (CPSS). Results of the audit report should be reviewed with Treehouse Almonds, the LAA farmer, and associated staff.

8 NMP Summary

This NMP characterizes Treehouse Almonds wastewater management. Soil-water balance, a nitrogen balance, a salt loading balance, and a BOD loading plan were evaluated. The results of these calculations demonstrate that wastewater can be applied at agronomic rates. Management practices, a Sampling, Analysis, and Record Keeping Plan, and an annual audit process were recommended to manage the LAA and evaluate system performance. This NMP should be updated by a certified soil scientist and agronomist as more data becomes available or as conditions change. The recommended update frequency is every three to five years. A log of all NMP revisions should be included with all updates.

9 Salinity Control and Minimization Plan

A Salinity Control and Minimization Plan was requested by WDR R5-2018-0066 and is presented in **Appendix I**.

10 Monitoring and Reporting Program

The monitoring and reporting program will be similar to MRP R5-2018-0066 and per the recommendations of the NMP.

It is proposed to submit all monitoring reports on a quarterly basis or less, such as semi-annually. **To provide adequate time to receive laboratory results, review for quality assurance, address inconsistencies, compile all farming data, analyze all information, and develop and internally review quarterly monitoring reports, the proposed schedule for submittal of quarterly monitoring reports to the CVRWQCB is June 1 (Q1 report), September 1 (Q2 report), December 1 (Q2 report), and March 1 (Q4/annual report).**

11 References

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Appendix A – Proposed Site Map

811 Know what's below. Call before you dig.

WARNING
POWER LINES OVERHEAD

SUMMARY OF LAND USE		
#	APN #	GROSS ACRES
LAND PRODUCTION		
1	319-060-037	41.40
2	319-060-022	16.30
3	319-060-019	4.65
LAND APPLICATION		
4	318-290-005	39.24
5	318-290-006	38.95
GROSSED ACRES (OWNED)		140.54
TOTAL GROSS ACRES (LEASED)		0
PRODUCTION AREA		62.35
POND TREATMENT AREA		9.08
FARMABLE ACREAGE		
4	318-290-005	38.29
5	318-290-006	27.27
NET FARMABLE ACRES		65.56

SCALE IN FEET
0 150 300 600

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL

PROPOSED SITE

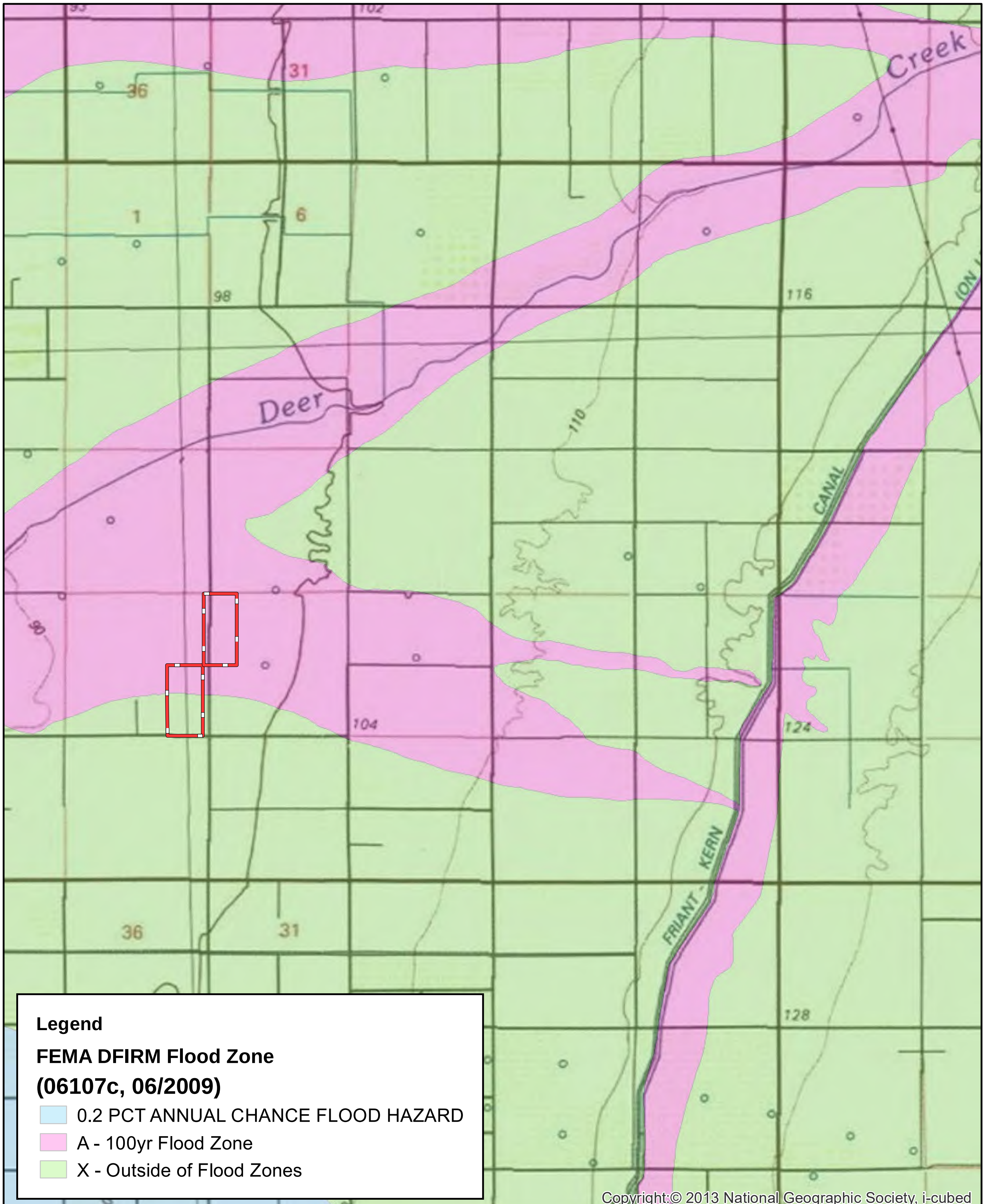
EST. 1968 PROVOST & PRITCHARD CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C2

Appendix B – FEMA Flood Maps



EST. 1968
PROVOST&
PRITCHARD
CONSULTING GROUP
An Employee Owned Company

N

0 0.25 0.5 0.75
Miles

Legend

Project Area

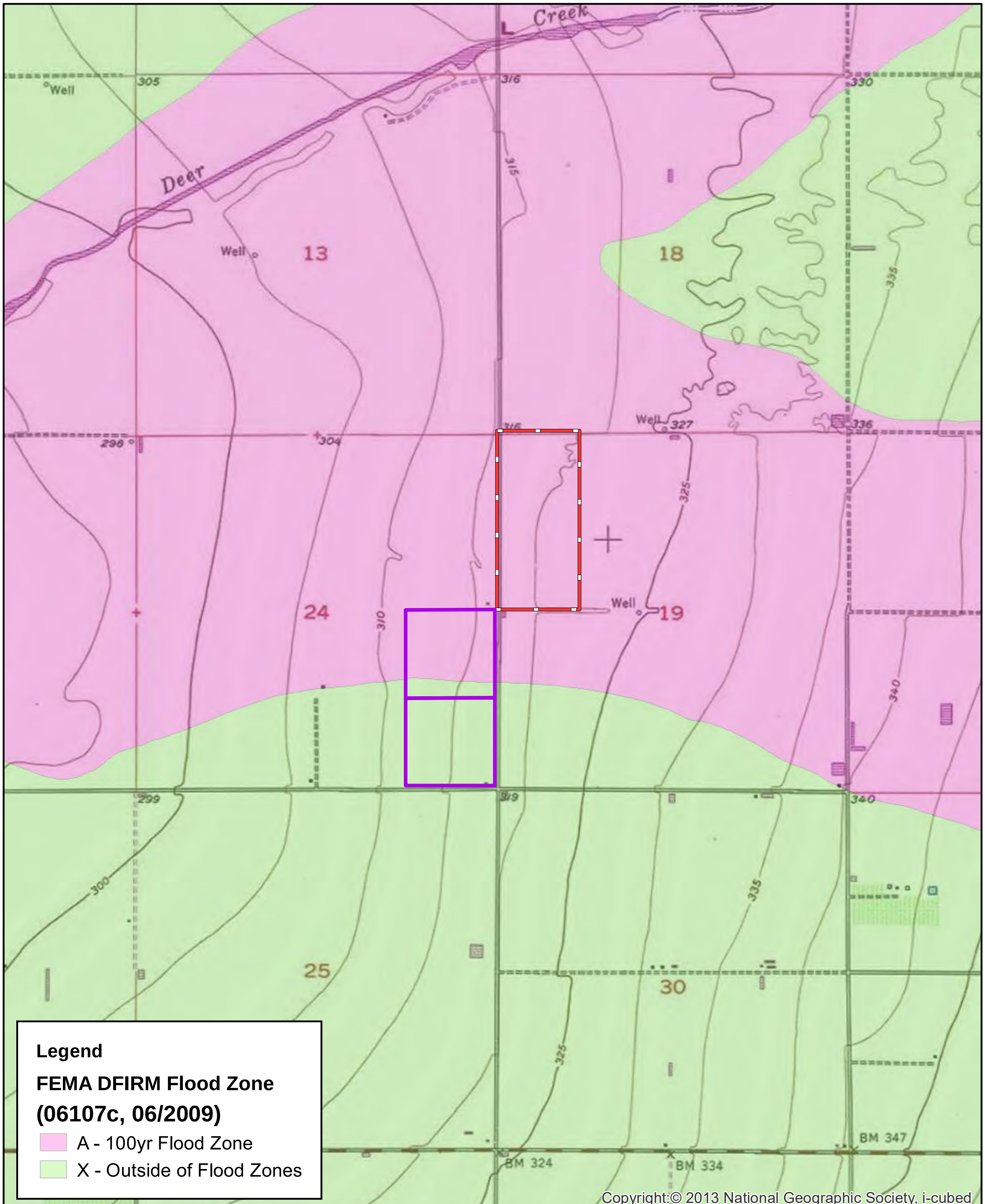
Treehouse Almonds

FEMA Flood Zone Map

FIRM Panel No.
06107C1950E

Job # 2912-19001

12/13/2022: \\ppeng.com\pzdata\clients\Treehouse CA Almonds-2912\291219001-Treatmt-Storage LD\GIS\Map\FEMA Flood Map.mxd



EST. 1968
PROVOST& PRITCHARD
CONSULTING GROUP
An Employee Owned Company

N

0 500 1,000 1,500
Feet

Legend

Project Area

New Parcels

Treehouse Almonds

FEMA Flood Zone Map

FIRM Panel No.
06107C1950E

Job # 2912-19001

12/13/2022: \\ppeng.com\pzdata\clients\Treehouse CA Almonds-2912\291219001-Treatmt-Storage LD\GIS\Map\FEMA Flood Map New Parcels.mxd

THIS LAYOUT OF THE REVISED FLOODPROOFING CERTIFICATE FOR NON-RESIDENTIAL STRUCTURES, IS PROVIDED FOR YOUR REFERENCE. THE FINAL FORM WILL BE RELEASED UPON O.M.B. APPROVAL.

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
National Flood Insurance Program

FLOODPROOFING CERTIFICATE
FOR NON-RESIDENTIAL STRUCTURES

The floodproofing of non-residential buildings may be permitted as an alternative to elevating to or above the Base Flood Elevation; however, a floodproofing design certification is required. This form is to be used for that certification. Floodproofing of a residential building does not alter a community's floodplain management elevation requirements or affect the insurance rating unless the community has been issued an exception by FEMA to allow floodproofed residential basements. The permitting of a floodproofed residential basement requires a separate certification specifying that the design complies with the local floodplain management ordinance.

BUILDING OWNER'S NAME
Treehouse California Almonds,LLC

STREET ADDRESS (Including Apt., Unit, Suite, and/or Bldg. Number) OR P.O. ROUTE AND BOX NUMBER
6914 Road 160

OTHER DESCRIPTION (Lot and Block Numbers, etc.)

FOR INSURANCE COMPANY USE

POLICY NUMBER

COMPANY NAIC NUMBER

CITY Earlimart, STATE CA. ZIP CODE 93219

SECTION I – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

Provide the following from the proper FIRM:

COMMUNITY NUMBER	PANEL NUMBER	SUFFIX	DATE OF FIRM INDEX	FIRM ZONE	BASE FLOOD ELEVATION (In AO Zones, Use Depth)
06107C	1950		6-19-2009	A	+2

Indicate elevation datum used for Base Flood Elevation shown above: ☐ NGVD 1929 ☐ NAVD 1988 ☐ Other/Source: ____

SECTION II – FLOODPROOFING INFORMATION (By a Registered Professional Engineer or Architect)

All elevations must be based on finished construction.

Floodproofing Elevation Information:

Building is floodproofed to an elevation of 318.7 feet (In Puerto Rico only: ____ . ____ meters). ☐ NGVD 1929 ☐ NAVD 1988 ☒ Other/Source: NAD83
(Elevation datum used must be the same as that used for the Base Flood Elevation.)

Height of floodproofing on the building above the lowest adjacent grade is 2.5 feet (In Puerto Rico only: ____ meters).

For Unnumbered A Zones Only:

Highest adjacent (finished) grade next to the building (HAG) 316.2 feet (In Puerto Rico only: ____ . ____ meters)
☐ NGVD 1929 ☐ NAVD 1988 ☒ Other/Source: NAD83

(NOTE: For insurance rating purposes, the building's floodproofed design elevation must be at least 1 foot above the Base Flood Elevation to receive rating credit. If the building is floodproofed only to the Base Flood Elevation, then the building's insurance rating will result in a higher premium. See the Instructions section for information on documentation that must accompany this certificate if being submitted for flood insurance rating purposes.)

Non-Residential Floodproofed Construction Certification:

I certify the structure, based upon development and/or review of the design, specifications, as-built drawings for construction and physical inspection, has been designed and constructed in accordance with the accepted standards of practice (ASCE 24-14 or its equivalent) and any alterations also meet those standards and the following provisions.

The structure, together with attendant utilities and sanitary facilities is watertight to the floodproofed design elevation indicated above, is substantially impermeable to the passage of water, and shall perform in accordance with the 44 Code of Federal Regulations (44 CFR 60.3(c)(3).

All structural components are capable of resisting hydrostatic and hydrodynamic flood forces, including the effects of buoyancy, and anticipated debris impact forces.

I certify that the information on this certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.

CERTIFIER'S NAME: Gerald A. Mele
LICENSE NUMBER (or Affix Seal): SE 2663, PE 31958

TITLE: President
COMPANY NAME: Gerald Mele & Associates, Inc

ADDRESS: 7337 N 1st Street, Suite 110
CITY: Fresno
STATE: CA
ZIP CODE: 93720

SIGNATURE
DATE
PHONE

Copies should be made of this Certificate for: 1) community official, 2) Insurance agent/company, and 3) building owner.

Appendix C – Pond Design Report

TIER 1

POND DESIGN REPORT

Prepared for

Treehouse California Almonds LLC

6914 Road 160
Earlimart, CA 93219

Tulare County

June 5, 2023

Prepared by:

PROVOST & PRITCHARD CONSULTING GROUP

400 E. Main Street, Suite 300
Visalia, CA 93291-6362
Phone: (559) 636-1166
Fax: (559) 636-1177
www.ppeng.com

2912-19-001

ENGINEERING CERTIFICATION

I have reviewed this pond design report and certify that this was prepared by me or under my responsible charge, as a registered Civil Engineer who is registered to practice in California pursuant to California law.

Signature: ______________________

Print: Edward J Caminata

Date: June 5, 2023

Limitations

Provost & Pritchard performs its services in a manner consistent with the standards of care and skill ordinarily exercised by members of the profession practicing under similar conditions in the geographic vicinity. This report was prepared in accordance with generally accepted engineering practices which existed at the time it was written. No warranty, expressed or implied, is made. This report is based on information provided to Provost & Pritchard by materials suppliers and other project subcontractors. Provost & Pritchard is not responsible for misinformation or product use, misuse or defects, and cannot warranty any work conducted by others. If any changes are implemented that materially alter the project, additional engineering services and/or Regional Water Quality Control Board approval may be required, along with revisions to the recommendations given herein.

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G. Construction Quality Assurance Plan
    1. Earthwork Construction Specifications
    2. Geosynthetic Materials Specifications

I. PROJECT DESCRIPTION

This Pond Design Report was prepared for Treehouse Almonds located at the following address.

Owner Name	Treehouse California Almonds LLC
Street Address	6914 Road 160
City/State/Zip	Earlimart CA 93219
County	Tulare

Treehouse Almonds was issued Waste Discharge Requirements (**WDR**) General Order No. R5-2018-0066. This WDR requests Treehouse Almonds either line the wastewater ponds or install monitoring wells to monitor the wastewater ponds.

Treehouse Almonds has selected to line its new ponds with two layers of HDPE liner including a leakage collection system of the primary layer. This liner system is identified as a Tier 1 liner in R5-2013-0122 the General Order for Existing Milk Cow Dairies. This design report follows the requirements outlined in that General Order.

Following screen separation, the wastewater will flow through several ponds in series. First will be two anaerobic treatment ponds of the same size, then one aerobic treatment pond, and then one storage pond. The flow process is described in the RWD.

This Pond Design Report includes plan and cross-sectional views of the ponds, discussions of on-site investigations, design criteria and specifications, a Construction Quality Assurance (CQA) Plan, local groundwater levels, and the flood zone designations in the area.

The CQA Plan (**Section VI**) shall be implemented as detailed in this Work Plan. The CQA Plan includes construction inspections, testing, record keeping, for inclusion in a final CQA Report to be submitted to the RWQCB for approval prior to pond use.

II. DESIGN CONSIDERATIONS

A. Pond Descriptions

There will be two anaerobic ponds of the same dimensions with 0.38 MG capacity each, one mechanically aerated pond of 1.28 MG capacity, and one storage pond of 17.09 MG capacity.

The proposed ponds are the following dimensions. The pond design drawings are included in **Appendix A**. Placement is a minimum of 100 feet from any wells or water bodies.

Pond ID	Length (ft)	Width(ft)	Depth(ft)	Freeboard(ft)	Slope
Anaerobic	88	88	19	2	1.75:1
Aerobic	280	87	13	2	1.75:1
Storage	466	280	27	2	2:1

To ensure drainage of potential leakage and the venting of gases from beneath the liner the floor will be sloped for the aerobic and storage ponds. The anaerobic pond floor is the size of the LCRS sump.

Floor slope is presented as percent drop and total distance dropped along the length direction, width direction, and then the summation of both directions.

	Floor Slope - Length		Floor Slope - Width		Resultant	
Pond ID	(%)	(ft)	(%)	(ft)	(%)	(ft)
Anaerobic						
Aerobic	1.50	3.52			1.50	3.52
Storage	0.50	1.86	1.50	1.25	1.58	3.11

B. Liner Design

The proposed Tier 1 pond design includes a double liner constructed with two layers of HDPE with a leakage collection and removal system (LCRS) between the two liners.

The LCRS sump is designed to be constructed in accordance with Section 20340 of Title 27 CCR. A pan lysimeter will be beneath the LCRS sump to monitor for potential leakage in the area of the secondary liner where standing water is most likely to occur during operation. A CQA Plan in accordance with Section 20323 and Section 20324 of Title 27 CCR is included as required in the General Order. Further details are outlined in **Section VI** of this report.

C. Containment Capacity

The anaerobic and aeration ponds will remain full during operation and therefore do not provide any storage volume.

To size the storage pond the following was considered. Approximately 120 days, November 1 through March 1, is a conservative wet period of the year that irrigations may not be needed to support the growing crops. This was the design storage period.

The maximum average daily wastewater generation is anticipated to be 150,000 gallons a day. The planned operations are 24 hours a day for 5 days a week with occasional weekend work. To account for potential weekend work, 6 days a week at the maximum average was used to determine needed storage capacity. For a daily basis, this is 128,570 gallons a day.

Some storm water from the plant roof and parking area will be used to augment groundwater supplied by the well for irrigations. Approximately 434,600 ft^2 of area will be collected and sent to the storage pond.

The WDR requires wastewater storage capacity to be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns. The ponds will collect any direct rainfall while the plant roof and parking area are affected by surface runoff therefore coefficients were used. Evaporation from all the ponds was considered within the storage period.

A presentation of the summary of the storage design tables and calculations are presented in **Appendix B**.

D. Groundwater Levels

The Water Quality Control Plan for the Tulare Lake Basin requires that new manure retention ponds be sited, designed, constructed, and operated to ensure that the invert of the pond will be at least 5 feet above the highest anticipated elevation of underlying groundwater. Other basins in this valley do not specify a separation distance to highest anticipated.

A review of Department of Water Resources (DWR) data was conducted to determine the highest anticipated groundwater level and is presented in the table below. State well number 23S25E12R001M just to the northwest of the facility shows a water level in excess of 200 feet below surface grade. The storage pond will be 3 feet above grade and therefore the design depth of the pond will maintain the minimum separation between the bottom of the pond and the anticipated high groundwater level.

Ground Surface to Groundwater (ft)	Pond Above Ground Surface (ft)	Pond Floor to Groundwater (ft)
200	3	176

E. Flood Zone Determination

The FEMA Flood Zones Map included as **Appendix C** identifies that these ponds are outside of an established 100-year flood zone. No flood protection is required for the ponds.

F. Geotechnical Investigation

ASR Engineering Services, Inc. prepared a Geotechnical Investigation Report for the project (Dated January 19, 2023, **Appendix D**). Their investigation concluded that the onsite soils are suitable for construction of the proposed project.

III. LINER AND LEACHATE COLLECTION SYSTEM

A double layer HDPE synthetic liner is proposed for this facility. Drawings of the liner are in **Appendix A**. Construction Specifications for earthwork and geomembrane liner are included in the Construction Quality Assurance Plan in **Appendix G**.

A. Material Specification

The geomembrane liner shall be constructed of two layers of high-density polyethylene (HDPE), with a nominal thickness shown in the table below (See **Appendix G** for material data). The material has excellent cold temperature flexibility and long-term UV resistance. It is designed to be left exposed to sunlight, and it is inert to chemicals that can cause environmental stress and cracking.

The primary layer shall be conductive material while the secondary layer shall be non-conductive. A drainage layer of HDPE Geonet will be placed between the two liners.

Venting strips of HDPE Geonet and Geotextile will be used beneath the liner. The Geonet shall meet or exceed the Geosynthetic Research Institute's (GRI) GM13 specifications.

Double Liner Layers

Description	Location	Material	Minimum Nominal Thickness	Top Finish
Primary	Top	Conductive HDPE	60 mils	Smooth
Geonet	Middle	HDPE	175 mils	N/A
Secondary	Bottom	Non-Conductive HDPE	60 mils	Smooth

Venting Strips Beneath Bottom Liner

Description	Location	Material	Minimum Nominal Thickness
Geonet/Geotextile	Below Liner	HDPE	175 mils
		Polypropylene	12 oz/yd^2

B. Pond Seepage

If constructed properly and verified with a leak check following construction, a geomembrane liner should be free of gross leakage unless subsequent damage should occur. Field leak detection equipment has the sensitivity to detect circular holes with a diameter of 1 mm.

The rate of leakage through a geomembrane liner due to geomembrane permeability is negligible when compared to the rate of leakage through manufacturing defects in the geomembrane material. Therefore, only leakage through liner defects will be considered.

The *USBR Report DS-13(20)-13, Chapter 20 – Geomembranes*, estimates that geosynthetic liners have defects about every 4,000 square meters (equivalent to about one defect per acre) with an average size of 0.1 cm^2 when a strict construction quality assurance program is implemented. Bernoulli's equation for free flow through an orifice is used to evaluate the rate of leakage through this small defect into a relatively porous medium such as a geonet. See **Appendix E** for assumptions and calculations.

Presented below are the determinations of the wetted surface of the liner, the potential number of defects for the completed primary liner, and the corresponding leakage rate based on the maximum potential of water head on the primary liner. This Potential Leakage rate will be the *Action Leakage Rate* during initial fill and normal operations as defined in the Operations & Maintenance Plan.

Using safety factor of 2, the minimum LCRS removal rate was also determined. A submersible pump in the LCRS sump which can pump more than this rate will be used. The leakage removal system is detailed in **Appendix A**.

Pond Id	Wetted Area (ac)	Potential Defects	Potential Leakage (gpm)	Minimum LCRS Flow Rate (gpm)
Anaerobic	0.2	1	0.3	0.7
Aerobic	0.5	1	0.3	0.6
Storage	2.9	3	1.2	2.5

C. Gas Venting

Upward moving gases are caused by biodegradation of organic material in the subsurface soils and from rising water-table levels that expel the air from the soil voids. Strips of venting geocomposite material can be used beneath liners to allow gases to vent above the high waterline. The liner design includes geocomposite vent strips below the secondary liner to reduce the potential for the formation of gas bubbles underneath the liner that could cause the liner to float.

Geonet material between the two layers of liner will provide any needed venting within the liner. The vents will be installed above the high-water line according to details shown in **Appendix A**, or an equivalent design approved by the Engineer.

D. Material Loading on the Anchor Trench

There is an anchor trench around the upper perimeter of the pond to anchor the liner material. The anchor trench must be sized sufficiently to support the tension forces primarily from the weight of the materials lying on the side slopes.

The anaerobic pond anchor trench is sized such that if a cover needs to be installed to control odors, the holding capacity is over twice the strength of the liner material.

Anchor trench calculations are presented in **Appendix F** following the guidance provided by *Designing with Geosynthetics, 6th Edition*. The weight of the materials on the side slopes is evaluated and is compared to the ability of the anchor trench to hold the load.

Pond ID	Trench Size (ft)		Liner Loading (plf)	Trench Hold Capacity (plf)	Material Strength (plf)
	Width	Depth			
Anaerobic	3.0	4.0	27	3,475	1,512
Aerobic	1.5	1.5	19	532	1,512
Storage	1.5	1.5	43	525	1,512

The anchor trench is typically backfilled and compacted with native soil. Details are provided in the design drawings and CQA plan (**Appendix G**).

The project engineer should be contacted for a revised anchor trench design if different materials or different thickness are to be used.

E. Liner Subgrade

Structural fill (embankments, anchor trench backfill, etc.) will be scarified, moisture conditioned, graded and compacted as indicated in the Geotechnical Report (**Appendix D**). A subgrade will be constructed in accordance with the recommendations of the Geotechnical Report and as indicated in the Construction Quality Assurance (CQA) plan in **Appendix G**.

F. Pipeline Connections

All pipes that penetrate the liner material require pipe boots or a bootless pipe penetration detail. Details are provided on the design drawings. The boots shall be made of HDPE, the same material as the liner.

A concrete collar is used below a synthetic liner pipe penetration boot to absorb the shock from flow being turned off and on in the pipeline. Typically, pond inlet and outlet pipes in the design have open discharges and thrust is expected to be negligible. Therefore, installing a concrete thrust block is considered unnecessary, but may be done at the owner or contractor's option. If a pressurized inlet or outlet pipe is to be installed, the engineer should be contacted for thrust block design.

G. Seepage Collection and Removal System

A leakage collection and removal system (constructed in accordance with Section 20340 of Title 27) is included between the primary and secondary liners. Additionally, a pan lysimeter will be installed below the secondary liner.

The pond will be equipped with a gravel-lined leak detection monitoring sump located between the primary and secondary HDPE liners in the low spot on of the secondary liner (**Appendix A** shows the location of the sump and details the LCRS system). A perforated pipe is located within the gravel sump and extends from the sump to above grade.

The Pan Lysimeter will be located directly below the secondary liner and LCRS. It will also be lined with the HDPE lining material (**Appendix A** shows the location of the sump and details the Pan Lysimeter). This sump area below the secondary liner will also be backfilled with washed gravel. A perforated pipe is located within the gravel sump and extends from the sump to above grade and next to the LCRS pipe.

Both of these leakage collection sumps and removal pipes provide access for monitoring and removal of liquid from the sumps. The LCRS systems are designed to accept submersible pumps for pumping leakage out of the sump.

H. Slope Stability

Slope stability analysis was conducted in the Geotechnical Investigation (**Appendix D**). The report concluded that the embankment slopes will have a static and a pseudo-static factor of safety greater than 1.5.

The contractor is responsible for providing safe working conditions with respect to slope stability during construction.

I. Geomembrane Strength

Designing with Geosynthetics, 6th Edition, provides assumptions for soil to geomembrane friction angles and design stress calculations for the geomembrane (see **Appendix F**). The soil to geomembrane friction angle, combined with the anchor trench, will provide a stable design for the geomembrane. The HDPE material selected will be adequate to handle the loading and design stresses.

J. Safety

The pond design presented in this Work Plan does not include several safety features that could be beneficial. These items are recommended; however, the dairy owner will add these safety features at the owner's discretion. These include fencing around the entire pond area (a minimum of 20 feet clear of the edges of any ponds for Mosquito Abatement District access), warning signs, life rings, lifelines, poles, ropes, boats and ladders.

Single-sided textured HDPE liner material could also be used with the textured side facing up on the primary layer to provide a less slippery surface at the owner's option.

IV. GROUNDWATER MODELING AND GROUNDWATER MONITORING

The liner system proposed by this design report is a Tier 1 or double liner system. Groundwater modeling and monitoring is therefore not required for this design.

V. SCHEDULE FOR CONSTRUCTION

A construction time schedule will be determined after contractors and suppliers have been contacted and materials ordered, and delivery dates are understood. Near the completion of the earthwork and a timely schedule of the geomembrane liner installation can be determined, a Liner Preconstruction Meeting will be scheduled at least 48 hours in advance of the meeting. Attendees at minimum will include the CQA officer, installer, contractor, and geotechnical engineer. The RWQCB will be notified at this time also.

VI. CONSTUCTION QUALITY ASSURANCE PLAN

Construction Quality Assurance (CQA) Specifications for Earthwork and Geomembrane Liner are included in **Appendix G**.

Upon completion of the proposed ponds, a Post-Construction Report will be prepared under the responsible charge of the project CQA Officer, a third-party California Registered Civil Engineer or Engineering Geologist working directly for the facility owner. This report shall include the results of testing data, along with a statement that the liner was installed in accordance with the approved CQA Plan based on the CQA Officer's observations and test results. This will be the CQA Officer's professional opinion that the ponds have been constructed in accordance with the specifications contained in this Work Plan.

VII. OPERATION AND MAINTENANCE PLAN

Treehouse will be responsible for all maintenance after the ponds have been constructed. Regularly scheduled inspections and timely maintenance by personnel experienced with installation and repair of geosynthetic materials are important for a waste storage pond.

An Operations & Maintenance Manual will detail startup procedures, normal operations, and normal maintenance, including rodent control.

If the ponds require cleaning, precautions need to be taken to prevent contact of the cleaning equipment with the liner material. A cleaning service with experience in cleaning ponds with geosynthetic materials will be required. Further information is provided in the Operations & Maintenance Manual.

APPENDIX A

Project Construction Drawings

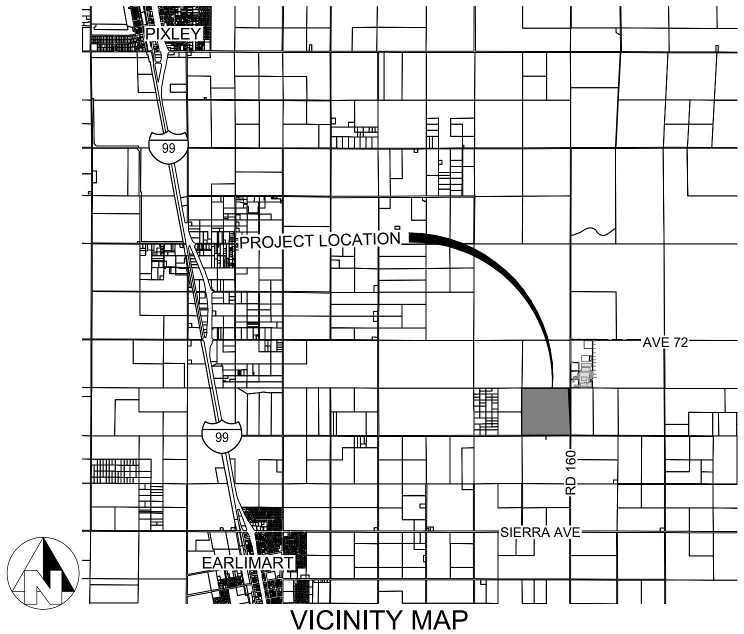
811
Know what's below.
Call before you dig.

WARNING
POWER LINES
OVERHEAD

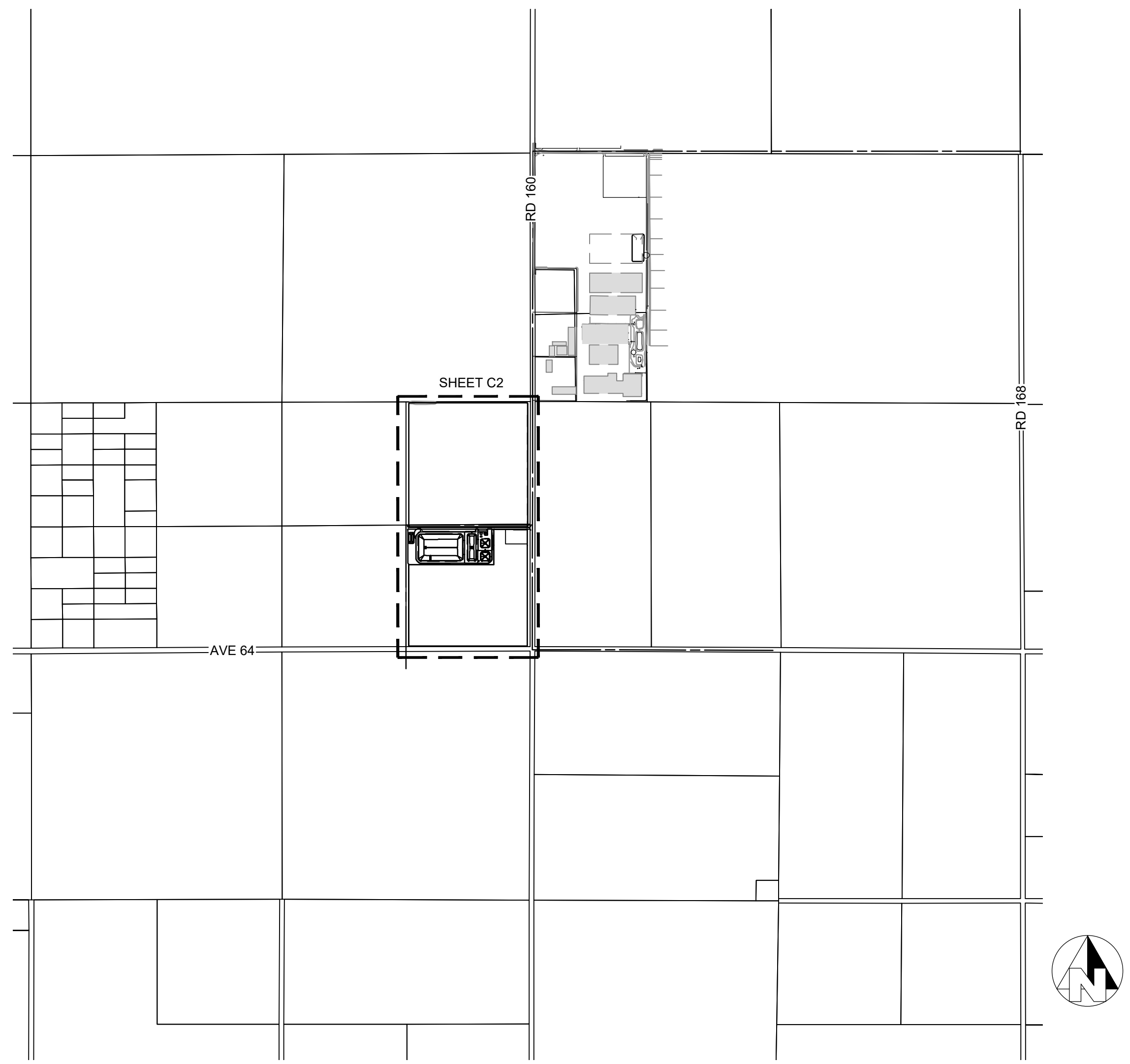
TREEHOUSE CALIFORNIA ALMONDS

EARLIMART, CA

WASTEWATER TREATMENT AND STORAGE SYSTEM



VICINITY MAP
NOT TO SCALE



SITE MAP
NOT TO SCALE

GENERAL NOTES

1. USED MATERIAL, REJECTS, MISFITS, OR SECONDS, ETC. ARE NOT ACCEPTABLE FOR USE ON FACILITIES.
2. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THESE PLANS, PROJECT SPECIFICATIONS.
3. CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING FACILITIES PRIOR TO COMMENCING WORK. CALL UNDERGROUND SERVICE ALERT (USA) AT 8-1-1. CONTRACTOR SHALL MAKE ENGINEER AWARE OF ANY DISCREPANCIES.
4. THE COUNTY SHALL INSPECT ALL WORK PHASES ON CONCRETE FACILITIES FOR CONFORMANCE TO COUNTY SPECIFICATIONS. REINFORCING SHALL NOT BE ENCASED IN CONCRETE WITHOUT PRIOR COUNTY INSPECTIONS. LIKEWISE, CONCRETE SHALL NOT BE COVERED WITH EARTH PRIOR TO COUNTY INSPECTION.
5. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE HEALTH AND SAFETY LAWS OF THE STATE OF CALIFORNIA AND CAL/OSHA STANDARDS.
6. CONTRACTOR WILL BE RESPONSIBLE FOR THE REPAIR OF ALL PIPELINE CRACKS, WHICH DEVELOP DURING CONSTRUCTION OF IMPROVEMENTS AFFECTING EXISTING FACILITIES.
7. ALL EXCESS MATERIAL AND/OR DEBRIS SHALL BE REMOVED UPON COMPLETION OF INSTALLATION.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE DUST CONTROL AT ALL TIMES.

PREPARATION FOR RAINFALL EVENTS

THE GRADING CONTRACTOR SHALL BE RESPONSIBLE FOR RAINWATER REMOVAL PRIOR TO LINER INSTALLATION. THE LINER INSTALLER SHALL BE RESPONSIBLE FOR RAINWATER REMOVAL AFTER LINER INSTALLATION HAS COMMENCED. IF THE SOIL LINER LAYER IS PARTIALLY COMPLETE, BOTH PARTIES WILL WORK TOGETHER TO REMOVE RAINWATER AND MINIMIZE THE EFFECT ON THE INSTALLED LINER. A TSURUMI MODEL LB-800 (1HP, 60 FT HEAD, 80 GPM) PUMP IS RECOMMENDED.

GRADING NOTES (SEE SUBGRADE SPECIFICATION FOR DETAILS)

1. ALL EARTHWORK FOR THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH THESE DRAWINGS, GEOTECH REPORT AND SUBGRADE SPECIFICATION & TABLES. THE SUBGRADE SPECIFICATION & TABLES FOR THIS PROJECT HAVE BEEN UPDATED TO INCLUDE FINDINGS OF THE GEOTECH REPORT.
2. A REPRESENTATIVE OF THE FIRM WHO PREPARED THE GEOTECHNICAL INVESTIGATION REPORT SHOULD BE PRESENT DURING SITE CLEARING AND GRADING FILL OPERATIONS (MINIMUM) TO TEST AND OBSERVE EARTHWORK CONSTRUCTION. THE GEOTECHNICAL ENGINEER MAY REJECT ANY MATERIAL THAT DOES NOT MEET COMPACTION AND STABILITY REQUIREMENTS SET FORTH IN THE GEOTECHNICAL REPORT.
3. A GPS MODEL OF THE BASIN AND GPS PERIMETER STAKES WILL BE PROVIDED PRIOR TO CONSTRUCTION START. CONSTRUCTION PLANS TAKE PRECEDENCE OVER GPS FILE FOR ANY GRADING DISCREPANCIES. GPS GRADING FILE IS A CONSTRUCTION AID ONLY.
4. WORK WILL BE COORDINATED WITH THE LINER INSTALLER TO PREPARE CENTER TRENCH AND LCRS SUMP.
5. ALL PIPE PENETRATIONS NEED TO BE PLACED AT FINAL CONTOURS, TEMPORARILY CAPPED AND BACKFILLED. CONNECTING THE REMAINDER OF THE PIPE SYSTEMS WILL BE COMPLETED AFTER LINER INSTALLATION.
6. ANCHOR TRENCH TAILINGS NEED TO BE BLADED DOWN FOR LINER INSTALLER. TAILINGS TO BE USED FOR BACKFILL OF ANCHOR TRENCH.

GENERAL LINER INSTALLATION NOTES (SEE LINER SPECIFICATION FOR DETAILS)

1. ALL LINER INSTALLATION WORK FOR THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH THESE DRAWINGS AND LINER INSTALLATION SPECIFICATION & TABLES.
2. GEOSYNTHETIC MATERIALS USED MUST MEET OR EXCEED GEOSYNTHETIC RESEARCH INSTITUTES'S (GRI) GM13 SPECIFICATIONS.
3. THE ENGINEER RESERVES THE RIGHT TO INSPECT THE MATERIALS AND WORKMANSHIP AT ANY TIME. MATERIALS OR WORKMANSHIP FOUND NOT CONFORMING TO THE DRAWINGS OR SPECIFICATION MAY BE REJECTED.
4. LINER INSTALLER SHALL HAVE ONE PERSON ON CREW ASSIGNED TO RECORD CONSTRUCTION QUALITY DATA. LINER INSTALLER SHALL PERFORM TESTING OF CONDUCTIVE LINER AFTER INSTALLATION.

SPECIAL NOTE

WHERE UNDERGROUND AND SURFACE STRUCTURES ARE SHOWN ON THE PLANS, THE LOCATIONS, DEPTH AND DIMENSIONS OF STRUCTURES ARE BELIEVED TO BE REASONABLY CORRECT, BUT ARE NOT GUARANTEED. SUCH STRUCTURES ARE SHOWN FOR THE INFORMATION OF THE CONTRACTOR, BUT INFORMATION SO GIVEN IS NOT TO BE CONSTRUED AS A REPRESENTATION THAT SUCH STRUCTURES WILL, IN ALL CASES, BE FOUND WHERE SHOWN, OR THAT THEY REPRESENT ALL OF THE STRUCTURES WHICH MAY BE ENCOUNTERED.

SITE SAFETY AND PROTECTION NOTES

THE DUTY OF THE ENGINEER, OWNER OR ITS AGENTS TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE AND THE UNDERTAKING OF INSPECTIONS OR THE GIVING OF INSTRUCTIONS AS AUTHORIZED HEREIN IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES IN, ON, OR NEAR THE CONSTRUCTION SITE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF THE ACTUAL CONSTRUCTION NOR MAKE THE ENGINEER, OWNER OR ITS AGENTS RESPONSIBLE FOR PROVIDING A SAFE PLACE FOR THE PERFORMANCE OF WORK BY THE CONTRACTOR, SUBCONTRACTORS, OR SUPPLIERS, OR FOR ACCESS, VISITS, USE, WORK, TRAVEL OR OCCUPANCY BY ANY PERSON.

THE CONTRACTOR SHALL HAVE AT THE WORK SITE, COPIES OR SUITABLE EXTRACTS OF CONSTRUCTION SAFETY ORDERS, ISSUED BY CAL-OSHA. CONTRACTOR SHALL COMPLY WITH PROVISIONS OF THESE AND ALL OTHER APPLICABLE LAWS, ORDINANCES AND REGULATIONS. THE CONTRACTOR MUST COMPLY WITH PROVISIONS OF THE SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION, PROMULGATED BY THE SECRETARY OF LABOR UNDER SECTION 107 OF THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT, AS SET FORTH IN TITLE 29 C.F.R.

TO PROTECT THE LIVES AND HEALTH OF CONTRACTOR'S EMPLOYEES UNDER THE CONTRACT, THE CONTRACTOR SHALL COMPLY WITH ALL PERTINENT PROVISIONS OF THE "MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION" ISSUED BY THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA, INC., AND SHALL MAINTAIN AN ACCURATE RECORD OF ALL CASES OF DEATH, OCCUPATIONAL DISEASE, AND INJURY REQUIRING MEDICAL ATTENTION OR CAUSING LOSS OF TIME FROM WORK, ARISING OUT OF AND IN THE COURSE OF EMPLOYMENT OR WORK UNDER THE CONTRACT.

THE CONTRACTOR ALONE SHALL BE RESPONSIBLE FOR THE SAFETY, EFFICIENCY, AND ADEQUACY OF CONTRACTOR'S FACILITIES, APPLIANCES, AND METHODS AND FOR ANY DAMAGE, WHICH MAY RESULT FROM THEIR FAILURE OR THEIR IMPROPER CONSTRUCTION, MAINTENANCE OR OPERATION.

THE CONTRACTOR AGREES THAT IT SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER, PROVOST & PRITCHARD CONSULTING GROUP, AND THEIR RESPECTIVE AGENTS HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF OWNER, ENGINEER, OR THEIR RESPECTIVE AGENTS.

THE OWNER AND ITS AGENTS' SITE RESPONSIBILITIES ARE LIMITED SOLELY TO THE ACTIVITIES OF THEIR EMPLOYEES ON SITE. THESE RESPONSIBILITIES SHALL NOT BE INFERRED BY ANY PARTY TO MEAN THAT THE OWNER OR ITS AGENTS HAVE RESPONSIBILITY FOR SITE SAFETY. SAFETY IN, ON, OR ABOUT THE SITE IS THE SOLE AND EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR ALONE. THE CONTRACTOR'S METHODS OF WORK PERFORMANCE, SUPERINTENDENCE AND THE CONTRACTOR'S EMPLOYEES, AND SEQUENCING OF CONSTRUCTION ARE ALSO THE SOLE AND EXCLUSIVE RESPONSIBILITIES OF THE CONTRACTOR ALONE.

TOPOGRAPHY NOTE

TOPOGRAPHY SHOWN WAS COLLECTED BY PROVOST AND PRITCHARD CONSULTING GROUP DURING A FIELD SURVEY CONDUCTED IN JULY, 2019 UNDER THE DIRECTION OF TIMOTHY M. ODOM, PLS 8468.

BOUNDARY NOTE

THE BOUNDARY/EASEMENT INFORMATION SHOWN ON THESE PLANS IS BASED UPON RECORD INFORMATION TIED TO PHYSICAL MONUMENTS, AND WAS PREPARED UNDER THE DIRECTION OF TIMOTHY M. ODOM, PLS 8468.

BASIS OF BEARINGS

THE CALIFORNIA COORDINATE SYSTEM OF 1983, ZONE 4, AS ESTABLISHED LOCALLY BY GPS OBSERVATIONS.

BENCHMARKS

PROJECT BENCHMARK
A 3/4" IRON PIPE WITH A PLASTIC PLUG STAMPED "SURVEY CONTROL", SET FLUSH IN THE GROUND AT THE NORTHEAST CORNER OF THE FENCED PORTION OF THE SITE, 4' SOUTH AND 4' WEST OF A FENCE CORNER.
ELEVATION = 313.31' NAVD88 DATUM

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

FOR CONSTRUCTION
6/7/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
GENERAL
COVER

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET 1
1 OF 36

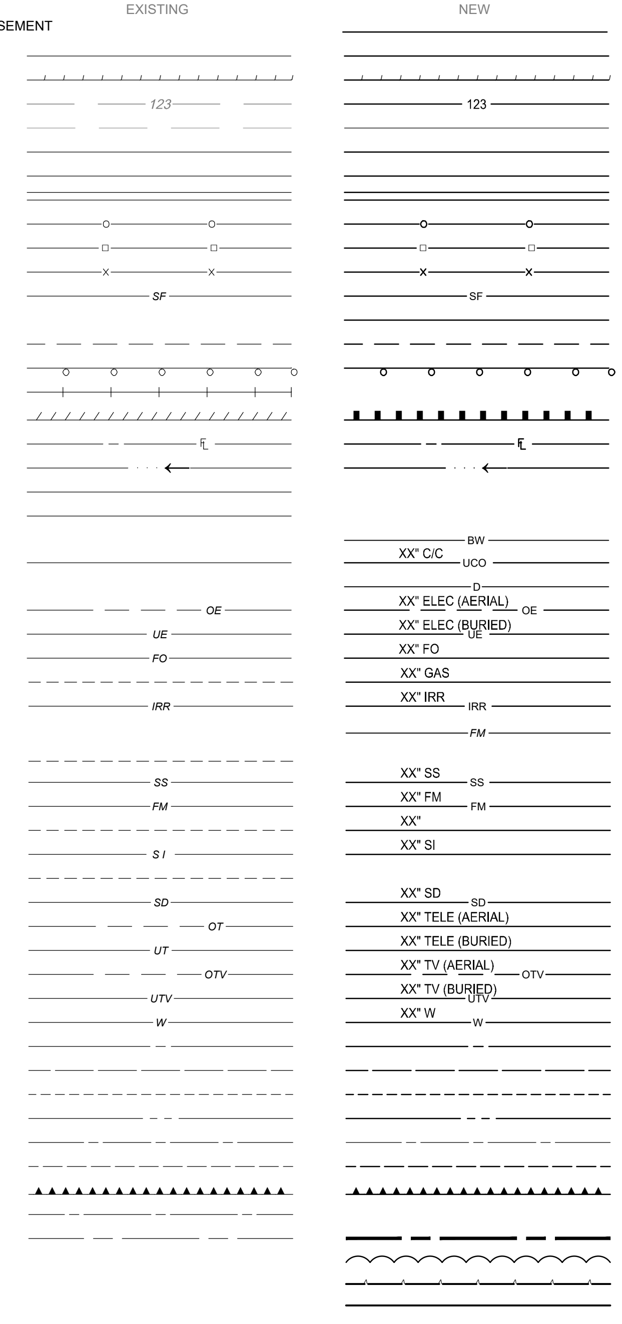
ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
ACP	ASBESTOS-CEMENT PIPE
AD	ALUMINUM DISK
AGG	AGGREGATE
AH	AHEAD
ALT	ALTERNATE
AP	ANGLE POINT
APPROX	APPROXIMATE
APN	ASSESSOR'S PARCEL NUMBER
ARV	AIR RELIEF VALVE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AV	AIR VENT
AVE	AVENUE
AWWA	AMERICAN WATER WORKS ASSOCIATION
BAR	BARRIER
BC	BEGIN CURVE
BD	BRASS DISK
BFP	BACKFLOW PREVENTER
BK	BACK
BLDG	BUILDING
BM	BENCHMARK
BO	BOLLARD
BTM	BOTTOM
BVC	BEGIN VERTICAL CURVATURE
BW	BACK OF WALK
BWL	BACK OF WALL
BWR	BARB WIRE
C, CONC	CONCRETE
CA	CALIFORNIA
CAB	CABINET
CBL	CABLE
CFS	CUBIC FEET PER SECOND
C&G	CURB & GUTTER
CHK	CHECK
CHLK	CHAIN LINK
CI	CAST IRON
CIP	CAST IRON PIPE
CIPCP	CAST-IN-PLACE CONCRETE PIPE
CL	CLASS
CLVT	CULVERT
℄	CENTERLINE
CLF	CHAIN LINK FENCE
CLR	CLEAR, CLEARANCE
CMLC	CEMENT MORTAR LINED & COATED
CMP	CORRUGATED METAL PIPE
CN	CONCRETE NAIL
CNS	COMPACTED NATIVE SOIL
CO	SEWER CLEAN OUT
CONT	CONTINUOUS
CONST	CONSTRUCT/CONSTRUCTION
COR	CORNER
CORP	CORPORATION
COL	COLUMN
COUP	COUPLING
CP	CONTROL POINT
CR	CROWN
CU	CUBIC
CY	CUBIC YARDS
DA	DRIVE APPROACH
DEC	DECIDUOUS
DEMO	DEMOLISH/DEMOLITION
DI	DROP INLET
DIA, Ø	DIAMETER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
D/S	DOWNSTREAM
DW	DRIVEWAY
DWG	DRAWING
(E)	EXISTING, EAST
EA	EACH
EC	END CURVE
ECC	ECCENTRIC
EF	EACH FACE
EG	EXISTING GRADE
EL, ELEV	ELEVATION
ELC	EPOXY LINED & COATED
ELEC	ELECTRIC
ELL	ELBOW
EM	ELECTRIC METER
EOL	END OF LINE
EP	EDGE OF PAVEMENT
EQUIV	EQUIVALENT
ESMT	EASEMENT
EUC	EUCALYPTUS
EVC	END VERTICAL CURVE
EW	EACH WAY
EXP	EXPOSED
(F)	FUTURE
F&I	FURNISH & INSTALL
FD	FOUND
FDC	FIRE DEPARTMENT CONNECTION
FF	FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL, FL	FLOW LINE
FLG	FLANGE
FLGD	FLANGED
FM	FORCE MAIN
FNC	FENCE
FRP	FIBER REINFORCED POLYESTER PIPE
FT	FOOT/FEET
FW	FRONT OF WALK
FWL	FACE OF WALL
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GB	GRADE BREAK
GM	GAS METER
GPM	GALLONS PER MINUTE
GRVL	GRAVEL
GS	GAS
GSV	GAS VALVE
GUY	GUY WIRE
GV	GATE VALVE
HD	HEAD
HDPE	HIGH DENSITY POLYETHYLENE
HDR	HEADER
HDW	HEADWALL
HGL	HYDRAULIC GRADE LINE
HORIZ	HORIZONTAL
HP	HINGE POINT, HIGH POINT, HORSEPOWER
HP GAS	HIGH PRESSURE GAS
HPS	HIGH PRESSURE SWITCH
HR	HANDRAIL
H/T	HUB & TACK
HWL	HIGH WATER LEVEL
HYDRO	HYDROPNEUMATIC
ID	INSIDE DIAMETER
IN	INCH
INV	INVERT
IP	IRON PIPE
IRR	IRRIGATION
JP	JUNCTION POLE
LBS	POUNDS
LC	LENGTH OF CURVE
LCW	LONG CRESTED WEIR
LF	LINEAR FEET
LG	LONG
LT	LEFT
LPG	LIQUEFIED PETROLEUM GAS
MAX	MAXIMUM
MB	MAILBOX
MCC	MOTOR CONTROL CENTER
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MN	MAG NAIL
MP	MEDIUM PRESSURE GAS LINE
MPT	MALE PIPE THREAD
MRKR	MARKER
MS	MILD STEEL
(N)	NORTH
NAVD	NORTH AMERICAN VERTICAL DATUM
NC	NORMALLY CONSOLIDATED
NGVD	NATIONAL GEODETIC VERTICAL DATUM
NIC	NOT IN CONTRACT
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OP	OPERATING
OSHA	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
O&M	OPERATIONS & MAINTENANCE
(P)	PROPOSED
PB	PULL BOX
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCC	PORTLAND CEMENT CONCRETE
PE	PERMANENT EASEMENT
PER	PERIMETER
PI	POINT OF INTERSECTION
PIP	PLASTIC IRRIGATION PIPE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PL	PROPERTY LINE
PNL	PANEL
POC	POINT ON CURVE
POL	POINT ON LINE
POT	POINT ON TANGENT
PP	POWER POLE
PRC	POINT OF REVERSE CURVATURE
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVCC	POINT OF VERTICAL COMPOUND CURVATURE
PVMT	PAVEMENT
PVRC	POINT OF VERTICAL REVERSE CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
RBR	REBAR
RC	RADIUS OF CURVE
RCP	REINFORCED CONCRETE PIPE
RD	RELATIVE DENSITY
RD	ROAD
RE	REFERENCE
REQD	REQUIRED
RET	RETURN
REV	REVISION
RGRCP	RUBBER GASKETED REINFORCED CONCRETE PIPE
RGS	RIGID GALVANIZED STEEL
RP	RADIUS POINT
RR	RAILROAD
RT	RIGHT
RTU	REMOTE TERMINAL UNIT
R/W	RIGHT OF WAY
(S)	SOUTH, SOLVENT WELD
S	SLIP
S=	SLOPE
SCH	SCHEDULE
SCP	STANDARD CONCRETE PIPE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SEC	SECTION
SERV	SERVICE
SF	SQUARE FEET
SP	SERVICE POLE
SPEC	SPECIFICATION
SPNDL	SPINDLE
SQ	SQUARE
SS	SANITARY SEWER
SS OR STS	STAINLESS STEEL
SSMH	SANITARY SEWER MANHOLE
STA	STATION
STD	STANDARD
STL	STEEL
STP	STAND PIPE
STRC	STRUCTURE
STRP	STRIPING
SWL	SWALE
STWL	STILLING WELL
(T)	THREADED
T	THREAD
T&B	TOP & BOTTOM
TB	TOP OF BANK
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TCE	TEMPORARY CONSTRUCTION EASEMENT
TDI	TENSILE DUCTILE IRON
TELE	TELEPHONE
TF	TOP OF FOOTING
TFC	TOP FACE OF CURB
TG	TOP OF GRATE
TH	THREAD
TL	TOP OF LINING
TOE	TOE OF SLOPE
TOP	TOP OF SLOPE
TP	TELEPHONE POLE
TR	TELEPHONE RISER
TRANS	TRANSFORMER
TRFC	TRAFFIC
TS	TOP OF STRUCTURE
TSB	TELEPHONE SPLICE BOX
TYP	TYPICAL
TWL	TOP OF WALL
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
UP	UTILITY POLE
UT	UTILITY
U/S	UPSTREAM
VCP	VERIFIED CLAY PIPE
VERT	VERTICAL
VG	VALLEY GUTTER
VLT	VAULT
VLV	VALVE
(W)	WEST
W	WATER
WL	WATER LINE
WM	WATER METER
WS	WATER SERVICE
WV	WATER VALVE
WW	WASTE WATER
W/	WITH
W/O	WITHOUT

LINETYPES

LINETYPE

EXISTING NEW

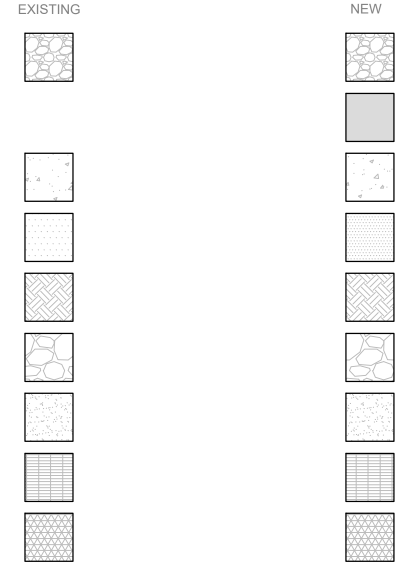


DESCRIPTION

- WATER LEVEL
- BARRICADE
- CONTOUR (DEPRESSION)
- CONTOUR (MAJOR)
- CONTOUR (MINOR)
- EMBANKMENT TOE
- EMBANKMENT TOP
- FENCE (BLOCK WALL)
- FENCE (CHAIN LINK)
- FENCE (WOOD)
- FENCE (WIRE)
- FENCE (SILT)
- GATE SWING
- GRADE BREAK
- GUARDRAIL
- RAILROAD
- RETAINING WALL
- SWALE CENTERLINE
- SWALE W/FLOW ARROWS
- WATER (LAKE/POND)
- WATER (MARSH/SWAMP)
- BLOWER PIPE
- COMPUTER/COMM. (BURIED)
- DRAIN PIPE
- ELECTRIC (AERIAL)
- ELECTRIC (BURIED)
- FIBER-OPTIC
- GAS
- IRRIGATION
- MIXING PIPE
- OIL
- SANITARY SEWER
- SANITARY SEWER FORCE MAIN
- SANITARY SEWER LATERAL
- SIGNAL INTERCONNECT (BURIED)
- STEAM
- STORM DRAINAGE
- TELEPHONE (AERIAL)
- TELEPHONE (BURIED)
- TELEVISION (AERIAL LINE)
- TELEVISION (BURIED LINE)
- WATER
- CENTERLINE
- EASEMENT
- MEANDER LINE
- PROPERTY LINE
- RESERVATION/PARK/FOREST
- RIGHT-OF-WAY
- RELINQUISH ACCESS LINE
- SECTION LINE
- STATE/COUNTY/CORPORATE LIMIT
- REVISION CLOUD
- SAWCUT LINE
- DEMO LINE
- WORK LIMITS

HATCH TYPE

EXISTING NEW



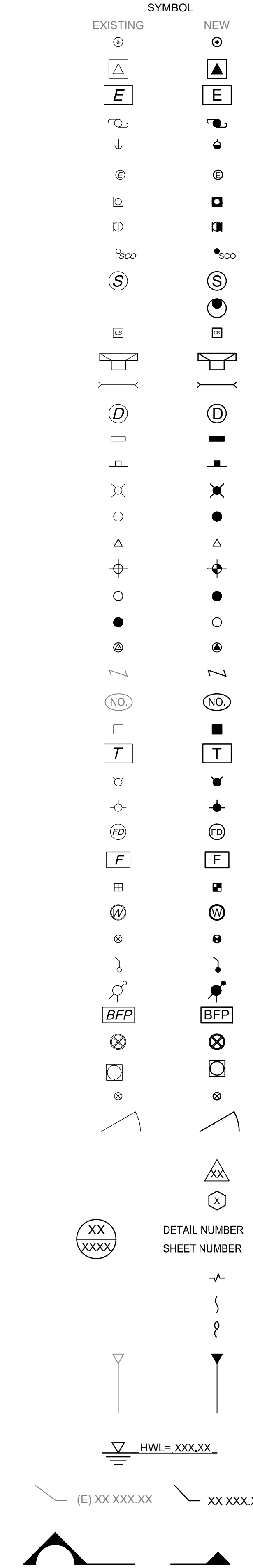
DESCRIPTION

- AGGREGATE
- AC PAVEMENT
- CONCRETE
- CONCRETE LINING (PLAN VIEW)
- EARTH
- RIP RAP
- SAND
- GRATING
- EXPANDED METAL

SYMBOLS

SYMBOL

EXISTING NEW



DESCRIPTION

- ELECTRIC METER
- PAD MOUNTED TRANSFORMER
- ELECTRIC VAULT
- UTILITY POLE
- UTILITY POLE ANCHOR
- ELECTRIC MANHOLE
- GAS METER
- GAS VALVE
- SANITARY SEWER CLEAN OUT
- SANITARY SEWER MANHOLE
- SSMH (ECCENTRIC CONE)
- STORM DRAIN CATCH BASIN
- STORM DRAIN INLET
- STORM DRAIN CULVERT
- STORM DRAIN MANHOLE
- MAIL BOX
- SIGN
- YARD LIGHT
- GUARD POST
- CONTROL POINT
- BENCH MARK
- IRON PIPE
- MONUMENT
- MONUMENT (OPTIONAL)
- OWNERSHIP TIE
- LOT NUMBER
- TELEPHONE RISER
- TELEPHONE VAULT
- 2-NOZZLE HYDRANT
- 3-NOZZLE HYDRANT
- FIRE DEPT. CONNECTION
- FIRE VAULT
- WATER METER
- WELL
- WATER VALVE
- BLOW-OFF
- AIR RELIEF VALVE
- BACK FLOW PREVENTOR
- GATE VALVE HANDLE
- STILLING WELL
- FENCE POST
- FENCE GATE
- REVISION
- CONSTRUCTION CALLOUT
- DETAIL CALLOUT
- LINE BREAK
- PIPE END (SCHEMATIC)
- PIPE END
- EMBANKMENT ARROW
- HIGH WATER LINE
- SPOT ELEVATION
- SECTION

SCALE IN FEET

0 X X X

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
GENERAL

LEGEND & ABBREVIATIONS

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET 2
2 OF 36

6/7/2023 11:35 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\01_General\TREATMENT POND SET\2 LEGEND & ABBREVIATIONS.dwg -Evan Freitas

GRADING NOTES

1. THE GRADING CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR GRADING THE SITE SUCH THAT ALL SOIL CONSTRAINTS ARE MET.
2. IF EXPANSIVE CLAY SOIL CONDITIONS EXIST, THE CONTRACTOR MUST CONSULT WITH THE SOILS ENGINEER FOR SUBGRADE REQUIREMENTS AND COORDINATE EARTHMOVING OPERATIONS TO ENSURE THAT APPROVED SUBGRADE MATERIALS ARE RESERVED IN SUFFICIENT QUANTITIES TO ACCOMMODATE CONCRETE FOOTINGS AND SLABS.
3. ALL CONCRETE FOOTINGS AND SLABS SHALL BEAR UPON AND/OR PENETRATE INTO UNDISTURBED SOIL OR COMPACTED SOIL: EACH SOIL SHALL HAVE A MINIMUM IN-PLACE DENSITY OF 90% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AT THE PROJECT SITE (SEE GEOTECHNICAL REPORT).
4. EXCAVATION AND GRADING TO BE DONE PER 2022 CBC, APPENDIX CHAPTER J.

FOUNDATION NOTES

1. FOUNDATION WORK TO BE DONE PER 2022 CBC, CHAPTER 18.
2. ENGINEERING DESIGN OF FOUNDATION IS BASED ON:
   SOILS INVESTIGATION REPORT NUMBER: 12-22108
   DATE WHEN SOILS REPORT WAS PREPARED: JANURARY 19, 2023
   DATE WHEN SOILS REPORT WAS REVISTED: JANURARY 19, 2023
   NAME OF SOILS ENGINEER COMPANY: ASR ENGINEERING INC.
   PHONE NUMBER OF SOILS ENGINEER: (559) 271-5260
3. NOTIFY THE SOILS ENGINEER FOR INSTRUCTIONS PRIOR TO CONTINUING WORK SHOULD ANY UNUSUAL CONDITIONS BECOME APPARENT DURING GRADING OR FOUNDATION EXCAVATION. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE RECOMMENDATIONS OUTLINED IN THE SOILS REPORT. THE SOILS ENGINEER SHOULD BE RETAINED TO OBSERVE FOUNDATION EXCAVATIONS PRIOR TO PLACEMENT OF REINFORCING STEEL OR CONCRETE TO ASSESS WHETHER THE ACTUAL CONDITIONS ARE COMPATIBLE WITH THE CONDITIONS ANTICIPATED DURING THE PREPARATION OF THE REPORT.
4. UNLESS NOTED OTHERWISE, FOUNDATION REINFORCEMENT SHALL HAVE 3" CONCRETE COVER.

CONCRETE SCHEDULE

SITE AREA	THICKNESS	REINFORCEMENT	NOTES
DRYING PAD / COMMODITY SLAB	6"	UNREINFORCED WITH CONTROL JOINTS PER ACI/PCA	5,6
DRIVE LANES	6"	UNREINFORCED WITH CONTROL JOINTS PER ACI/PCA	1,6
FEED LANES/WALK LANES	5"	UNREINFORCED WITH CONTROL JOINTS PER ACI/PCA	1,6
TRANSFER LANES	4"	UNREINFORCED WITH CONTROL JOINTS PER ACI/PCA	1,6
SIDEWALKS	3 1/2"	UNREINFORCED WITH CONTROL JOINTS PER ACI/PCA	--
TANKER PADS	5 1/2"	#5 @ 18" O.C.	4,5,6
PARKING AREAS	5"	UNREINFORCED WITH CONTROL JOINTS PER ACI/PCA	--
BUILDINGS/STRUCTURAL CONCRETE	AS SPECIFIED	AS SPECIFIED	--
SAND LANE CONCRETE	**5 1/2"**	**#5 @ 18" O.C.**	4,5,6
PEBBLE LANE CONCRETE	**6"**	**#5 @ 18" O.C.**	
SEPARATION BASINS/WEEPING WALLS	AS SPECIFIED	AS SPECIFIED	--
WASH AREA/DEAD ANIMAL AREA	6"	UNREINFORCED WITH CONTROL JOINTS PER ACI/PCA	--
ROADS	6"	UNREINFORCED WITH CONTROL JOINTS PER ACI/PCA	2,3,6

NOTES:
1. MINIMUM THICKNESS
2. RECOMMENDED THICKNESS
3. PROVIDE 12" THICK AGGREGATE BASE.
4. SLAB REINFORCING IS TO BE PLACES BETWEEN THE CENTER AND 2" BELOW THE TOP OF THE SLAB UNLESS NOTED OTHERWISE.
5. FILL SAWCUT JOINTS WITH A SEMI RIGID EPOXY.
6. SEE GEOTECHNICAL REPORT FOR SUBGRADE PREPARATION.

IMPORTANT: CONCRETE SLABS ARE NOT TO BE PLACED ON EXPANSIVE SOIL. AN EXPANSIVE SOIL CONDITION **AUTOMATICALLY VOIDS** THIS DESIGN. IN CASE OF EXPANSIVE SOILS, CONSULT WITH THE SOILS ENGINEER.

CONCRETE NOTES

1. ALL CONCRETE FOOTINGS AND SLABS SHALL BEAR UPON AND/OR PENETRATE INTO UNDISTURBED SOIL OR COMPACTED SOIL: EACH SOIL SHALL HAVE A MINIMUM IN-PLACE-DENSITY OF 90% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AT THE PROJECT SITE (SEE GEOTECHNICAL REPORT). IN CASE OF EXPANSIVE CLAY SOIL CONDITION THE CONTRACTOR MUST CONSULT WITH THE GEOTECHNICAL ENGINEER AND THE FOUNDATION PLAN MUST BE APPROVED BY THE GEOTECHNICAL ENGINEER.
2. ALL FORMED CONCRETE SHALL BE THOROUGHLY CONSOLIDATED WITH A VIBRATOR OPERATING AT NO LESS THEN 4,500 VIBRATIONS PER MINUTE.
3. ALL CONCRETE SHALL CONSIST OF TYPE II PORTLAND CEMENT, FINE AGGREGATE, COARSE AGGREGATE, AND WATER (WATER:CEMENT RATIO SHALL NOT EXCEED 0.45 ABSOLUTE BY WEIGHT, AND SLUMP SHALL NOT EXCEED 4 INCHES) TO YIELD AT 28 DAYS A MINIMUM COMPRESSIVE STRENGTH AS FOLLOWS:

PAVING, NON-STRUCTURAL SLABS, AND SIDEWALKS	2500 PSI
SAND & PEBBLE LANE SLABS	4000 PSI
SAND & PEBBLE LANE WALLS	4000 PSI
STRUCTURAL CONCRETE	4000 PSI

4. SECONDARY (CRACK CONTROL) REINFORCEMENT OF CONCRETE SLABS SHALL BE 1.5 LBS OF FIBERMESH PER CUBIC YARD OF CONCRETE.
5. PROVIDE CONTROL JOINTS IN UNREINFORCED SLABS PER PCA GUIDELINES:
6. ALL CONCRETE SLAB COLD JOINTS AND PIPE PENETRATIONS REQUIRE BENTONITE STRIP WATER STOP.
7. ALL CAST-IN-PLACE CONCRETE STRUCTURES SHALL BE FORMED INSIDE AND OUT AND CONCRETE VIBRATED SUFFICIENTLY TO PROVIDE FOR SMOOTH SURFACED WALLS/FLOORS WITHOUT VOIDS AND HONEYCOMBS.

CONTROL JOINT SPACING (FT)

SLAB THICKNESS (IN)	SLUMP 4 TO 6 IN.		SLUMP LESS THAN 4 IN.
	MAXIMUM-SIZE AGGREGATE LESS THAN 3/4"	MAXIMUM-SIZE AGGREGATE 3/4" AND LARGER	
5	10	13	15
6	12	15	18
7	14	18	21
8	16	20	24
9	18	23	27
10	20	25	30

REINFORCING STEEL NOTES

1. ALL REBAR SHALL BE GRADE 60.
2. SPLICES MADE IN REINFORCING STEEL SHALL BE LAPPED 50 DIAMETERS WITH A MINIMUM OF 28".
3. ALL REINFORCING STEEL SHALL HAVE 3" MINIMUM COVER. (UNLESS OTHERWISE NOTED)
4. SLAB REINFORCING IS TO BE LOCATED IN THE CENTER OF THE SLAB, UNLESS NOTED OTHERWISE.

SPECIAL INSPECTION NOTES

1. THE CONTRACTOR SHALL NOTIFY THE OWNER 48 HOURS BEFORE PLACEMENT OF REINFORCING STEEL AND CONCRETE SO THAT THE SUBGRADE OF EXCAVATIONS MAY BE INSPECTED BY THE GEOTECHNICAL ENGINEER. THE GEOTECHNICAL ENGINEER SHALL VERIFY BACKFILL MATERIAL, BACKFILLING PROCEDURES AND SOIL COMPACTION TESTS.
2. STRUCTURAL OBSERVATION SHALL BE PROVIDED BY THE DESIGN ENGINEER(S) OF RECORD OR THEIR AUTHORIZED REPRESENTATIVES IN ACCORDANCE WITH CBC 2022, SECTION 1704. STRUCTURAL OBSERVATION SHALL CONSIST OF SITE VISITS AT INTERVALS APPROPRIATE TO THE STAGE OF CONSTRUCTION TO OBSERVE CONSTRUCTION IN PROGRESS AND REVIEW OF TESTING AND INSPECTION REPORTS FOR GENERAL COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS RELATING TO THE STRUCTURAL WORK AND THE NONSTRUCTURAL COMPONENTS AND EQUIPMENT ANCHORAGE.
3. SPECIAL INSPECTION IN ACCORDANCE WITH CBC 2022 SECTIONS 1704 & 1705, SHALL BE REQUIRED AS INDICATED IN THE SPECIAL INSPECTION AND TESTING SCHEDULE ON THIS SHEET.
4. ALL SPECIAL INSPECTIONS REQUIRED MUST BE BY APPROVED INDEPENDENT INSPECTORS WHO SHALL BE RETAINED BY THE OWNER. INSPECTORS SHALL SUBMIT THEIR REPORTS DIRECTLY TO THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. THESE INSPECTORS ARE IN ADDITION TO ANY REQUIRED TULARE COUNTY INSPECTIONS. CONTRACTOR SHALL COORDINATE INSPECTIONS AND ALLOW ACCESS FOR THE SPECIAL INSPECTOR TO PERFORM REQUIRED INSPECTIONS.

SPECIAL INSPECTION & TESTING SCHEDULE

SPECIAL INDEPENDENT INSPECTIONS SHALL BE REQUIRED FOR:
(CHECK ALL THAT APPLY)

1. CONCRETE & REINFORCING
   INSPECTIONS PER CBC 2022 TABLE 1705.3
   EXCEPTIONS:
   [ ] 2,500 PSI OR TYPE E CONCRETE
   [ ] CONCRETE FOOTING FOR BUILDING 3 STORIES OR LESS
   [ ] NON-STRUCTURAL CONCRETE SLABS
2. BOLTS INSTALLED IN CONCRETE/MASONRY
   [ ] ALL BOLTS
   [ ] LOCATION: SEPARATOR PEDESTAL
3. SOILS AND DEEP FOUNDATIONS
   INSPECTIONS PER CBC 2022 SECTIONS 1705.6, 1705.7 & 1705.8
4. MECHANICAL & ELECTRICAL COMPONENTS
   INSPECTIONS PER CBC 2022 SECTIONS 1705.12.6

STEEL NOTES

1. ALL EXPOSED STEEL SHALL BE PAINTED WITH A MINIMUM OF ONE (1) COAT OF RUST INHIBITIVE PRIMER AFTER BEING THOROUGHLY CLEANED OF ALL LOOSE SCALE AND RUST, OR BE GALVANIZED.

PIPE NOTES

1. GRAVITY PIPE INVERTS TAKE PRECEDENCE OVER PRESSURE PIPE INVERTS. IN CASE OF CONFLICTS, LOWER OR RAISE PRESSURE PIPE TO PROVIDE 12" CLEAR DISTANCE BETWEEN PIPES.
2. ALWAYS MAINTAIN MINIMUM 2' OF COVER FOR BURIED PIPE UNLESS NOTED OTHERWISE.
3. WASTEWATER PRESSURE LINES TO BE PVC PIPE SDR 32.5. GRAVITY LINES TO BE PVC PIPE SDR 41. HDPE PIPE THAT PENETRATES THE POND LINERS SHALL BE SDR 17.
4. WASTEWATER PVC PIPE ABOVE GRADE SHALL BE PAINTED. CONFIRM COLOR SELECTION WITH THE OWNER.
5. BLOWER HEADER PIPE AND RISER TO BE BLACK STEEL.
6. THRUST RESTRAINTS TO BE PROVIDED AT ALL UNDERGROUND PIPELINE BENDS, WHETHER OR NOT SHOWN ON THE PLANS.
7. TRENCH BACKFILL AND RESERVOIR EMBANKMENTS SHALL BE COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS AND THE GEOTECHNICAL REPORT CONTAINED IN THE SPECIFICATIONS.

WARNING
POWER LINES OVERHEAD

811
Know what's **below.**
Call before you dig.

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
GENERAL
NOTES

PROVOST & PRITCHARD CONSULTING GROUP
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https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA | CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET 3

WARNING
POWER LINES OVERHEAD

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SCALE IN FEET
0 150 300 600

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
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REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

CIVIL

EXISTING SITE

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DESIGN ENGINEER:
E. CAMINATA
LICENSE NO:
88473

DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C1

6/7/2023 11:36 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C1 EXISTING SITE.dwg -Evan Freitas

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WARNING
POWER LINES
OVERHEAD

SUMMARY OF LAND USE		
#	APN #	GROSS ACRES
LAND PRODUCTION		
1	319-060-037	41.40
2	319-060-022	16.30
3	319-060-019	4.65
LAND APPLICATION		
4	318-290-005	39.24
5	318-290-006	38.95
GROSSED ACRES (OWNED)		140.54
TOTAL GROSS ACRES (LEASED)		0
PRODUCTION AREA		62.35
POND TREATMENT AREA		9.08
FARMABLE ACREAGE		
4	318-290-005	38.29
5	318-290-006	27.27
NET FARMABLE ACRES		65.56

SCALE IN FEET
0 150 300 600

FOR CONSTRUCTION
6/7/2023

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PROPOSED SITE

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JOB NO: 291219001
PROJECT NO: 291219001
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0 1"
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SHEET C2

6/7/2023 11:36 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C2 PROPOSED SITE.dwg -Evan Freitas

PLN
C3

WARNING
POWER LINES OVERHEAD

811
Know what's below.
Call before you dig.

SCALE IN FEET
0 30 60 120

FOR CONSTRUCTION
6/7/2023

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STATE OF CALIFORNIA
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WASTEWATER TREATMENT AND STORAGE SYSTEM
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EARLIMART, CA
CIVIL

PROPOSED FACILITY

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https://provostandpritchard.com/

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LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
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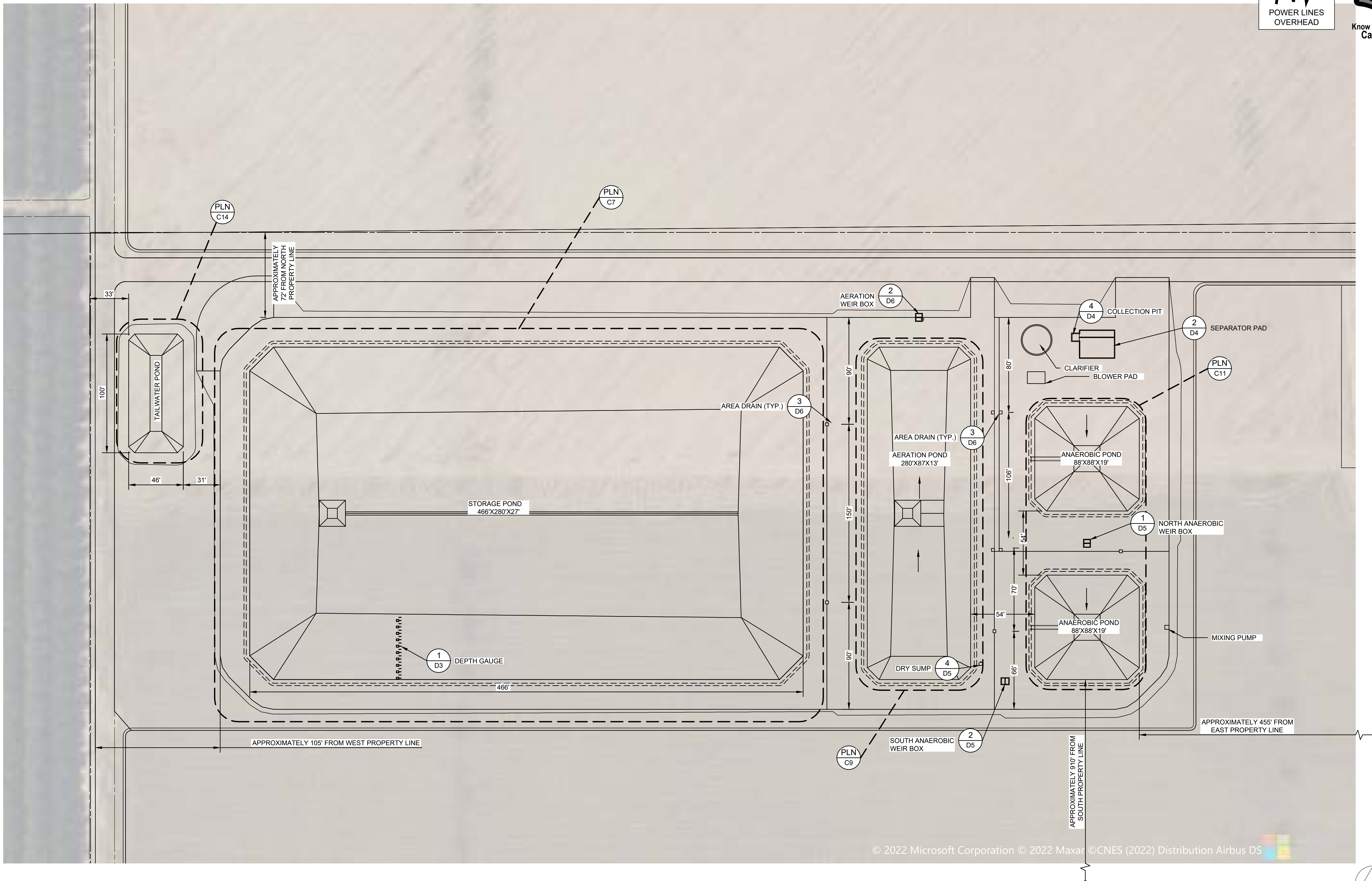
SHEET C3
6 OF 36

6/7/2023 11:36 AM g:\treehouse ca almonds-2912\291219001-treatmt+storage fd\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C3 PROPOSED FACILITY.dwg Evan Freitas

WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.



SCALE IN FEET
0 20 40 80

PLN
C4

No.	REVISION	BY	DATE
	FOR REVIEW 6/7/2023		

FOR REVIEW ONLY

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

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PROPOSED PONDS

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CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
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SHEET C4
7 OF 36

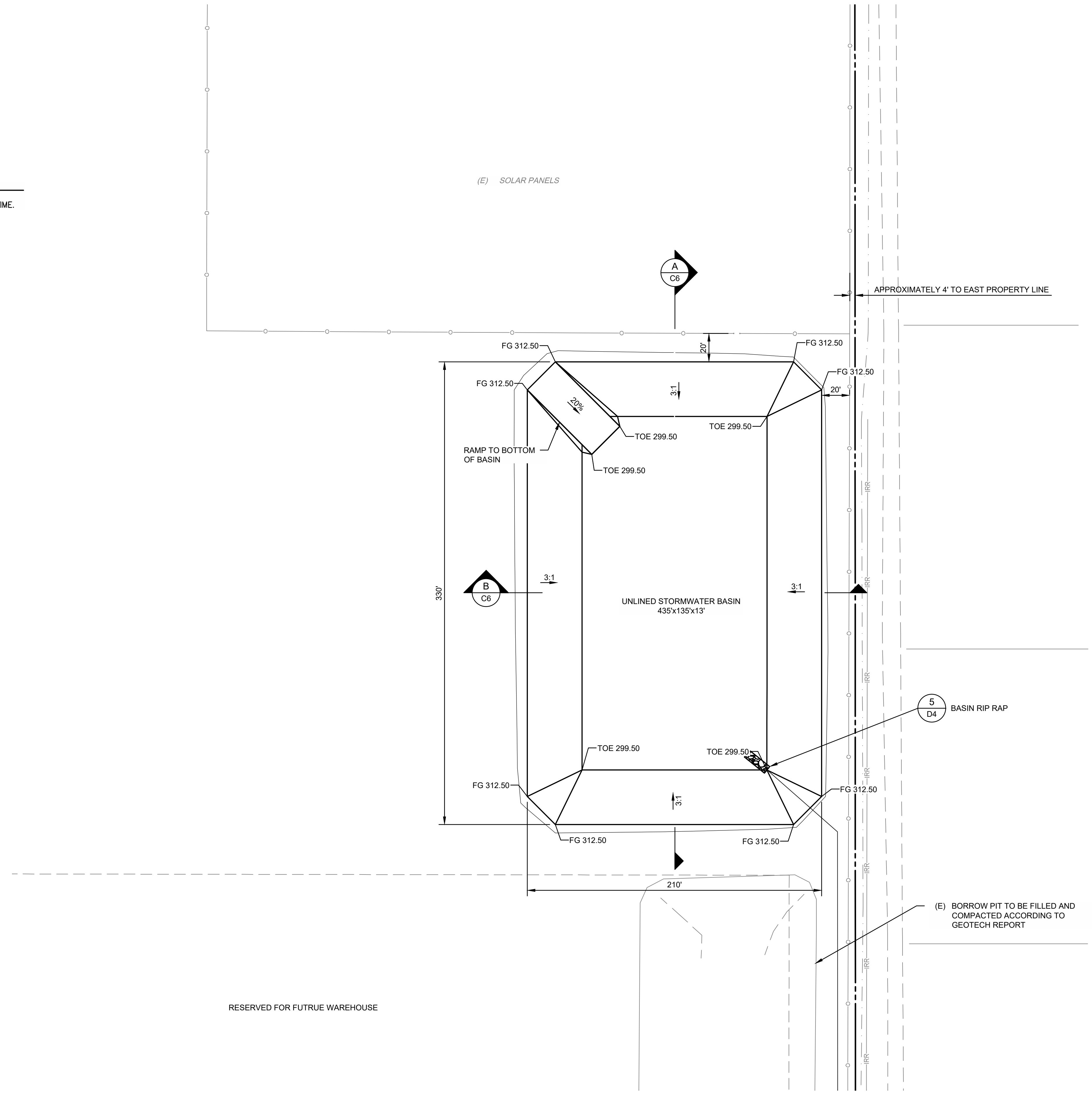
Know what's below. Call before you dig.

WARNING
POWER LINES OVERHEAD

STORMWATER POND GRADING CUT/FILL SUMMARY		
CUT/FILL FACTOR		CU. YD.
1.0	CUT	22409.51
1.2	FILL	120.76
	NET (CUT)	22288.75

NOTES

1. SIZE OF BORROW PIT IS UNKNOWN AT THIS TIME.



PLN
C5

SCALE IN FEET
0 20 40 80

FOR CONSTRUCTION
6/7/2023

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DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
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STORM BASIN PLAN

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DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
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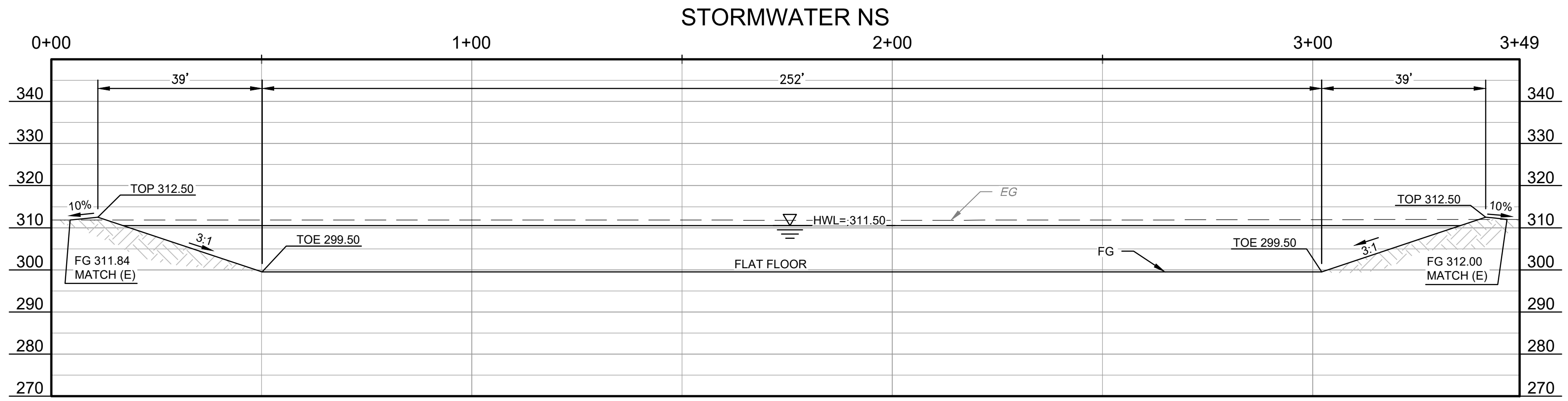
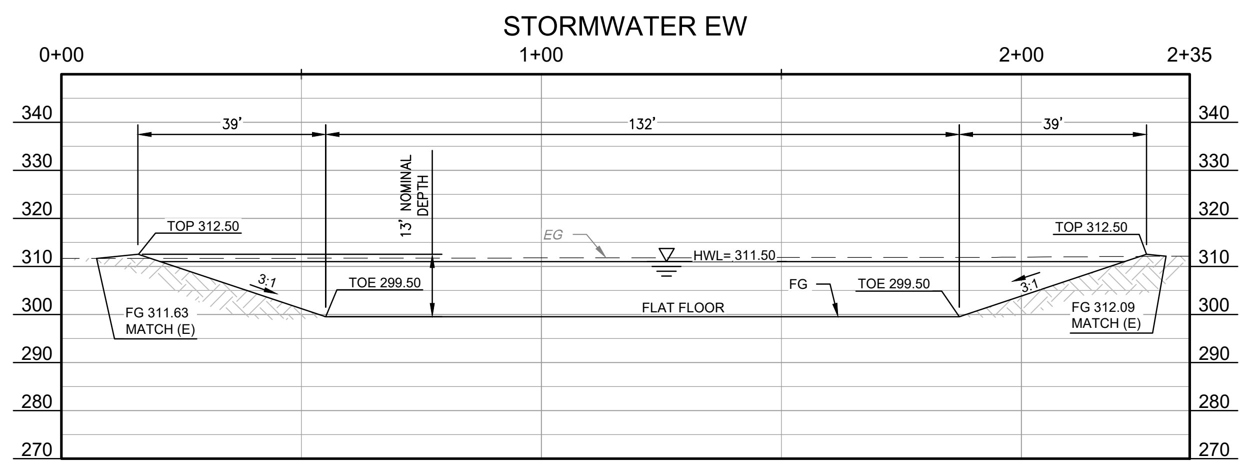
SHEET C5

8 OF 36



A
C6

POND PROFILE VIEW



B
C6

POND CROSS SECTION VIEW

WARNING
POWER LINES
OVERHEAD

811
Know what's below.
Call before you dig.

HATCH LEGEND

EXISTING EARTH

FINISHED EARTH

SCALE IN FEET
0 10 20 40

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
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STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL

STORM BASIN SECTION VIEW

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NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
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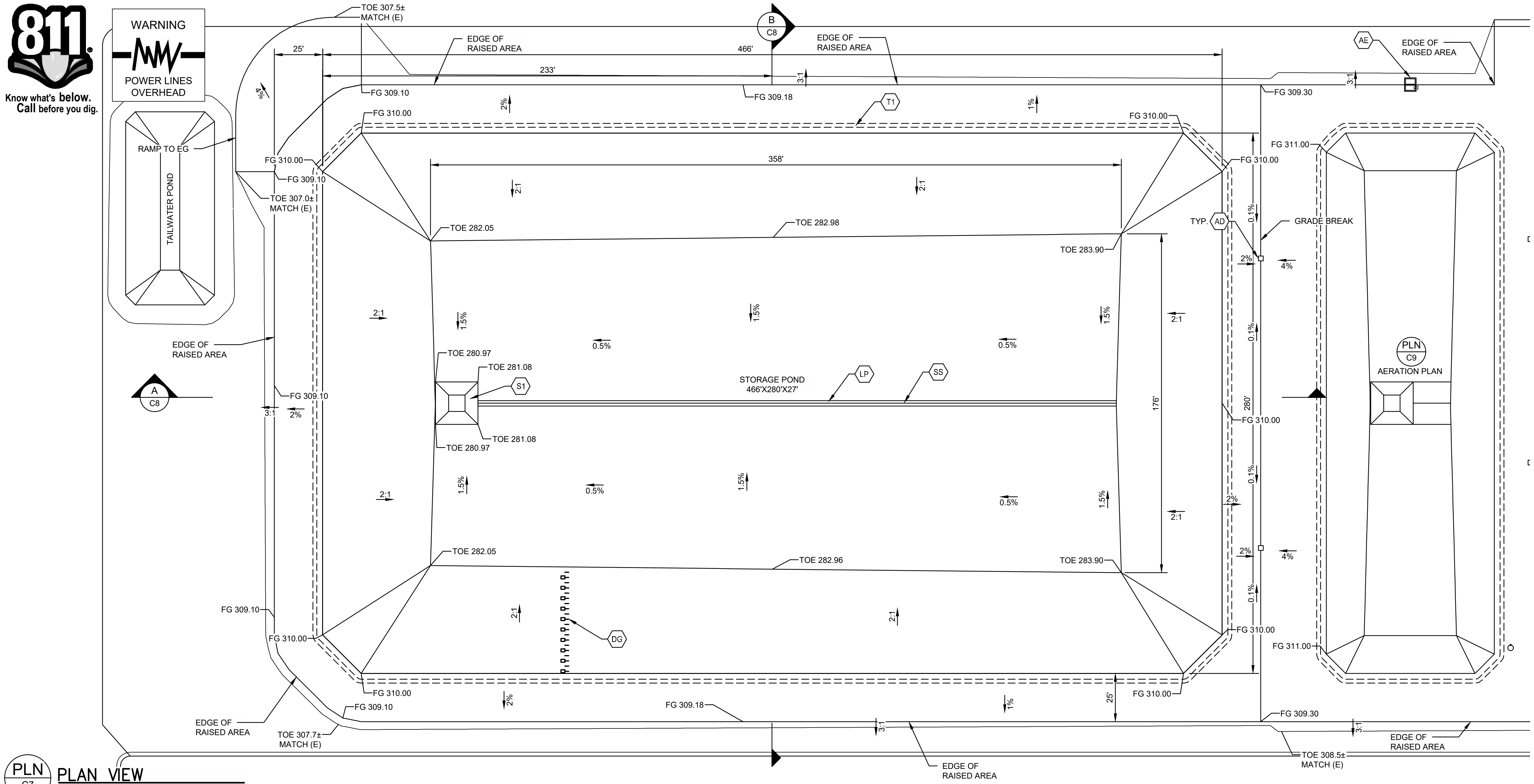
SHEET C6



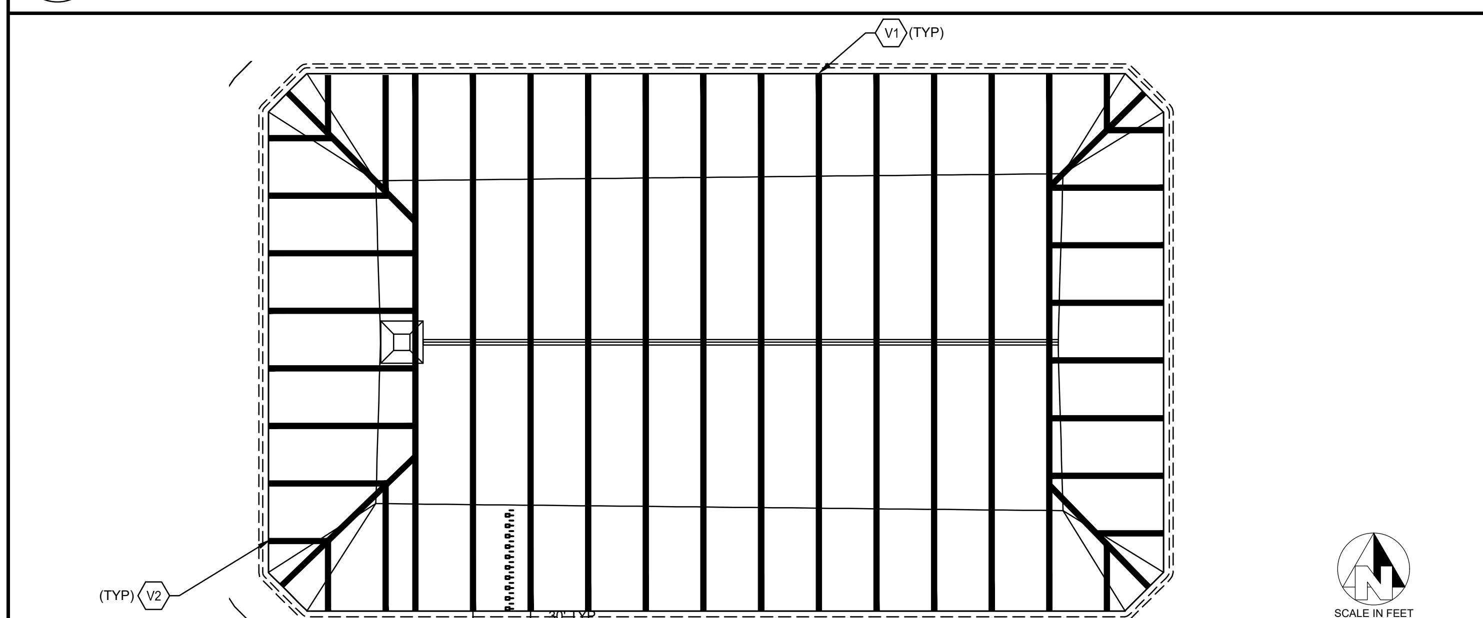
PLN
C7
PLAN VIEW

NOTES

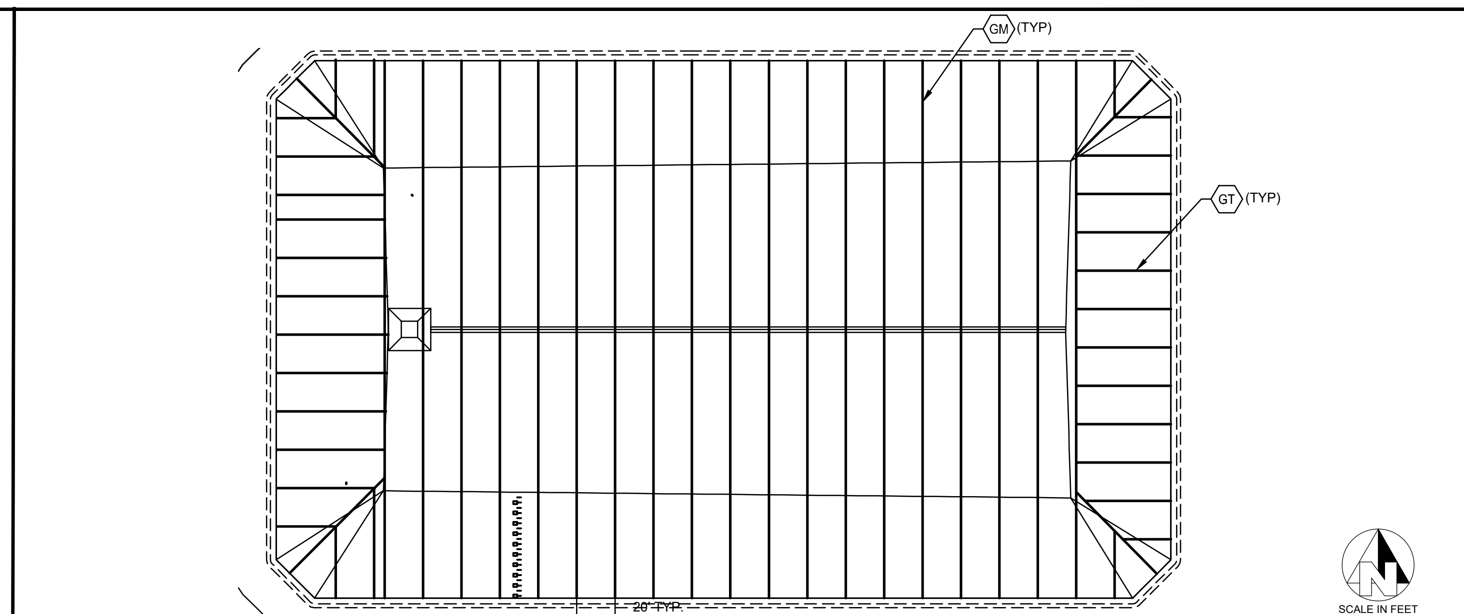
1. POND SUBGRADE AND LINER SHALL BE INSTALLED IN ACCORDANCE WITH THE POND DESIGN WORK PLAN THAT HAS BEEN APPROVED BY THE REGIONAL WATER QUALITY CONTROL BOARD.
2. HIGH WATER LINE (HWL) IS THE FREEBOARD LEVEL.
3. POINTS WILL BE GIVEN FOR GPS LOCATION OF GRADING EQUIPMENT.
4. CONSTRUCT LAGOON UPPER PERIMETER SURFACE TO THE INSIDE ELEVATION CALLED OUT. WHEN FILLING THE ANCHOR TRENCH, POST LINING INSTALLATION, ADJUST OUTER SURFACE TO THE LOWER ELEVATION CALLED OUT.
5. VENT STRIPS REQUIRE 30' SPACING WITH GAS ROUTE TO FLOOR. ADJUSTMENTS TO WHAT IS SHOWN CAN OCCUR DURING INSTALLATION.

CONSTRUCTION LEGEND

Symbol	Description	Detail
AD	AREA DRAIN	3/D6
AE	AERATION WEIR BOX	1/D6
DG	DEPTH GAUGE	1/D3
GM	OVERLAP GEONET EDGES A MINIMUM OF 3 INCHES. INSTALL PLASTIC CABLE TIES EVERY 5 FEET.	
GT	OVERLAP GEONET ENDS OR END TO EDGE WITH MATERIALS SHINGLED DOWN A MINIMUM 5 FEET FROM THE TOE OF POND IN THE DIRECTION OF THE SLOPE A MINIMUM OF 12 INCHES. INSTALL PLASTIC CABLE TIES EVERY 12 INCHES.	
LP	LEAKAGE PIPE AT CENTER OF POND TO SUMP-DOUBLE LINER	
S1	LCRS/LYSIMETER SUMPS	6/D2
SS	1/8" STAINLESS STEEL CABLE LOCATED IN CENTER TRENCH AND EXITS AT SURFACE.	
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3/D1
V1	VENT ORIFICE	5/D1
V2	2' WIDE DOUBLE FACED 160ML MINIMUM GEOCOMPOSITE DRAINAGE VENT STRIPS. (MATERIAL TO BE APPROVED BY ENGINEER)	



VENT STRIP PLAN



GEONET LAYOUT PLAN

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

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STATE OF CALIFORNIA
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WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
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STORAGE PLAN VIEW

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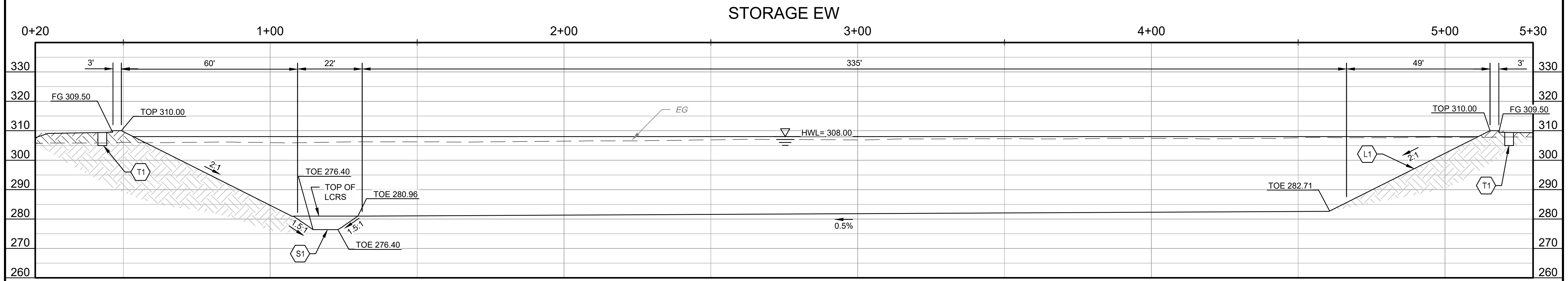
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

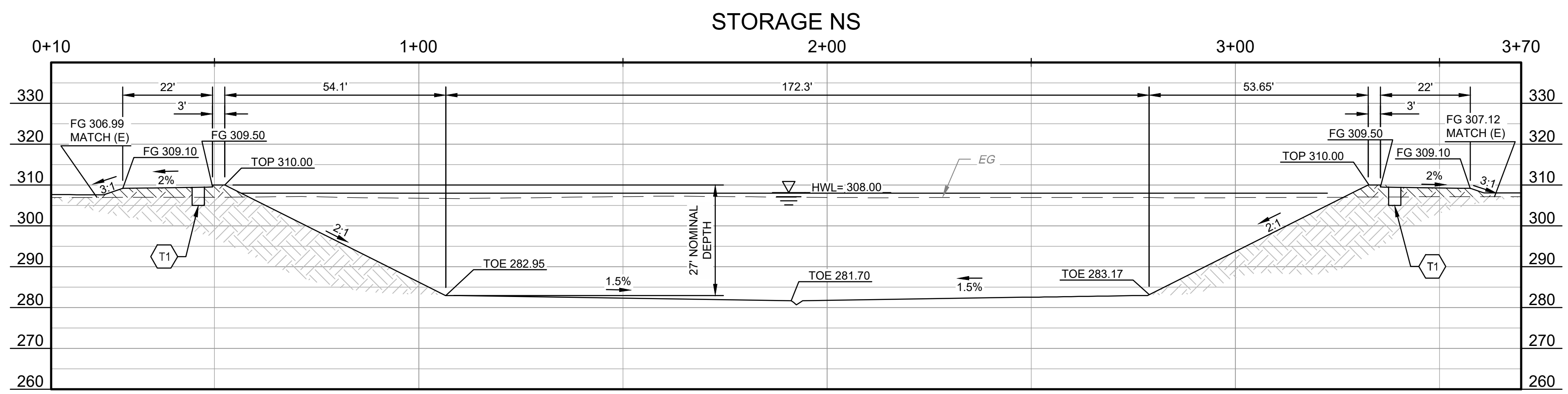
0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C7
10 OF 36



A
C8

POND PROFILE VIEW



B
C8

POND CROSS SECTION VIEW

WARNING
POWER LINES OVERHEAD

Know what's below.
Call before you dig.

CONSTRUCTION LEGEND

L1	DOUBLE LINER LAYERING	1 / D1
S1	LCRS/LYSIMETER SUMPS	6 / D2
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1

HATCH LEGEND

EXISTING EARTH

FINISHED EARTH

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

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STATE OF CALIFORNIA
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WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
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CIVIL
STORAGE SECTION VIEW

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NPA	SCB

DATE: 06/07/2023
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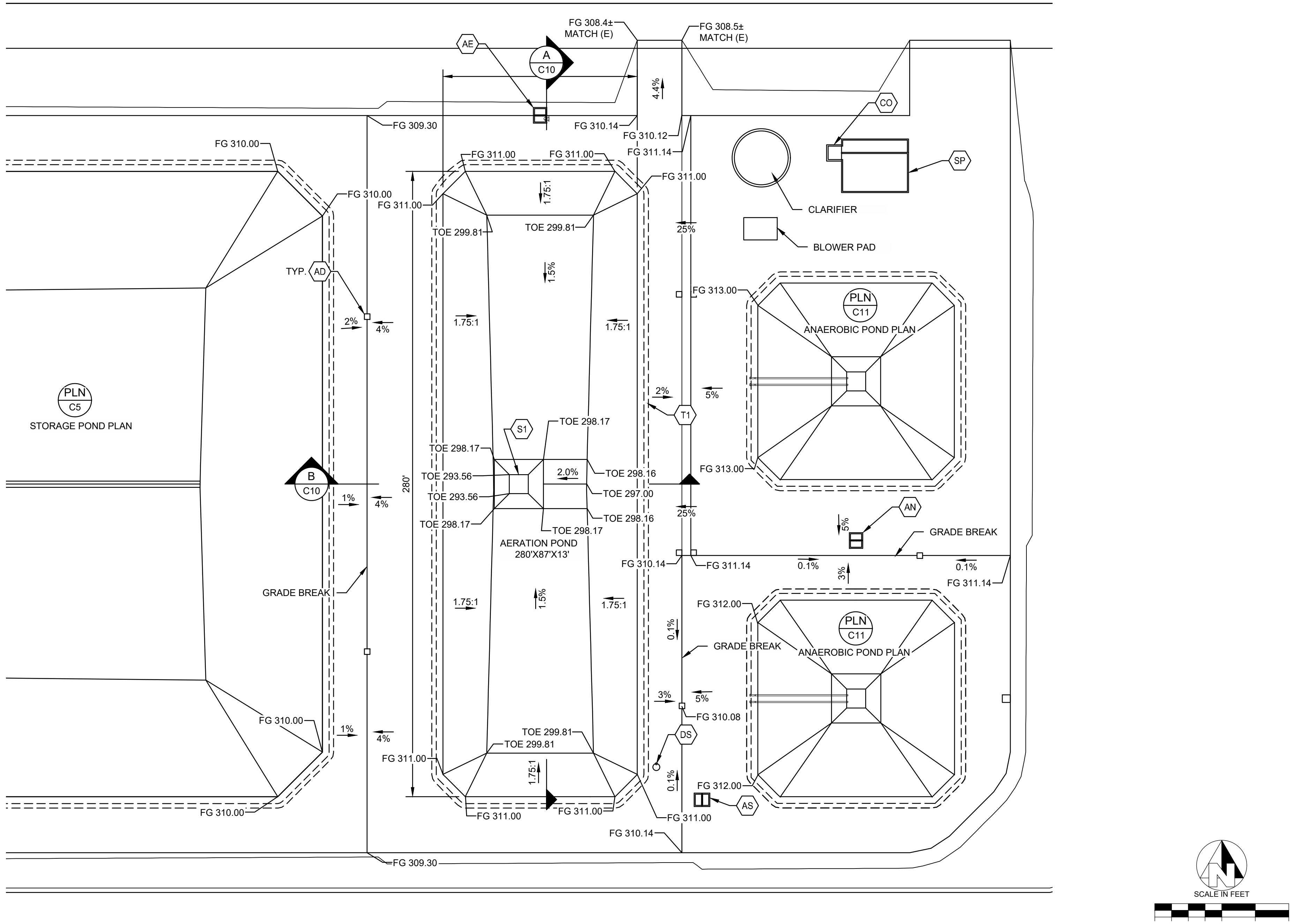
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SCALE IN FEET
0 10 20 40

SHEET C8

6/7/2023 11:38 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage lst\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C8 STORAGE SECTION VIEW.dwg -Evan Freitas



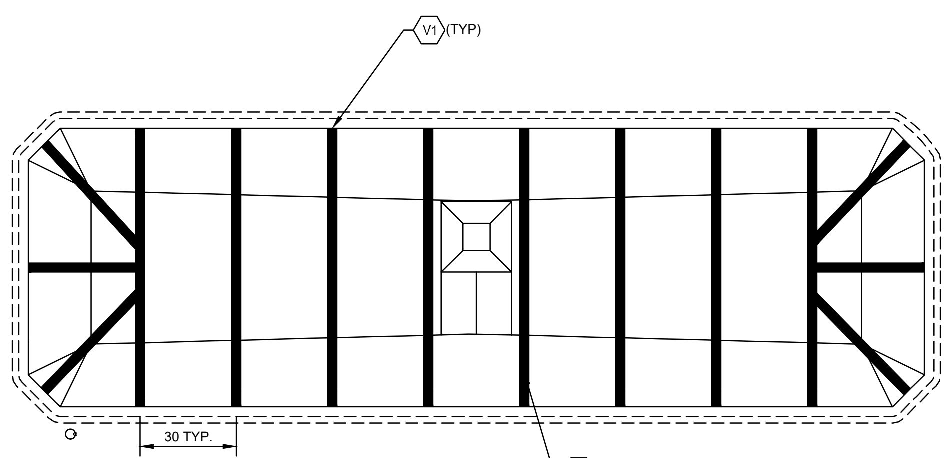
PLN C9 PLAN VIEW

NOTES

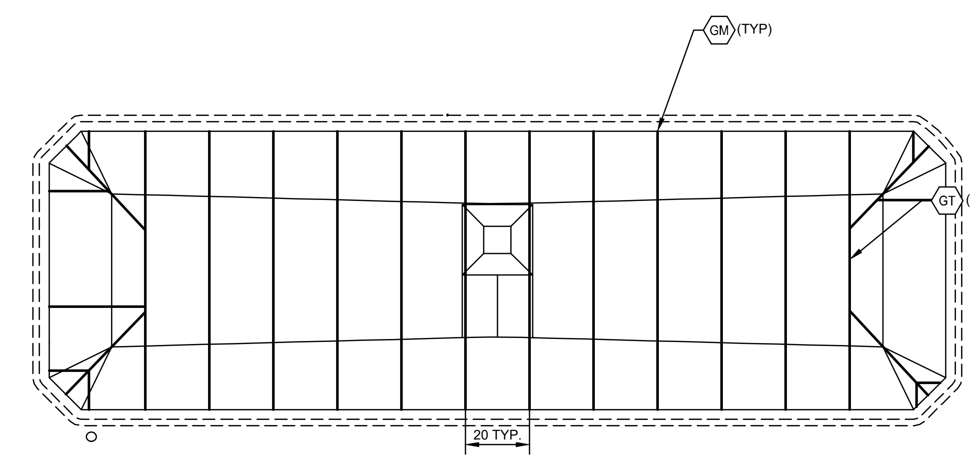
1. ... LINER S... ED ... THE PO... APPRO... TY CO...
2. ... IS THE FRE... LEVEL.
3. ... FOR ... GRADING EQUIPMENT.
4. CONSTRUCT LAGOON UPPER PERIMETER SURFACE TO THE INSIDE ELEVATION CALLED OUT. WHEN FILLING THE ANCHOR TRENCH, POST LINING INSTALLATION, ADJUST OUTER SURFACE TO THE LOWER ELEVATION CALLED OUT.
5. VENT STRIPS REQUIRE 30' SPACING WITH GAS ROUTE TO FLOOR. ADJUSTMENTS TO WHAT IS SHOWN CAN OCCUR DURING INSTALLATION.

CONSTRUCTION LEGEND

Symbol	Description	Detail
AD	AREA DRAIN	3 / D6
AE	AERATION WEIR BOX	1 / D6
AN	NORTH ANAEROBIC WEIR BOX	1 / D5
AS	SOUTH ANAEROBIC WEIR BOX	2 / D5
CO	COLLECTION PIT	4 / D4
DS	DRY SUMP	4 / D5
GM	OVERLAP GEONET EDGES A MINIMUM OF 3 INCHES. INSTALL PLASTIC CABLE TIES EVERY 5 FEET.	
GT	OVERLAP GEONET ENDS OR END TO EDGE WITH MATERIALS SHINGLED DOWN A MINIMUM 5 FEET FROM THE TOE OF POND IN THE DIRECTION OF THE SLOPE A MINIMUM OF 12 INCHES. INSTALL PLASTIC CABLE TIES EVERY 12 INCHES.	
S1	LCRS/LYSIMETER SUMPS	6 / D2
SP	SEPARATOR PAD	2 / D4
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1
V1	VENT ORIFICE	5 / D1
V2	2' WIDE DOUBLE FACED 160ML MINIMUM GEOCOMPOSITE DRAINAGE VENT STRIPS. (MATERIAL TO BE APPROVED BY ENGINEER)	



VENT STRIP PLAN



GEONET LAYOUT PLAN

No.	REVISION	BY	DATE
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FOR CONSTRUCTION
6/7/2023

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DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL
AERATION PLAN VIEW

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PROJECT NO: 291219001
PHASE:
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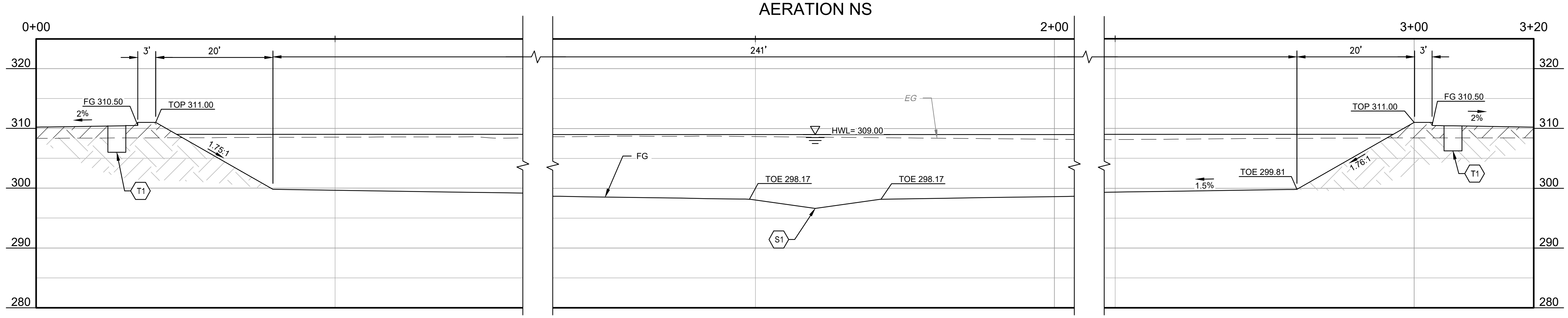
SHEET C9

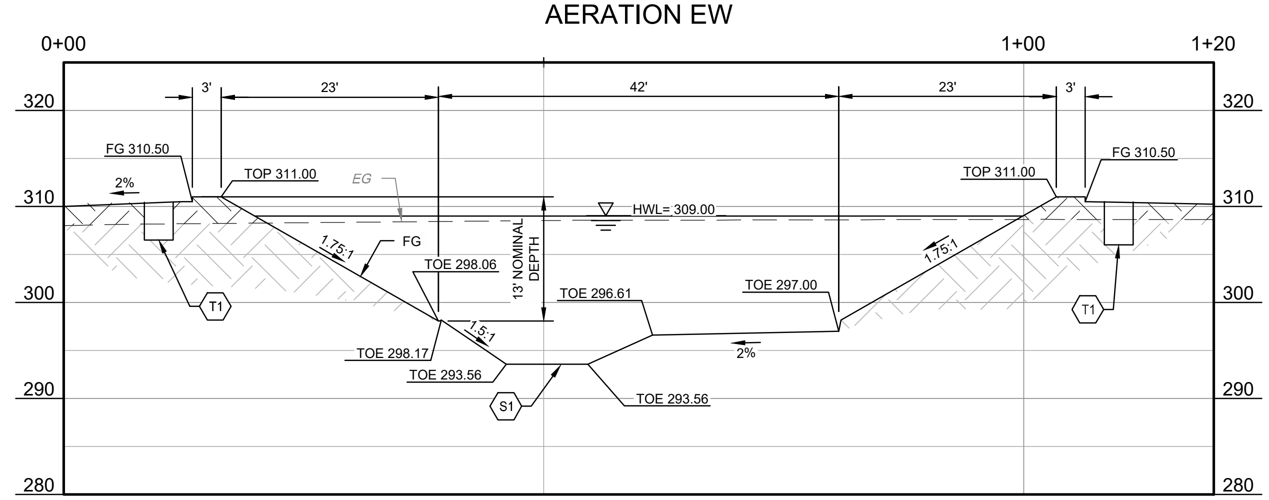
AERATION NS



A
C10

POND PROFILE VIEW

AERATION EW



B
C10

POND CROSS SECTION VIEW

WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.

CONSTRUCTION LEGEND

L1	DOUBLE LINER LAYERING	1 / D1
S1	LCRS/LYSIMETER SUMPS	6 / D2
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1

HATCH LEGEND

EXISTING EARTH

FINISHED EARTH

SCALE IN FEET
0 5 10 20

FOR CONSTRUCTION
6/7/2023

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TREEHOUSE CALIFORNIA ALMONDS
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CIVIL
AERATION SECTION VIEW

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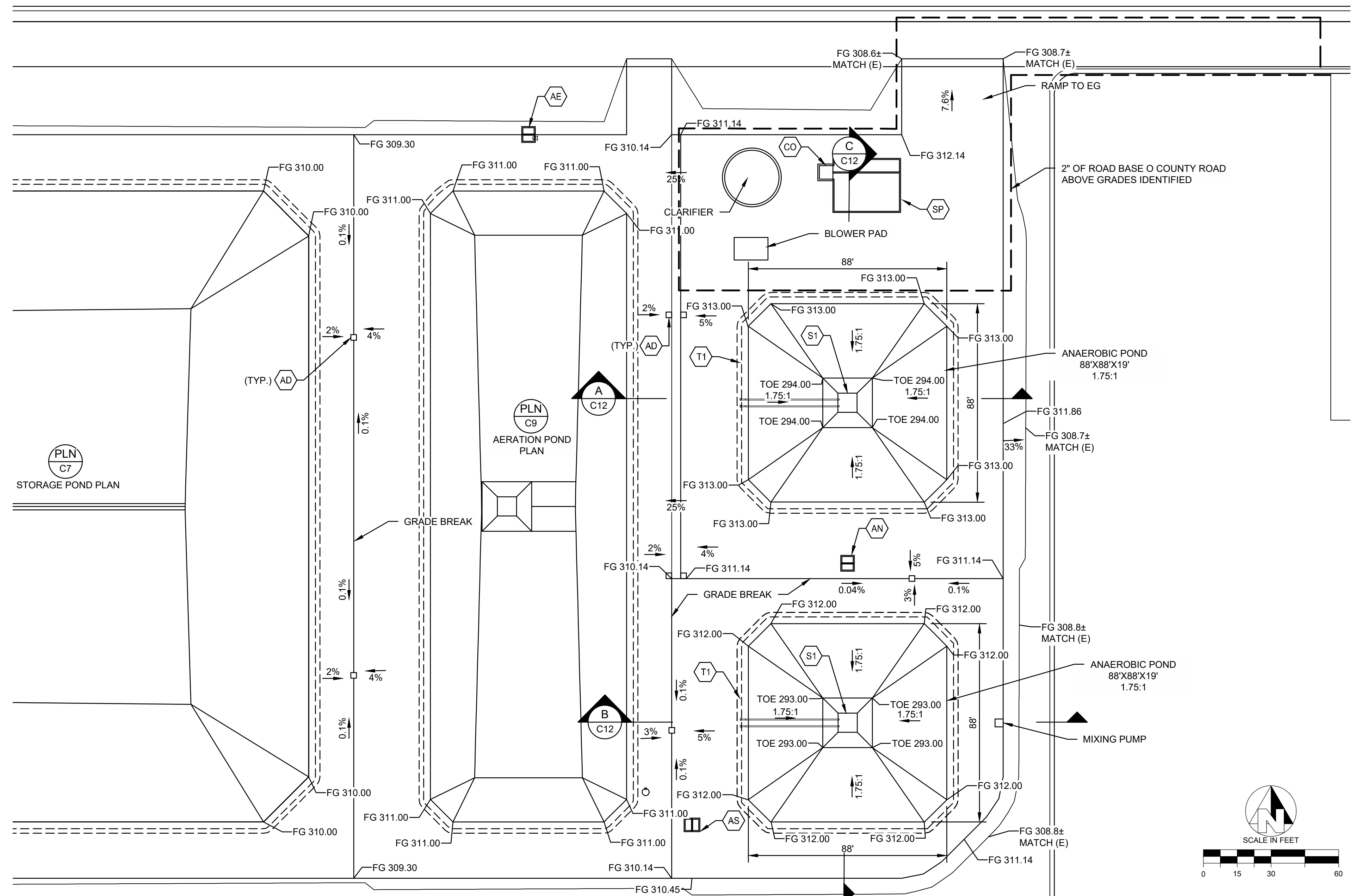
SHEET C10
13 OF 36

811 Know what's below. Call before you dig.

WARNING
POWER LINES OVERHEAD



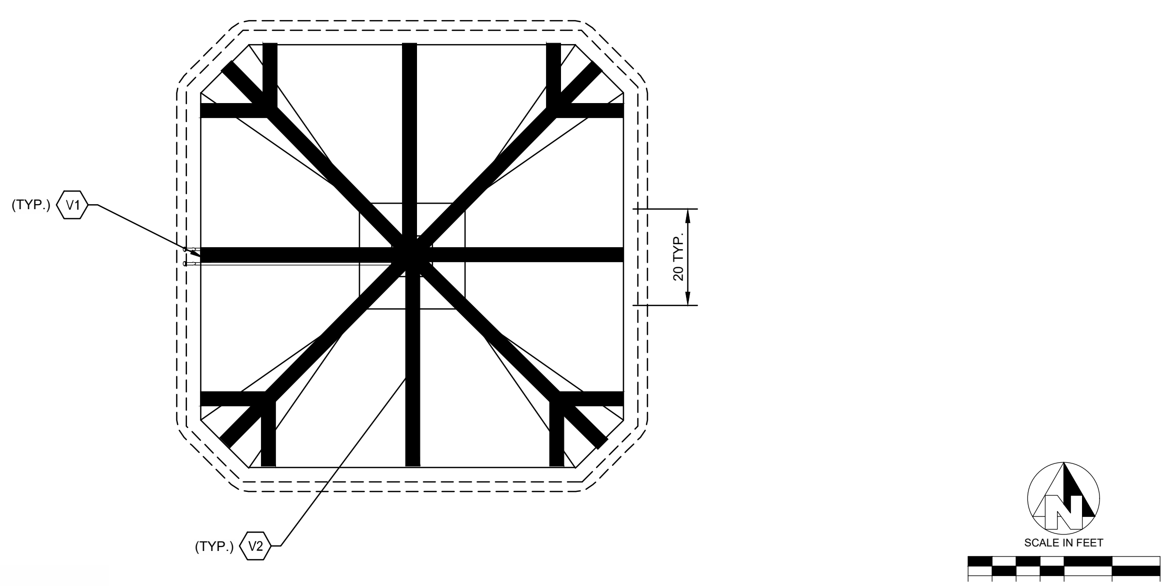
PLN C11 PLAN VIEW

NOTES

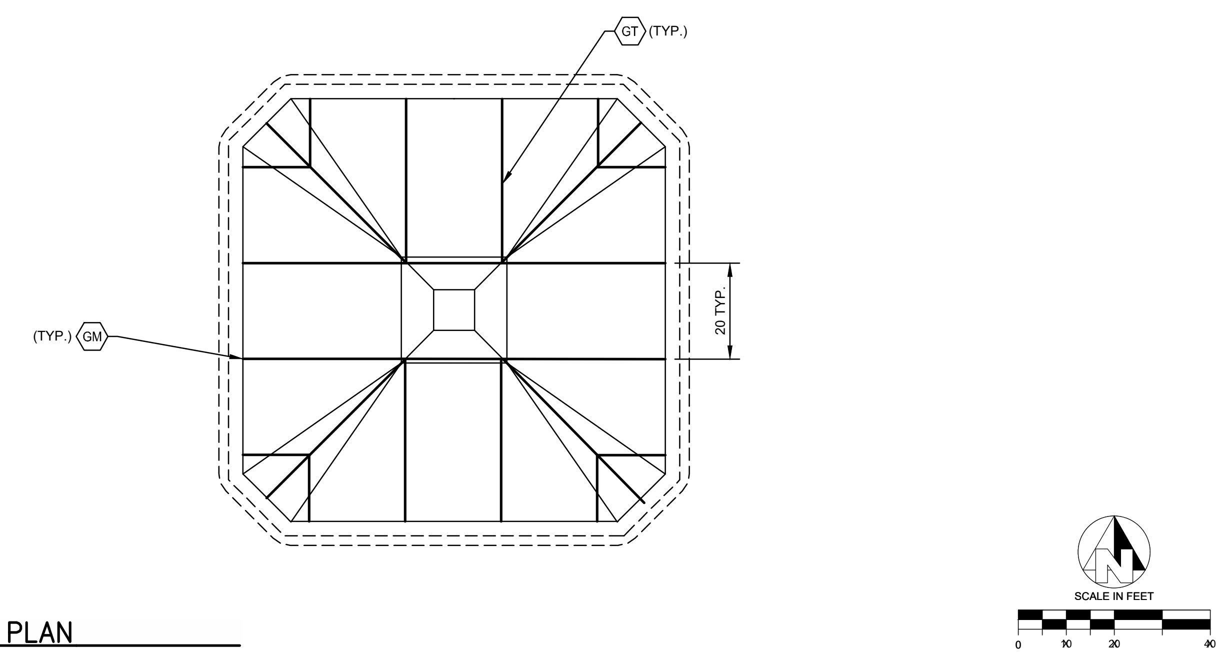
1. POND SUBGRADE AND LINER SHALL BE INSTALLED IN ACCORDANCE WITH THE POND DESIGN WORK PLAN THAT HAS BEEN APPROVED BY THE REGIONAL WATER QUALITY CONTROL BOARD.
2. HIGH WATER LINE (HWL) IS THE FREEBOARD LEVEL.
3. POINTS WILL BE GIVEN FOR GPS LOCATION OF GRADING EQUIPMENT.
4. CONSTRUCT LAGOON UPPER PERIMETER SURFACE TO THE INSIDE ELEVATION CALLED OUT. WHEN FILLING THE ANCHOR TRENCH, POST LINING INSTALLATION, ADJUST OUTER SURFACE TO THE LOWER ELEVATION CALLED OUT.
5. VENT STRIPS REQUIRE 30' SPACING WITH GAS ROUTE TO FLOOR. ADJUSTMENTS TO WHAT IS SHOWN CAN OCCUR DURING INSTALLATION.

CONSTRUCTION LEGEND

Symbol	Description	Detail
AD	AREA DRAIN	3/D6
AE	AERATION WEIR BOX	1/D6
AN	NORTH ANAEROBIC WEIR BOX	1/D5
AS	SOUTH ANAEROBIC WEIR BOX	2/D5
CO	COLLECTION PIT	4/D4
DS	DRY SUMP	4/D5
GM	OVERLAP GEONET EDGES A MINIMUM OF 3 INCHES. INSTALL PLASTIC CABLE TIES EVERY 5 FEET.	
GT	OVERLAP GEONET ENDS OR END TO EDGE WITH MATERIALS SHINGLED DOWN A MINIMUM 5 FEET FROM THE TOE OF POND IN THE DIRECTION OF THE SLOPE A MINIMUM OF 12 INCHES. INSTALL PLASTIC CABLE TIES EVERY 12 INCHES.	
S1	LCRS/LYSIMETER SUMPS	6/D2
SP	SEPARATOR PAD	2/D4
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3/D1
V1	VENT ORIFICE	5/D1
V2	2' WIDE DOUBLE FACED 160ML MINIMUM GEOCOMPOSITE DRAINAGE VENT STRIPS. (MATERIAL TO BE APPROVED BY ENGINEER)	



VENT STRIP PLAN



GEONET LAYOUT PLAN

FOR CONSTRUCTION 6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER E. J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL
ANAEROBIC PLAN VIEW

EST. 1968 PROVOST & PRITCHARD CONSULTING GROUP
An Employee Owned Company
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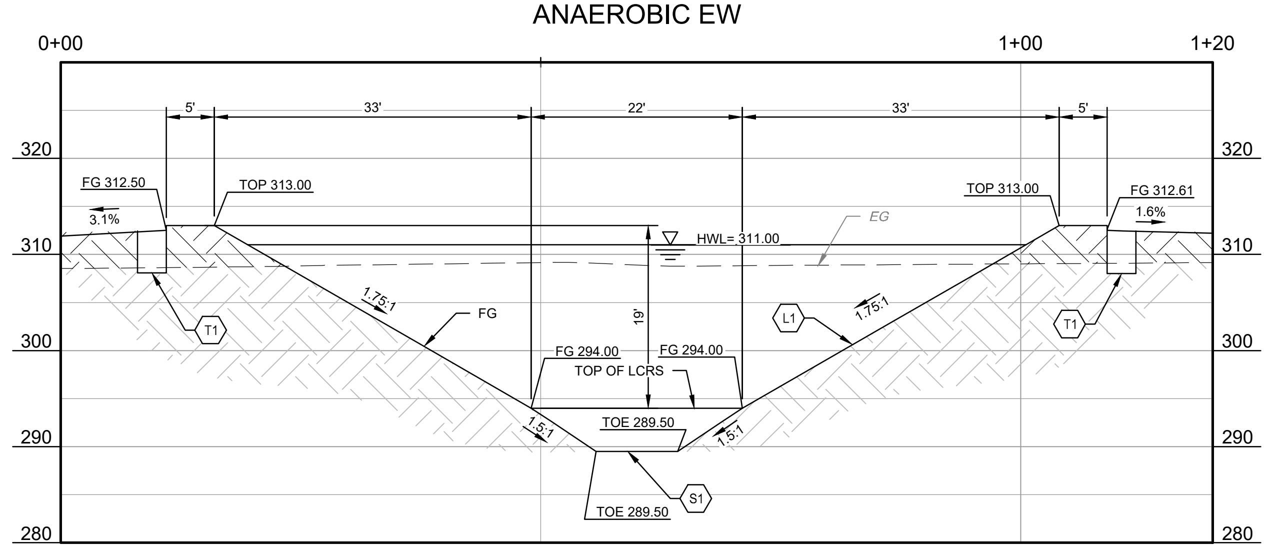
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA | CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C11

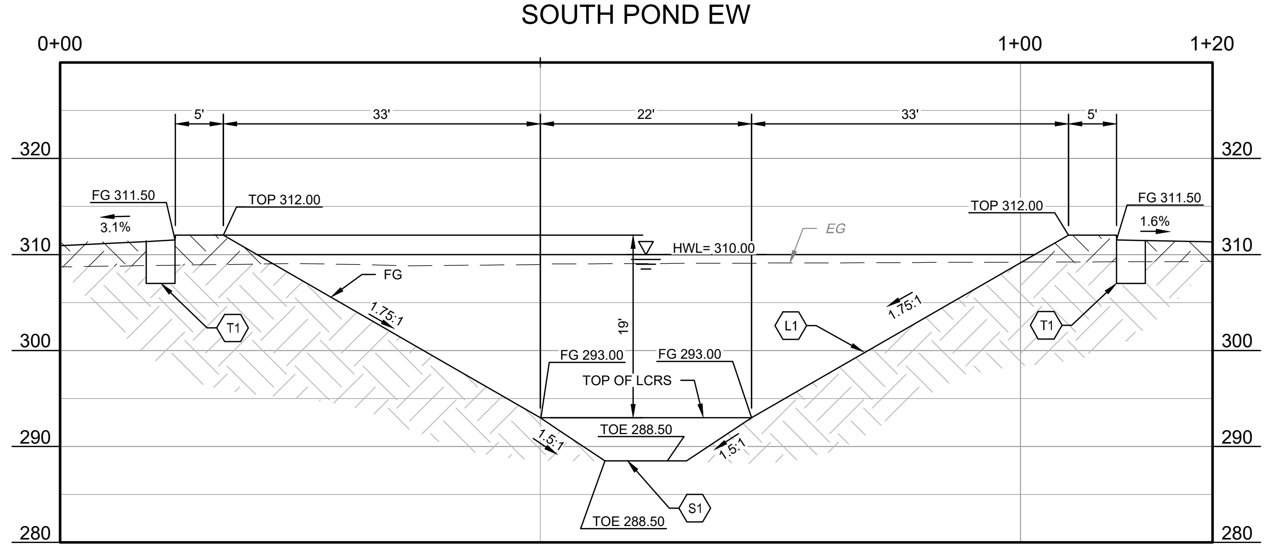
ANAEROBIC EW



A / C12

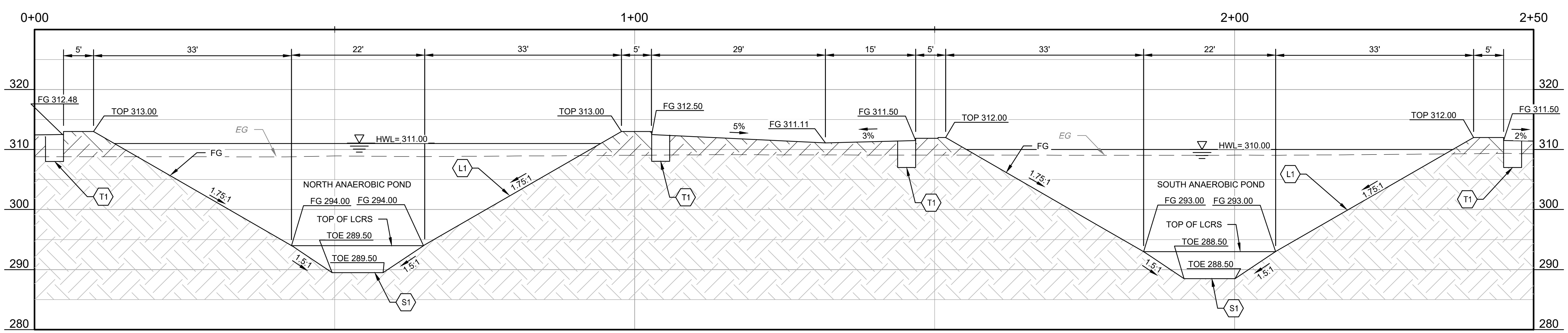
NORTH POND CROSS SECTION VIEW

SOUTH POND EW



B / C12

SOUTH POND CROSS SECTION VIEW



C / C12

POND PROFILE VIEW

WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.

CONSTRUCTION LEGEND

L1	DOUBLE LINER LAYERING	1 / D1
S1	LCRS/LYSIMETER SUMPS	6 / D2
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1

HATCH LEGEND

	EXISTING EARTH
	FINISHED EARTH

SCALE IN FEET
0 5 10 20

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER · EDWARD J. CAMINATA · No. C88473 · CIVIL · STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

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TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL

ANAEROBIC SECTION VIEW

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DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

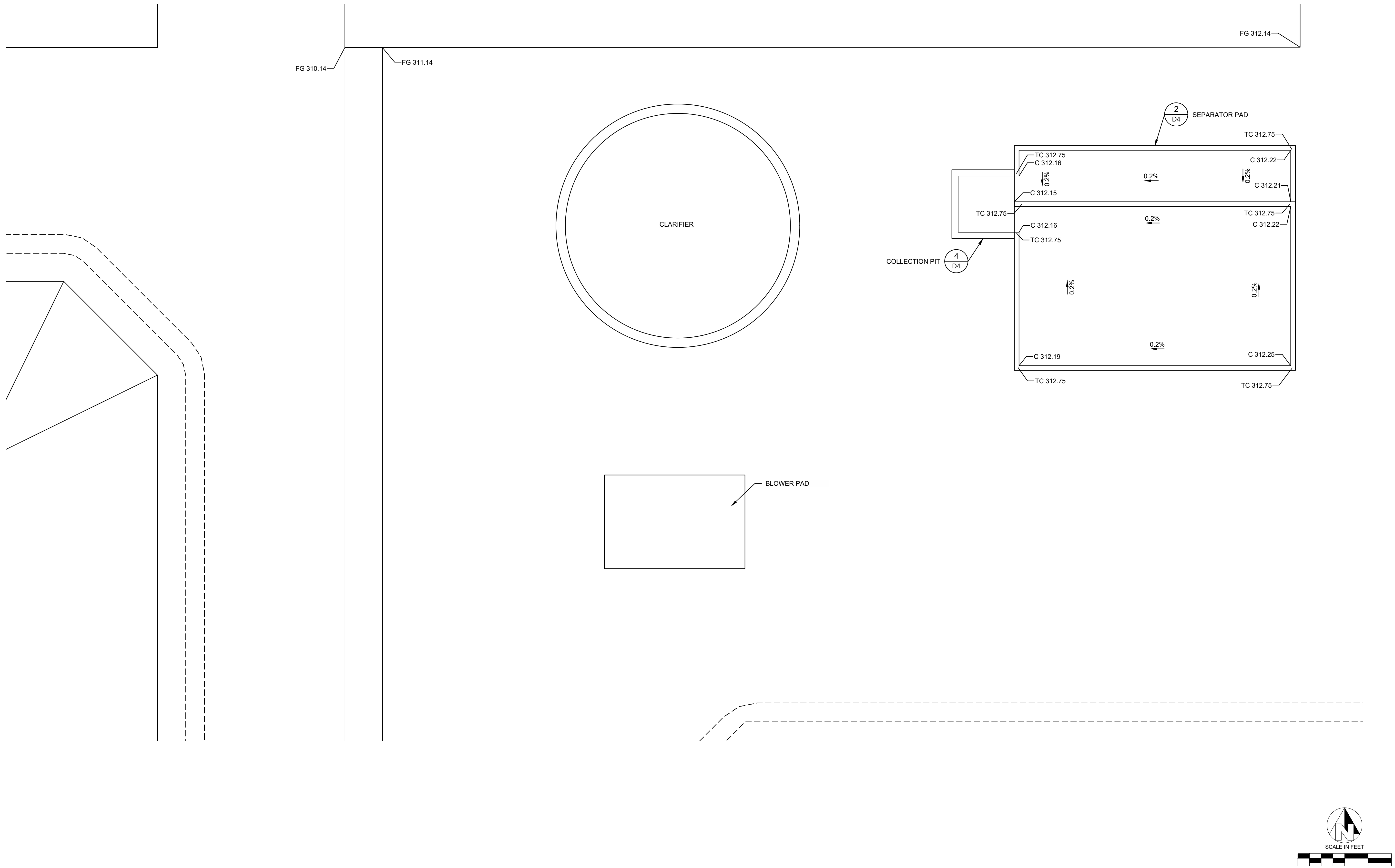
0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C12
15 OF 36

6/7/2023 11:40 AM g:\treehouse ca almonds-2912\291219001-treatmt+storage\d\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C12 ANAEROBIC SECTION VIEW.dwg -Evan Freitas

811
Know what's below.
Call before you dig.

WARNING
POWER LINES OVERHEAD



No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

FOR CONSTRUCTION
6/7/2023

REGISTERED PROFESSIONAL ENGINEER
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CIVIL
STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

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SEPARATOR PAD GRADING

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LICENSE NO:
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DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
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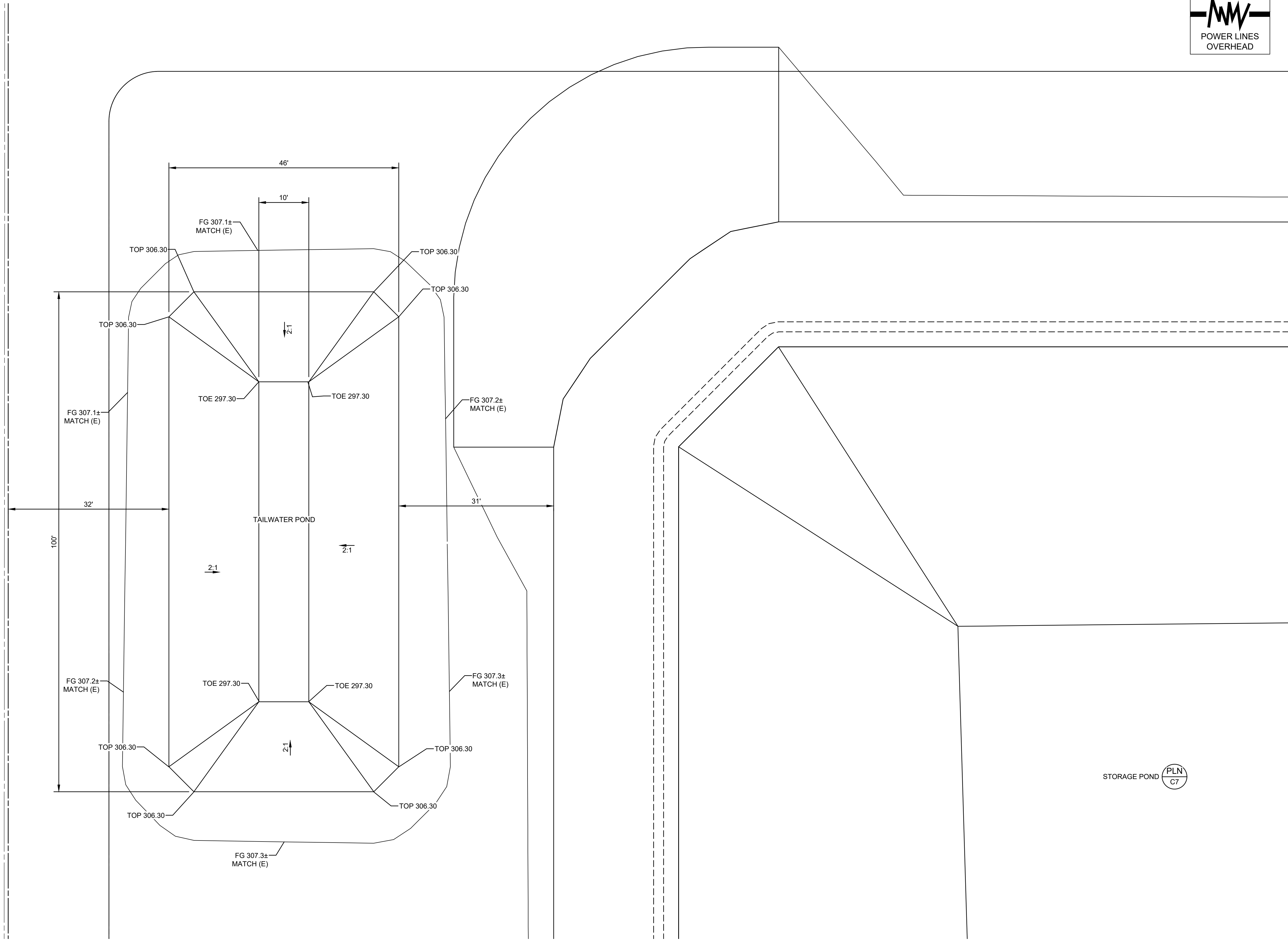
SHEET C13

6/7/2023 11:40 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C13 SEPARATOR PAD GRADING.dwg -Evan Freitas



WARNING
POWER LINES OVERHEAD

811
Know what's below.
Call before you dig.

PLN
C14

SCALE IN FEET
0 5 10 20

FOR CONSTRUCTION
6/7/2023

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STATE OF CALIFORNIA
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WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
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CIVIL

TAILWATER POND

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DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
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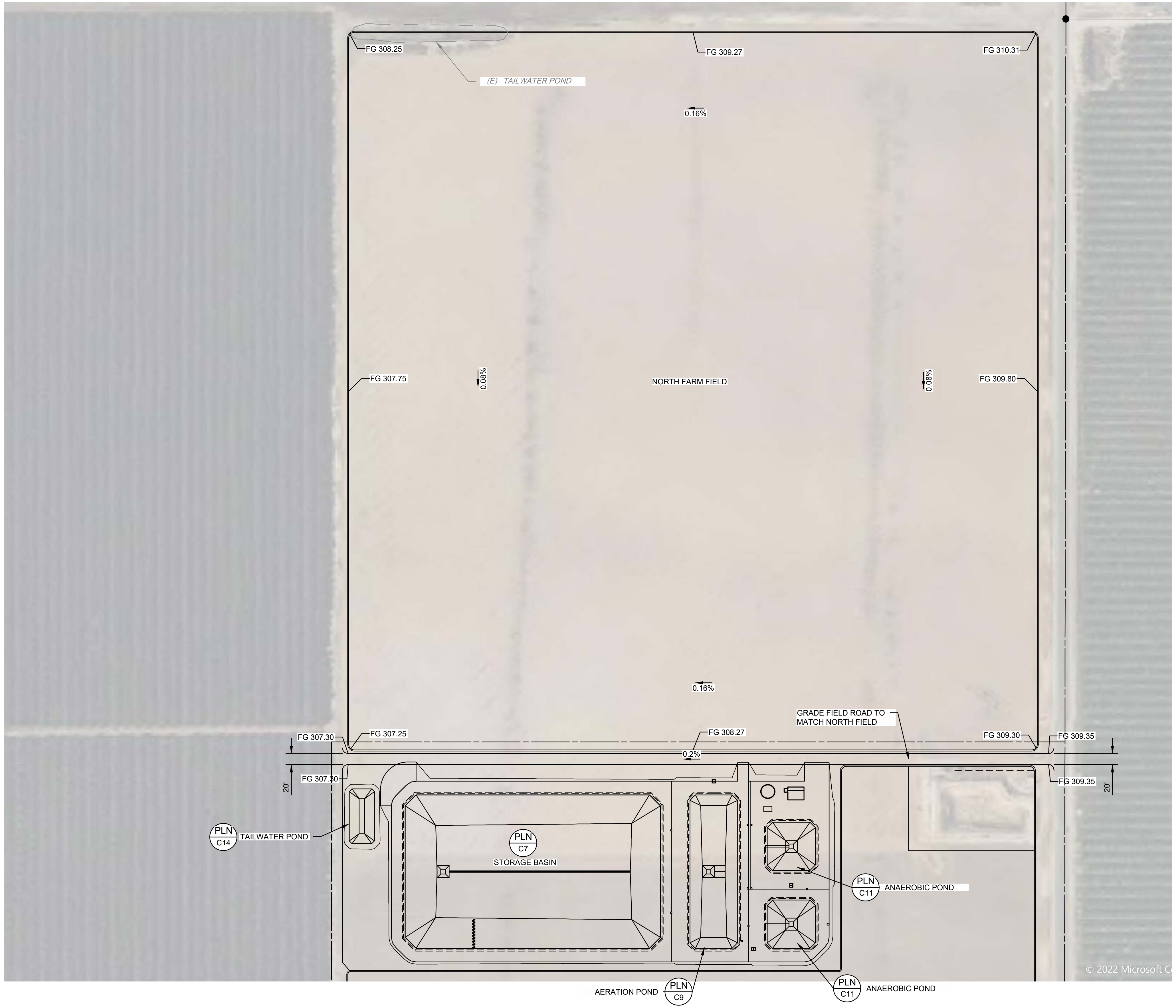
SHEET C14
17 OF 36

6/7/2023 11:40 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C14 TAILWATER POND.dwg -Evan Freitas



PLN
C15

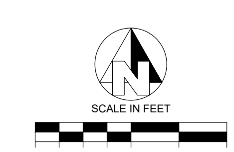
WARNING
POWER LINES
OVERHEAD

811
Know what's **below.**
Call before you dig.

NOTES

1. EXCESS DIRT FROM BASIN EXCAVATION TO BE PLACED AND LEVELED ACROSS THE NORTH FIELD
2. FILL IN EXISTING TAILWATER POND TO MATCH EXISTING GRADE

DETAILED CUT/FILL SUMMARY					
LOCATION	CUT FACTOR	FILL FACTOR	CUT CY	FILL CY	NET CY
TREATMENT PONDS VS EG	1.00	1.20	91429.09	15322.73	76106.36 (C)
NORTH FARM FIELD VS EG	1.00	1.20	6675.70	71849.69	65173.99 (F)
SOUTH FARM FIELD VS EG	1.00	1.20	16085.23	26797.85	10712.63 (F)
				NET (CUT)	220.34



FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL

FIELD GRADING

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DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C15

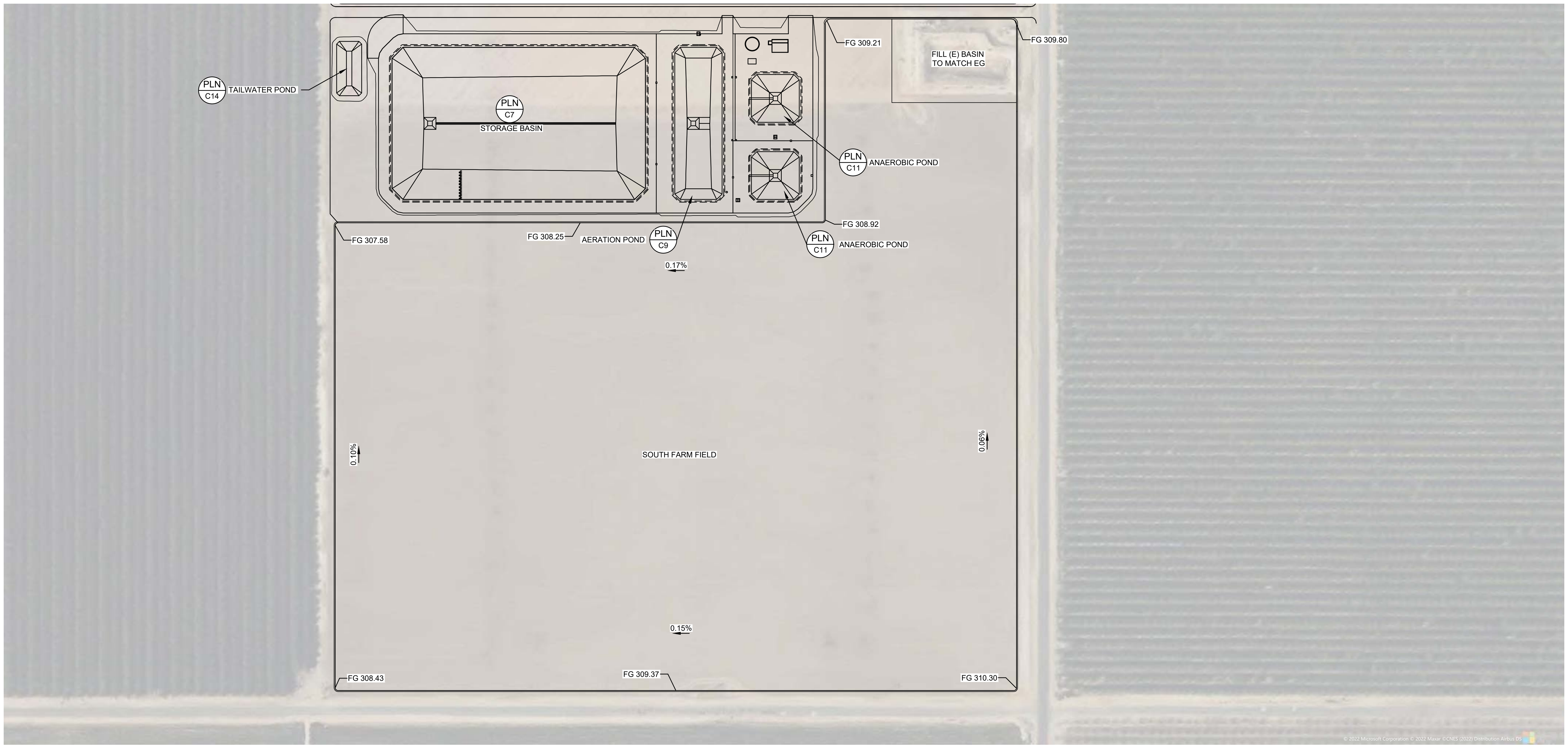
DETAILED CUT/FILL SUMMARY					
LOCATION	CUT FACTOR	FILL FACTOR	CUT CY	FILL CY	NET CY
TREATMENT PONDS VS EG	1.00	1.20	91429.09	15322.73	76106.36 (C)
NORTH FARM FIELD VS EG	1.00	1.20	6675.70	71849.69	65173.99 (F)
SOUTH FARM FIELD VS EG	1.00	1.20	16085.23	26797.85	10712.63 (F)
				NET (CUT)	220.34

NOTES

1. EXISTING IRRIGATION BASIN TO BE FILLED IN TO MATCH EXISTING GRADE
2. GRADING OF THE SOUTH FIELD AT THE TIME OF CONSTRUCTION IS UP TO THE OWNER

WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.



PLN
C16

SCALE IN FEET
0 50 100 200

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

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EDWARD J. CAMINATA
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CIVIL
STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL
SOUTH FIELD

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DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

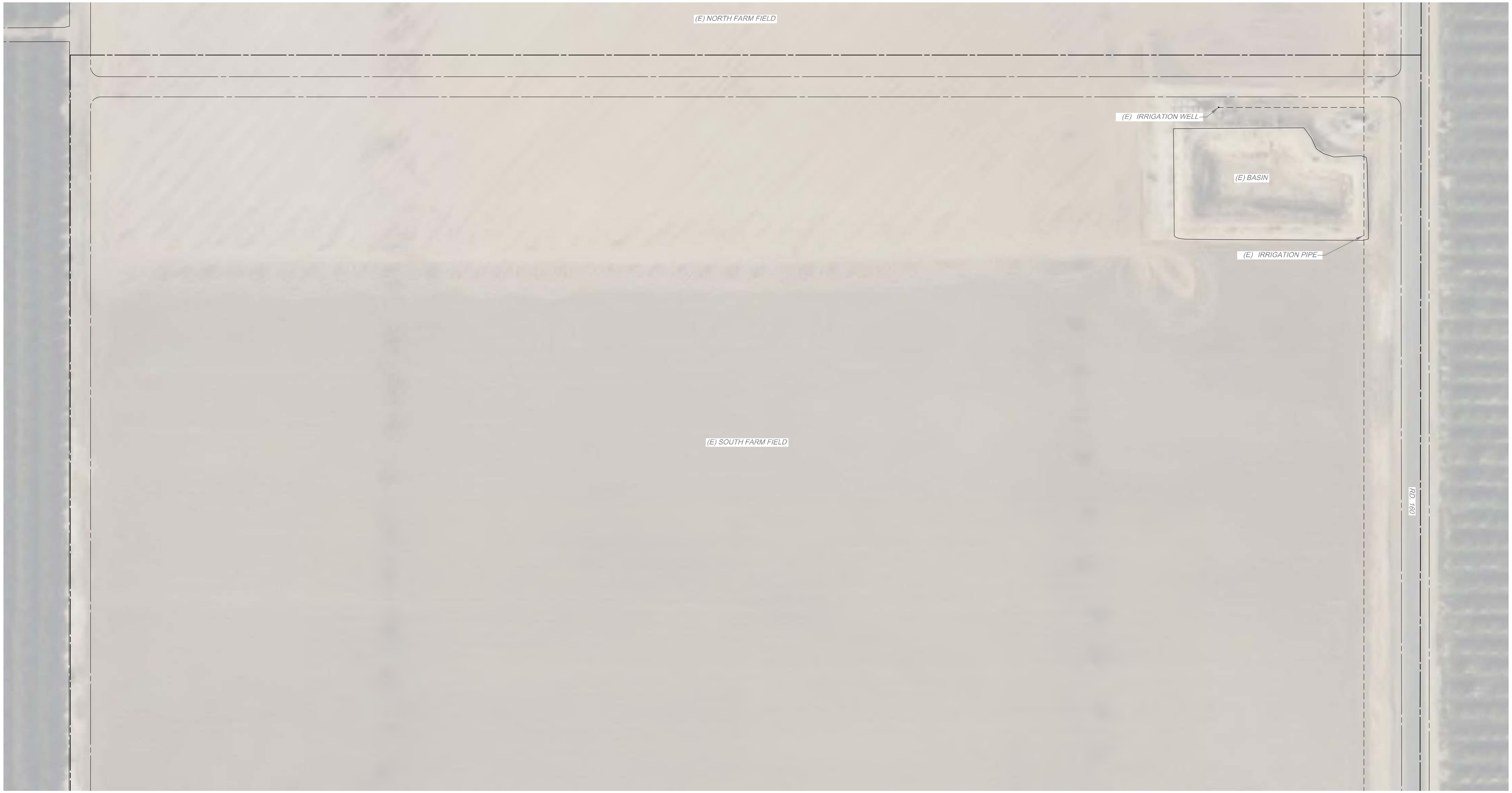
0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C16

6/7/2023 11:41 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C16 SOUTH FIELD.dwg -Evan Freitas

811
Know what's below. Call before you dig.

WARNING
POWER LINES OVERHEAD



SCALE IN FEET
0 25 50 100

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
PLUMBING

EXISTING PLUMBING

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DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET P1
20 OF 36

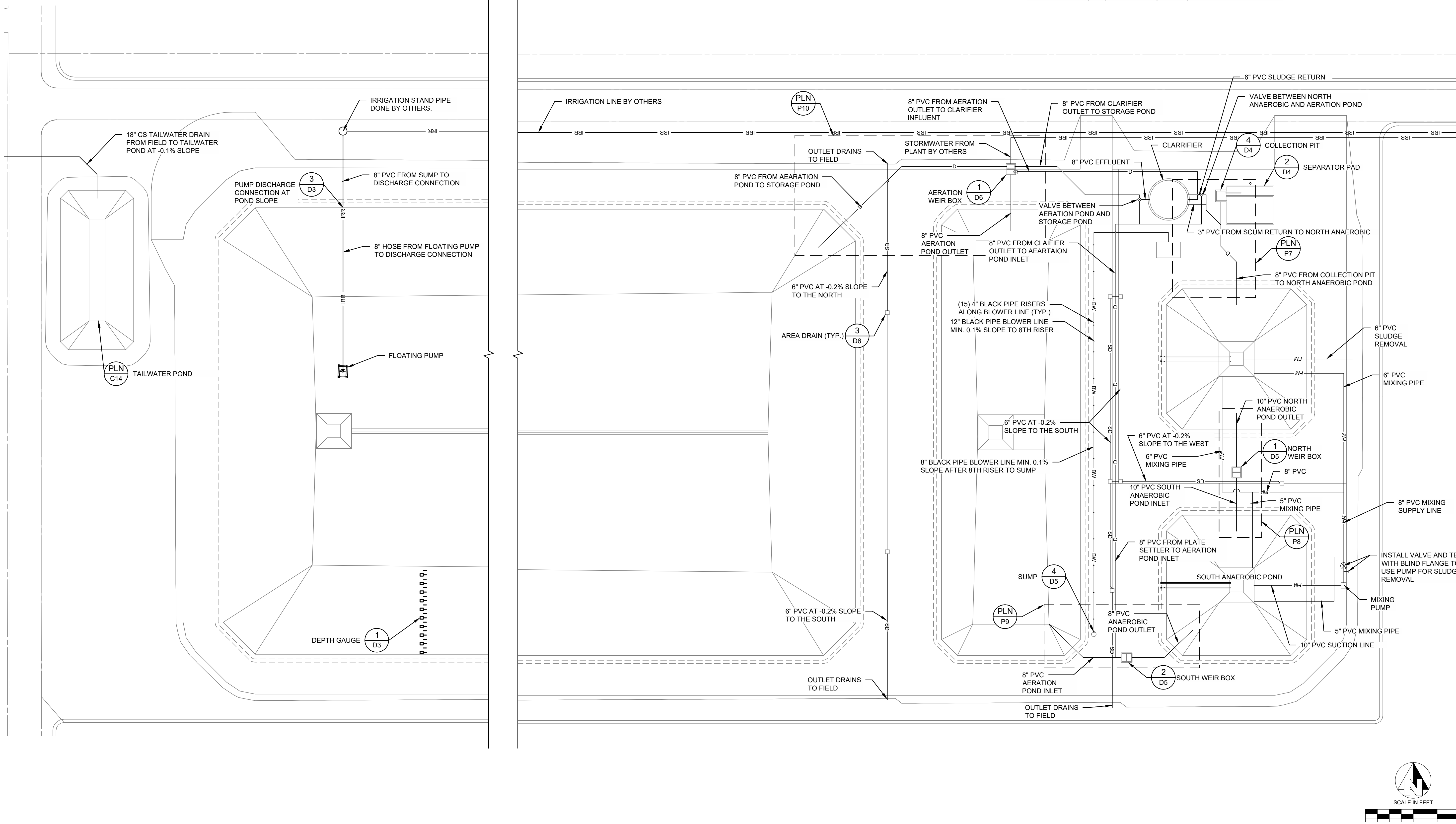
6/7/2023 11:42 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\07_Utilities\TREATMENT PONDS\P1 EXISTING PLUMBING.dwg -Evan Freitas

NOTES:

1. PIPES PENETRATING LINER WILL BE INSTALLED AFTER EXCAVATION AND PRIOR TO LINER INSTALLATION, TEMPORARILY CAPPED AND BACKFILLED. ONCE LINER INSTALLATION IS COMPLETE, REMAINDER OF THE PIPE ROUTES CAN BE INSTALLED.
2. ANAEROBIC MIXING PUMP - 10 HP, 1,000 GPM.
3. AERATION POND WEIR PUMP - 225 GPM
4. CLARIFIER SELECTION VALVE - SLUDGE RETURN. NORMALLY OPEN TO AERATION POND. ACTIVATE VALVE TO COLLECTION PIT FOR 15 MINUTES EVERY HOUR.
5. CLARIFIER SELECTION VALVE - CLARIFIED WATER. NORMALLY OPEN TO STORAGE POND. ACTIVATE VALVE TO AERATION POND WHEN AERATION POND WATER LEVEL DROPS 6", DEACTIVATE WHEN NORMAL WATER LEVEL RETURNS AT 2" BELOW WEIR LEVEL.
6. 1200 GPM, OR EQUIVALENT, FLOATING PUMP BY VALMETAL. VARIABLE SPEED WITH FLOW METER.
7. TAILWATER PUMP TO BE SIZED AND PROVIDED BY OTHERS.

WARNING
POWER LINES OVERHEAD

Know what's below. Call before you dig.



No.	DRAWINGS ISSUED REVISION	BY	DATE
0	FOR CONSTRUCTION 6/7/2023	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

PLUMBING

PROPOSED PLUMBING

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DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

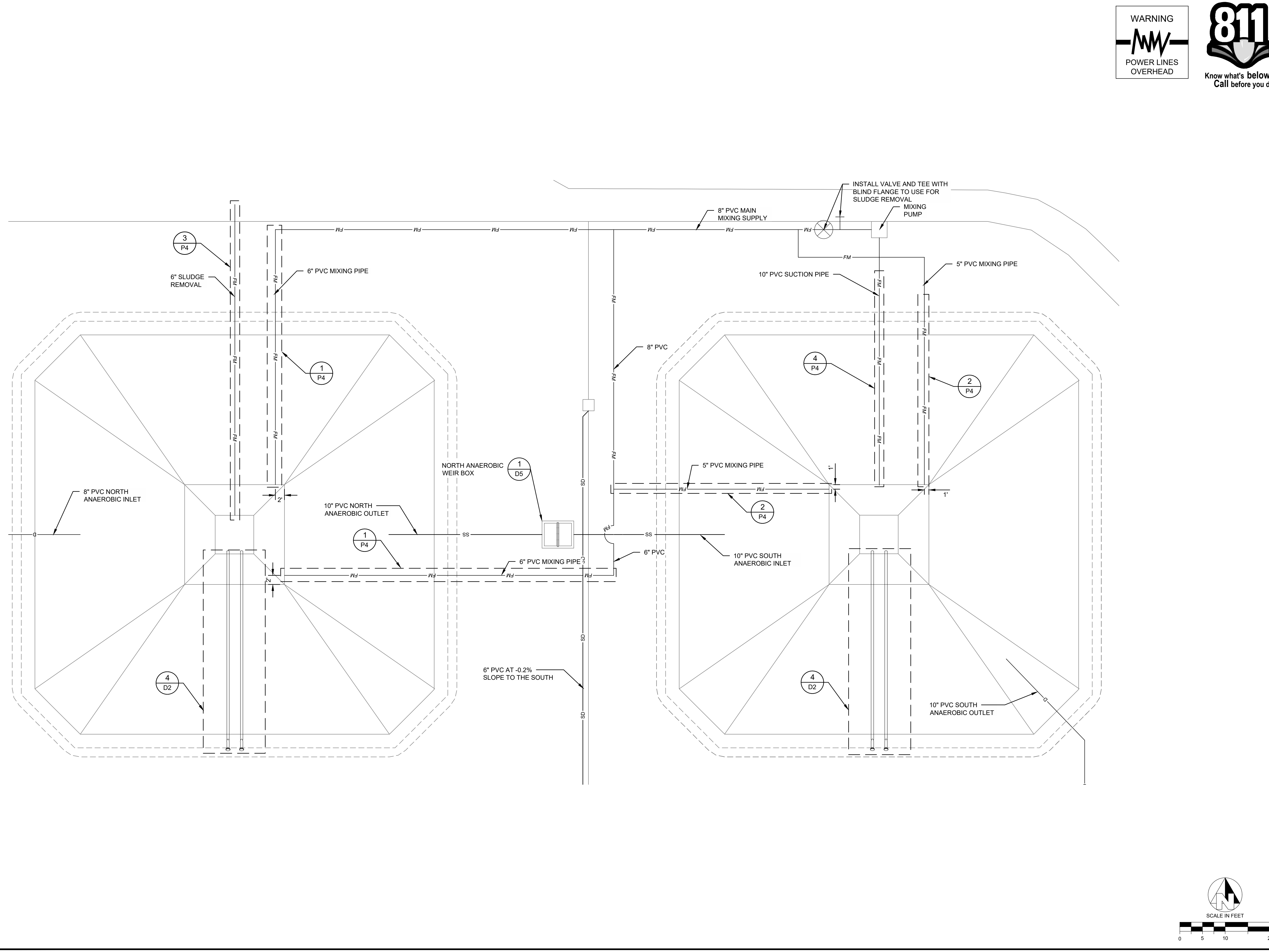
DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET P2

6/7/2023 11:42 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\07_Utilities\TREATMENT PONDS\P2 PROPOSED PLUMBING.dwg-Evan Freitas



FOR CONSTRUCTION 6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

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WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

PLUMBING

MIXING SYSTEM PLAN

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DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

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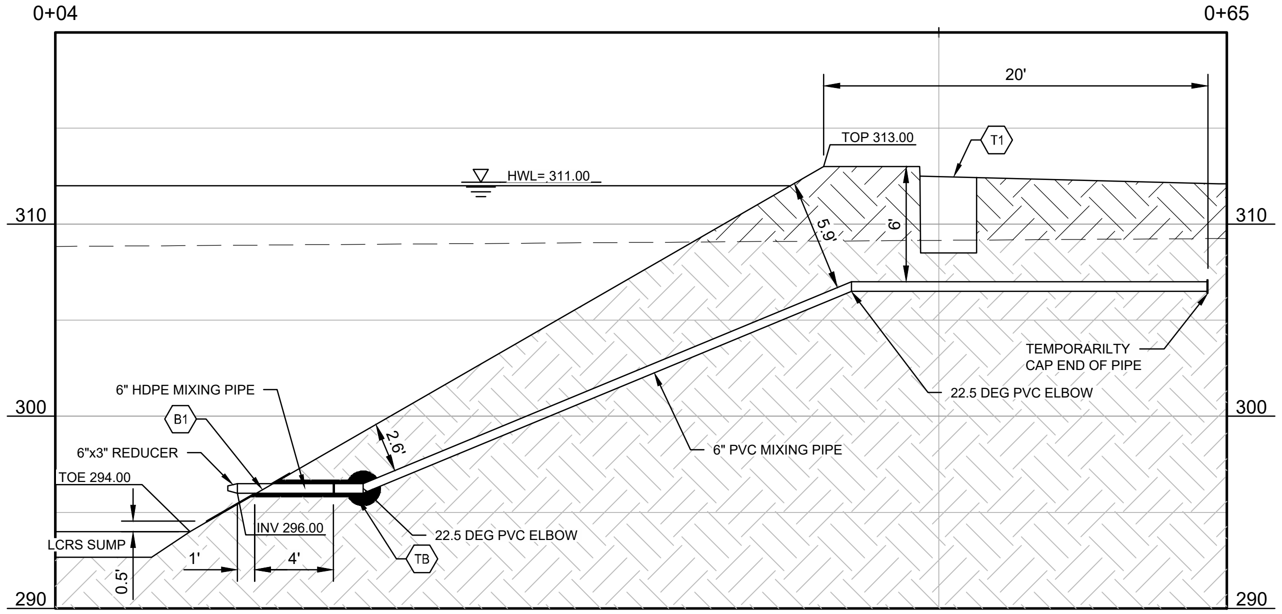
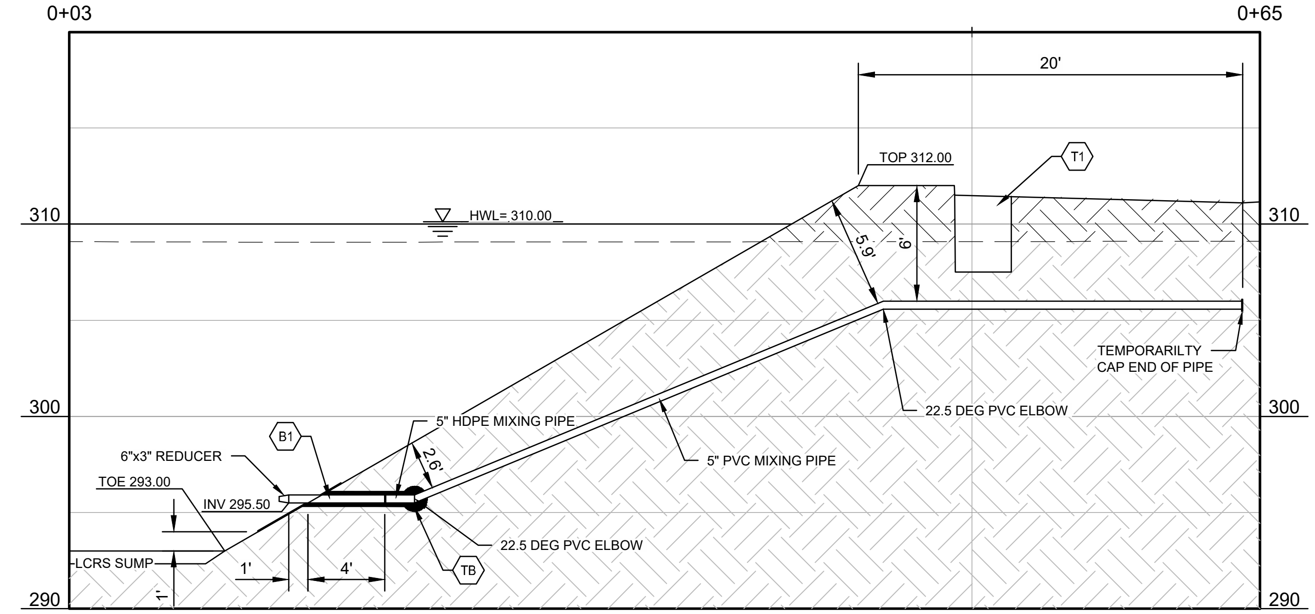
SHEET P3

NORTH ANAEROBIC MIXING PIPE



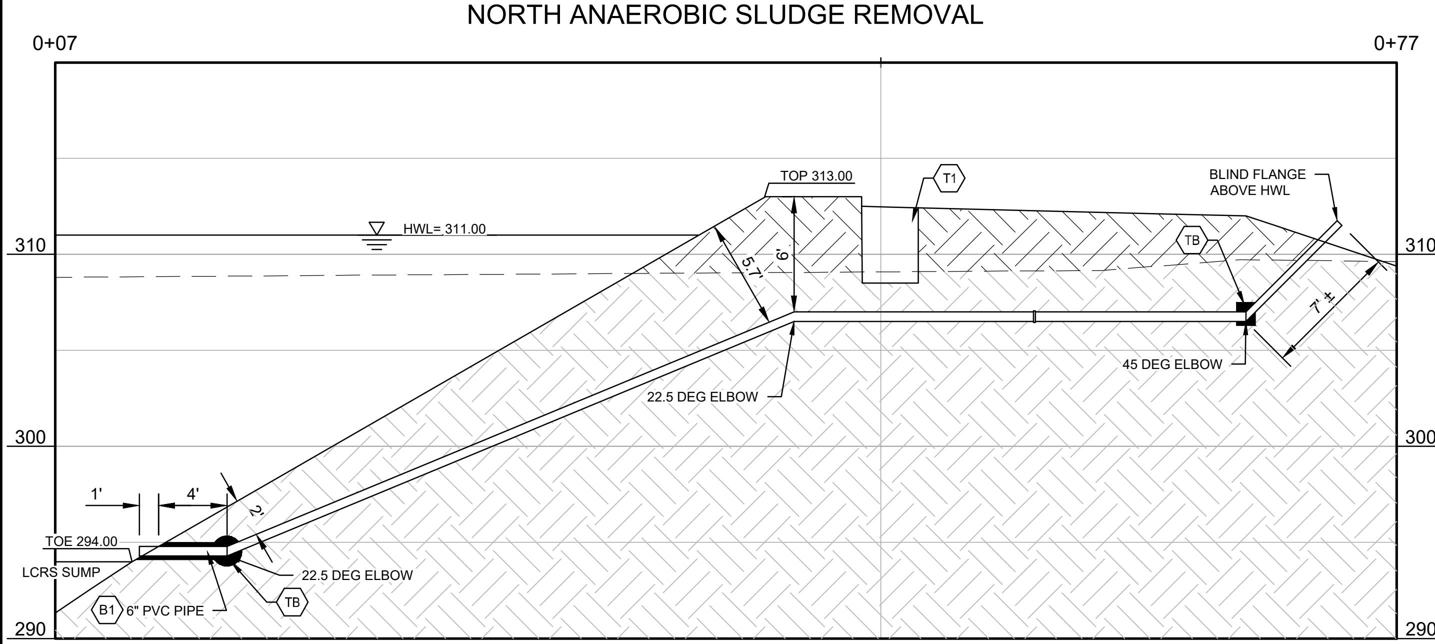
1
P4

SOUTH ANAEROBIC MIXING PIPE



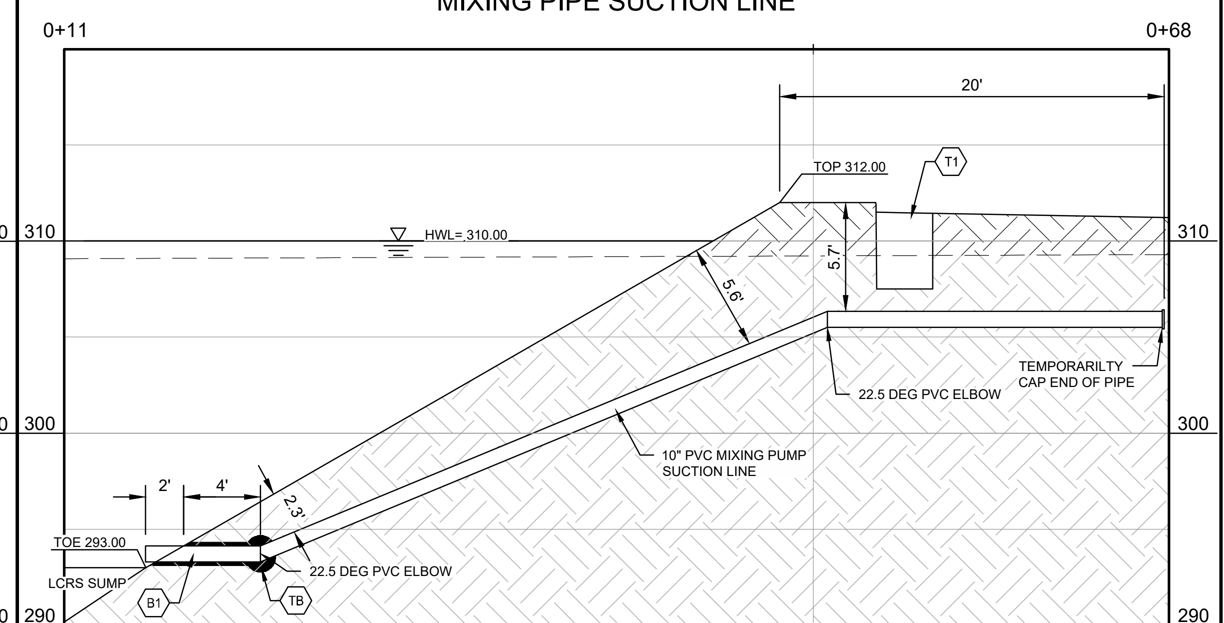
2
P4

NORTH ANAEROBIC SLUDGE REMOVAL



3
P4

MIXING PIPE SUCTION LINE



4
P4

WARNING
POWER LINES OVERHEAD

811
Know what's **below.**
Call before you dig.

NOTES

1. SEE PLAN VIEW FOR PIPE SIZE.
2. ALL HDPE PIPE TO BE DR17.

CONSTRUCTION LEGEND

B1	BOOTLESS PIPE PENETRATION	4 / D1
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1
TB	THRUST BLOCK	5 / D2

HATCH LEGEND

EXISTING EARTH

FINISHED EARTH

SCALE IN FEET
0 2.5 5 10

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

FOR CONSTRUCTION
6/7/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

PLUMBING

MIXING SYSTEM SECTIONS 1

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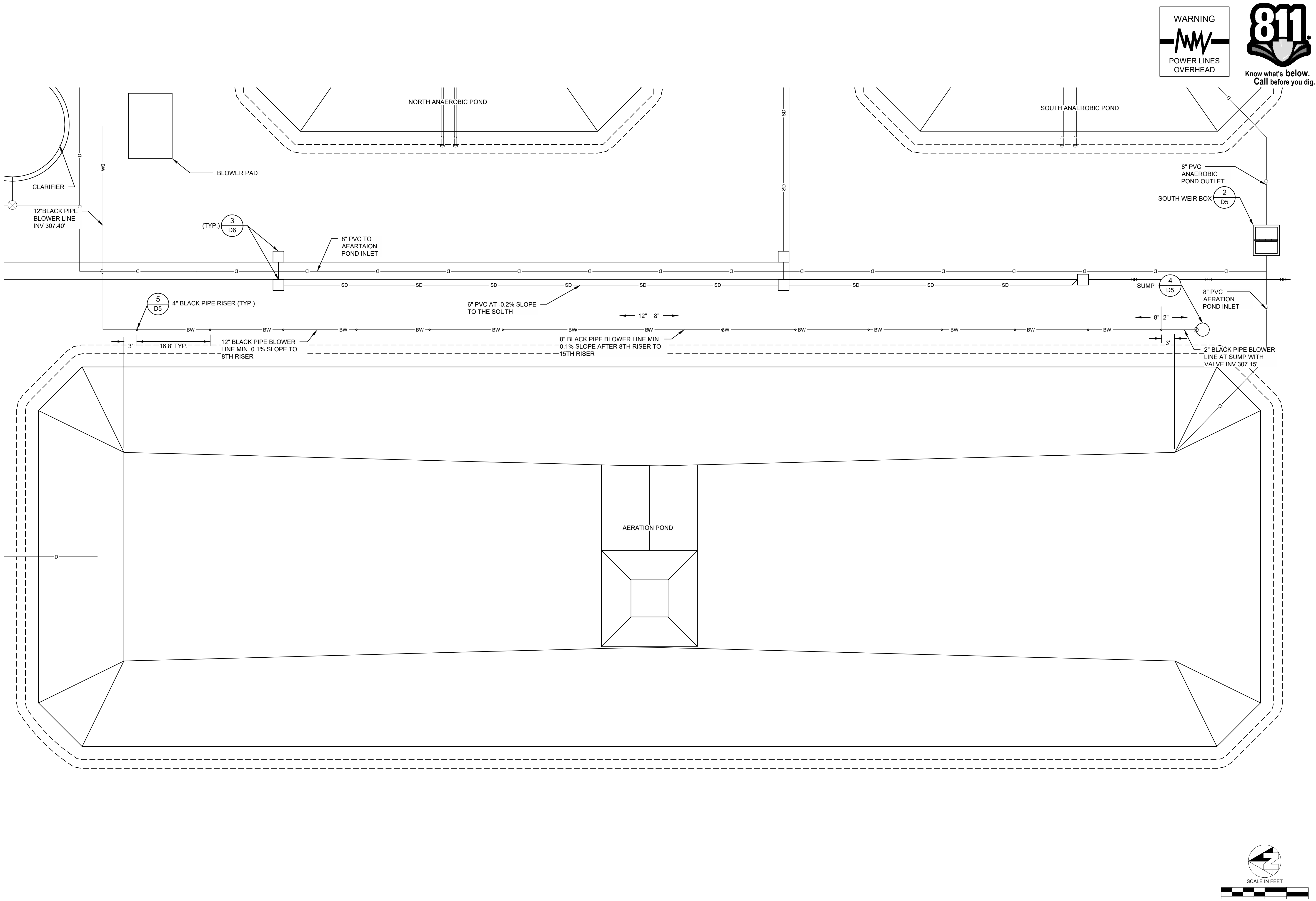
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET P4

23 OF 36



FOR CONSTRUCTION
6/7/2023

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DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM

TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
PLUMBING

BLOWER SYSTEM PLUMBING

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PHASE:

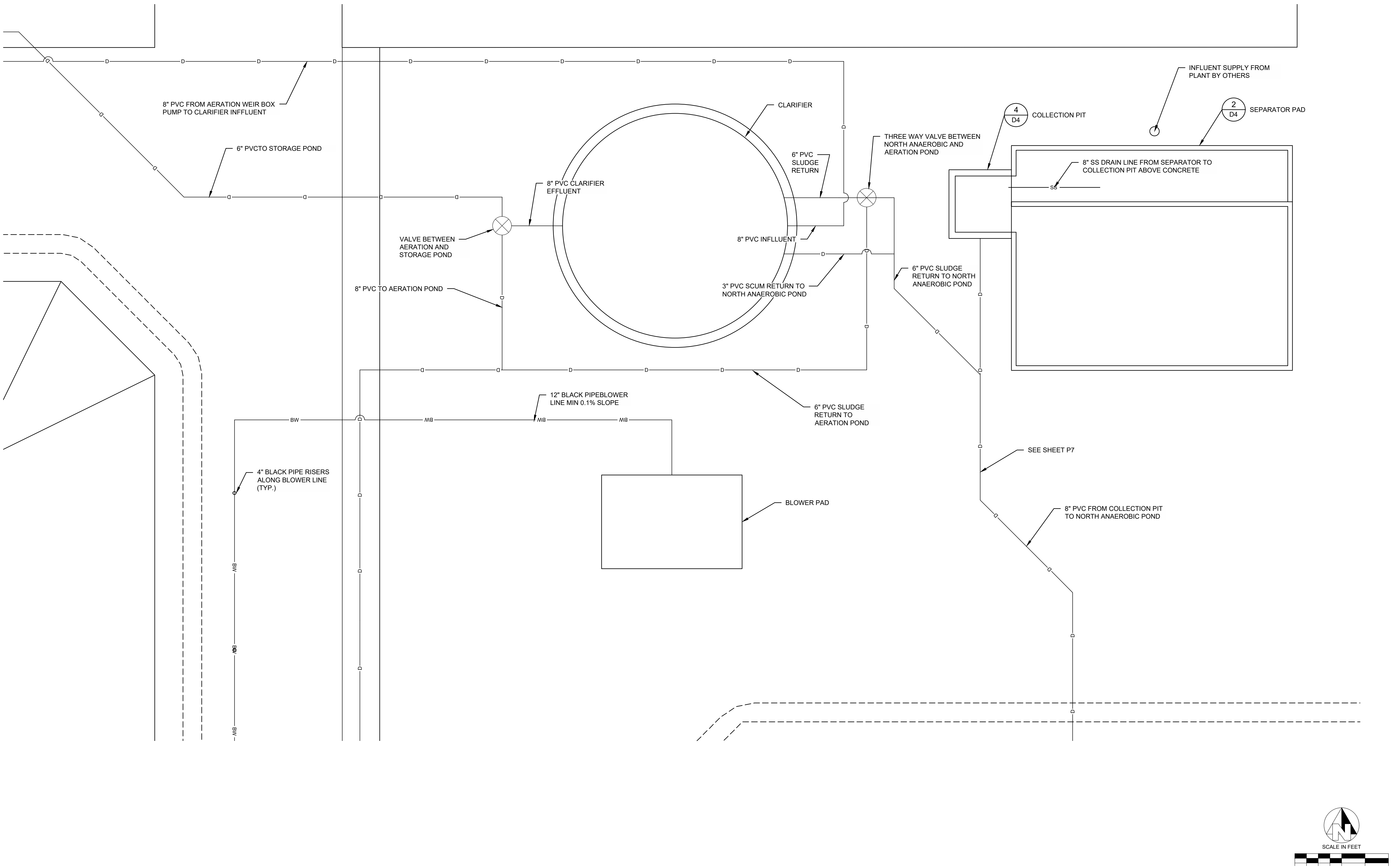
0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET P5

6/7/2023 11:43 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage lnt\DWG\40_sheet sets\07_Utilities\TREATMENT PONDS\P5 BLOWER SYSTEM PLUMBING.dwg -Evan Freitas

WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.



FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
PLUMBING

TREATMENT PLUMBING

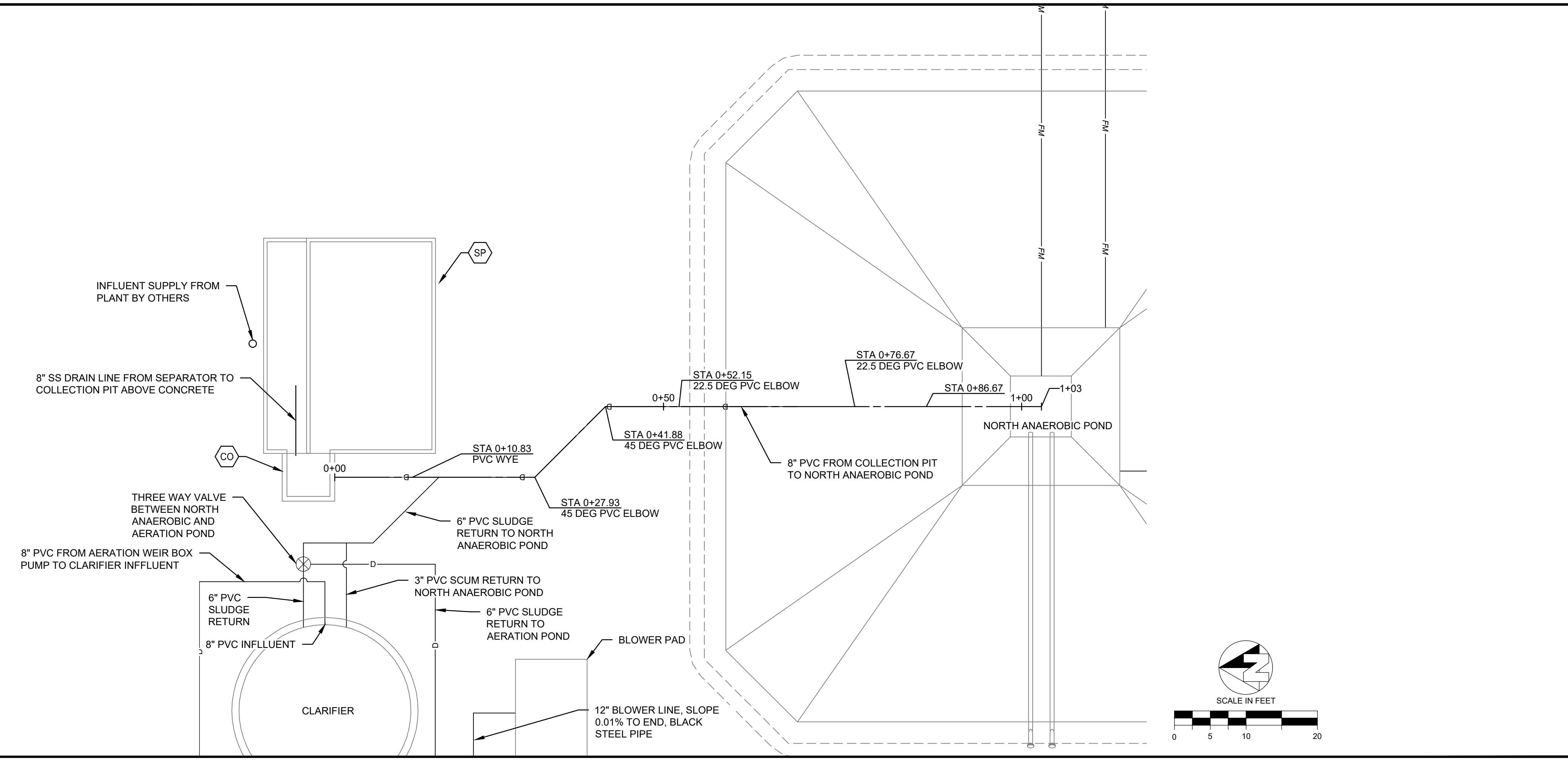
EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

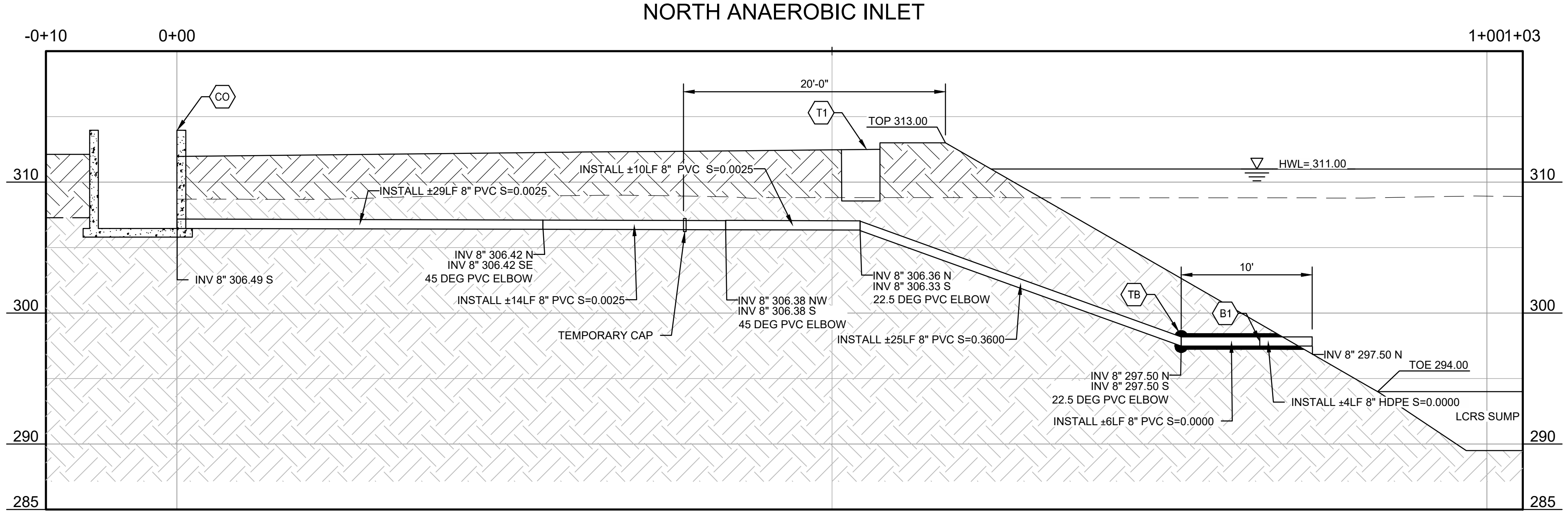
0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET P6

6/7/2023 11:43 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\07_Utilities\P6 TREATMENT PLUMBING.dwg -Evan Freitas



NORTH ANAEROBIC INLET



PLN
P7

WARNING
POWER LINES OVERHEAD

811
Know what's below.
Call before you dig.

NOTES

1. SEE PLAN VIEW FOR PIPE SIZE.
2. ALL HDPE PIPE TO BE DR17.

CONSTRUCTION LEGEND

B1	BOOTLESS PIPE PENETRATION	4 / D1
CO	COLLECTION PIT	4 / D4
SP	SEPARATOR PAD	2 / D4
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1
TB	THRUST BLOCK	5 / D2

HATCH LEGEND

EXISTING EARTH

FINISHED EARTH

SCALE IN FEET
0 3 6 12

FOR CONSTRUCTION
6/7/2023

No.	REVISION	DRAWINGS ISSUED	BY	DATE
0			SCB	06/07/2023

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DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

PLUMBING

STA 0+00-1+00

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559/449-2700 FAX 559/449-2715
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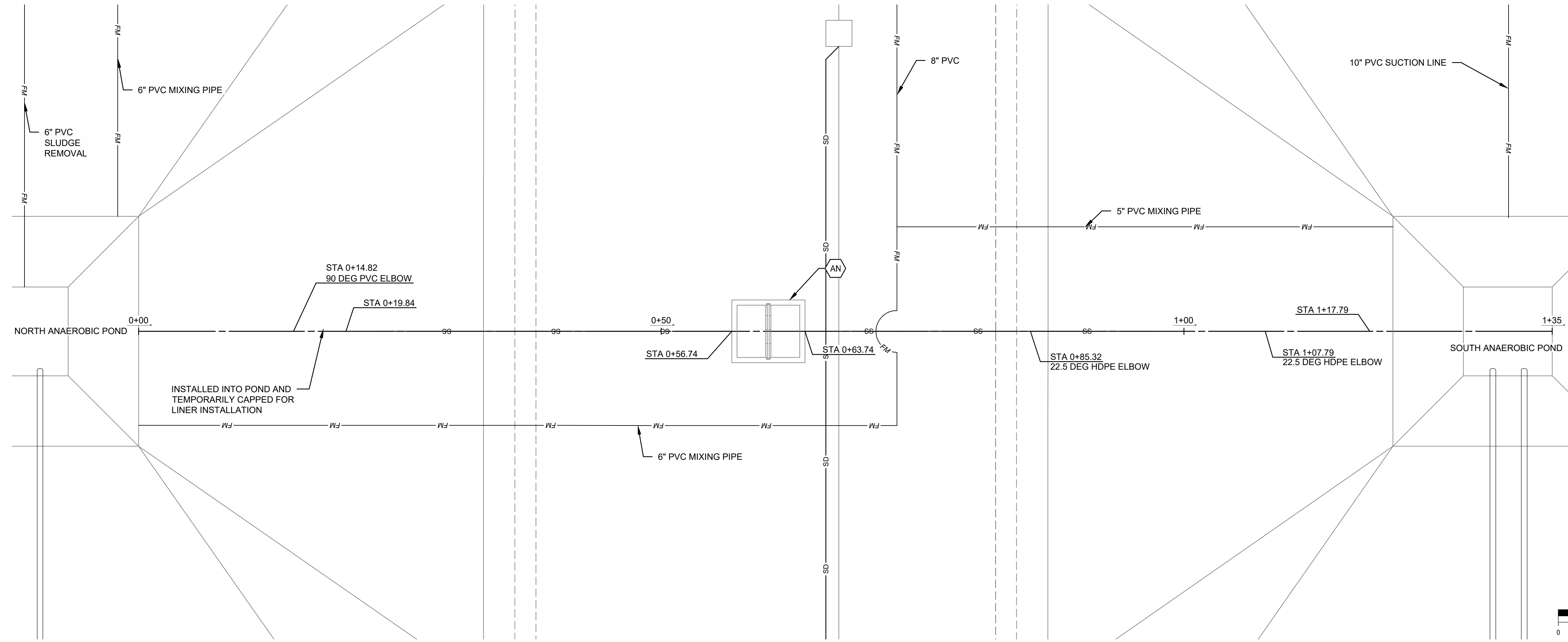
DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET P7
26 OF 36



WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.

NOTES

1. SEE PLAN VIEW FOR PIPE SIZE.
2. ALL HDPE PIPE TO BE DR17.

CONSTRUCTION LEGEND

AO	ANAEROBIC OUTLET	4/D3
AN	NORTH WEIR BOX	1/D5
B1	BOOTLESS PIPE PENETRATION	4/D1
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3/D1
TB	THRUST BLOCK	5/D2

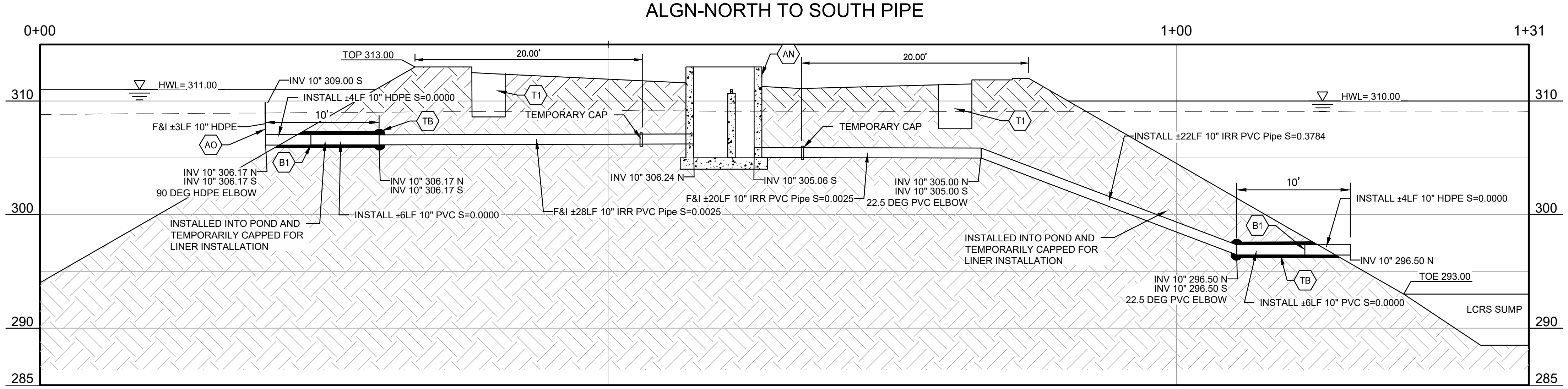
SCALE IN FEET
0 3 6 12

HATCH LEGEND

EXISTING EARTH

FINISHED EARTH

ALGN-NORTH TO SOUTH PIPE



No.	REVISION	BY	DATE
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6/7/2023

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WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

PLUMBING

STA 0+00-1+35.25

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PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

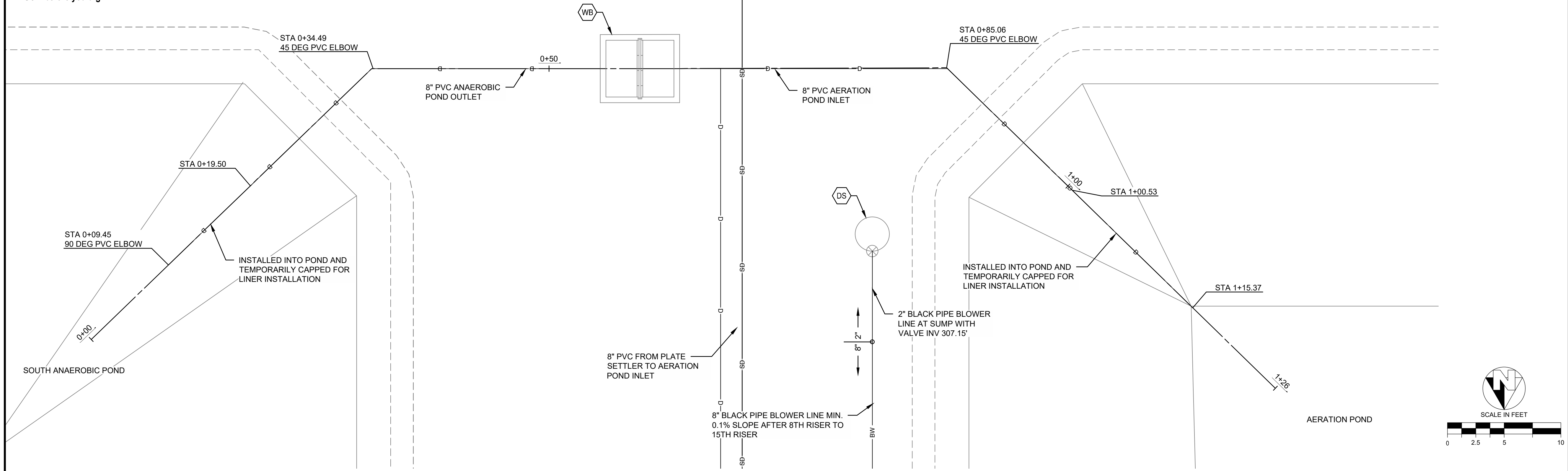
SHEET P8
27 OF 36

PLN
P8

6/7/2023 11:44 AM g:\treehouse ca almonds-2912\291219001-treatmt+storage ld\DWG\40_sheet sets\07_Utilities\TREATMENT PONDS\P8 STA 0+00-1+35.25.dwg -Evan Freitas

811 Know what's below. Call before you dig.

WARNING
POWER LINES OVERHEAD



NOTES

1. SEE PLAN VIEW FOR PIPE SIZE.
2. ALL HDPE PIPE TO BE DR17.

CONSTRUCTION LEGEND

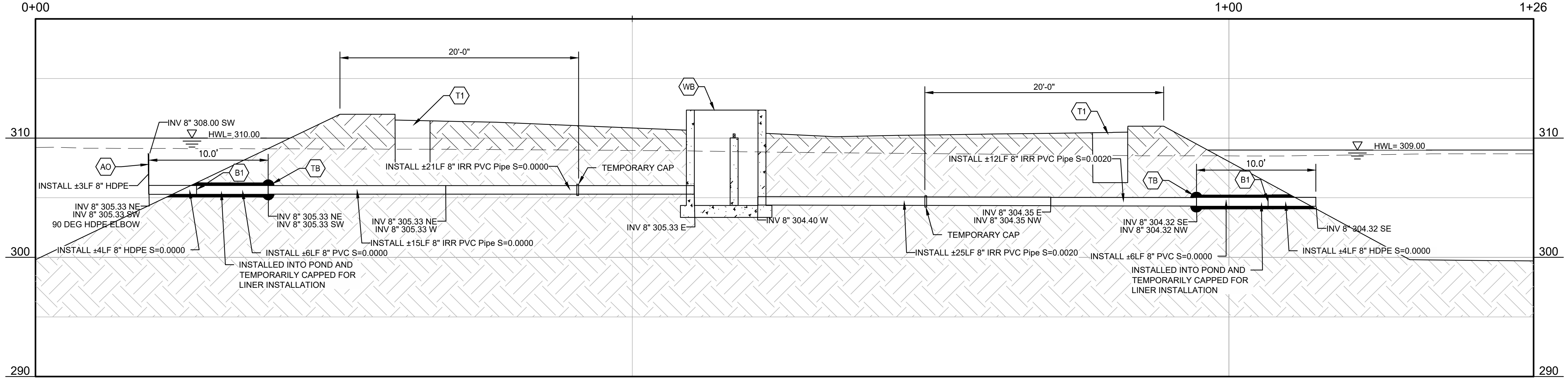
B1	BOOTLESS PIPE PENETRATION	4/D1
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3/D1
TB	THRUST BLOCK	5/D2
AO	ANAEROBIC OUTLET	4/D3
WB	SOUTH WEIR BOX	2/D5
DS	DRY SUMP	4/D5

HATCH LEGEND

EXISTING EARTH

FINISHED EARTH

ALGN-SOUTH ANAEROBIC TO AERATION



PLN
P9

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

FOR CONSTRUCTION
6/7/2023

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WASTEWATER TREATMENT AND STORAGE SYSTEM
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JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

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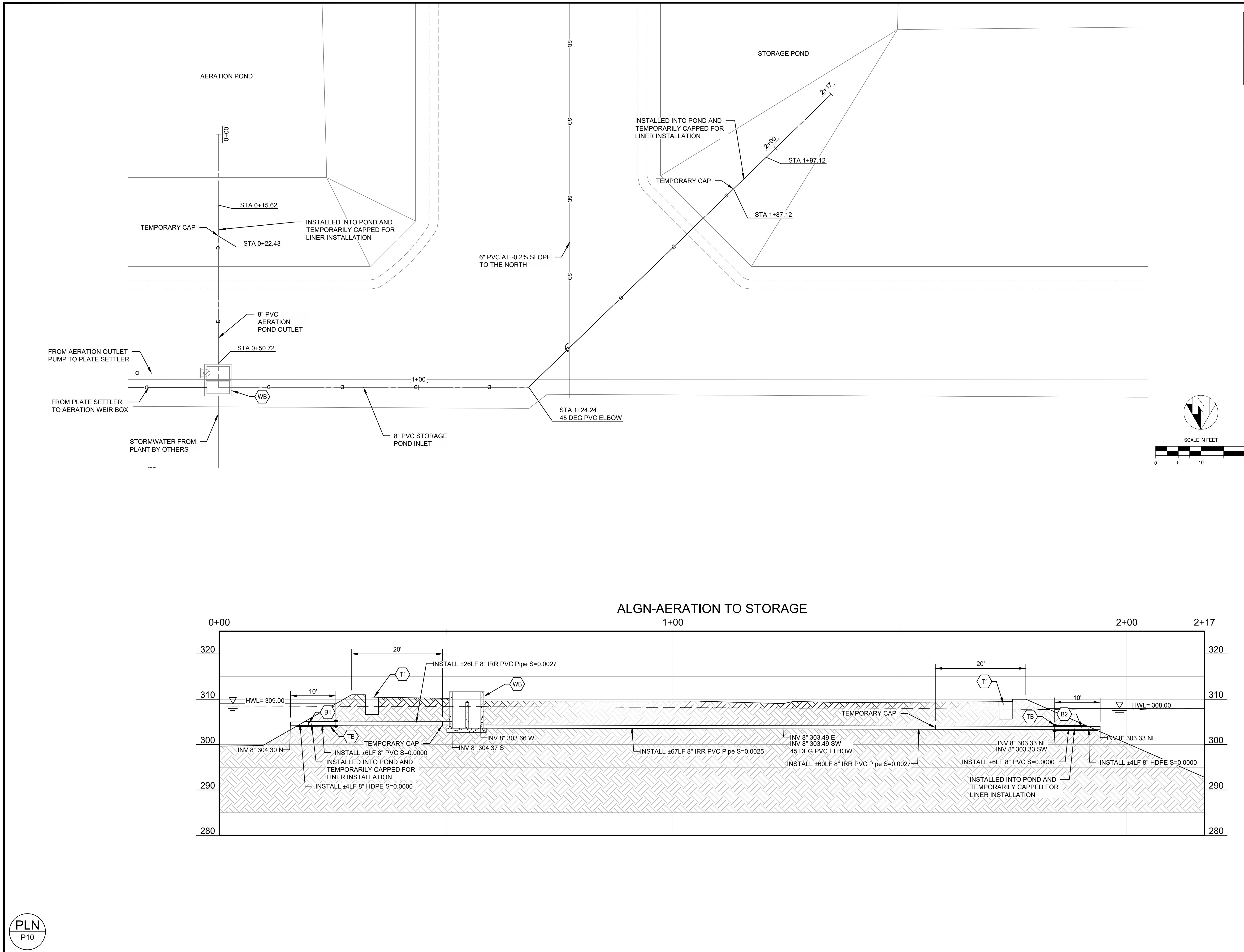
SHEET P9



WARNING
POWER LINES OVERHEAD

811
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NOTES

1. SEE PLAN VIEW FOR PIPE SIZE.
2. ALL HDPE PIPE TO BE DR17.

CONSTRUCTION LEGEND

B1	BOOTLESS PIPE PENETRATION	4/D1
B2	BOOTED PIPE PENETRATION	7/D1
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3/D1
TB	THRUST BLOCK	5/D2
WB	AERATION WEIR BOX	2/D6

HATCH LEGEND

EXISTING EARTH

FINISHED EARTH

FOR CONSTRUCTION 6/7/2023

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WASTEWATER TREATMENT AND STORAGE SYSTEM
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PLUMBING
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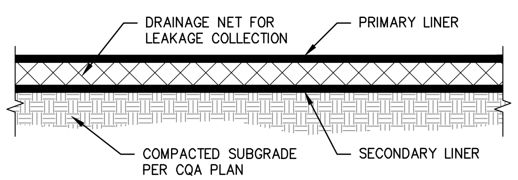
SHEET P10

PC-0213

LINER LAYERS					
DESCRIPTION	LOCATION	MATERAIL	THICKNESS (MINIMUM)	TOP FINISH	BOTTOM FINISH
PRIMARY LINER	TOP	HDPE CONDUCTIVE	60 MIL	SMOOTH	SMOOTH
DRAINAGE NET	MIDDLE	HDPE	175 MIL	N/A	N/A
SECONDARY LINER	BOTTOM	HDPE	60 MIL	SMOOTH	SMOOTH



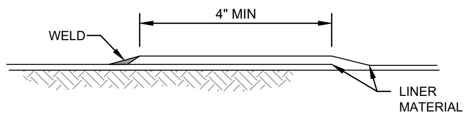
NOT TO SCALE

1 D1 DOUBLE LINER LAYERING

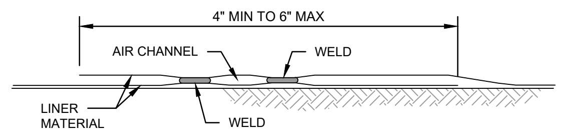
WWTP

NOTES

1. VACUUM TEST ALL EXTRUSION WELDS
2. AIR TEST ALL WEDGE WELDS
3. DOUBLE PATCH ALL PATCHES ON PRIMARY LAYER



EXTRUSION WELD



HOT WEDGE DOUBLE FUSION WELD

NOT TO SCALE

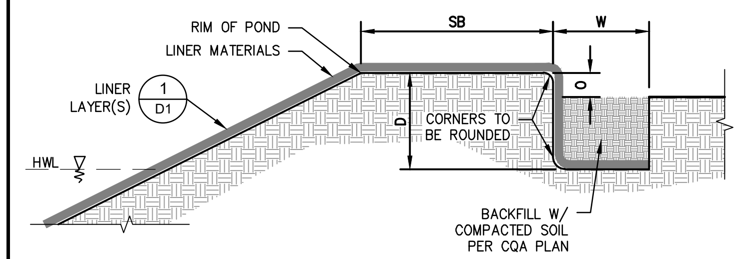
2 D1 HDPE WELDS

PC-0210

ANCHOR TRENCH LAYOUT				
LOCATION	SB=(SETBACK)	W=(WIDTH)	D=(DEPTH)	O=(OFFSET)
STORAGE POND	36"	18"	24"	6"
AERATION POND	36"	18"	24"	6"
ANAEROBIC POND	60"	36"	48"	6"

NOTES

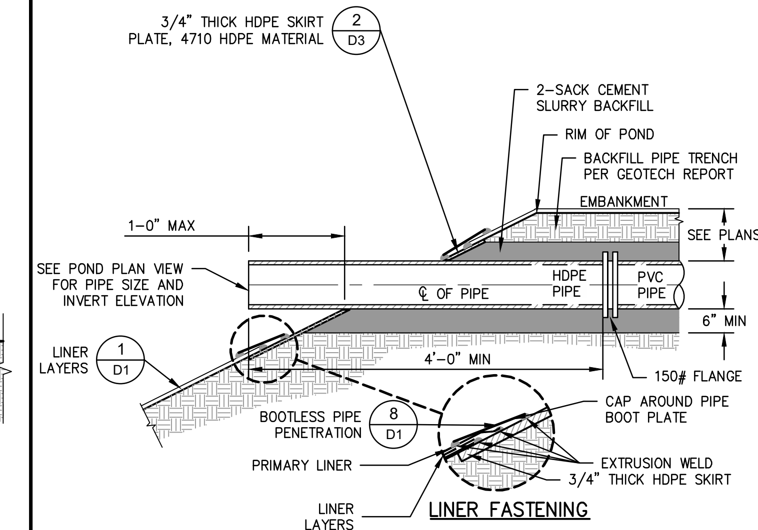
1. CONSTRUCT POND UPPER PERIMETER SURFACE TO THE INSIDE ELEVATION CALLED OUT. WHEN FILLING THE ANCHOR TRENCH, POST LINING INSTALLATION, ADJUST OUTER SURFACE TO THE LOWER ELEVATION CALLED OUT.
2. AT CORNERS CUT AND FIT ALL LAYERS AGAINST INTERIOR TRENCH WALL. FLOOR LAYERS NOT TO HAVE FOLDS. TRIM EXCESS LINER AT OUTER TRENCH WALL.
3. PUNCTURE THROUGH ALL LAYERS ON FLOOR APPROXIMATELY EVERY 20' WITH ½" HOLES BEFORE SOIL IS PLACED IN TRENCH



NOT TO SCALE

3 D1 ANCHOR TRENCH

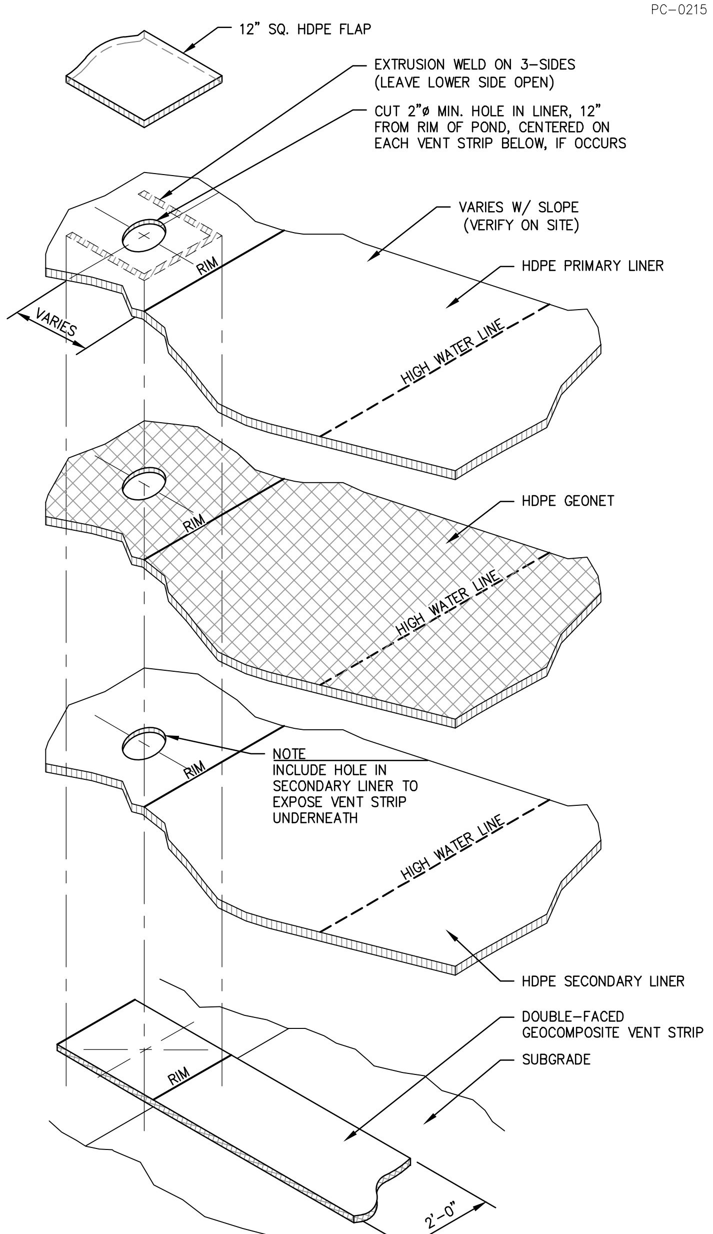
PC-0415



NOT TO SCALE

4 D1 BOOTLESS PIPE PENETRATION

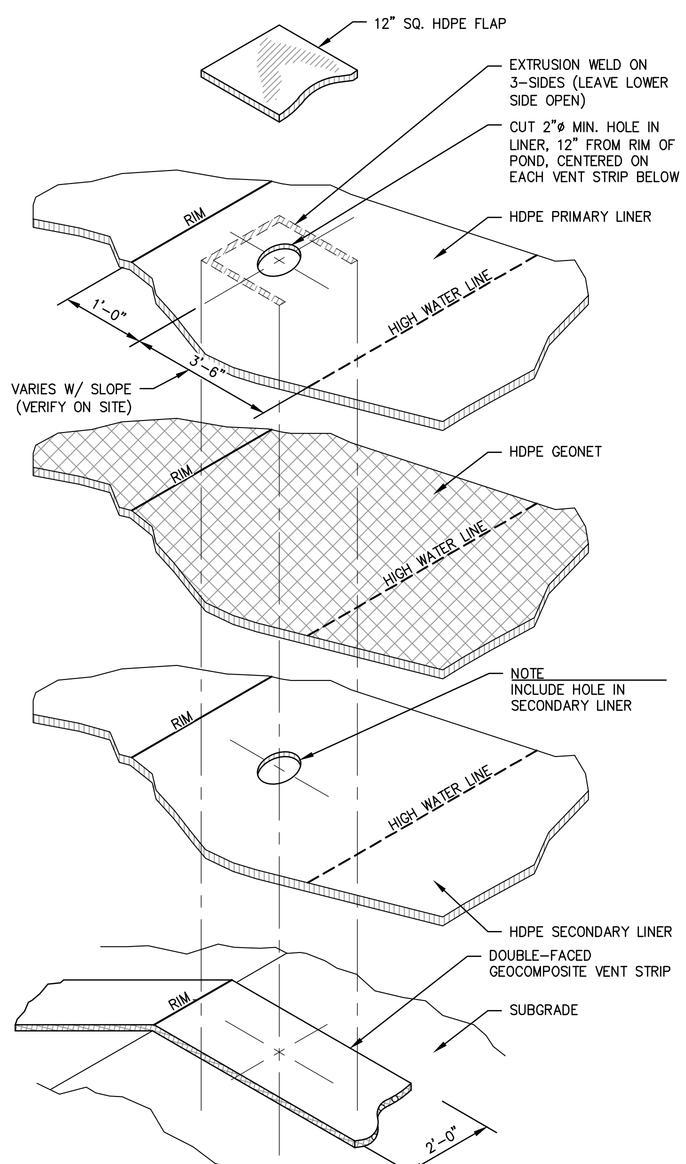
PC-0215



NOT TO SCALE

5 D1 ANAEROBIC VENT ORIFICE (ISOMETRIC VIEW)

PC-0215

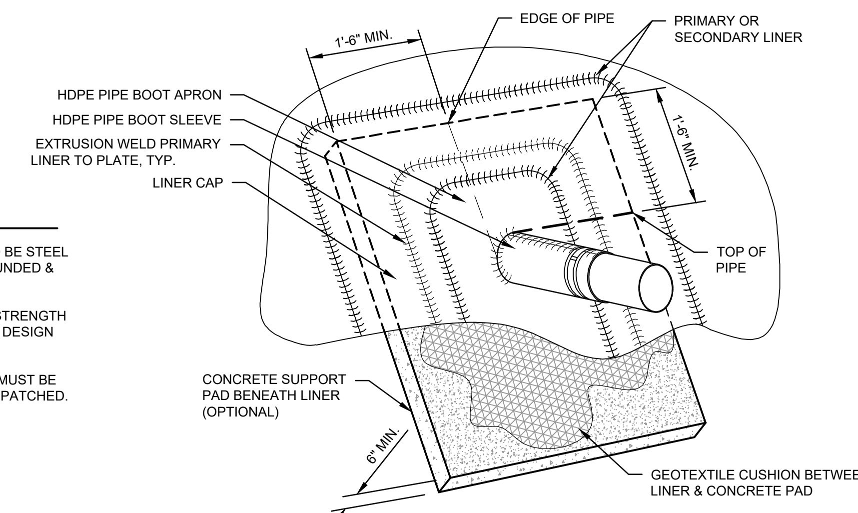


NOT TO SCALE

6 D1 STORAGE VENT ORIFICE (ISOMETRIC VIEW)

NOTES

1. CONCRETE SURFACES TO BE STEEL TROWEL FINISH WITH ROUNDED & SMOOTHED EDGES.
2. 4000PSI MIN. CONCRETE STRENGTH OR AS APPROVED BY THE DESIGN ENGINEER.
3. ALL PIPE PENETRATIONS MUST BE AIR TESTED AND DOUBLE PATCHED.

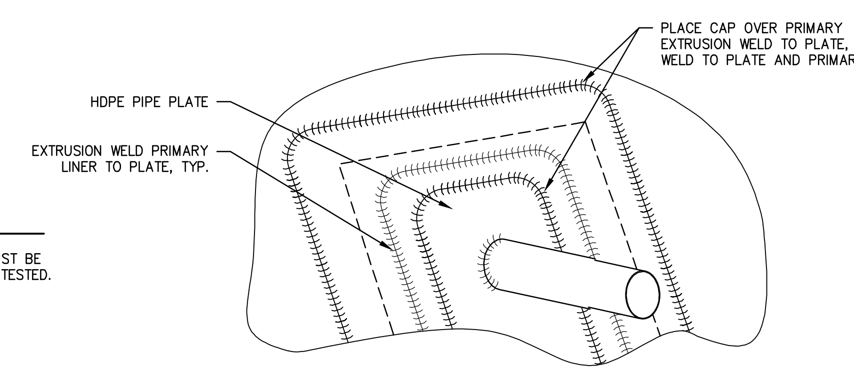


NOT TO SCALE

7 D1 BOOT PIPE PENETRATION WITH LINER CAP

NOTES

1. ALL PIPE PENETRATIONS MUST BE DOUBLE PATCHED AND AIR TESTED.

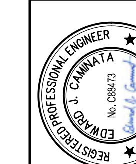


NOT TO SCALE

8 D1 BOOTLESS PIPE PENETRATION WITH LINER CAP

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023



DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

DETAILS

DETAILS 1

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559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

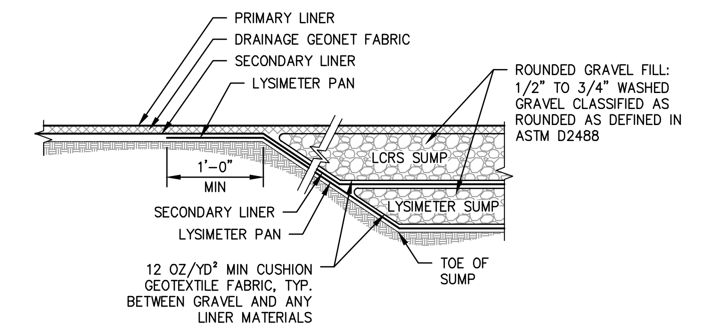
DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET D1

6/7/2023 11:45 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\04_Civil_Details\TREATMENT PONDS\D1 DETAILS 1.dwg-Evan Freitas

PC-0212

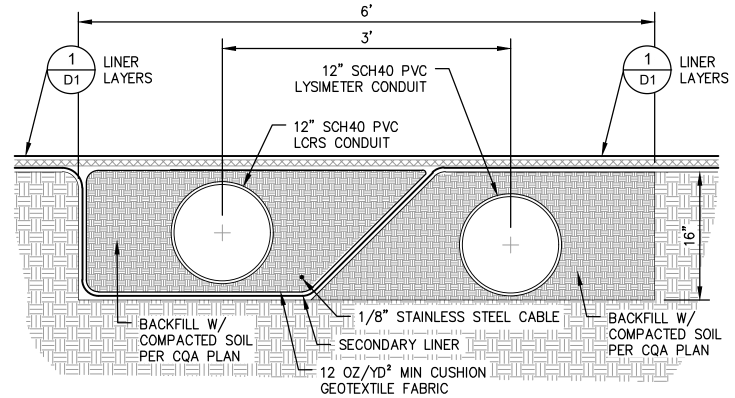


NOT TO SCALE

1 / D2 TYPICAL LINER LAYERS AT SUMP

NOTES

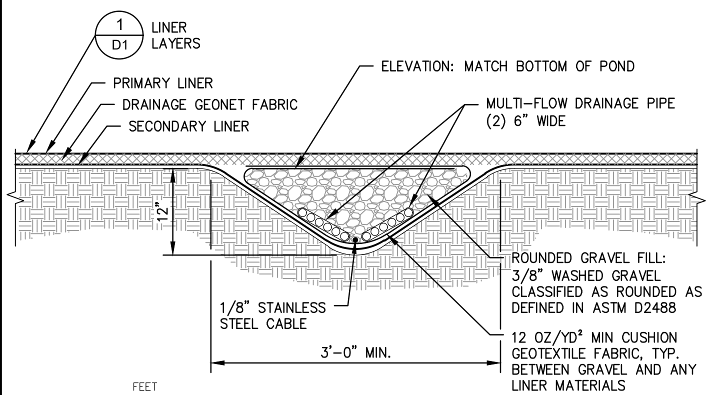
1. 12" SCH 40 CAN BE SUBSTITUTED W/ CLASS 125



NOT TO SCALE

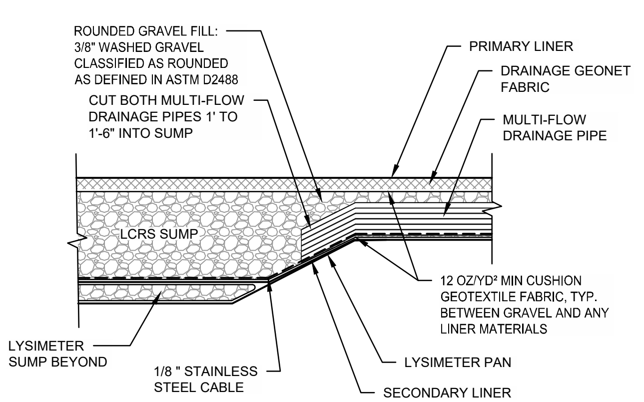
4 / D2 LINER LAYERS AT LCRS & LYSIMETER PIPES

PC-0404



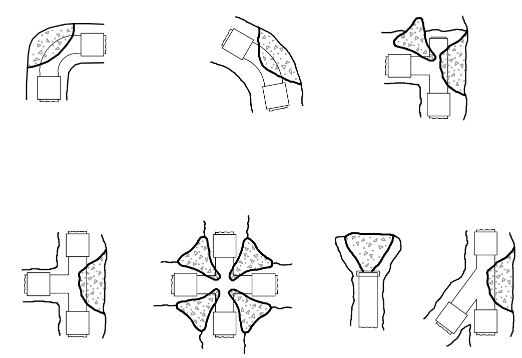
2 / D2 LEAKAGE PIPE-DOUBLE LINER

LIBRARY FOLDER NAME



3 / D2 TRENCH CROSS SECTION

PPNG



MAX INTERNAL PRESSURE (PSI)	50
SOIL BEARING PRESSURE (PSF)	1500
SAFETY FACTOR	1.5

MINIMUM BEARING AREA (SF)

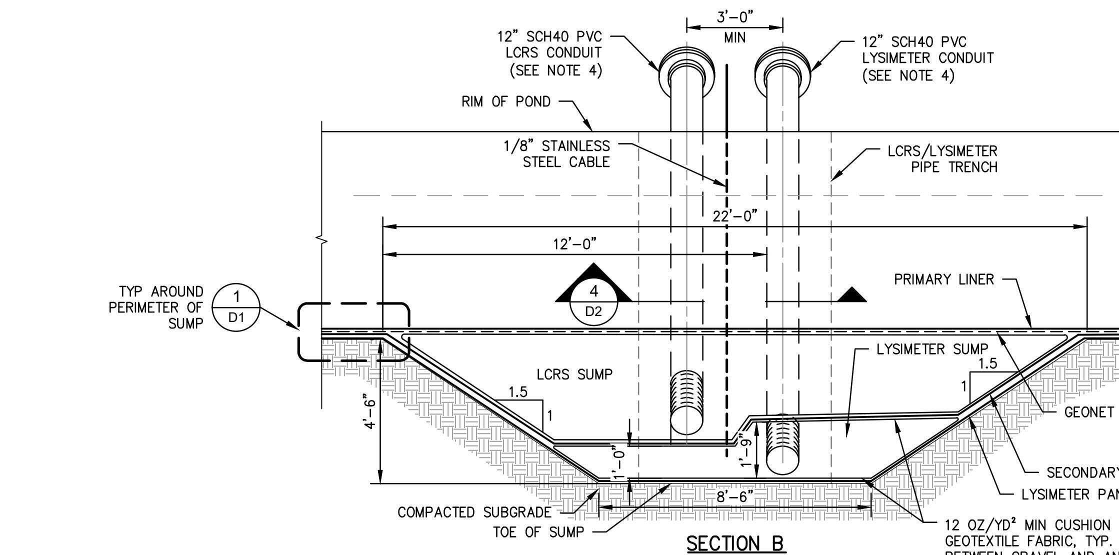
PIPE SIZE	DEAD END OR TEE	90° BEND	45° BEND	22.5° BEND	11.25° BEND
3	0.4	0.5	0.3	0.1	0.1
4	0.6	0.9	0.5	0.2	0.1
6	1.4	2.0	1.1	0.6	0.3
8	2.5	3.6	1.9	1.0	0.5
10	3.9	5.6	3.0	1.5	0.8
12	5.7	8.0	4.3	2.2	1.1
16	10.1	14.2	7.7	3.9	2.0
18	12.7	18.0	9.7	5.0	2.5
20	15.7	22.2	12.0	6.1	3.1
24	22.6	32.0	17.3	8.8	4.4
30	35.3	50.0	27.1	13.8	6.9
36	50.9	72.0	39.0	19.9	10.0
42	69.3	98.0	53.0	27.0	13.6
48	90.5	128.0	69.2	35.3	17.7

NOTES

1. ALL FITTINGS TO BE WRAPPED IN 4 MIL VISQUEEN.
2. CONCRETE SHALL NOT ENCROACH ON END FITTINGS.
3. CONCRETE SHALL BEAR AGAINST UNDISTURBED SOIL.
4. CONCRETE TO HAVE ULTIMATE STRENGTH OF 3000 PSI @ 28 DAYS.
5. THRUST BLOCK DATA FOR VERTICAL PIPE BENDS MAY REQUIRE ENGINEERING NOT INCLUDED IN THIS DETAIL.

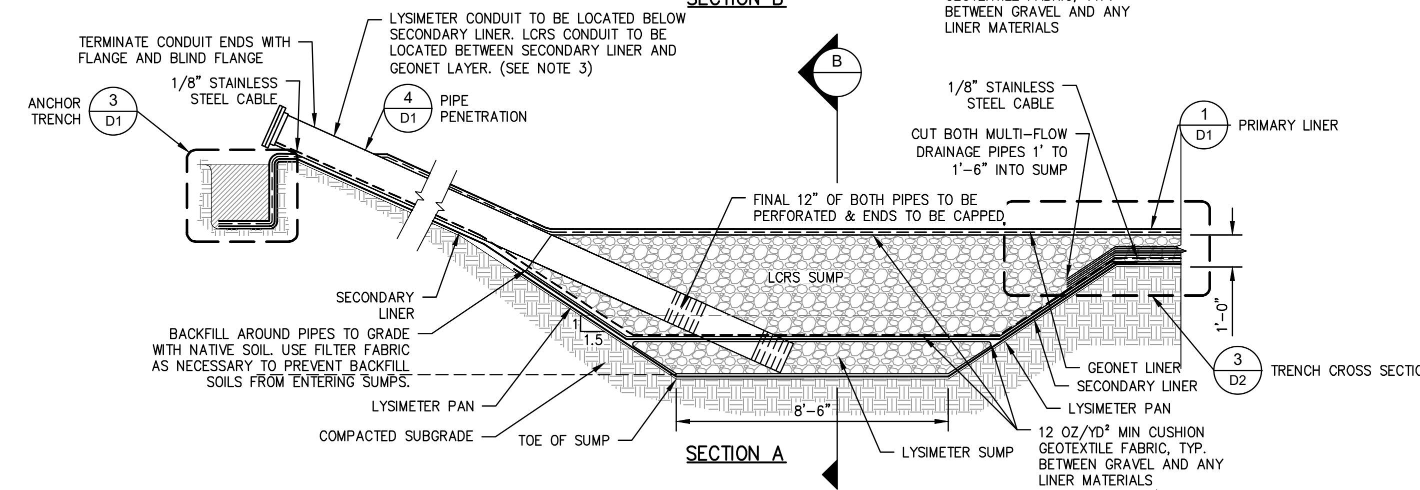
5 / D2 THRUST BLOCKS

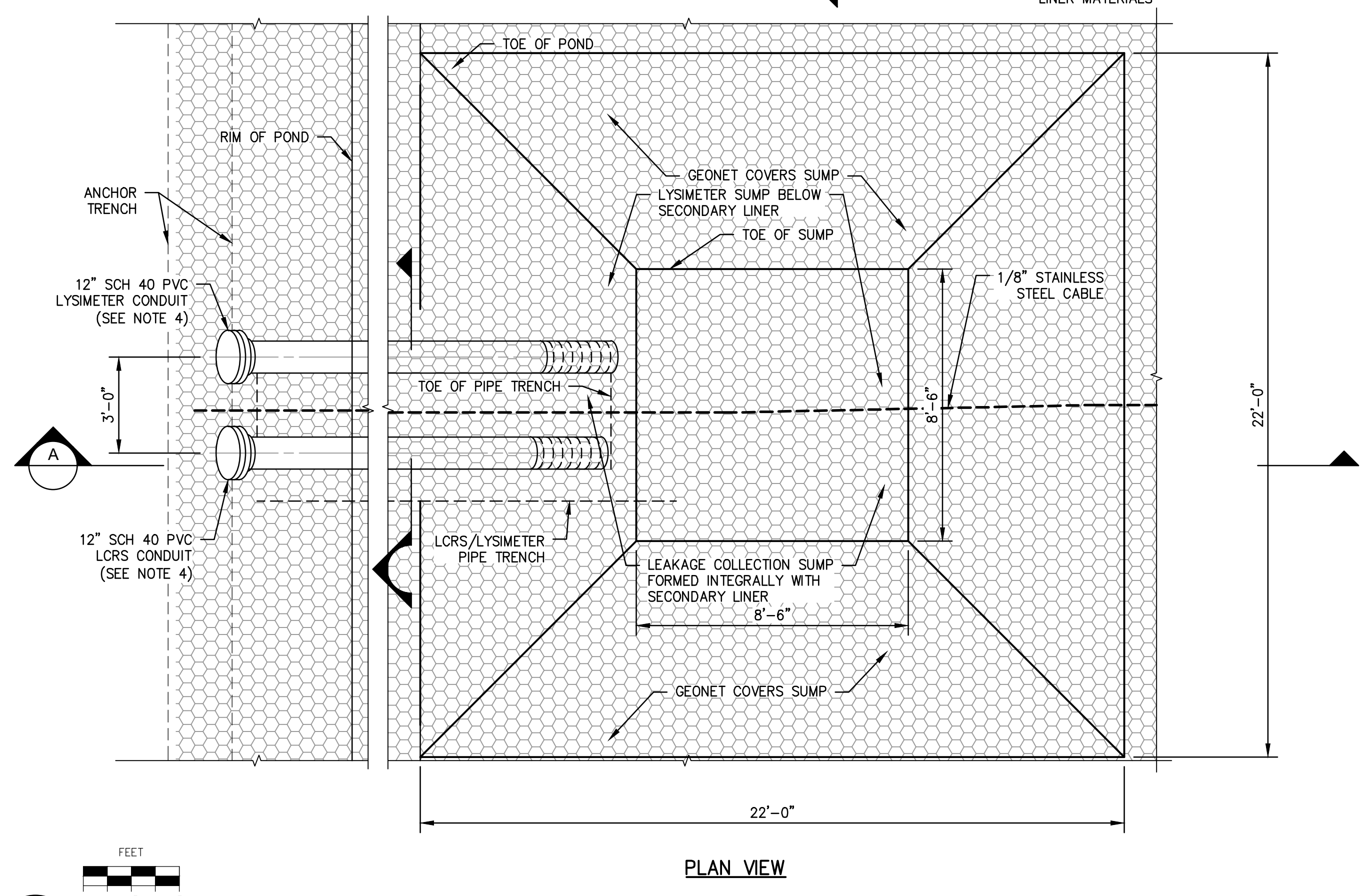
PC-0403



NOTES

1. FILL BOTH LYSIMETER AND LCRS SUMPS WITH ROUNDED GRAVEL. 1/2" TO 3/4" WASHED GRAVEL CLASSIFIED AS ROUNDED AS DEFINED IN ASTM D2488.
2. DURING CONSTRUCTION GEOTEXTILE FABRIC SHALL EXTEND 2 FT BEYOND EDGE OF LINER.
3. LCRS/LYSIMETER PIPE LAYOUT IS NOT TO SCALE DUE TO ANGLE OF PIPE INTRUSION INTO THE SUMP. DIMENSIONS MAY VARY. WHEN LOOKING DOWN AT THE SUMP FROM THE RIM, LYSIMETER WILL BE ON THE LEFT AND LCRS WILL BE ON THE RIGHT.
4. 12" SCH 40 CAN BE SUBSTITUTED WITH CLASS 125.
5. WHEN INSTALLING LINER BOOTS ON THE LCRS/LYSIMETER PIPES, CONTINUE BOOTS TO FLANGES
6. CONTRACTOR TO SUPPLY OWNER A SUMP PUMP (RECOMMENDED LITTLE GIANT WE10G05P4-21 OR ENGINEER APPROVED) PREPARED WITH HOSE AND CORD TO REACH SUMP.





6 / D2 LCRS & LYSIMETER DRAINAGE SUMPS

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DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
DETAILS

DETAILS 2

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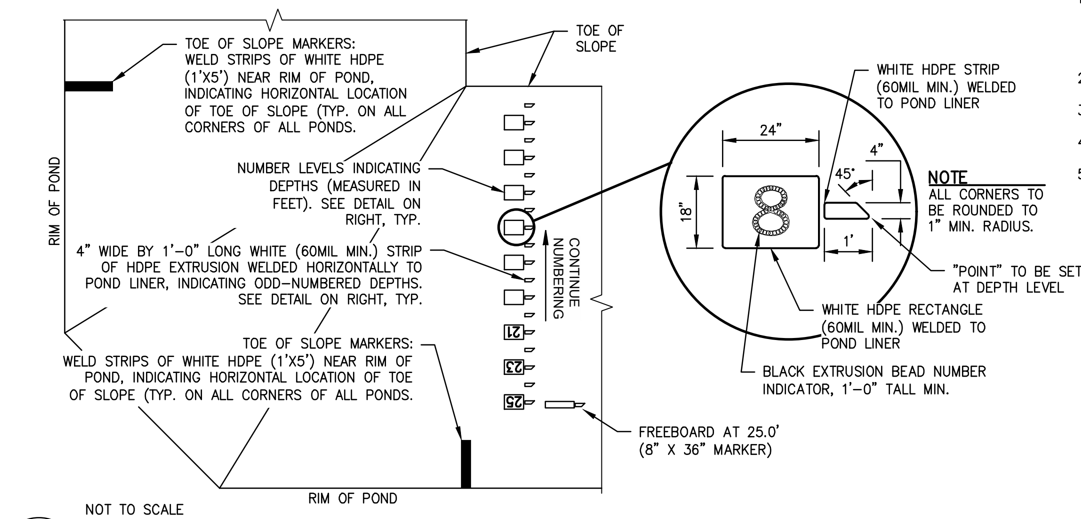
SHEET D2

6/7/2023 11:46 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage b\D\WG\40_sheet sets\04_Civil_Details\TREATMENT PONDS\02 DETAILS 2.dwg-Evan Freitas

PC-0525



NOT TO SCALE

1
D3

TYPICAL DEPTH GAUGE & TOE OF SLOPE MARKERS

NOTES

1. DEPTH GAUGE LEVELS ARE MEASURED **VERTICALLY.** SURVEY EQUIPMENT SHALL BE USED TO LOCATE VERTICAL POSITIONS OF HDPE NUMBERS AND STRIPS. HDPE STRIP "POINT" SHALL BE SET AT THE INDICATED VERTICAL LEVEL.
2. THE ZERO ELEVATION IS SET BASED OFF THE CENTER OF POND IN THE LONG DIRECTION.
3. ALTERNATE MARKERS TO BE APPROVED BY THE ENGINEER.
4. ADDITIONAL DEPTHS MARKERS TO BE SET FOR FREEBOARD. (SEE TABLE BELOW FOR DEPTHS)
5. PLACE NUMBERS FROM RIM OF POND TO BOTTOM.

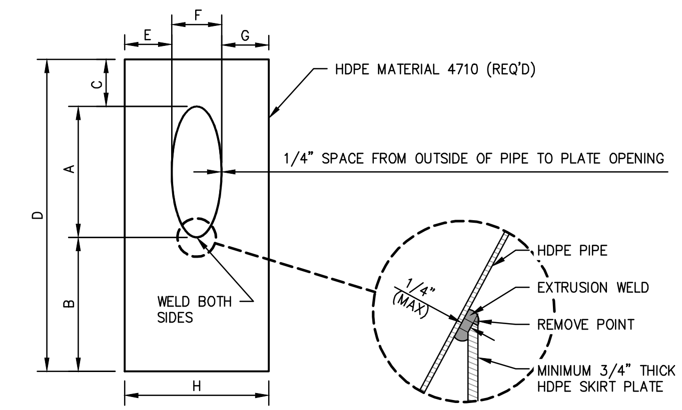
ADDITIONAL DEPTH MARKERS	
DESCRIPTION	DEPTH
FREEBOARD	2' FROM TOP

PC-0415

NOTES

1. FIELD CUT PLATE HOLE TO FIT HDPE PIPE.

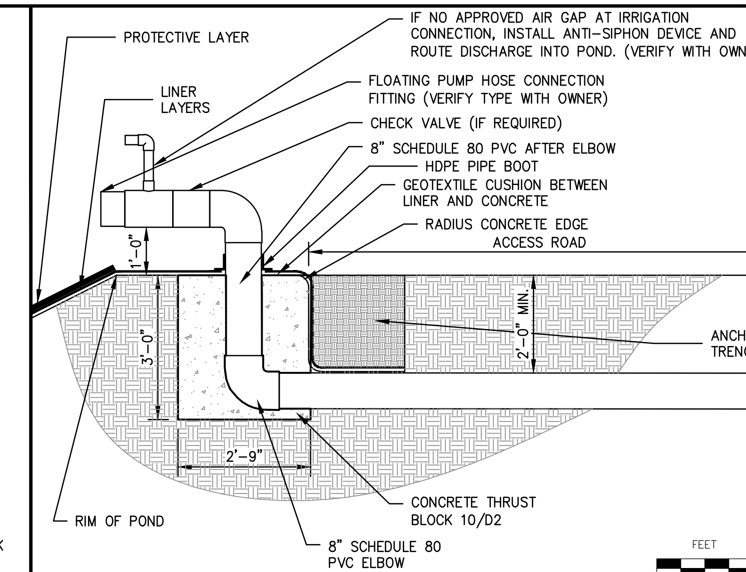
PIPE SIZES	SIDE SLOPE	DIM A	DIM B	DIM C	DIM D	DIM E	DIM F	DIM G	DIM H
5"	1.75:1	10"	1'-6"	1'-8"	4'-0"	1'-0 1/32"	5 3/8"	1'-0 1/32"	2'-6"
6"	1.75:1	1'-0"	3'-0" MIN	1'-0" MIN	5'-6"	11 7/8"	6 1/8"	11 7/8"	2'-6"
8"	1.75:1	1'-4 1/8"	3'-0" MIN	1'-0" MIN	5'-6"	10 3/4"	8 1/2"	10 3/4"	2'-6"
10"	1.75:1	1'-8"	3'-0"	1'-10"	6'-6"	9 5/8"	10 3/4"	9 5/8"	2'-6"



NOT TO SCALE

2
D3

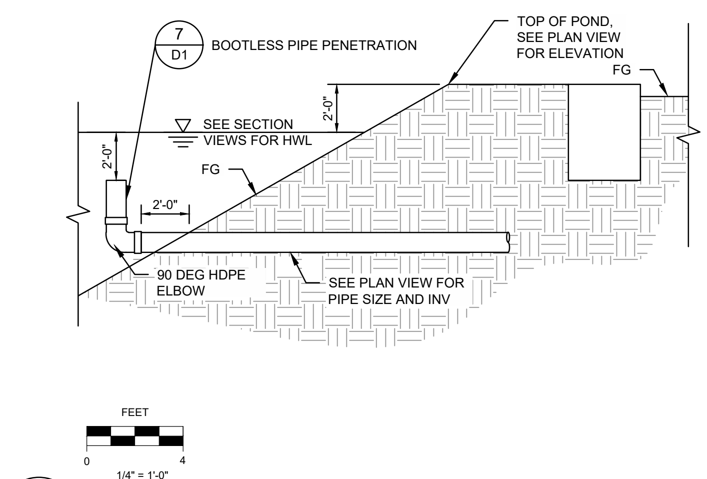
SMALL HDPE PIPE TO HDPE SKIRT PLATE WELD FOR BOOTLESS PENETRATION



3
D3

FLOATING PUMP CONNECTION

LIBRARY FOLDER NAME



4
D3

ANAEROBIC OUTLET

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
DETAILS

DETAILS 3

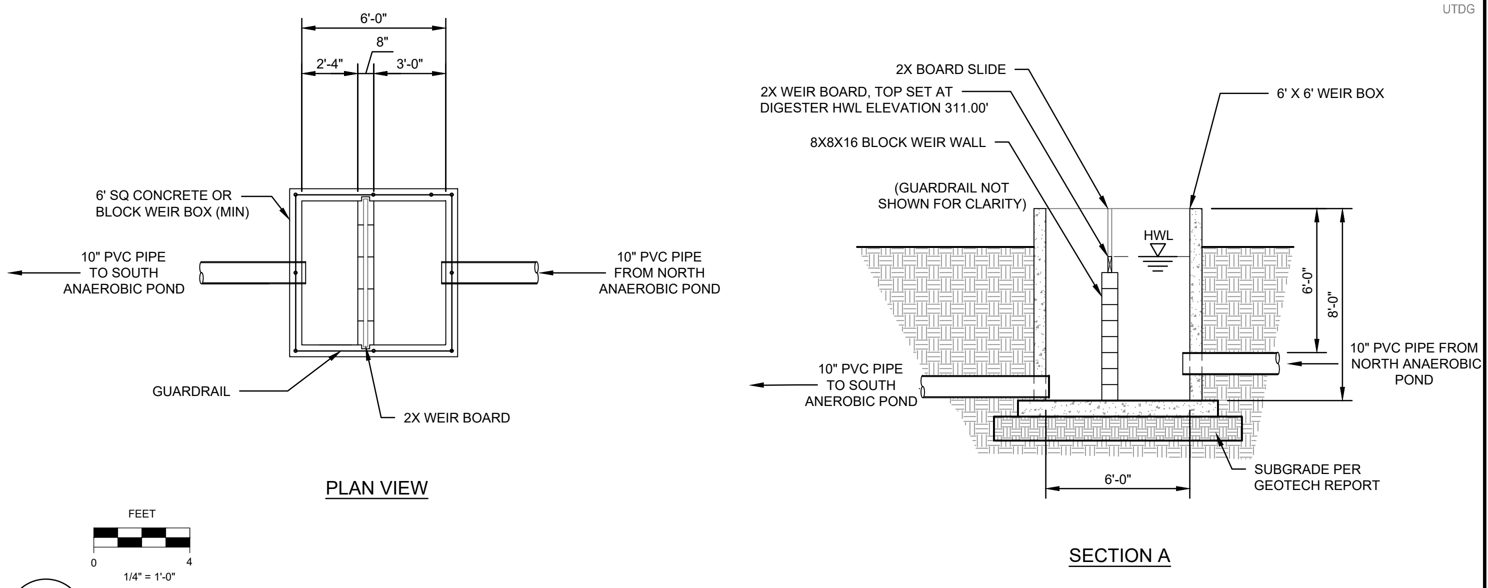
EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

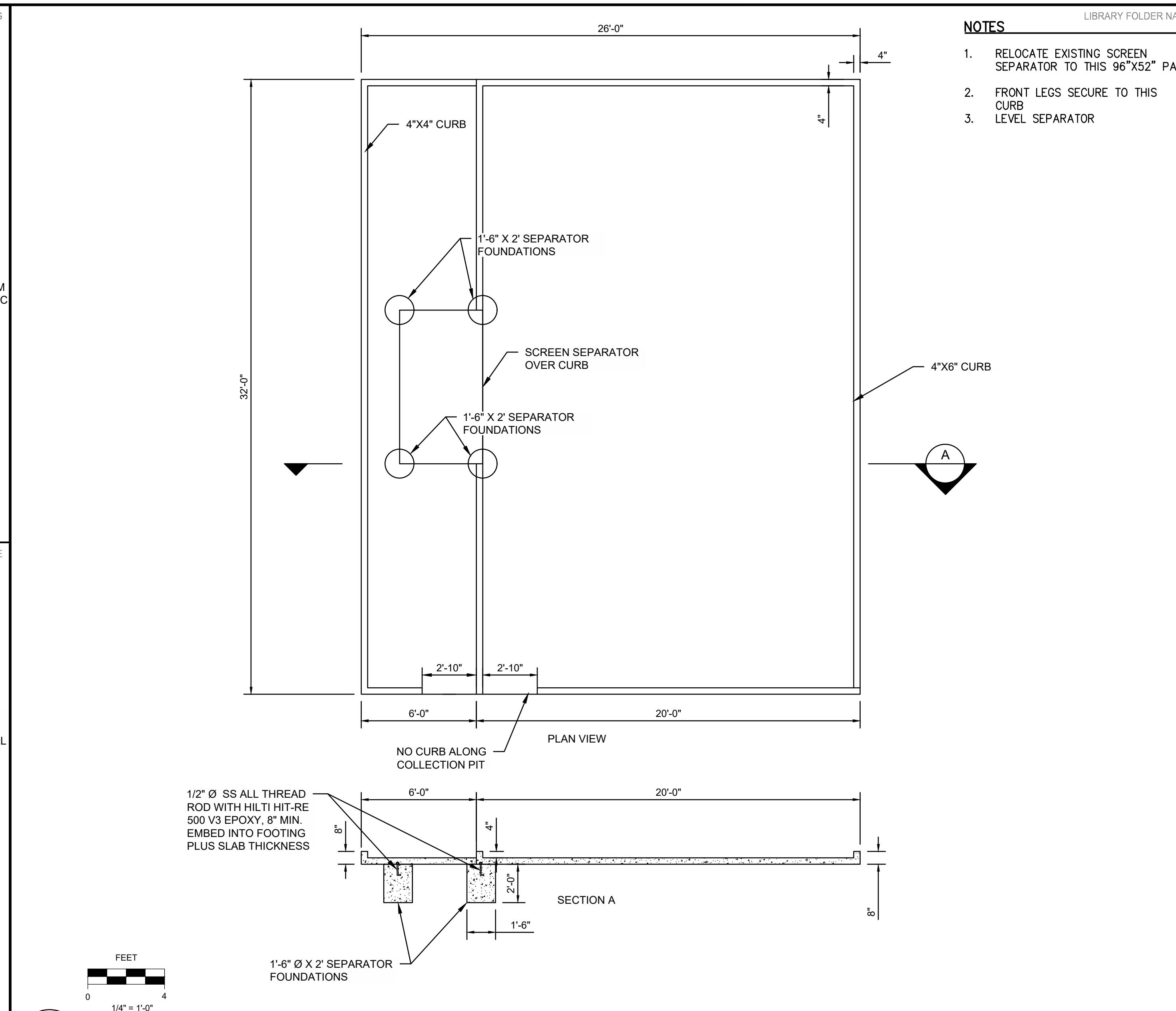
SHEET D3

6/7/2023 11:46 AM g:\treehouse ca almonds-2912\291219001-treatmt+storage td\DWG\40_sheet sets\04_Civil_Details\TREATMENT PONDS\D3 DETAILS 3.dwg Evan Freitas



1
D4

NORTH POND WEIR BOX

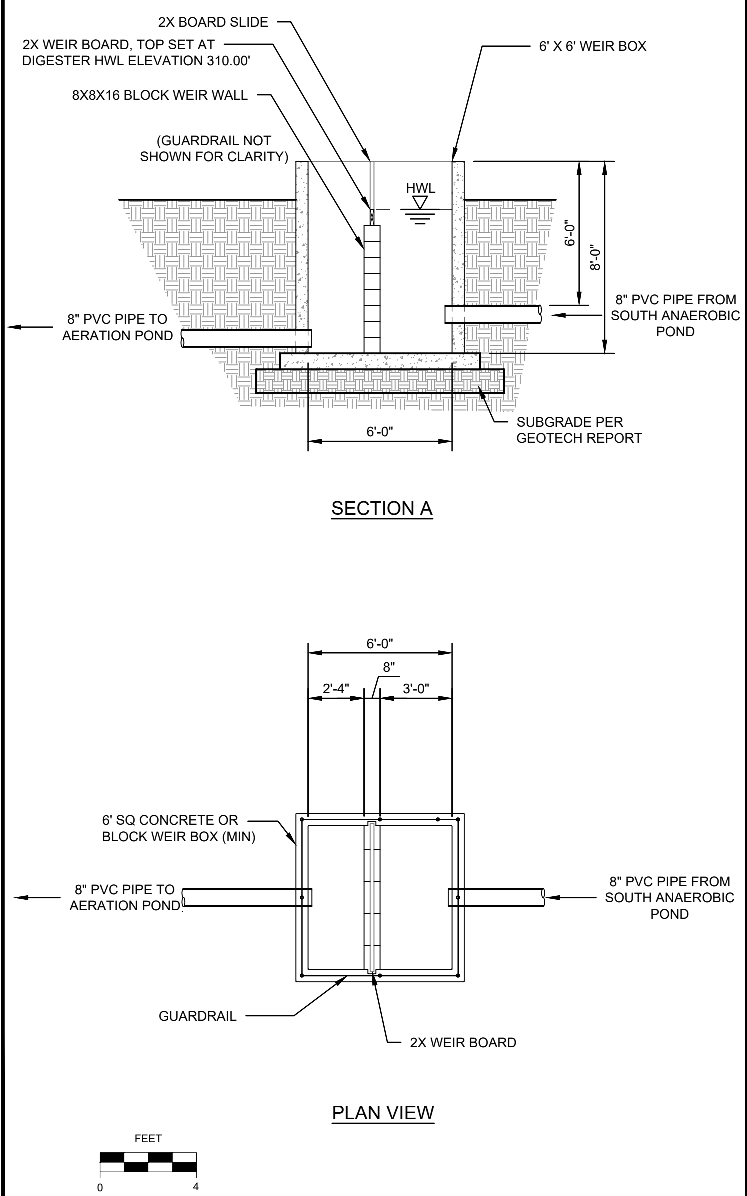


NOTES

1. RELOCATE EXISTING SCREEN SEPARATOR TO THIS 96"X52" PAD
2. FRONT LEGS SECURE TO THIS CURB
3. LEVEL SEPARATOR

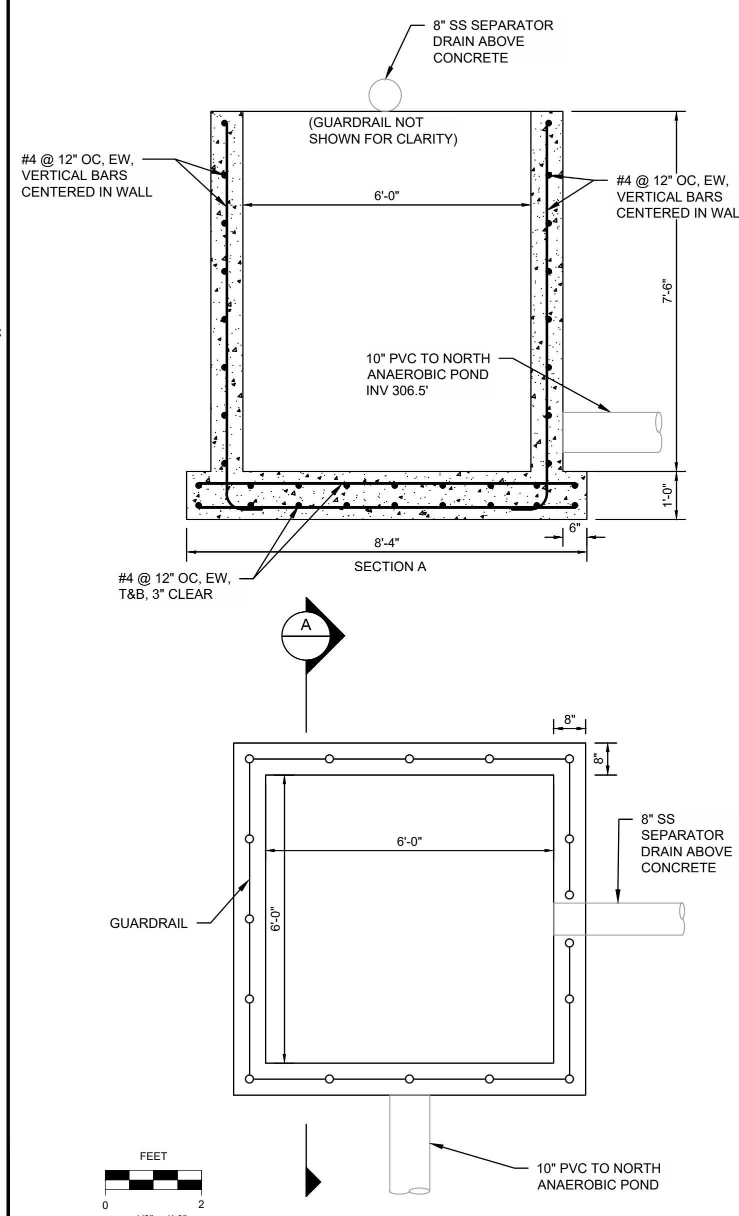
2
D4

SEPARATOR PAD



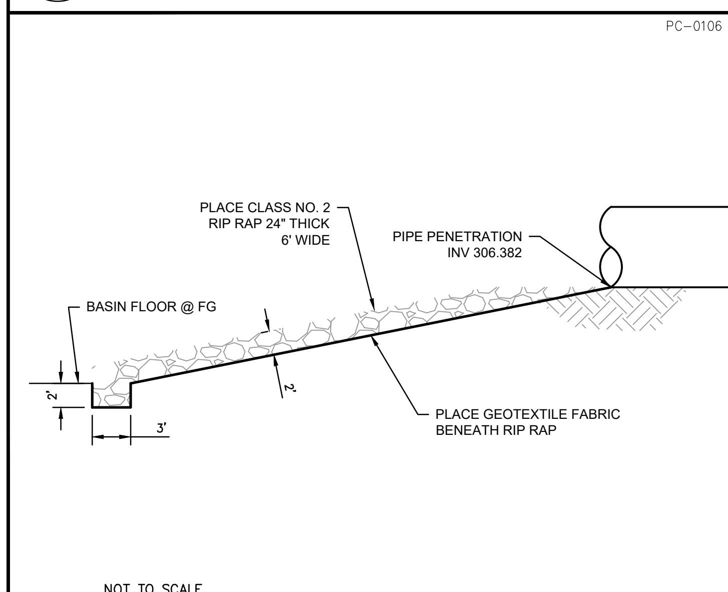
3
D4

SOUTH POND WEIR BOX



4
D4

COLLECTION PIT



5
D4

BASIN RIP RAP

FOR CONSTRUCTION
6/7/2023

No.	DRAWINGS ISSUED / REVISION	BY	DATE
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EARLIMART, CA
DETAILS

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559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

DRAFTED BY: NPA	CHECKED BY: SCB

DATE: 06/07/2023
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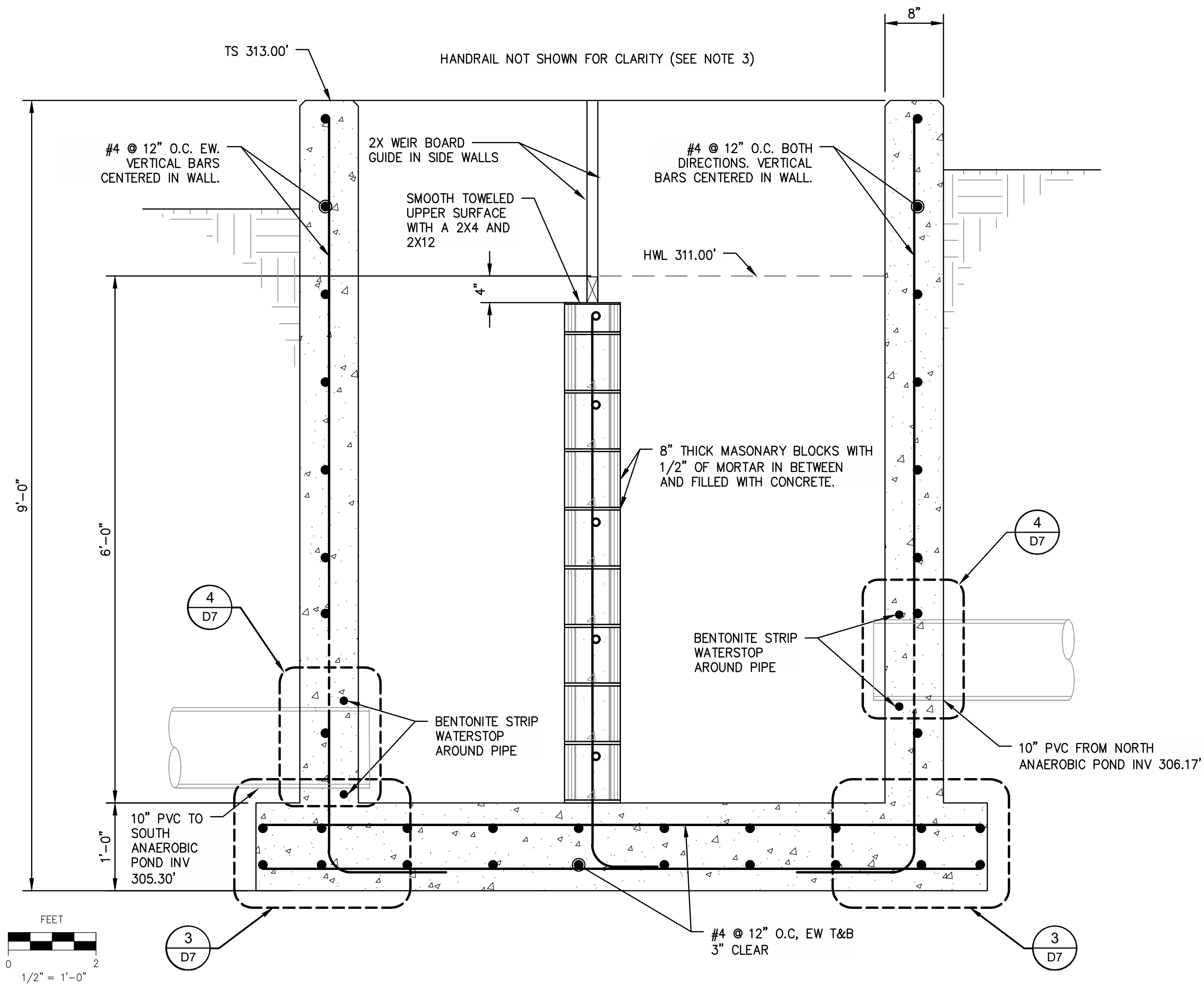
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET D4
33 OF 36

NOTES

1. APPLY COAL TAR EPOXY PAINT (RUST–OLEUM OR EQUIVALENT) TO THE INTERIOR UPPER 3 FEET OF THE WEIR BOX.

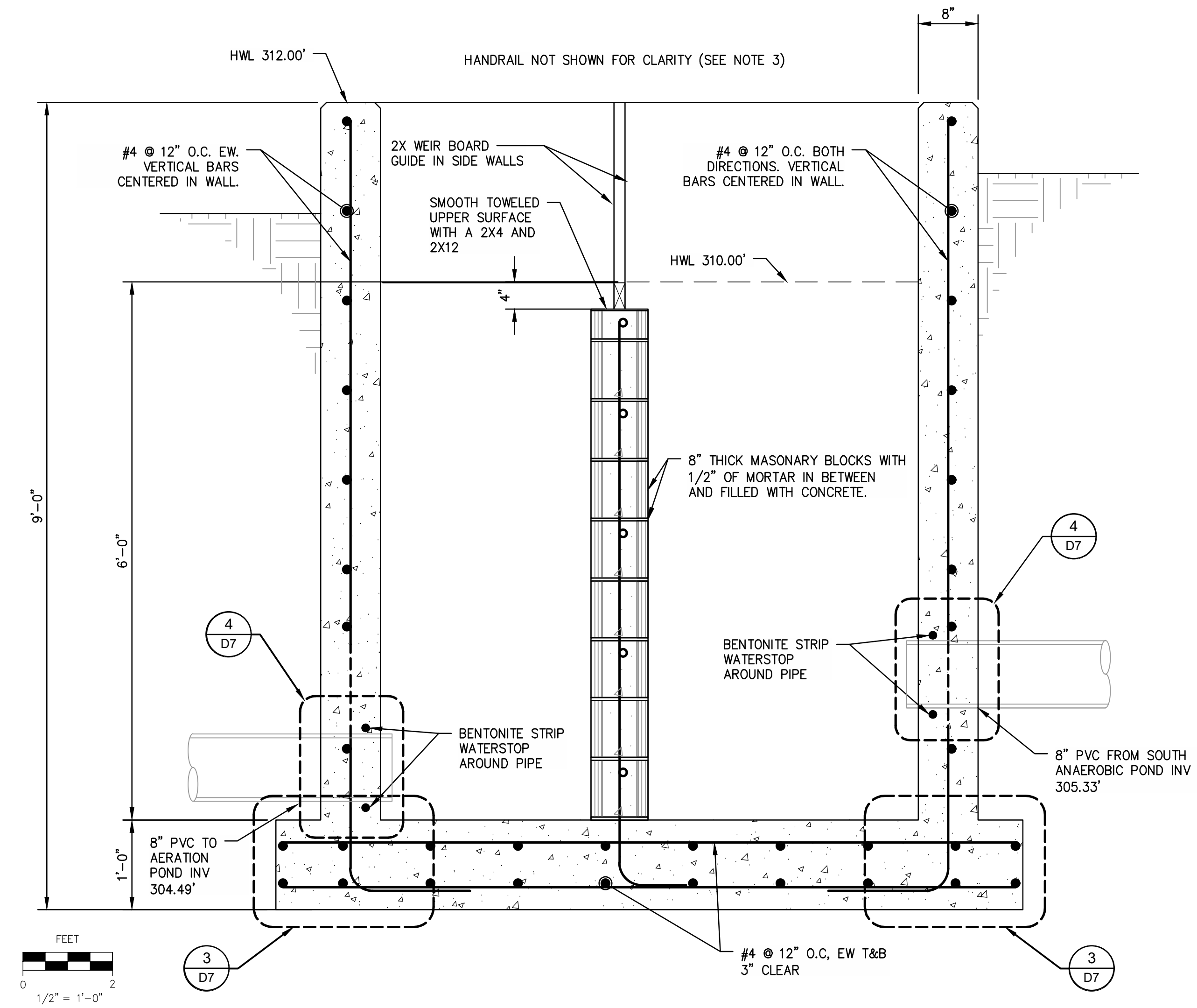


1 D5

NORTH POND WEIR BOX STRUCTURE

NOTES

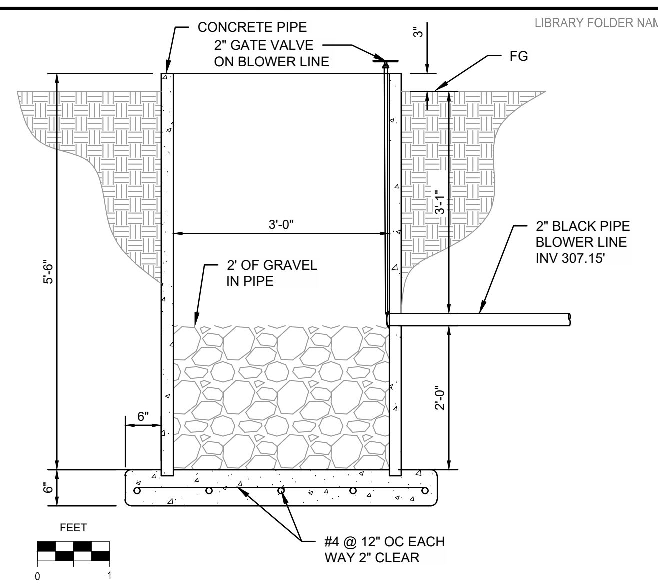
1. APPLY COAL TAR EPOXY PAINT (RUST–OLEUM OR EQUIVALENT) TO THE INTERIOR UPPER 3 FEET OF THE WEIR BOX.



2 D5

SOUTH POND WEIR BOX STRUCTURE

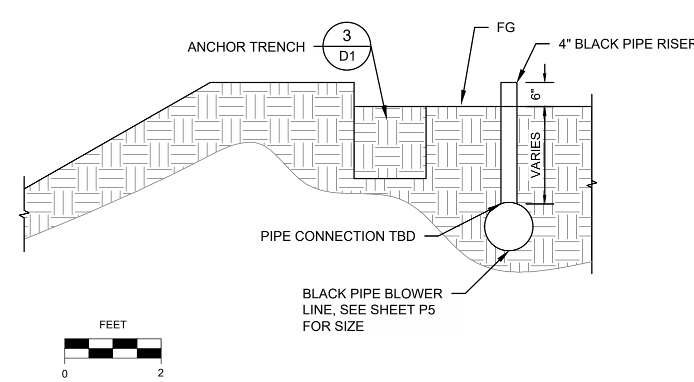
LIBRARY FOLDER NAME



4 D5

DRY SUMP

LIBRARY FOLDER NAME



5 D5

PVC RISER

FOR CONSTRUCTION
6/7/2023

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0	DRAWINGS ISSUED	SCB	06/07/2023

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DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

DETAILS

DETAILS 4

PROVOST & PRITCHARD CONSULTING GROUP EST. 1968
An Employee Owned Company
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CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

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DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
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PROJECT NO: 291219001
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0 1"
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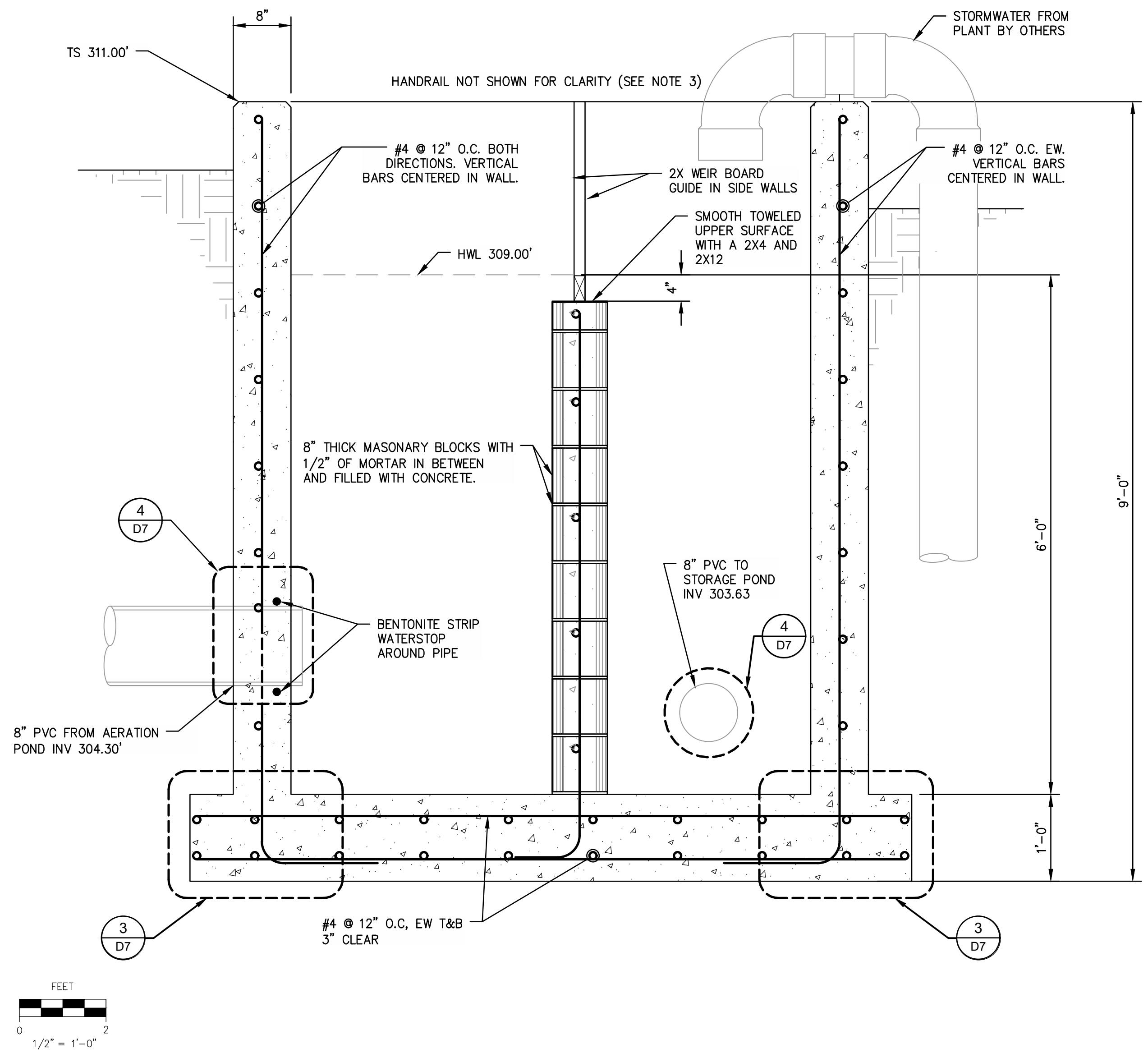
SHEET D5

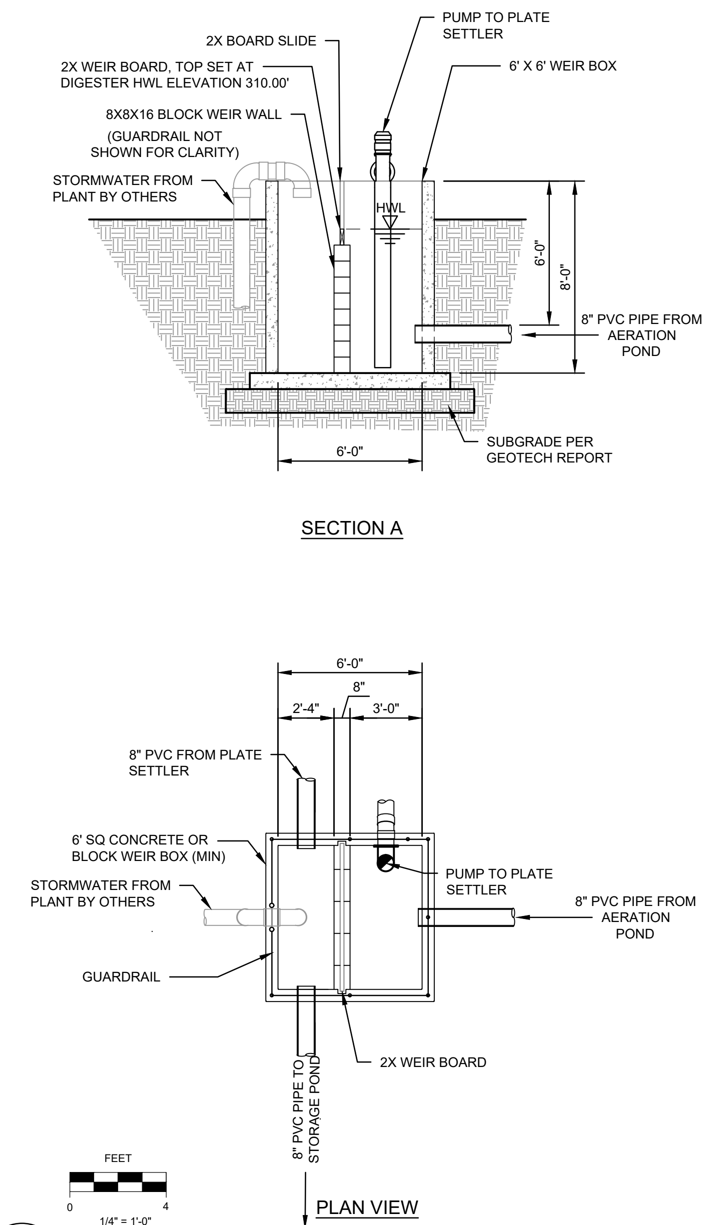
34 OF 36



1 D6

AERATION POND WEIR BOX STRUCTURE

UTDG



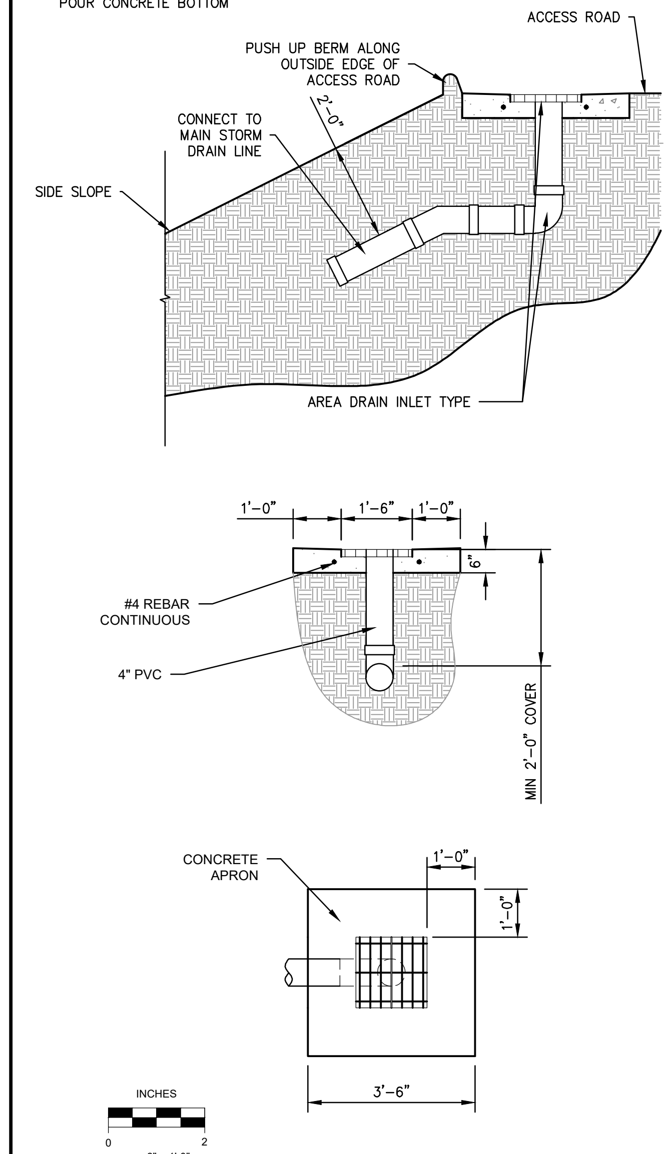
2 D6

AERATION POND WEIR BOX

LIBRARY FOLDER NAME

NOTES

1. CHOOSE EITHER AREA DRAIN INLET AS SHOWN OR CHRISTY OLD CASTLE V64-71C DRAIN BOX AND POUR CONCRETE BOTTOM



3 D6

AREA DRAIN

FOR CONSTRUCTION
6/7/2023

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DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
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DETAILS 6

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PROVOST & PRITCHARD
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559/449-2700 FAX 559/449-2715
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DESIGN ENGINEER:
E. CAMINATA
LICENSE NO:
88473

DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
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PROJECT NO: 291219001
PHASE:

0 1"
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SHEET D6

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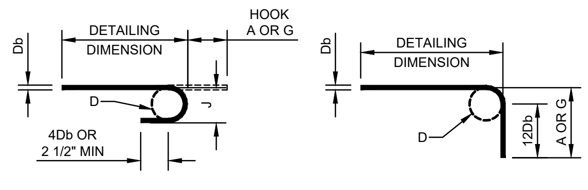
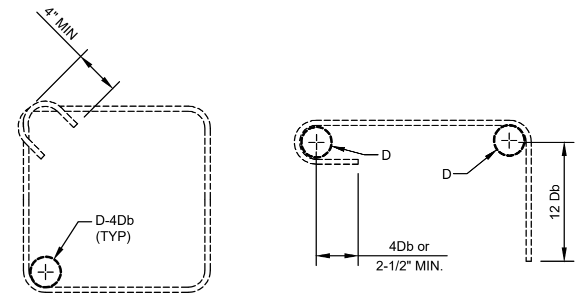
STRC



DIMENSION OF STANDARD 180° HOOKS, ALL GRADES				DIMENSION OF STANDARD 90° HOOKS, ALL GRADES	
SIZE	D	J	A OR G	D	A OR G
#3	2 1/4"	3"	5"	2 1/4"	6"
#4	3"	4"	6"	3"	8"
#5	3 3/4"	5"	7"	3 3/4"	10"
#6	4 1/2"	6"	8"	4 1/2"	12"
#7	5 1/4"	7"	10"	5 1/4"	14"
#8	6"	8"	11"	6"	16"
#9	9 1/2"	11 3/4"	15"	9 1/2"	19"
#10	10 3/4"	13 1/4"	17"	10 3/4"	22"
#11	12"	14 3/4"	19"	12"	24"
#14	18 1/4"	21 3/4"	27"	18 1/4"	31"
#18	24"	28 1/2"	36"	24"	41"



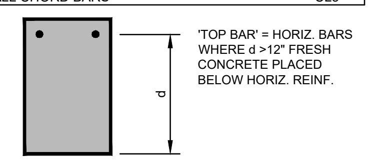
REINFORCEMENT BENDS

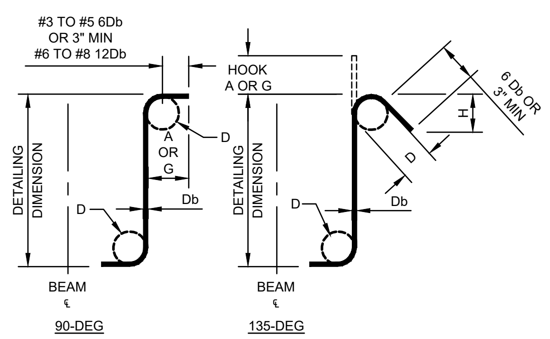
NOTES

1. SPLICES SHOWN ARE NORMALWEIGHT CONCRETE, UNCOATED SPLICE fy=60ksi f'c=4ksi CALCULATED PER ACI 318-14 SECTION 25.4.2.2. SEE CHART 1 FOR DIFFERENT CONCRETE STRENGTHS.
2. Db = (1) BAR DIAMETER
   D = FINISHED INSIDE BEND DIA.
   D = 6Db FOR #3-#8
   D = 8Db FOR #9-#11
   D = 10Db FOR #14 AND #18

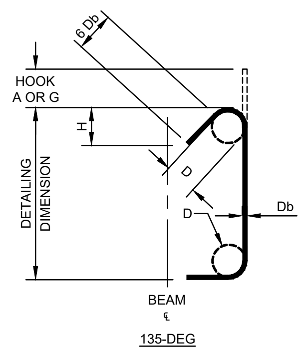
CHART 2		
BAR SIZE	CL1	CL2
#4	0.5	0.65
#5	0.63	0.81
#6	0.75	0.98
#7	0.875	1.14
#8	1.0	1.3
#9	1.28	1.47

CONCRETE BAR TYPES	LAP TYPE
FOOTING BARS (OTHER THAN TOP BARS)	CL1
HORIZ. WALL BARS	CL2
FOOTING 'TOP BARS'	CL2
WALL CHORD BARS	CL3

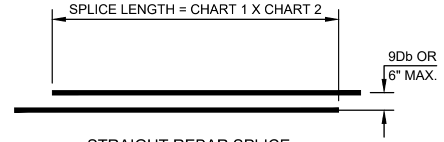




STIRRUP HOOKS
(TIE BENDS SIMILAR)



SEISMIC STIRRUP/TIE



STRAIGHT REBAR SPLICE

	90°		135°	
SIZE	D	A OR G	A OR G	ARROX. H
#3	1 1/2"	4"	4"	2 1/2"
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	12"	8"	4 1/2"
#7	5 1/4"	14"	9"	5 1/4"
#8	6"	16"	10 1/2"	6"

135° SEISMIC HOOK			
SIZE	D	A OR G	ARROX. H
#3	1 1/2"	4"	2 1/2"
#4	2"	4 1/2"	3"
#5	2 1/2"	5 1/2"	3 3/4"
#6	4 1/2"	8"	4 1/2"
#7	5 1/4"	9"	5 1/4"
#8	6"	10 1/2"	6"

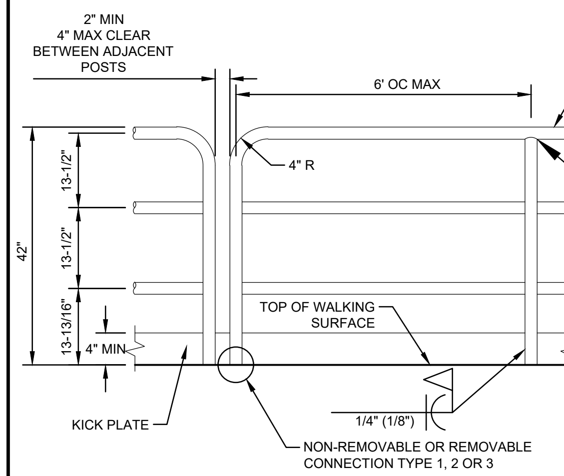
CHART 1					
	CONCRETE STRENGTH (PSI)				
	2500	3000	3500	4000	5000
#6 AND SMALLER	63	57	53	50	45
#7-#11	78	72	66	62	56

NOT TO SCALE

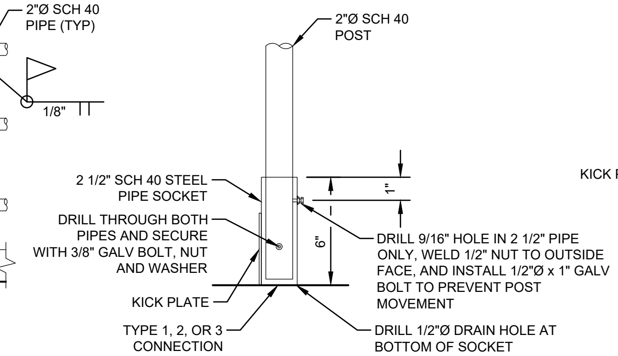
1
D7

REINFORCEMENT BENDS & SPLICES

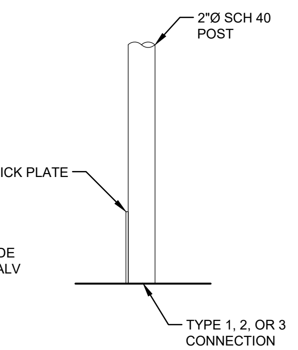
STRC



TYPICAL GUARDRAILING DETAIL



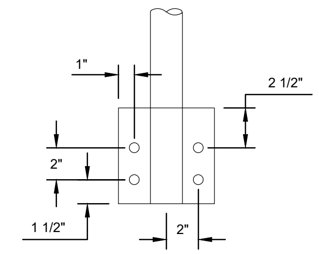
REMOVABLE POST



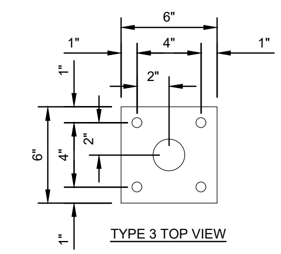
NON-REMOVABLE POST

NOTES

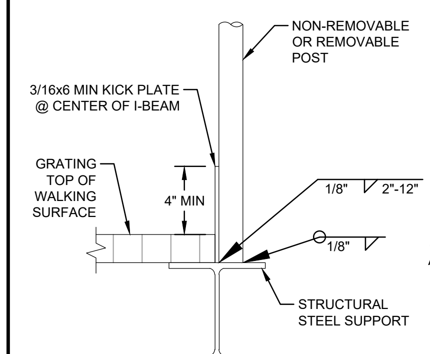
1. ALL RAILING SHALL BE HOT-DIPPED GALVANIZED STEEL. ALL HARDWARE SHALL BE TYPE 304 SS.
2. A LARGER PLATE MAY BE USED TO MOUNT ADJACENT POSTS/SOCKETS TO SAME PLATE



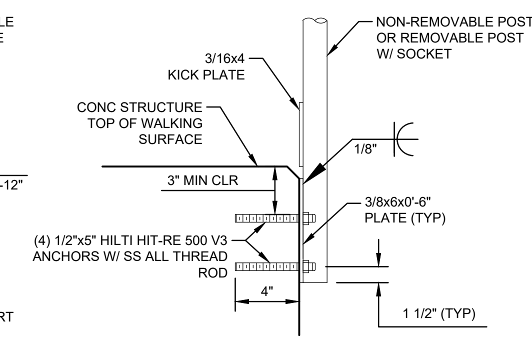
TYPE 2 FRONT VIEW



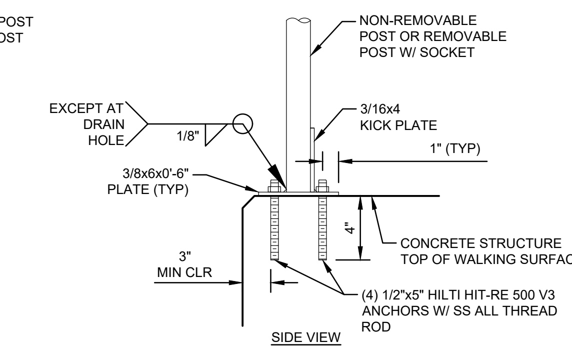
TYPE 3 TOP VIEW



TYPE 1 - WELDED CONNECTION



TYPE 2 - SIDE BOLTED CONNECTION



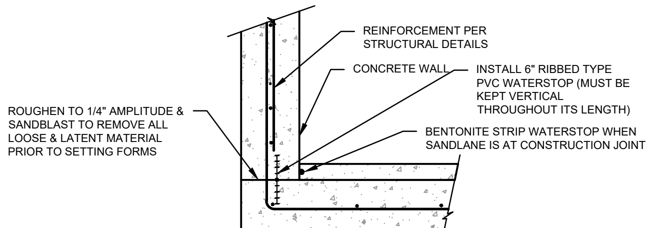
TYPE 3 - TOP BOLTED CONNECTION

NOT TO SCALE

2
D7

GUARDRAIL

STRC



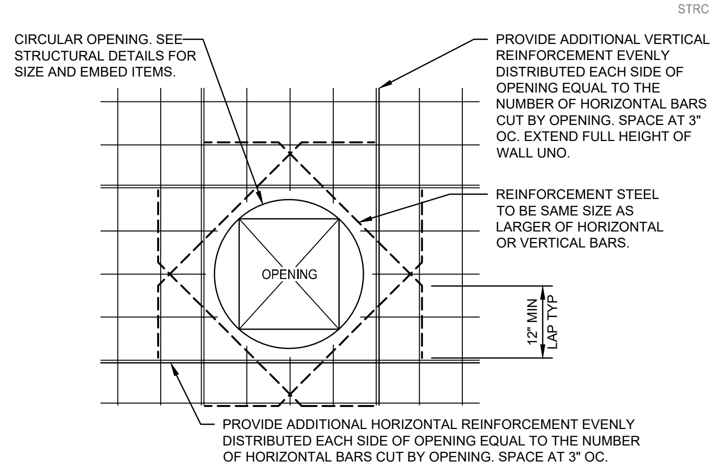
NOTE
ALL FLOOR TO WALL CONSTRUCTION JOINTS SHALL HAVE PVC WATERSTOPS IN WATER CONDITIONS

NOT TO SCALE

3
D7

CONCRETE CONSTRUCTION JOINT

STRC



NOTE
THIS DETAIL APPLIES TO ALL OPENINGS IN WALLS AND SLABS THAT DO RETAIN LIQUID OR SOIL

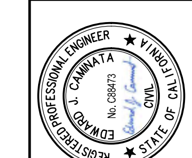
4
D7

CONCRETE OPENING REINFORCEMENT WITH LIQUID OR SOIL

STRC

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023



DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

DETAILS

DETAILS 7

EST. 1968
PROVOST & PRITCHARD
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CLOVIS, CALIFORNIA 93611-9166
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DESIGN ENGINEER: E. CAMINATA
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0 1"
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SHEET D7

6/7/2023 11:46 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage lt\DWG\40_sheet sets\04_Civil_Details\TREATMENT PONDS\D7 DETAILS 7.dwg Evan Freitas

Appendix B

Storage Capacity

Storage Capacity Design Calculations

A. Precipitation, Evaporation, and Runoff Coefficients

Precipitation Station: Delano
CIMIS Zone: 12
Precipitation Factor: Return Period of 100 Years

Month	100 Year Return Period (in.)	Evaporation ETpan (in.)	Runoff Coefficients Unsurfaced (%)	Runoff Coefficients Surfaced (%)
October	0.74	5.31	18%	40%
November	1.80	2.57	11%	47%
December	2.02	1.33	20%	42%
January	2.93	1.77	13%	42%
February	2.76	2.80	19%	44%
March	2.69	4.87	13%	34%
April	1.59	7.14	10%	41%

B. Surface Areas

Areas	Ft^2		Acres	
Unsurfaced	64,570		1.5	
Surfaced (sum of below)	434,600		10.0	
Roofed		434,600		10.0
Concrete		0		0.0
Rainfall (sum of below)	170,330		3.9	
Storage		130,480		3.0
Treatment		39,850		0.9
Evaporation (sum of below)	133,458		3.1	
Storage		93,610		2.1
Treatment		39,848		0.9
Total	669,500		15.4	

C. New Storage Pond

Pond ID	Earthen Length (ft)	Earthen Width (ft)	Earthen Depth (ft)	Slope (H:V)
Storage	466	280	27.0	2.0

Pond ID	Freeboard Level (ft from rim)	25yr/24hr Level (ft from rim)	Unusable Level (ft from rim)	Max Liquid Vol * (ft^3)
Storage	2.0	2.0	26.5	2,285,230

* Maximum liquid volume includes freeboard level to floor

Storage Capacity Design Calculations (cont.)

D. Selection of Storage Period

Storage Period days	Needed Vol ft^3	% of Available Storage Vol
X 120	2,261,760	100%
150	2,740,340	82%
180	3,292,280	68%
210	3,775,620	60%

The storage period is approximately November 01 through March 01

E. Volumes Sent to Storage for Storage Period

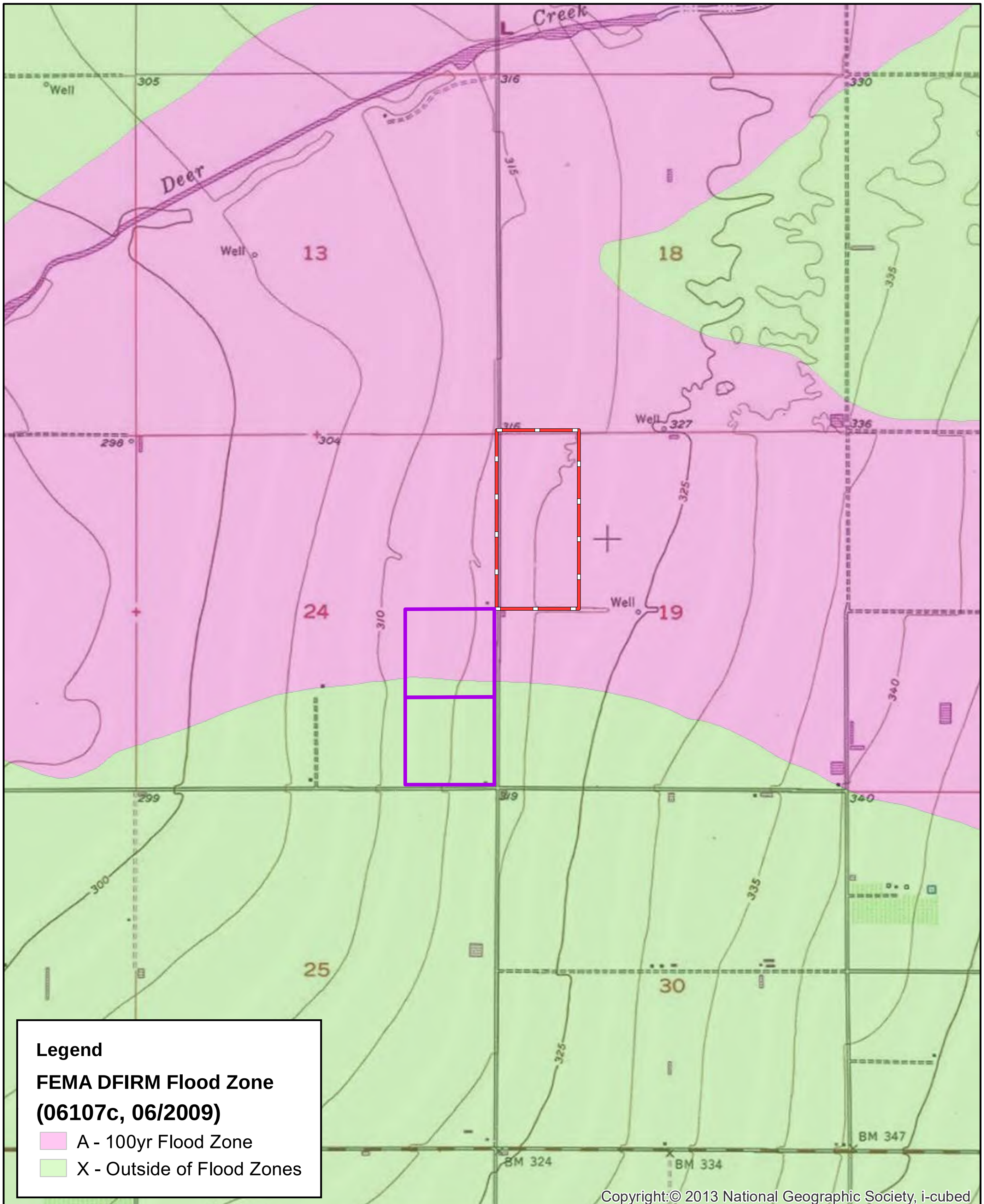
Type	Volume (ft^3)
Plant Water Generation	2,062,960
Runoff - Surfaced	149,920
Runoff - Unsurfaced	8,110
Rainfall onto Ponds	134,980
Evaporation from Ponds	-94,210
Total	2,261,760

G. Final Pond Storage Volumes

Type	Volume ft^3	Percent of Total Volume
Earthen	2,540,000	111%
Total Liquid	2,285,000	100%
Useable	2,254,000	99%
Unusable	31,000	1%

Appendix C

FEMA Flood Zones Map



N

0 500 1,000 1,500
Feet

Legend
Project Area
New Parcels

Treehouse Almonds

FEMA Flood Zone Map

FIRM Panel No.
06107C1950E

Job # 2912-19001

12/13/2022: \\ppeng.com\pzdata\clients\Treehouse CA Almonds-2912\291219001-Treatmt-Storage LD\GIS\Map\FEMA Flood Map New Parcels.mxd

Appendix D

Geotechnical Investigation Report

GEOTECHNICAL ENVIRONMENTAL
ASR Engineering, Inc.
MATERIAL TESTING

3629 W Gettysburg Ave , Fresno, CA 93722
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GEOTECHNICAL ENGINEERING INVESTIGATION
TREEHOUSE CALIFORNIA ALMOND
6914 ROAD 160
EARLIMART, CALIFORNIA

Prepared for:
Mr. Steven Bommelje
Provost & Pritchard Consulting Group
400 E. Main Street, Suite 300
Visalia, CA 93291

Prepared by:
ASR Engineering, Inc.
3629 W. Gettysburg Ave.
Fresno, California 93722

Project No. 12-22108
January 19, 2023

GEOTECHNICAL ENVIRONMENTAL
ASR Engineering, Inc.
MATERIAL TESTING

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January 19, 2023 Job No. 12-22108

Steven Bommelje
Provost & Pritchard Consulting Group
400 E. Main Street, Suite 300
Visalia, CA 93291

Subject: Geotechnical Engineering Investigation
Treehouse California Almond
6914 Road 160
Earlimart, CA 93219

Dear Mr. Bommelje:

At your request and authorization, ASR Engineering, Inc. (ASR), has performed a Geotechnical Engineering Investigation for the proposed ponds to be constructed at 6914 Road 160 in Earlimart, CA 93219.

The accompanying report contains the results of our investigation. If you have questions or require further information, please contact the undersigned at (559) 271-5260.

Respectfully submitted,
ASR Engineering, Inc.

A. Saboor Rahim, Ph.D., C.E., G.E.
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
A. SABOOR RAHIM
No. 2073
Exp 6-30-23
GEOTECHNICAL
STATE OF CALIFORNIA

Re: \\10.1.10.46\share1\Geotechnical\Geo-2022\12-22108 Treehouse California Almonds

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GEOTECHNICAL ENGINEERING INVESTIGATION
TREEHOUSE CALIFORNIA ALMOND
6914 ROAD 160
EARLIMART, CALIFORNIA 93219

1.0 INTRODUCTION

This report presents the results of our Geotechnical Engineering Investigation for the site of two (2) anaerobic ponds, one (1) aeration pond, and one (1) storage pond located at 6914 Road 160 in Earlimart, CA 93219. (See Figure 1, Vicinity Map).

The investigation included a field exploration program of performing seven (7) test borings, the collection of bulk sample, and a variety of laboratory tests to supplement the field data. The findings of the investigation and our recommendations are presented in this report. The site layout, including the location of the test borings, is shown on Figure 2, Test Boring Location Plan.

The results of the field exploration are included in Appendix "A." Laboratory test data are presented in Appendix "B."

2.0 SITE AND PROJECT DESCRIPTION

Based on the information provided by Steven Bommelje with Provost and Pritchard Consulting Group (P&P), it is planned to construct two (2) anaerobic ponds, one (1) aeration pond, and one (1) storage pond within the Treehouse California Almond property, located at 6914 Road 160 in Earlimart, CA 93219.

Reportedly, each of the two anaerobic ponds would be about 88 feet long, 88 feet wide, and 18 feet deep and would be provided with side slope of 1.75 to 1 (horizontal to vertical). One of the anaerobic ponds will be about 6 feet above grade, and other will be 5 feet above grade. The aeration pond would be about 160 feet long, 68 feet wide and 12 feet deep. A side slope of 1.75 to 1 is also considered for this pond. The storage pond would be 480 feet long, 274 feet width, and 27 feet deep. The storage pond embankment will be about 4-5 feet above the existing grade. The storage pond would have side slope of 2 to 1 and would be provided with double liner.

It should be noted that after preparation of the initial site plan, which was used for developing the field exploration program, the locations and configuration of the pods were revised.

3.0 PURPOSE AND SCOPE

The purpose of this investigation is to evaluate the subsurface soil and groundwater conditions and provide Geotechnical Engineering recommendations and specifications for construction of the proposed storage pond, anaerobic ponds, and aeration pond. Services provided in conjunction with the preparation of the Geotechnical Engineering Investigation Report included field exploration and soil sampling, laboratory testing, engineering evaluation, and report preparation.

4.0 FIELD EXPLORATION

The field exploration consisted of site surface reconnaissance and subsurface exploration. Seven (7) exploratory test borings (B-1 through B-7) were advanced at the subject site at the approximate locations shown on Figure 2, Test Boring Location Plan. One (1) test boring was advanced to a depth of about 50 feet below surface grade (bsg), two (2) test borings were advanced to a depth of about 30 bsg, each, and three (3) test borings were advanced to a depth of about 20 bsg, each. The test borings were drilled on December 15, 2022. The test borings were advanced with a 6-inch diameter hollow-stem auger rotated a truck-mounted CME-75 drilling rig.

The materials encountered in the test borings were visually classified in the field, and logs were recorded at the time of drilling. Visual classification of the materials encountered in the test borings was generally made in accordance with the Unified Soil Classification System (ASTM D 2488). A soil classification chart and key to sampling is presented on the Unified Soil Classification Chart, Figure A-1 in Appendix "A.” The logs of the test borings are presented on Figures A-2 and A-8 in Appendix "A.”

Subsurface soil samples from the test borings were obtained by driving a Modified California split-spoon sampler. Penetration resistance blow counts were obtained by dropping a 140-pound hammer through a 30-inch free fall to drive the sampler to a maximum depth of 18 inches. The number of blows required to drive the last 12 inches is recorded as Penetration Resistance (blows/foot) on the logs of borings.

Soil samples were obtained from the test borings at the depths shown on the boring logs. The samples were recovered and capped at both ends to preserve the samples natural moisture content. At the completion of drilling and sampling, the test borings were backfilled with auger cuttings.

5.0 LABORATORY TESTING

Laboratory tests were performed on selected soil samples to evaluate their physical characteristics and engineering properties. The laboratory-testing program included evaluation of natural moisture content, density, particle size distribution, permeability, compaction characteristics, consolidation, recompacted shear, and shear strength. In addition, chemical tests were performed to evaluate the corrosivity potential of the soils to buried concrete and metal. Details of the laboratory testing program and the results of laboratory tests are summarized in Appendix "B." This information, along with the field observations was used to prepare the final boring logs in Appendix "A."

6.0 GEOLOGIC CONSIDERATIONS

6.1 Soil and Groundwater Conditions

Subsurface soils, to the maximum explored depth of about 50 feet bsg, predominantly comprise alternating layers of medium dense to very dense silty sand and sandy silt containing clay lenses, dense to very dense sand, and very stiff clayey silt. The soils were classified in the field during the drilling and sampling operations. The stratification lines were approximated on the basis of observations made at the time of field exploration. The actual boundaries between different soil types may be gradual and soil conditions may vary. For a detailed description of the materials encountered, the Boring Logs (Figures A-2 and A-8 in Appendix "A") should be consulted. The Boring Logs include the soil type, color, moisture content, dry density, and the applicable Unified Soil Classification System Symbol.

Groundwater was not encountered to the maximum explored depth of approximately 50 feet bsg. It should be recognized that water table elevations might fluctuate with time, being dependent upon seasonal precipitation, irrigation, land use, and climatic conditions as well as other factors. Therefore, water level observations at the time of the field investigation may vary from those encountered during the construction phase of the project. The evaluation of such factors is beyond the scope of this report.

6.2 Geologic Setting

The subject property is located within the central portion of San Joaquin Valley. The San Joaquin Valley is a northwest-southeast trending structural basin within the Great Valley geomorphic province. The Sierra Nevada to the east, the Coast Ranges to the west, and the Tehachapi Mountains to the south borders the San Joaquin Valley.

The basement, or structural floor, of the San Joaquin Valley is asymmetrical, sloping westward to its greatest depth near the western valley margin. Almost continuous deposition in the basin since the Cretaceous Period has resulted in deposits comprising a thick and mainly conformable section of strata. Dominantly, marine sediments were deposited until about the middle of the Tertiary Period. Since that time the proportion of non-marine sediments has gradually increased. The maximum thickness of sedimentary rocks occurs at the southern end of the valley below the Buena Vista Lakebeds, where over 20,000 feet of Cretaceous, Tertiary and Pleistocene age sediments overlie a plutonic and metamorphic basement complex.

Review of the Regulatory Maps maintained by the California Department of Conservation reveals that no Earthquake Fault Zones are located on or near the project site.

6.3 Soil Liquefaction

Soil liquefaction is a state of soil particles suspension caused by a complete loss of strength when the effective stress drops to zero. Liquefaction normally occurs in saturated soils such as sand in which the strength is purely frictional. However, liquefaction has occurred in soils other than clean sand. Liquefaction usually occurs under vibratory conditions such as those induced by a seismic event.

To evaluate the liquefaction potential of the site, the following items were evaluated:

1) Groundwater depth
2) Soil type
3) Relative density
4) Initial confining pressure
5) Intensity and duration of ground shaking

Subsurface soils, to the maximum explored depth of about 50 feet bsg, predominantly comprise alternating layers of medium dense to very dense silty sand and sandy silt containing clay lenses, dense to very dense sand, and very stiff clayey silt. The cohesive clayey soils have low liquefaction potential. However, the non-cohesive sandy soils have liquefaction potential, but due to absence of groundwater within the explored depth 50 feet bsg and the denseness of these soils, their liquefaction potential is low. Furthermore, the site is not located within a known liquefaction zone based on the review of the Regulatory Maps maintained by the California Department of Conservation. Therefore, liquefaction is not considered a likely geologic hazard at the site.

6.4 Seismic Settlement

One of the most common phenomena during seismic shaking, accompanying any earthquake, is the induced settlement of loose unconsolidated soils. Based on the relatively low seismicity of the region and the presence of medium dense to very dense silty sand, sandy silt, and very stiff clayey silt beneath the site, we would not expect seismic settlement to represent a significant geologic hazard to the sites, provided that the recommendations presented in subsequent sections of this report are implemented.

6.5 Seismic Design Criteria

The following are the seismic design parameters for the subject site per the 2019 California Building Code:

Seismic Design Parameter	Value
Site Class	D
Latitude	35.90972°N
Longitude	-119.21676°W
Site Class D, 5%-damped, 0.2-second spectral acceleration (S_S)	0.65
Site Class D, 5%-damped, 1-second spectral acceleration (S_1)	0.24
Short Period Site Coefficient (F_a)	1.27
Long Period Site Coefficient (F_v)	1.93
0.2-second Period, Maximum Considered Earthquake Spectral Response Acceleration Adjusted for Site Effects (S_{MS})	0.8
1-second Period, Maximum Considered Earthquake Spectral Response Acceleration Adjusted for Site Effects (S_{M1})	0.48
0.2-second Period, Design Earthquake Spectral Response Acceleration (S_{DS})	0.5

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon the data collected during this investigation, and from a geotechnical engineering standpoint, it is our opinion that the site is suitable for construction of the proposed ponds.

Detailed geotechnical engineering recommendations are presented in the remaining portions of the report. The recommendations are based on the properties of the materials identified during our investigation.

7.1 Site and Subsurface Conditions

The site of the proposed ponds is located at 6914 Road 160 in Earlimart, California. At the time of field exploration, the subject site was vacant field, and was surrounded by flat crop land.

Subsurface soils, to the maximum explored depth of about 50 feet bsg, predominantly comprise alternating layers of medium dense to very dense silty sand and sandy silt containing clay lenses, dense to very dense sand, and very stiff clayey silt. These soils exhibited low settlement/collapse and low expansion potential when subjected to moisture fluctuation under load.

During our field investigation, groundwater was not encountered to the maximum explored depth of approximately 50 feet below surface grade. It is not anticipated that groundwater will rise within the zone of structural influence or affect the construction of proposed ponds. However, if earthwork is performed during or soon after periods of precipitation, the subgrade soils may become saturated, pump or not respond to densification techniques. Typical remedial measures include; discing and aerating the soil during dry weather; mixing the soil with dryer materials; removing and replacing the soil with an approved fill material; or mixing the soil with an approved lime or cement product. Our firm should be consulted prior to implementing remedial measures to observe the unstable subgrade conditions and provide appropriate recommendations.

7.2 Structures Area Preparation

7.2.1 Auxiliary Structures Area Preparation

If it is planned to construct structures in conjunction with the operation of the ponds, it is recommended that the upper 2 to 4 inches of soils, containing vegetation, and other organic matter, should be removed from such structures' areas and at least five (5) feet outside their perimeter. Soils containing organic materials will not be suitable for use as backfill material. However, stripped topsoil may be stockpiled and reused in landscape or non-structural areas.

Following stripping operations, the exposed surfaces in these areas should be scarified to a minimum depth of eight (8) inches, moisture conditioned to near optimum and compacted to achieve at least 90 percent of the maximum dry density as determined by test method ASTM D1557. Fill, required to bring the pads for such structures to the design grade, should be placed and compacted in accordance with the procedures included in Section 7.3, below.

The structures pads should be kept in a moist condition prior to placement of slab concrete.

7.2.2 Ponds Area Preparation

The upper 2 to 4 inches of the soils containing vegetation, roots and other objectionable organic matter should be stripped and removed from the pond areas. Within these areas excavation should extend to their designed depths. The exposed surfaces within the pond areas should be proof rolled to detect loose and soft spots, which should be excavated to firm ground to prepare it for liner placement. Soils containing clods or cemented particles larger than 3/8 inch should be broken or pulverized prior to placement of the liner. The liner base area may be inspected by the Geotechnical Engineer or the project design consultants to assess its suitability for liner placement. Undesired soils detected during the inspection should be excavated from the liner base area and the area should be backfilled with the excavated sandy silt or clayey silt. Backfilling may be performed by placing soil in 8-inch lifts, moisture conditioned to near optimum and compacted to at least 90 percent of the maximum dry density as determined by ASTM Method D1557. The liner base should be kept in a moist condition prior to placement of the liner.

7.2.3 Embankment Area Preparation

Where applicable, the upper 2 to 4 inches of the soils containing vegetation, roots and other objectionable organic matter should be stripped and removed from the embankment areas. The exposed surfaces in these areas should be scarified to a minimum depth of eight (8) inches, moisture conditioned to near optimum and compacted to achieve at least 90 percent of the maximum dry density as determined by test method ASTM D1557. Fill required to bring the embankments to their design grade should be placed and compacted in accordance with the procedures included in Section 7.3, below.

7.2.4 Additional Site Grading Considerations

The upper soils, during wet winter months, may become very moist due to the absorption characteristics of the soil. Earthwork operations performed during winter months may encounter very moist unstable soils, which may require removal of soil to stable soil. Project site winterization consisting of placement of aggregate base and protection of exposed soils during construction should be performed.

All excavations, depressions, or soft and pliant areas extending below planned finished subgrade levels should be cleaned to firm, undisturbed soil and backfilled with Engineered Fill. Any buried structures, if discovered during construction activities, should be properly removed and backfilled. In general, any septic tanks, debris pits, cesspools, or similar structures should be entirely removed. Any other buried structures should be removed in accordance with the recommendations of the Geotechnical Engineer. Resulting excavations should be properly backfilled.

A representative of our firm should be present during all site clearing and grading operations to test and observe earthwork construction. This testing and observations are an integral part of our service as acceptance of earthwork construction is dependent upon compaction of the material and the stability of the material. Further recommendations of this report are predicated upon the assumption that earthwork construction will conform to recommendations set forth in this section.

Fill soils should be placed in lifts approximately 8 inches thick, moisture-conditioned to near optimum and compacted to achieve at least 90 percent of the maximum dry density as determined by ASTM D 1557. Additional lifts should not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable.

If applicable, within parking and driveway areas, the upper 12 inches of subgrade soils should be compacted to at least 95 percent of the maximum dry density as determined by ASTM Test Method D 1557.

If sand is encountered within the slope, it should be over excavated to stable ground. Following excavation operation, if applicable, the exposed surfaces in these areas should be scarified to a depth of about 8 inches, moisture conditioned to near optimum condition and compact to at least 90 percent of the maximum dry density indicated above. The excavated soil and the additional fill material, required to bring the site to the design grade, should be placed and compacted in accordance with the procedures established in Section 7.3, below.

7.3 Filling and Compaction

The on-site soils predominantly comprise medium dense to very dense silty sand, sandy silt containing clay lenses, sand, and very stiff clayey silt. These soils will be suitable for raising the structural areas to their design grades. The excavated clayey and silty soils may be used for constructing the embankment area to the design grade, provided they are cleansed of excessive organics, cemented particles larger than 3 inches, and debris. Project site winterization and protection of exposed soils during the construction phase should be the sole responsibility of the Contractor, who has complete control of the project site at that time.

Imported non-expansive fill, needed for embankment and other structures construction, should consist of silty fine sand, clayey silt, or sandy silt, with relatively impervious characteristics when compacted. The fill material should be approved by the Geotechnical Engineer prior to use.

Fill soils should be placed in lifts approximately 8 inches thick, moisture-conditioned to near optimum and compacted to achieve at least 90 percent of the maximum dry density as determined by ASTM D1557. Additional lifts should not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable. If applicable, within the access road, parking, and driveway areas, the upper 12 inches of subgrade soils should be compacted to at least 95 percent of the maximum dry density specified above.

7.4 Pond Slope Stability Assessment

As indicated in Section 2.0, above, the storage pond will be 27 feet deep and will be provided with a side slope of 2 to 1 (horizontal to vertical). The anaerobic and aeration ponds will be, respectively, 18 feet and 12 feet in depth and each will be provided with side slopes of 1.75 to 1. The safety factors are calculated based on average shear strength parameters of the subsurface site soils.

Lagoon Depth	Factor of Safety		Maximum Slope (horizontal to vertical)
	Static	Pseudo-static	
27 feet	6.0	3.58	2 to 1
18 feet	7.6	4.58	1.75 to 1
12 feet	9.5	6.18	1.75 to 1

With consideration of the subsurface soil conditions, we recommend a minimum factor of safety of 1.5 for static loading condition and a minimum factor of safety of 1.2 for pseudo-static loading condition. As indicated in the above table, for the designed slopes of 2 to 1 and 1.75 to 1, the factors of safety far exceed the minimum factor of safety requirements for the indicated loading conditions. However, the slope steepness is controlled by erosion and lagoon liner construction. With the consideration of these factors, the designer may decide of the appropriate slope steepness. The contractor is responsible for providing safe working conditions with respect to slope stability.

For the slopes indicated, a minimum setback of 4 feet is recommended if the equipment tracks are parallel to the slope. However, if the equipment tracks are perpendicular to the slope, no setback is recommended. Placement of buildings and structures on or adjacent to slopes steeper that 3 to 1 should be in accordance with Section 1808.7 of the Building Code.

7.5 Liner Preparation Specification

7.5.1 Liner Base Area Preparation

The liner base area should be prepared as indicated in Section 7.2.2, above. The soils below the bottom of the ponds indicated coefficients of permeability in the range of $1.39X10^{-8}$cm/sec and $8.78X10^{-8}$cm/sec in their natural conditions. These values of coefficients of permeability are significantly lower than the recommended coefficient of permeability of $1.0X10^{-6}$cm/sec.

The ponds side slopes should be excavated to the proposed slope finished grade and the area should be visually inspected by the Geotechnical Engineer to confirm the presence of a firm and unyielding surface. Loose sandy soils, if encountered during preparation of the slopes, should be over-excavated, backfilled and compacted as described in Section 7.3, above.

7.5.2 Pond Backfill Compliance Testing

A representative of our firm shall provide continuous observation of the pond backfill moisture conditioning and compaction. The following schedule of tests shall be performed during the pond backfill operation. The frequency relates to the square footage of the basin or cubic yards of soil used.

Test	Minimum Frequency
Maximum Dry Density / Optimum Moisture (ASTM D 1557)	**1 per 5,000 yd^3**
Compaction Test (ASTM D 6938/2937)	**3 per acre**
In-place Moisture (ASTM D 6938/2937)	**3 per acre**
Nuclear Gauge Moisture Standardization (Oven)	**Daily per nuclear gauge**
Nuclear Gage Density Standardization (Drive Cylinder)	**2 per week per nuclear gauge**

7.5.3 Side Slopes Compliance Inspection

A representative of our firm shall provide visual inspection of the finished grade basin side slopes to confirm the presence of a firm and unyielding surface.

7.5.4 Anchor Trench

As indicated above, installation of liner is planned for the ponds. The anchor trench for the liner should be a minimum of 18 inches deep, 18 inches wide and located about 3 feet away from the top of the slope of the basin. Subsequent to placement of the liner in the anchor trench, the trench should be backfilled with compacted soil. The soil within the anchor trench should be moisture conditioned to near optimum and compacted to at least 90 percent of the maximum dry density as determined by ASTM Test Method D 1557. A friction angle of 30 degrees may be considered in the design of the anchor trench.

7.6 Structure Foundations

If applicable, wall footings for the structures constructed in the vicinity of the basins area should be continuous with a minimum width of 12 inches and extend to a minimum depth of 18 inches below the lowest adjacent grade. Isolated column footings should have a minimum width of 18 inches and extend to a minimum depth of 18 inches below the lowest adjacent grade.

7.7 Bearing Capacity and Settlement

Foundations for structures, constructed as recommended in Section 7.6, above, may be designed with the maximum bearing capacity of 2,500 pounds per square foot (psf). Isolated column footings, constructed as recommended in Section 7.5, above, may be designed for a maximum bearing capacity of 3,000 psf. These values are for dead and sustained live loads and may be increased by one-third (1/3) to include wind and seismic effects.

For design purposes, total settlement of about 1/2 to 3/4 of an inch may be assumed anticipated. Differential settlement on the order of 1/4 to 1/2 inch should be anticipated. Most of the settlement is expected to occur during construction as the loads are applied. However, additional post-construction settlement may occur if the foundation soils are flooded or saturated.

7.8 Lateral Earth Pressures and Frictional Resistance

Active, at-rest and passive unit lateral earth pressures against footings and walls are presented below:

Lateral Pressure Conditions	Equivalent Fluid Pressure, pcf
Active Pressure, Drained	27
At-Rest Pressure, Drained	36
Passive Pressure	612
Seismic Component of Earth Pressure	9.62H*

*H is the height of the wall in feet and considering an average unit weight of 114.6 pound per cubic foot for the native soil and compacted native and imported soil.

Active pressure applies to walls, which are free to rotate. At-rest pressure applies to walls, which are restrained against rotation.

The preceding lateral earth pressures assume sufficient drainage behind retaining walls to prevent the build-up of hydrostatic pressure. The top foot of adjacent subgrade should be deleted from the passive pressure computation. A coefficient of friction of 0.60 may be used between soil subgrade and footings or slabs.

The foregoing values of lateral earth pressures and frictional coefficients represent ultimate soil values and a safety factor consistent with the design conditions should be included in their usage. For stability against lateral sliding, which is resisted solely by the passive pressure, we recommend a minimum safety factor of 1.5. For stability against lateral sliding, which is resisted by the combined passive and frictional resistance, a minimum safety factor of 2.0 is recommended. For lateral stability against seismic loading conditions, we recommend a minimum safety factor of 1.1.

7.9 Utility Pipes Bedding and Backfilling

Proper bedding and envelope should be provided for utility pipes. Imported or native granular material, 100 percent passing the No. 4 Sieve and not more than eight (8) percent passing the No. 200 Sieve, should be used as bedding and pipe envelope. The envelope should extend a minimum of 6 inches above top of pipe. Pipe backfill material should be compacted as recommended herein. Due to space limitations, a hand compactor may be required. The required fill should be brought to near optimum moisture content, placed in loose lifts not more than eight (8) inches in thickness, and compacted to achieve at least 90 percent of maximum dry density as determined by ASTM Test Method D1557. The excavated site soils may be used as backfill over the pipes and compacted as specified above provided they do not contain rock fragments and cemented particles of 3 inches in the greatest dimension. Additional lifts should not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable. Within parking and driveway areas, the upper 8 inches of subgrade soils should be compacted to at least 95 percent of the maximum dry density as determined by ASTM Test Method D-1557.

7.10 Soil-Borne Salt Protection

A soil sample from the project site was tested for the evaluation of the potential for concrete deterioration and steel corrosion due to attack by soil-borne soluble salts. The water-soluble sulfate concentration in the saturation extract from the soil sample tested was 96 mg/L. This concentration is indicative of slight corrosion potential. Normally formulated concrete mixes have been shown to adequately resist this level of soil sulfate concentration.

The water-soluble chloride concentrations detected in saturation extract from the soil sample test was 18 mg/L. This concentration is indicative of slight corrosion potential. The electrical conductance of the soil sample measured is 782 micromhos/cm, which is indicative of heavy corrosion potential. Therefore, we recommend that buried steel pipe or conduit be protected from salt attack.

8.0 PLAN REVIEW, CONSTRUCTION OBSERVATIONS AND TESTING

We recommend that ASR complete a review of plans and specifications with regard to foundations and earthwork, prior to construction bidding.

ASR should be present at the site during site preparation to observe site clearing, preparation of exposed surfaces after clearing, and placement and compaction of fill material. ASR's observations should be supplemented with periodic compaction tests to establish substantial conformance with these recommendations. Moisture content of the prepared pads (footings and slab subgrade) should be tested immediately prior to concrete placement. ASR should observe foundation excavations prior to placement of reinforcing steel or concrete to assess whether the actual bearing conditions are compatible with the conditions anticipated during the preparation of this report. ASR should also observe placement of foundation and slab concrete.

9.0 CHANGED CONDITIONS

The analyses and recommendations submitted in this report are based upon the data obtained from the seven (7) test borings made at the approximate locations shown on Figure 2, Test Boring Location Plan. The report does not reflect variations, which may occur away from the borings.

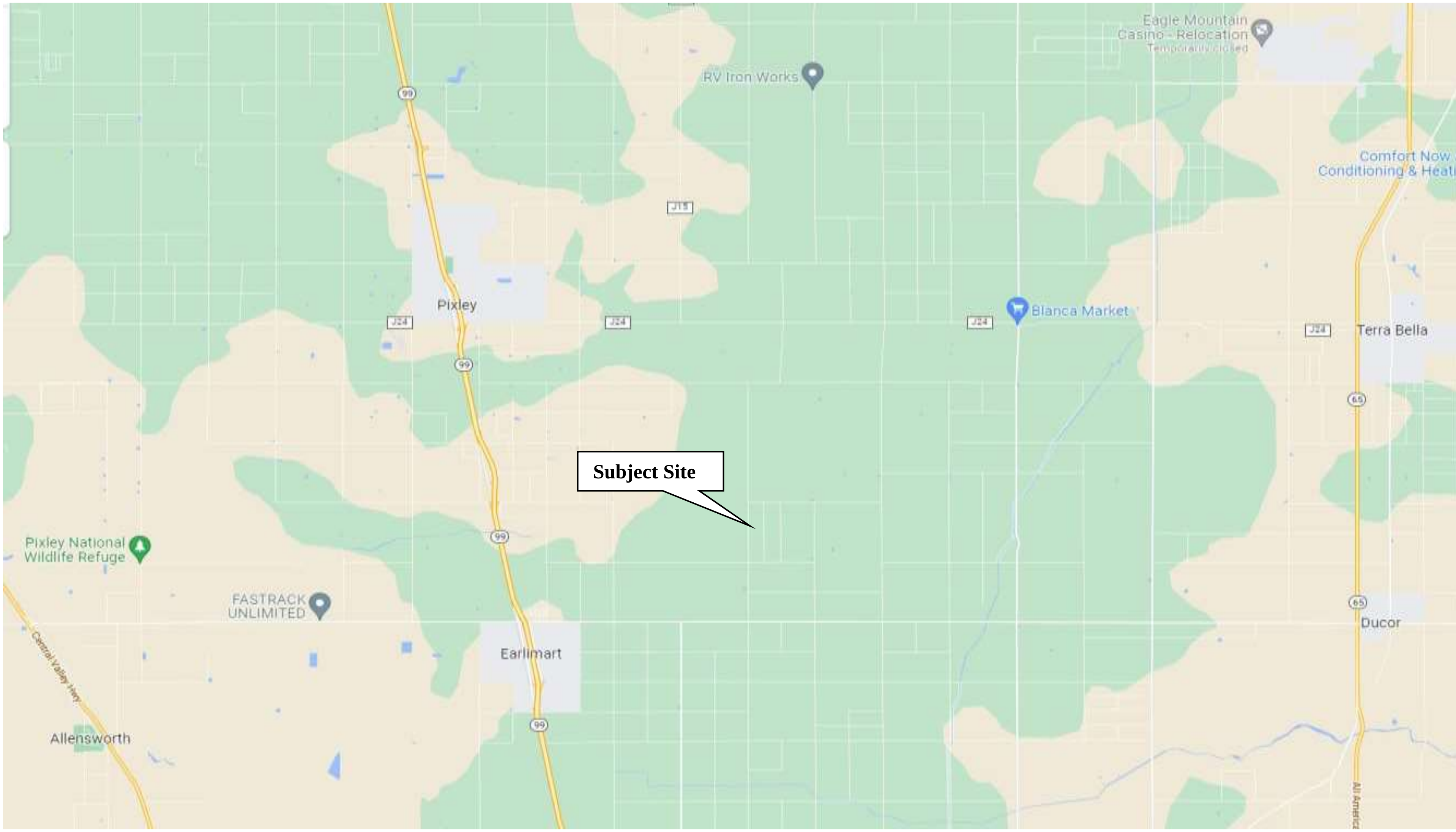
The findings and recommendations presented in this report are valid as of the present and for the proposed construction. If site conditions change due to natural processes or human intervention on the property or adjacent to the site, or changes occur in the nature or design of the project, or if there is a substantial time lapse between the submission of this report and the start of the work at the site, the conclusions and recommendations contained in our report will not be considered valid unless the changes are reviewed by ASR and the conclusions of our report are modified or verified in writing.

The validity of the recommendations contained in this report is also dependent upon an adequate testing and observations program during the construction phase. Our firm assumes no responsibility for construction compliance with the design concepts or recommendations unless we have been retained to perform the on-site testing and review during construction.

ASR has prepared this report for the exclusive use of the owner and project design consultants. The report has been prepared in accordance with generally accepted geotechnical engineering practices in the area. No other warranties, either expressed or implied, are made as to the professional advice provided under the terms of our agreement and included in this report.

FIGURES

Job No. 12-22108
January 2023
Figure 1



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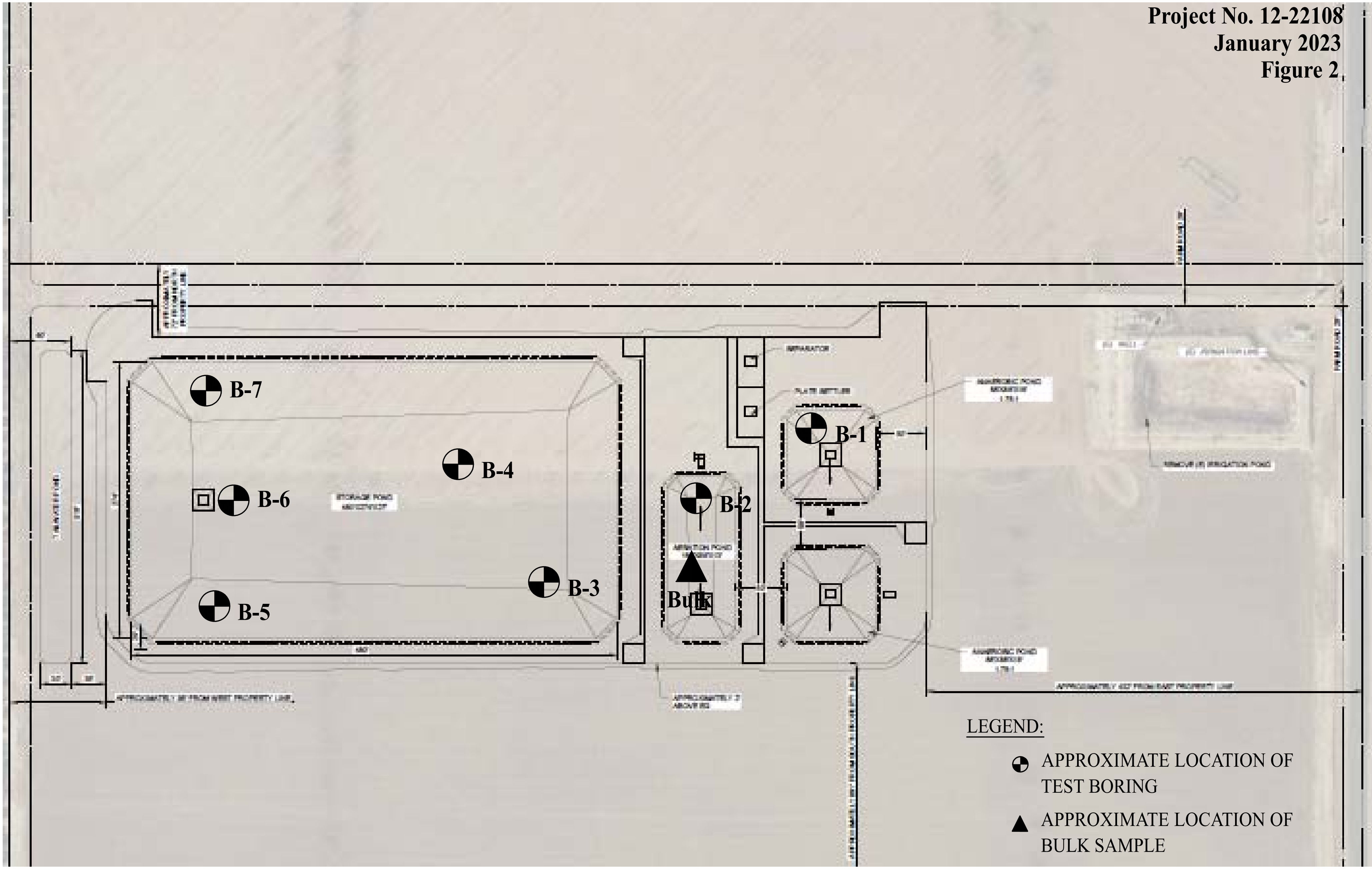
NORTH

<u>Vicinity Map</u>
Treehouse California Almond
6914 Rd 160
Earlimart, CA 93219

Project No. 12-22108
January 2023
Figure 2



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3629 West Gettysburg Avenue, Fresno, California 93722

NORTH
NOT SCALE

TEST BORING LOCATION PLAN
TREEHOUSE CALIFORNIA ALMOND
6914 Road 160
EARLIMART, CALIFORNIA 93219

APPENDIX “A”

APPENDIX "A"
FIELD EXPLORATION

A.1 Test Boring Drilling

Seven (7) exploratory test borings (B-1 through B-7) were drilled on December 15, 2022. One (1) test boring was advanced to depths of about 50 feet below surface grade (bsg), two (2) test borings were advanced to depths of about 30 feet bsg and four (4) test borings was advanced to depths of about 20 feet bsg. The test borings were advanced with a 6-inch diameter hollow-stem auger rotated a truck-mounted CME-75 drilling rig. The test borings were made at the approximate locations shown on Figure 2, Test Boring Location Plan.

A continuous log of the soils encountered in the test boring was recorded at the time of the exploration. The Test Boring Logs, shown on Figures A-2 and A-8, should be consulted for more detail concerning subsurface conditions.

Subsurface soil samples were obtained by driving a Modified California or a SPT sampler with a 140-pound hammer through a 30-inch drop. Penetration resistance determinations were made and are recorded on the logs of borings. At the completion of the field exploration, the test borings were backfilled with auger cuttings.

Unified Soil Classification System

Major Divisions			Letter	Symbol	Description
Coarse-grained Soils More than 1/2 retained on the No. 200 Sieve	**Gravels** More than 1/2 coarse fraction retained on the No. 4 Sieve	Clean Gravels	GW		Well-graded gravels and gravel-sand mixtures, little or no fines.
			GP		Poorly-graded gravels and gravel-sand mixtures, little or no fines.
		Gravels with Fines	GM		Silty gravels, gravel-sand-silt mixtures.
			GC		Clayey gravels, gravel-sand-clay mixtures.
	Sands More than 1/2 passing through the No. 200 Sieve	Clean Sands	SW		Well-graded sands and gravelly sands, little or no fines.
			SP		Poorly-graded sands and gravelly sands, little or no fines.
		Sands with Fines	SM		Silty sands, sand-silt mixture.
			SC		Clayey sands, sandy-clay mixture.
Coarse-grained Soils More than 1/2 passing through the No. 200 Sieve	**Silts and Clays** Liquid Limit less than 50%		ML		Inorganic silts, very fine sands, rock flour, silty or clayey fine sands.
			CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL		Organic clays of medium to high plasticity.
	Silts and Clays Liquid Limit greater than 50%		MH		Inorganic silts, micaceous or diatomaceous fines sands or silts, elastic silts.
			CH		Inorganic clays of high plasticity, fat clays.
			OH		Organic clays of medium to high plasticity.
Highly Organic Soils			PT		Peat, muck and other highly organic soils.

Consistency Classification

Granular Soils			*Cohesive Soils*		
Description	**Blows per Food (Corrected)**		**Description**	**Blows per Food (Corrected)**	
	MCS	SPT		MCS	SPT
Very loose	< 5	< 4	Very soft	< 3	< 2
Loose	5 – 15	4 – 10	Soft	3 – 5	2 – 4
Medium dense	16 – 40	11 – 30	Firm	6 – 10	5 – 8
Dense	41 – 65	31 – 50	Stiff	11 – 20	9 – 15
Very Dense	> 65	> 50	Very stiff	21 – 40	16 – 30
			Hard	> 40	> 30
MCS = Modified California Sampler			SPT = Standard Penetration Test Sampler		

Figure: A-2

Project No: 12-22108

Project: Treehouse Almonds

Client: Provost & Pritchard

Location: Earlimart, CA

Log of Borehole: B-1

Logged by: S.P.

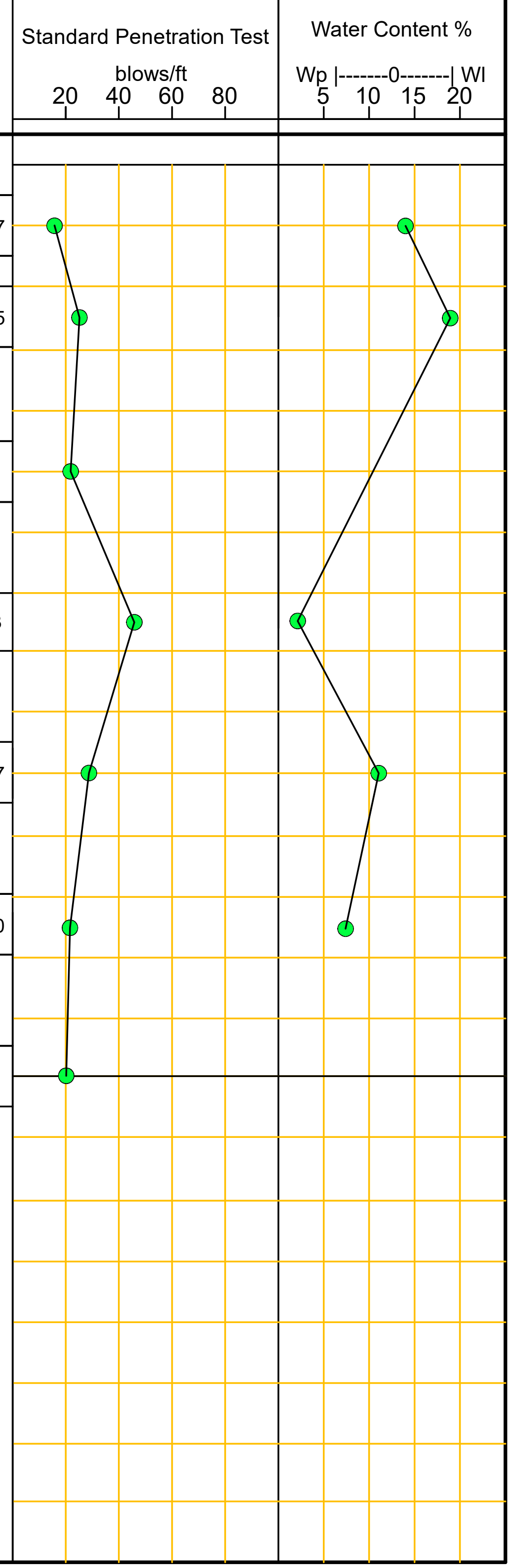
Company: ASR Engineering, Inc.

SUBSURFACE PROFILE

Depth	Description	Notes
0	Ground Surface	
0–5	***Silty Sand (SM)*** Light brown, coarse, medium dense	
5–15	***Poorly Graded Sand (SP)*** Coarse, medium dense	
15–20	***Silty Sand (SM)*** Light brown, medium dense	
20–25	***Sandy Silt (ML)*** Light brown, coarse, medium dense	
25–30	***Clayey Silt (ML)*** Light brown, coarse, medium dense	
30	End of Borehole	

SAMPLE

Number	Moisture %	Blows/ft	Density
1	14.5	18	102.7
2	17.3	24	105.5
3	-	21	-
4	2.2	44	110.3
5	11.1	29	116.7
6	7.7	22	119.0
7	-	20	-



Drill Method: CME-45: Hollow Stem Auger

Drill Date: 12/15/22

Hole Size: 6"

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E-mail: asrengineering@sbcglobal.net

Drilled by: Salem

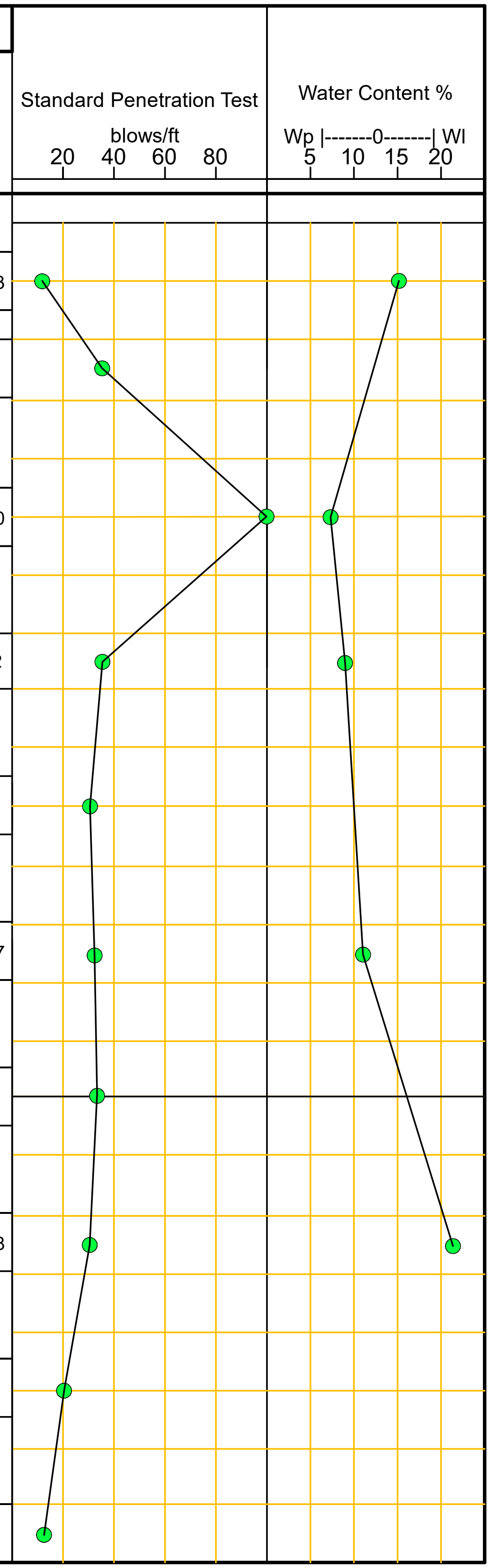
Checked by: ASR

Figure: A-3

Project No:	12-22108
Project:	Treehouse Almonds
Client:	Provost & Pritchard
Location:	Earlimart, CA
Logged by:	S.P.
Company:	ASR Engineering, Inc.

Log of Borehole: B-2

SUBSURFACE PROFILE				SAMPLE			
Depth	Symbol	Description	Notes	Number	Moisture %	Blows/ft	Density
0		Ground Surface					
0		***Silty Sand (SM)*** Light brown, coarse, moist, loose		1	15.1	12	104.3
5				2	-	37	-
10				3	8.4	50-4"	123.0
15				4	9.5	36	126.2
20				5	-	30	-
25		***Sandy Silt (ML)*** Light brown, very fine grain, medium dense		6	11.3	33	121.7
30				7	-	32	-
35		***Poorly Graded Sands (SP)*** Gray, coarse, medium dense		8	22.7	29	106.8
40				9	-	21	-
45				10	-	14	-



Drill Method: CME-45: Hollow Stem Auger
Drill Date: 12/15/22
Hole Size: 6"

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Drilled by: Salem
Checked by: ASR

Figure: A-3

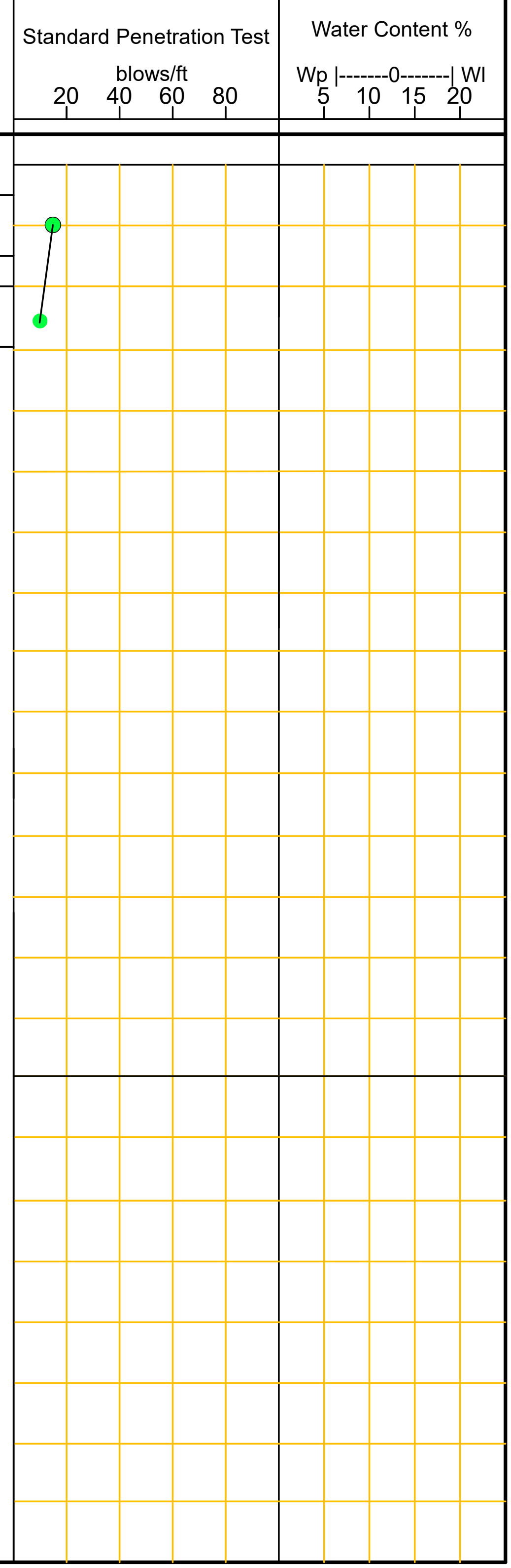
Project No:	12-22108
Project:	Treehouse Almonds
Client:	Provost & Pritchard
Location:	Earlimart, CA

Log of Borehole: B-2

Logged by: S.P.

Company: ASR Engineering, Inc.

Depth	Symbol	Description	Notes	Number	Moisture %	Blows/ft	Density
		Ground Surface					
45		***Sandy Silt (ML)*** Light brown, moist, fine grain, loose					
				11	-	14	-
				12	-	13	-
50		End of Borehole					



Drill Method: CME-45: Hollow Stem Auger

Drill Date: 12/15/22

Hole Size: 6"

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Checked by: ASR

Figure: A-4

Log of Borehole: B-3

Project No: 12-22108

Project: Treehouse Almonds

Client: Provost & Pritchard

Location: Earlimart, CA

Logged by: S.P.

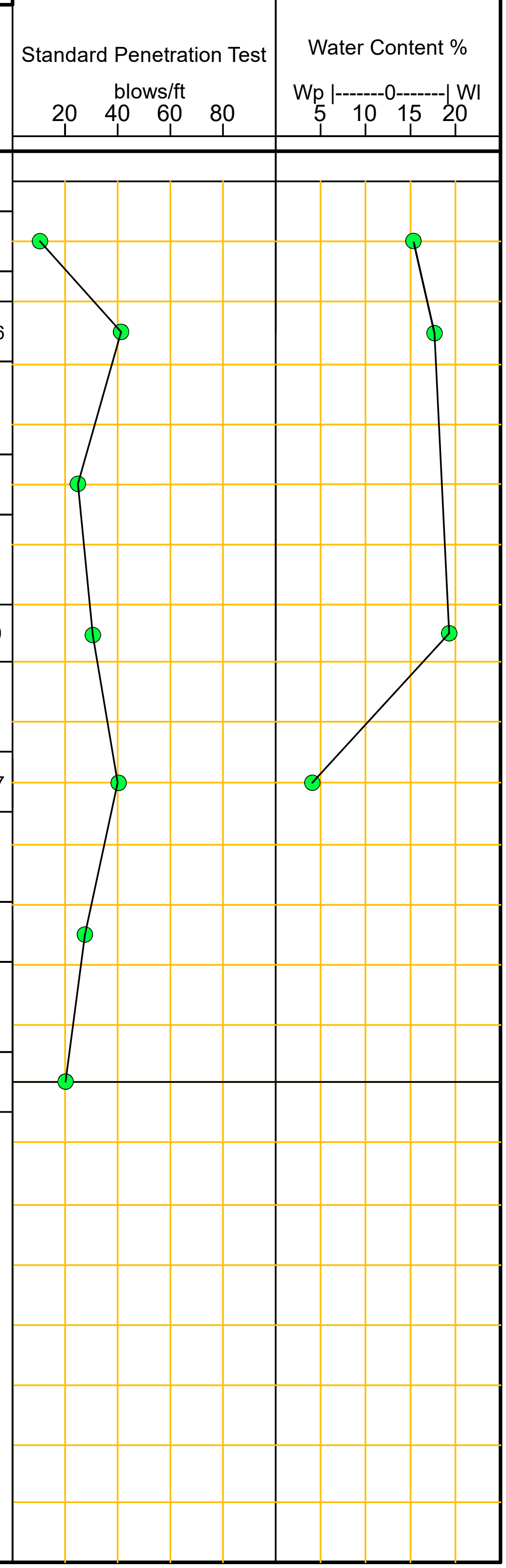
Company: ASR Engineering, Inc.

SUBSURFACE PROFILE

Depth	Description	Notes
0	Ground Surface	
0–5	***Silty Sand (SM)*** Light brown, coarse, medium dense	
5–10	***Sandy Silt (ML)*** Light brown, coarse, medium dense	
10–15	***Silty Sand (SM)*** Light brown, moist, coarse, medium dense	
15–20	***Poorly Graded Sand (SP)*** Light brown, coarse, medium dense	
20–30	***Sandy Silt (ML)*** Light brown, coarse, medium dense	
30	End of Borehole	

SAMPLE

Number	Moisture %	Blows/ft	Density
1	15.6	10	97.8
2	17.2	42	112.6
3	-	24	-
4	19.2	29	114.0
5	4.3	42	113.7
6	-	28	-
7	-	20	-



Drill Method: CME-45: Hollow Stem Auger

Drill Date: 12/15/22

Hole Size: 6"

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Drilled by: Salem

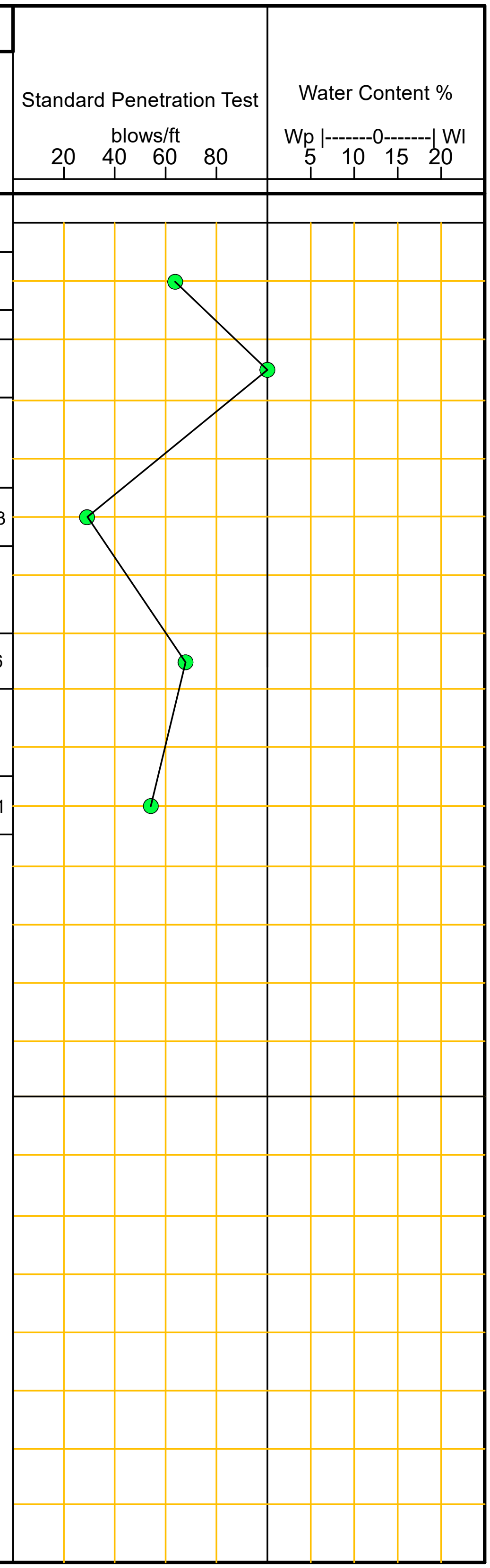
Checked by: ASR

Figure: A-5

Project No:	12-22108
Project:	Treehouse Almonds
Client:	Provost & Pritchard
Location:	Earlimart, CA
Logged by:	S.P.
Company:	ASR Engineering, Inc.

Log of Borehole: B-4

Depth	Description	Notes	Number	Moisture %	Blows/ft	Density
0	Ground Surface					
0–15	***Silty Sand (SM)*** Light brown, moist, fine grain, dense					
2			1	-	63	-
5			2	17.2	50-5"	89.1
10			3	19.3	28	103.3
15–20	***Poorly Graded Sand (SP)*** Light brown, coarse, dense		4	13.2	68	123.6
20	End of Borehole		5	5.7	53	117.1



Drill Method: CME-45: Hollow Stem Auger
Drill Date: 12/15/22
Hole Size: 6"

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Drilled by: Salem
Checked by: ASR

Figure: A-6

Project No: 12-22108

Project: Treehouse Almonds

Client: Provost & Pritchard

Location: Earlimart, CA

Log of Borehole: B-5

Logged by: S.P.

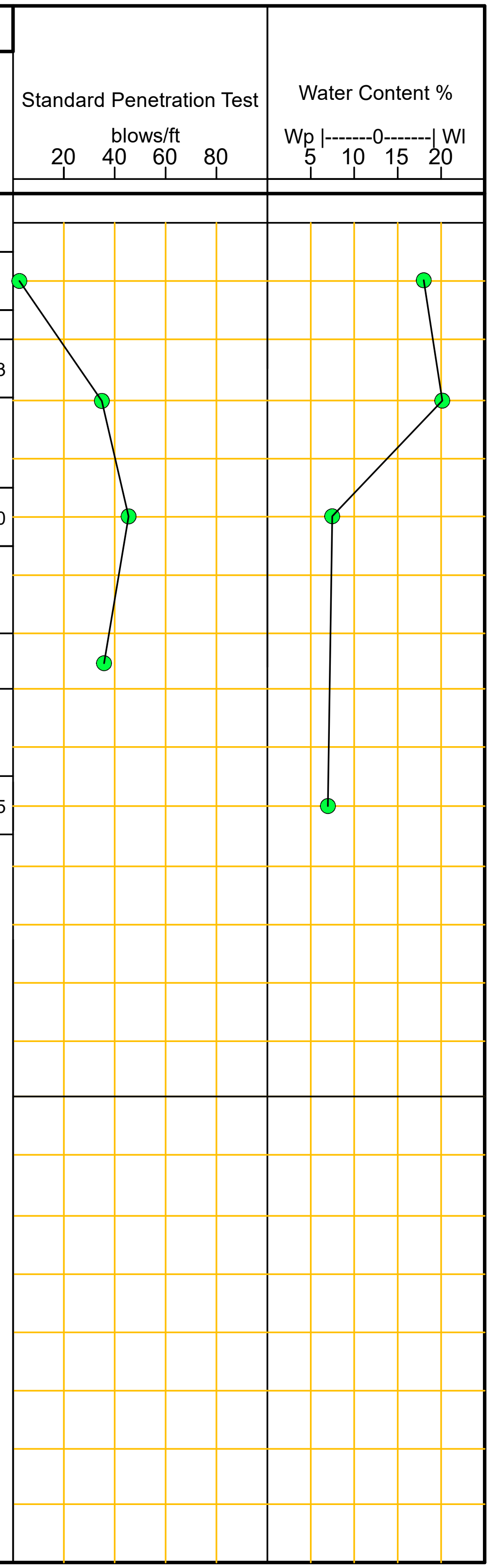
Company: ASR Engineering, Inc.

SUBSURFACE PROFILE

Depth	Symbol	Description	Notes
0		Ground Surface	
0–20		***Silty Sand (SM)*** Light brown, moist, fine grain, very loose	
20		End of Borehole	

SAMPLE

Number	Moisture %	Blows/ft	Density
1	17.2	2	89.1
2	19.3	34	103.3
3	8.8	45	129.0
4	-	36	-
5	8.7	-	139.5



Drill Method: CME-45: Hollow Stem Auger

Drill Date: 12/15/22

Hole Size: 6"

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Drilled by: Salem

Checked by: ASR

Figure: A-7

Project No:	12-22108
Project:	Treehouse Almonds
Client:	Provost & Pritchard
Location:	Earlimart, CA
Logged by:	S.P.
Company:	ASR Engineering, Inc.

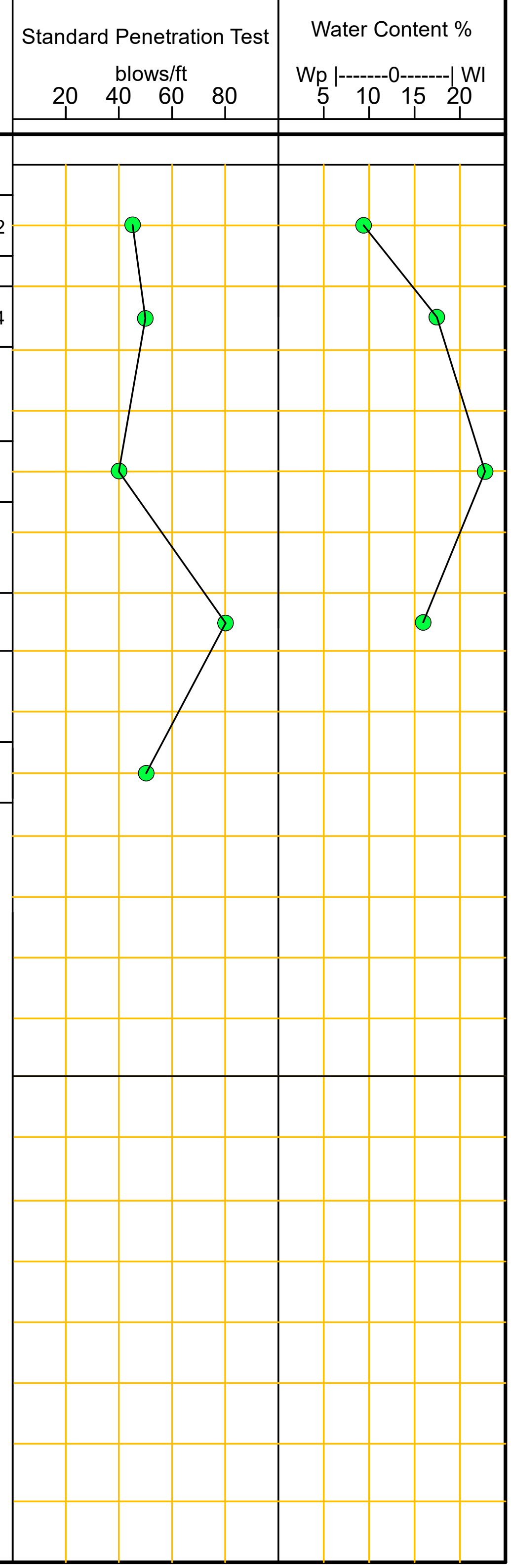
Log of Borehole: B-6

SUBSURFACE PROFILE

Depth	Symbol	Description	Notes
0		Ground Surface	
0–20	SM	***Silty Sand (SM)*** Light brown, moist, coarse, dense	
20		End of Borehole	

SAMPLE

Depth	Number	Moisture %	Blows/ft	Density
2	1	9.3	45	120.2
5	2	17.4	49	112.4
10	3	23.1	40	96.9
15	4	16.6	81	99.6
20	5	-	50	-



Depth scale: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45

Drill Method:	CME-45: Hollow Stem Auger
Drill Date:	12/15/22
Hole Size:	6"
Drilled by:	Salem
Checked by:	ASR
Sheet: 1 of 1	

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Figure: A-8

Log of Borehole: B-7

Project No: 12-22108

Project: Treehouse Almonds

Client: Provost & Pritchard

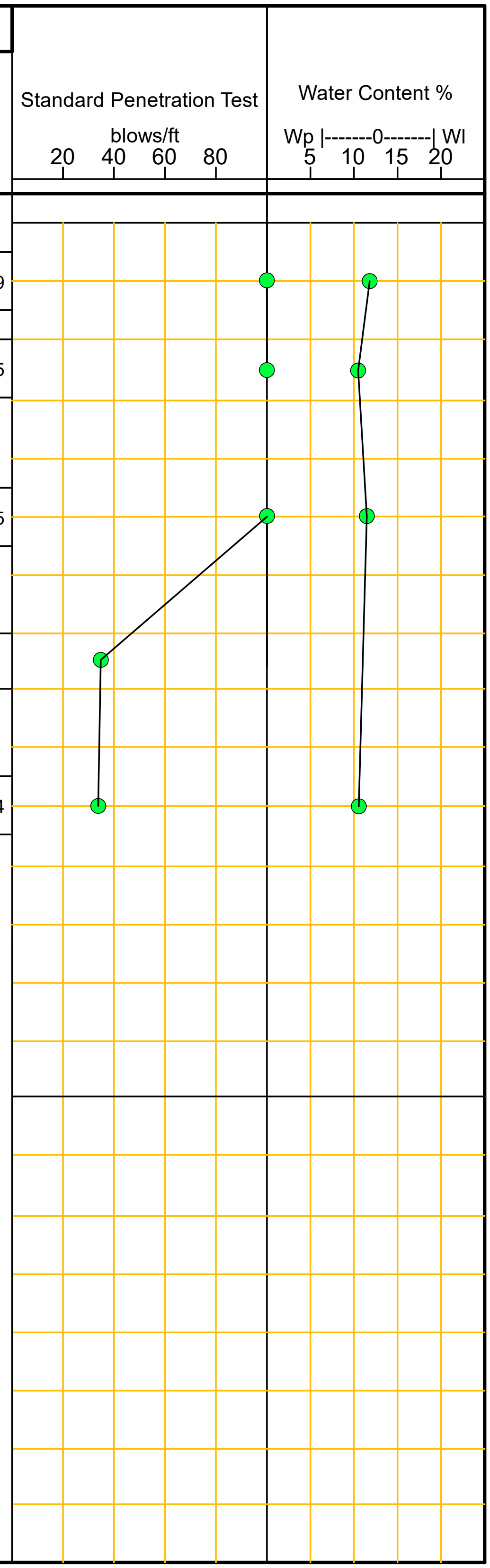
Location: Earlimart, CA

Logged by: S.P.

Company: ASR Engineering, Inc.

Depth	Symbol	Description	Notes	Number	Moisture %	Blows/ft	Density
0		Ground Surface					
0–20		***Silty Sand (SM)*** Light brown, moist, fine grain, very dense					
				1	12.4	50-5"	112.9
5				2	11.2	50-5"	115.5
10				3	12.3	50-5"	115.5
15				4	-	35	-
20		End of Borehole		5	11.1	34	115.4

Depth scale: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45



Drill Method: CME-45: Hollow Stem Auger

Drill Date: 12/15/22

Hole Size: 6"

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Drilled by: Salem

Checked by: ASR

APPENDIX "B"

APPENDIX "B"
LABORATORY TESTING

B.1 Moisture-Density Tests

The field moisture content, as a percentage of dry weight of the soils, was determined by weighing samples before and after drying. Dry densities, in pounds per cubic foot, were also determined for undisturbed core samples. The results of these determinations are shown in Table B-1.

TABLE B-1 SUMMARY OF MOISTURE-DENSITY TEST RESULTS			
Test Boring	**Depth, ft. bsg**	**Moisture %**	**Dry Density, pcf.**
B-1	2	14.5	102.7
B-1	5	17.3	105.5
B-1	15	2.2	110.3
B-1	20	11.1	116.7
B-1	25	7.7	119.0
B-2	2	15.1	104.0
B-2	10	8.4	123.0
B-2	15	9.5	126.2
B-2	20	10.8	119.7
B-2	25	11.3	121.7
B-2	35	22.7	106.8
B-3	2	15.6	97.8
B-3	5	17.2	112.6
B-3	15	19.2	114.0
B-3	20	4.3	113.7
B-4	5	12.3	93.3
B-4	10	19.7	111.5
B-4	15	13.2	123.6
B-4	20	5.7	117.7
B-5	2	17.2	89.1
B-5	5	19.3	103.3
B-5	10	8.8	129.0
B-5	20	8.7	139.5

TABLE B-1 SUMMARY OF MOISTURE-DENSITY TEST RESULTS			
Test Boring	**Depth, ft. bsg**	**Moisture %**	**Dry Density, pcf.**
B-6	**2**	**9.3**	**120.2**
B-6	**5**	**17.4**	**112.4**
B-6	**10**	**23.1**	**96.9**
B-6	**15**	**16.6**	**99.6**
B-7	**2**	**12.4**	**112.9**
B-7	**5**	**11.2**	**115.5**
B-7	**10**	**12.3**	**115.5**
B-7	**20**	**11.1**	**120.5**
Recompacted	**2-15**	**15.9**	**115.4**

B.2 Consolidation Test

Two (2) consolidation tests were performed on soil sample collected from the respective depth of 15 feet and 5 feet bsg from the location of Test Borings B-5 and B-7. Result of the consolidation tests are shown on Figure B-1 & B-2 in Appendix "B."

B.3 Direct Shear Test

Four (4) direct shear tests were performed on soil samples collected from the respective depths of 20 feet, 15 feet, 10 feet, 5 feet below surface grade from the locations of Test Borings B-2, B-3, B-4, and B-6. In addition, one shear test was performed on a composite of site soils from the depths in the range of 2 to 15 feet. The test was conducted on the composite soil compacted to 90 percent of the maximum dry density as determined by Test Method ASTM D 1557. Results of the direct shear tests are shown on Figure B-3 through B-7 in Appendix "B."

B.4 Particle Size Analyses

Two Particle size distribution tests were conducted on a soil sample collected from the respective depth of 30 feet and 15 feet bsg from the location of Test Boring B-2 and Test Boring B-7. The tests were performed by ASTM Test Method D 422. Particle Size Distribution Diagrams are shown on Figure B-8 and B-9 in Appendix "B."

B.5 Permeability Tests

Permeability tests were performed on intact soil samples from a depth of 30 feet from the location of Test Boring B-2 and from a depth of 15 feet from the location of Test Boring B-7.

Results of Permeability tests are presented in Table B-2.

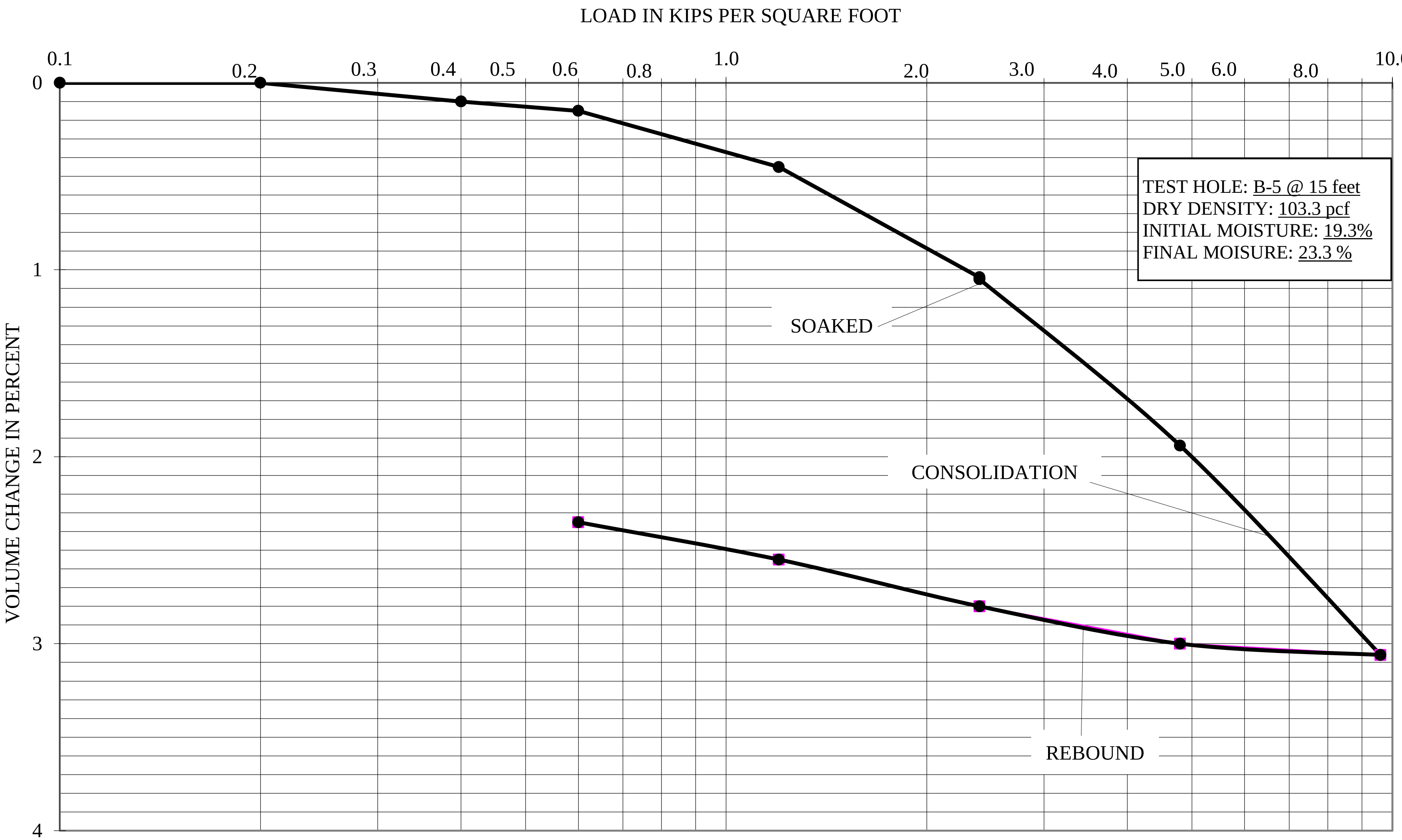
TABLE B-2 SUMMARY OF PERMEABILITY TEST RESULTS			
Sample Location	**Soil Type**	**Test Type**	**Coefficient of Permeability, k, cm/sec**
B-2@30	ML, traces of Clay	Constant Head	$8.78X10^{-8}$
B-7@15	SM, traces of Clay	Constant Head	$1.39X10^{-8}$

B.6 Soil Chemical Analyses

Results of chemical analyses performed on a soil sample obtained from Test Boring are presented in Table B-3:

TABLE B-3 SUMMARY OF CHEMICAL TEST RESULTS	
Test Designation	**Sample**
	B-3@2'
pH level	8.17
Electrical Conductance, µS/cm	782
Sulfate, mg/L	96
Chloride, mg/L	18

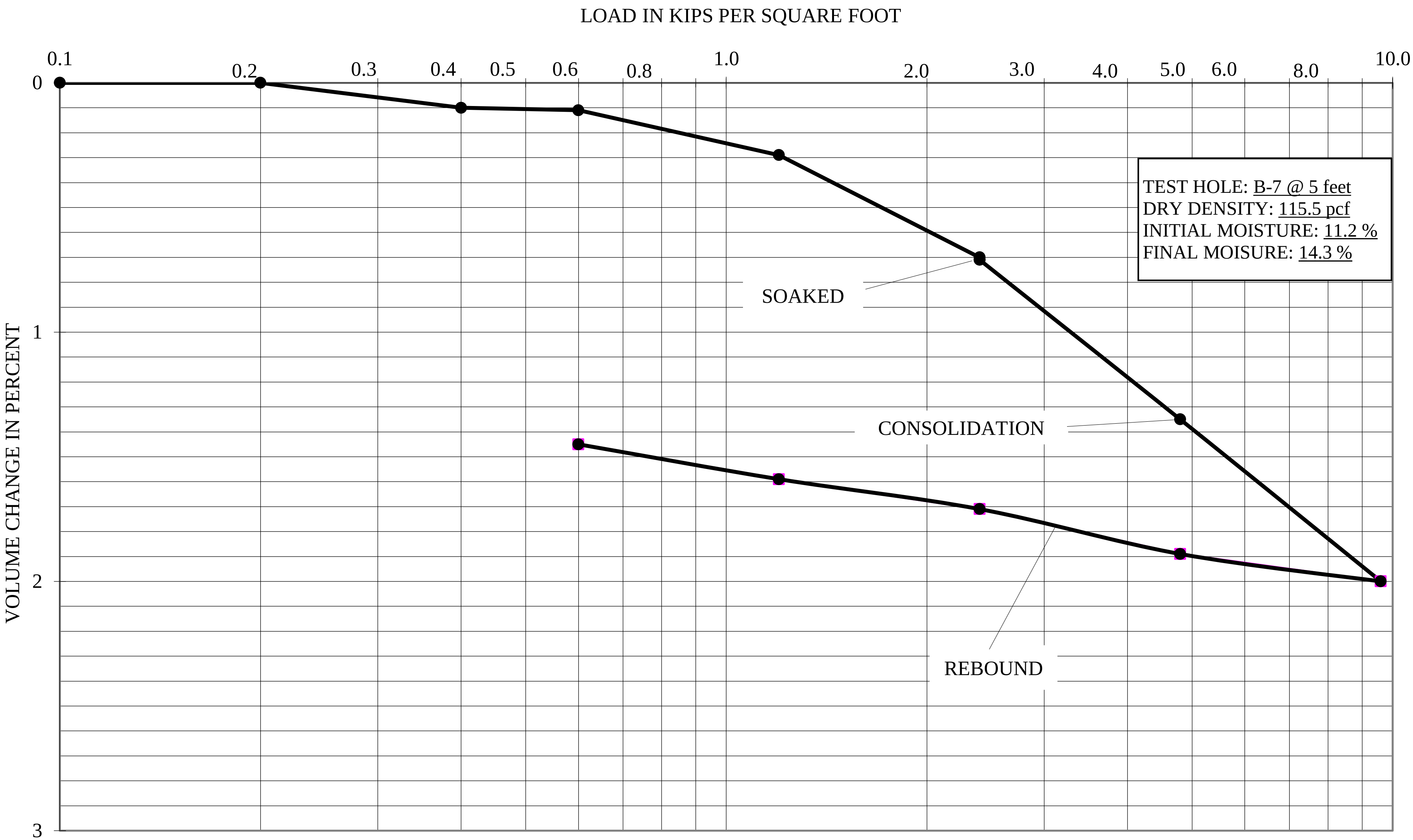
Job No. 12-22108
January 2023
Figure B-1



CONSOLIDATION - PRESSURE TEST DATA

ASR Engineering, Inc.

Job No. 12-22108
January 2023
Figure B-2

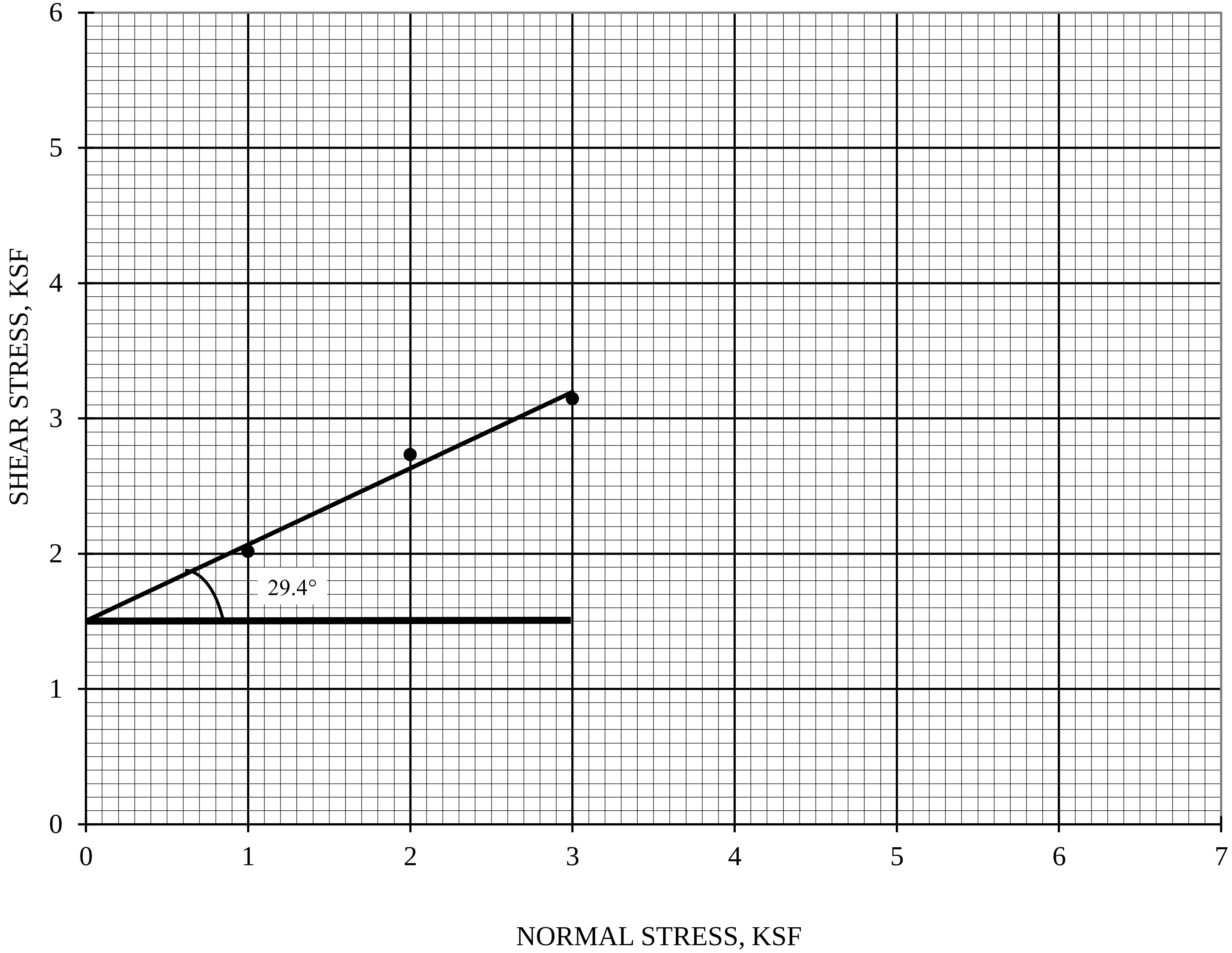


CONSOLIDATION - PRESSURE TEST DATA

ASR Engineering, Inc.

Job 12-22108
January 2023
Figure B-3

SHEAR STRENGTH DIAGRAM
(DIRECT SHEAR)



Test Boring B-2 @20'
Dry Density = 119.7 pcf
Moisture = 10.8 %
Cohesion = 1503.8 psf
Friction Angle = 29.4°

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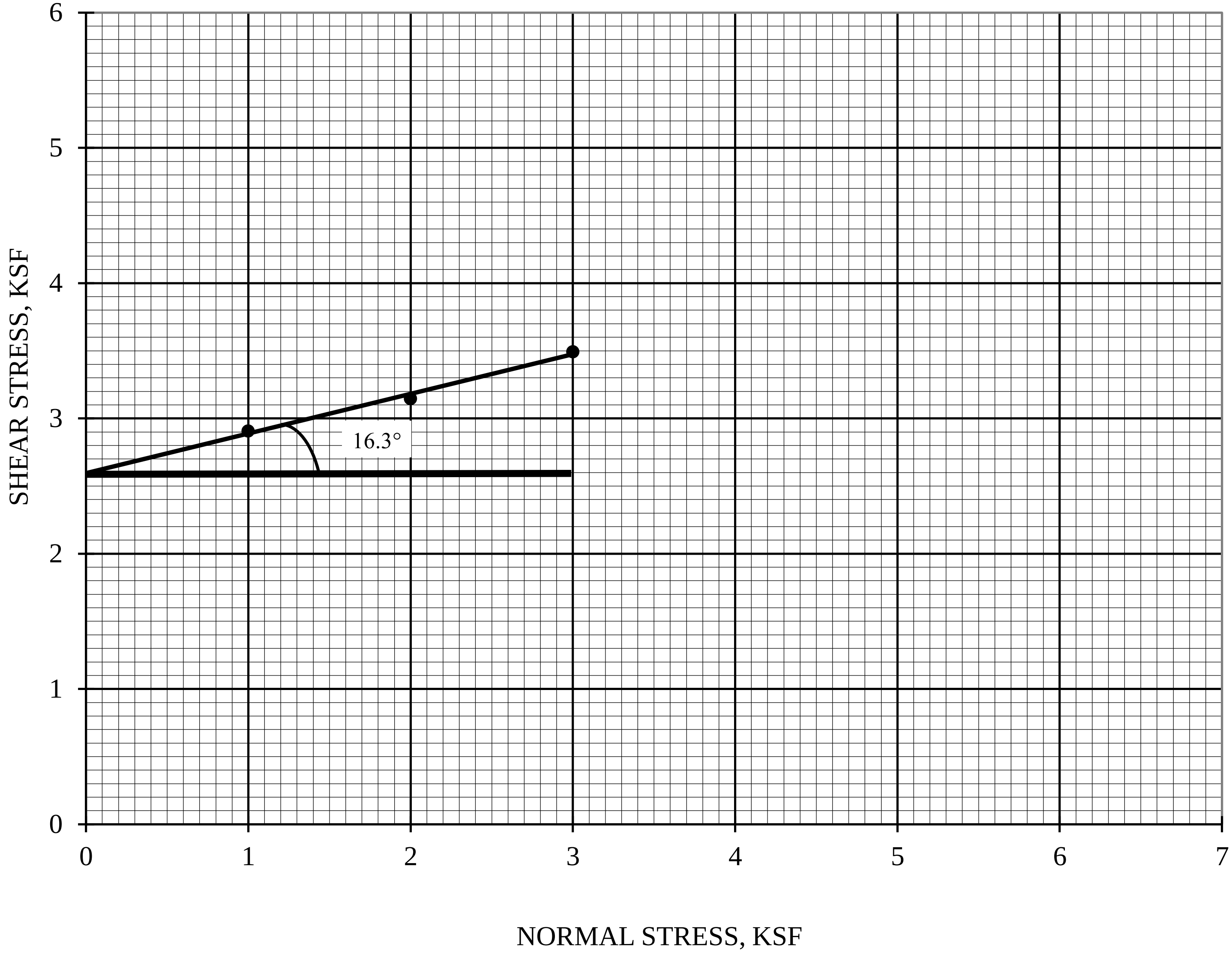
Job 12-22108
January 2023
Figure B-4

SHEAR STRENGTH DIAGRAM
(DIRECT SHEAR)



Test Boring B-3 @15'
Dry Density = 114.0 pcf
Moisture = 19.2 %
Cohesion = 2595.6 psf
Friction Angle = 16.3°

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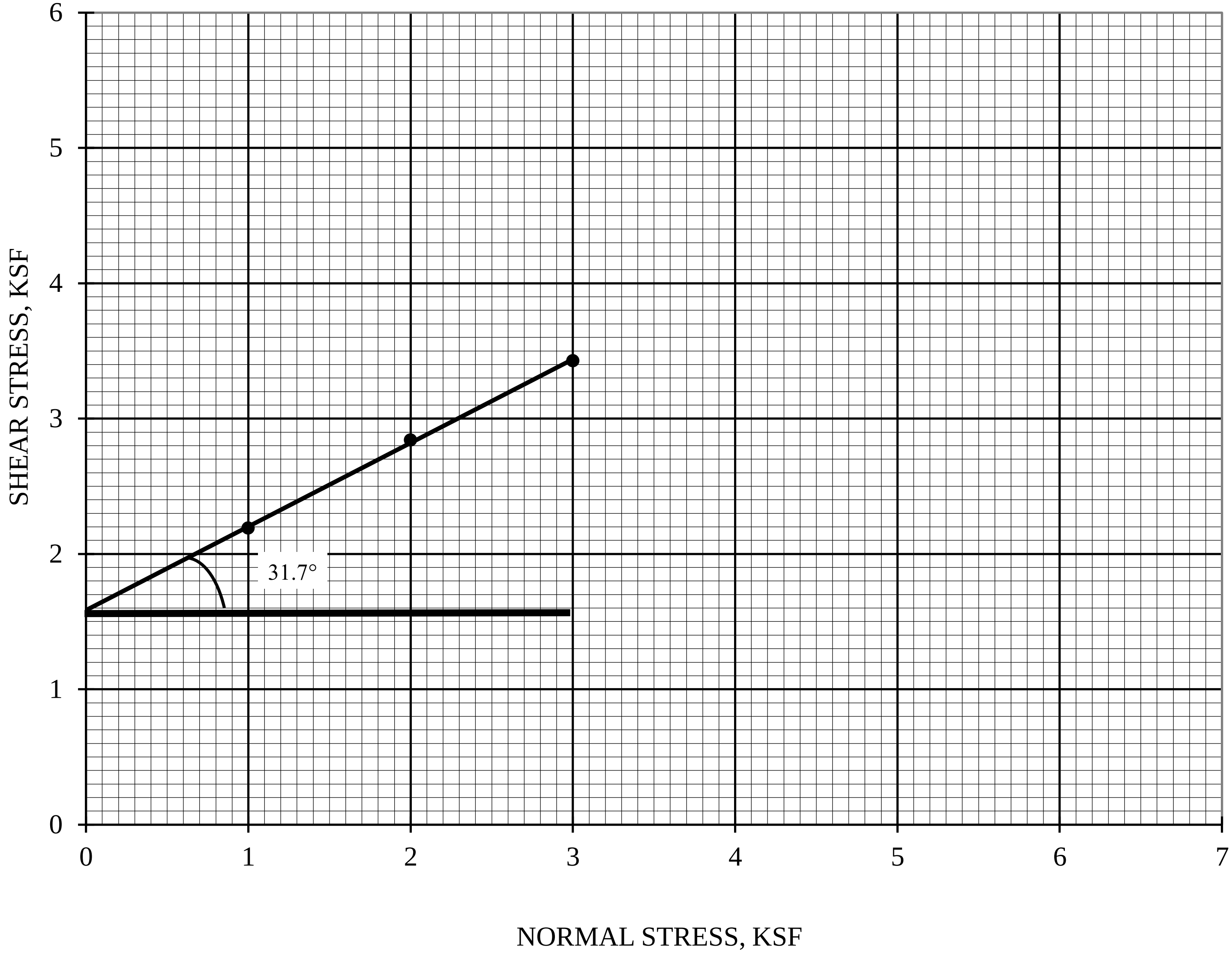
Job 12-22108
January 2023
Figure B-5

SHEAR STRENGTH DIAGRAM
(DIRECT SHEAR)



Test Boring B-4 @10'
Dry Density = 111.5 pcf
Moisture = 19.7 %
Cohesion = 1583.4 psf
Friction Angle = 31.7°

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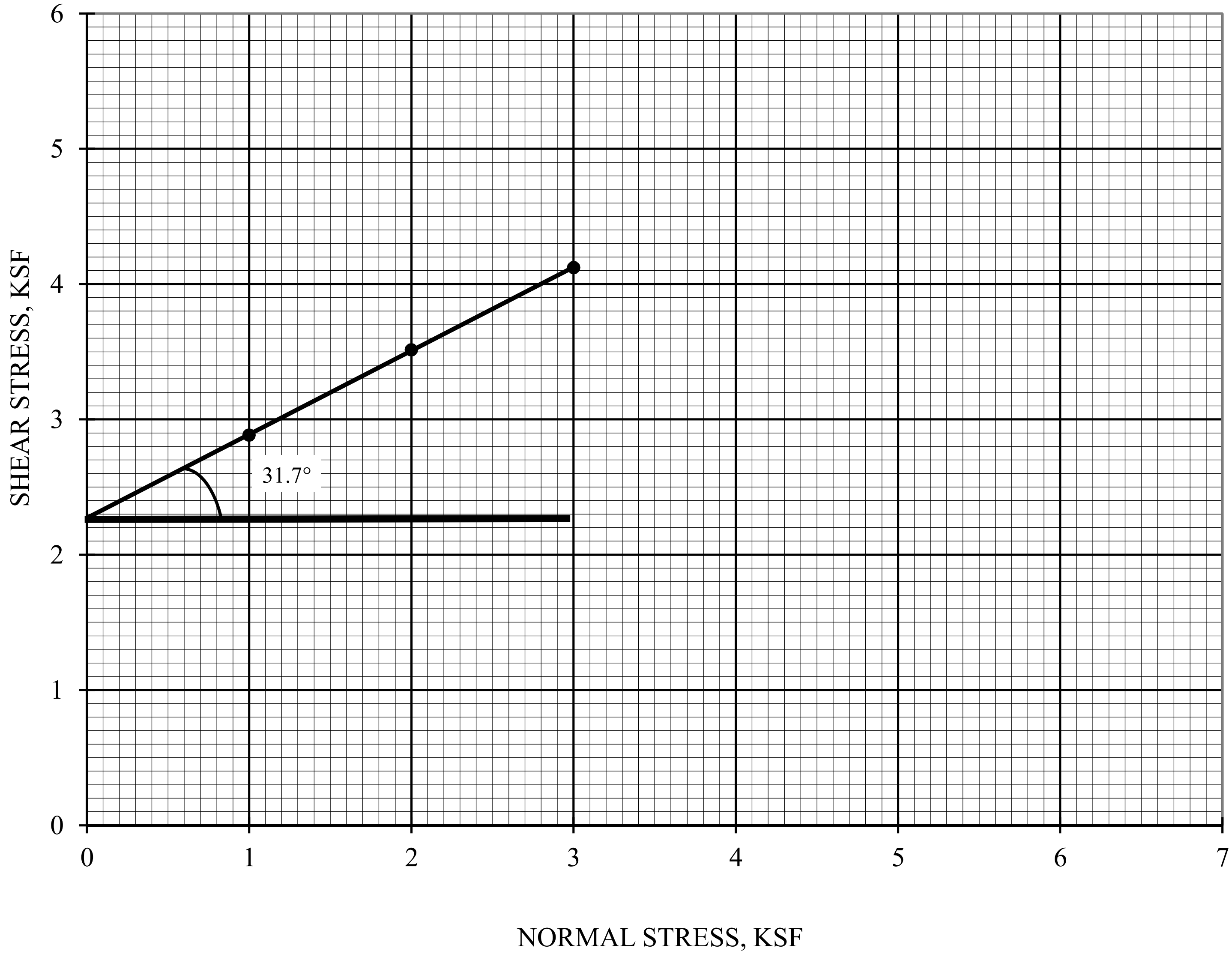
Job 12-22108
January 2023
Figure B-6

SHEAR STRENGTH DIAGRAM
(DIRECT SHEAR)



Test Boring B-6 @5'
Dry Density = 112.4 pcf
Moisture = 17.4 %
Cohesion = 2270.2 psf
Friction Angle = 31.7°

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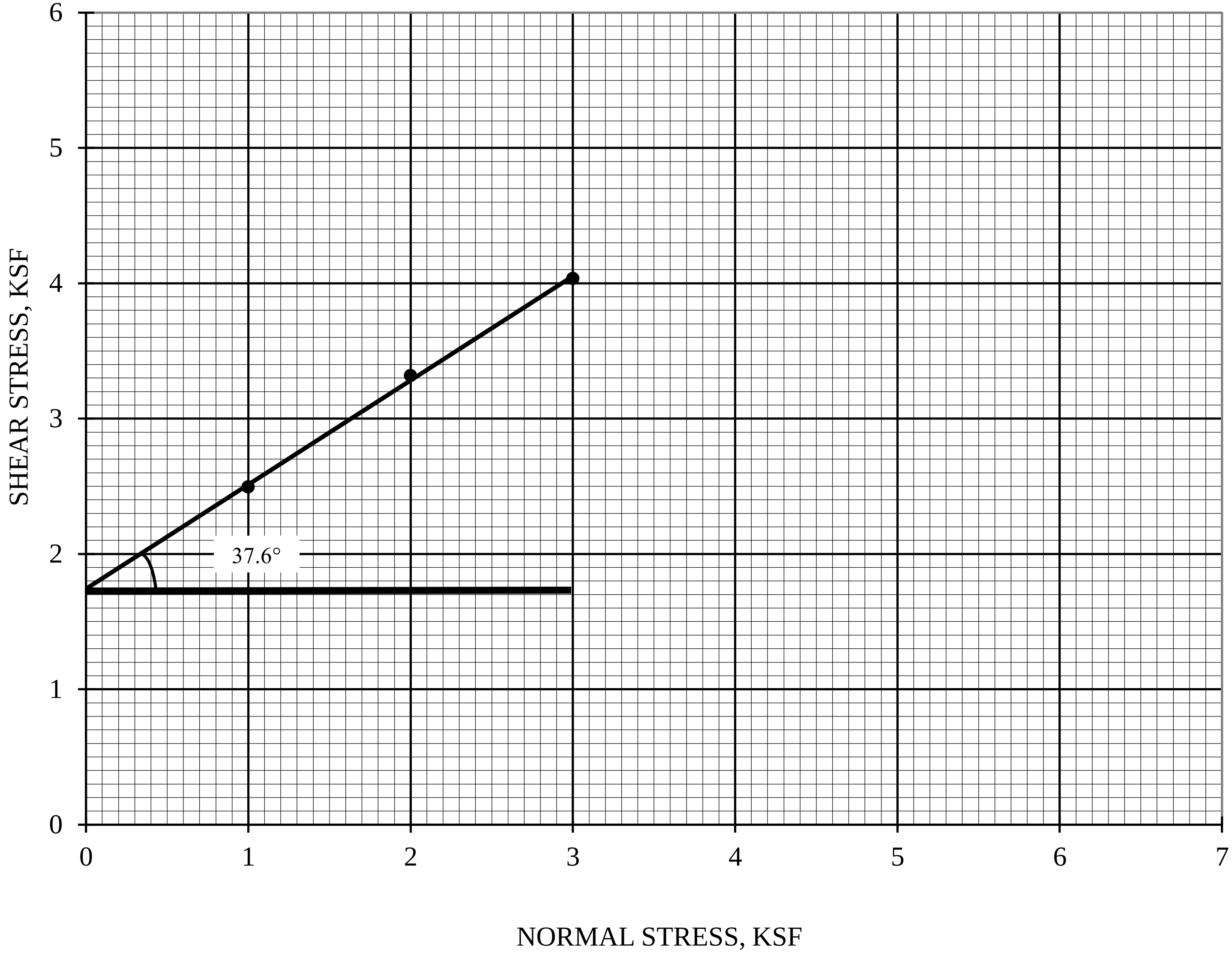
January 2023
Figure B-7

SHEAR STRENGTH DIAGRAM
(DIRECT SHEAR)

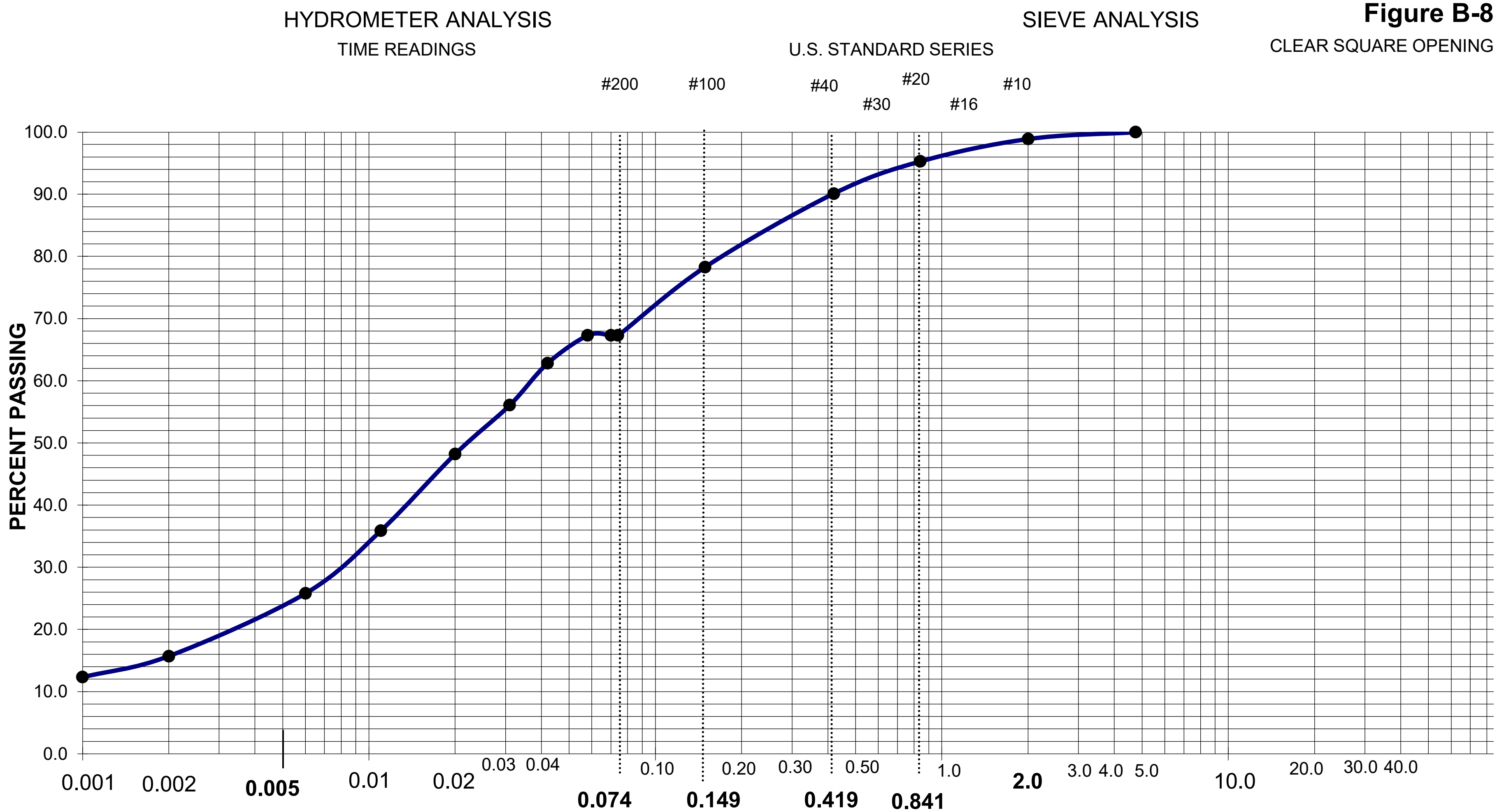


Test Boring Bulk Sample
Dry Density = 115.4 pcf
Moisture = 15.9 %
Cohesion = 1742.4 psf
Friction Angle = 37.6°

ASR Engineering

Project No. 12-22108
January 2023
Figure B-8

(B-2 @30')



CLAY (PLASTIC) TO SILT (NON-PLASTIC)	SAND			GRAVEL		COBBLE
	FINE	MEDIUM	COARSE	FINE	COARSE	

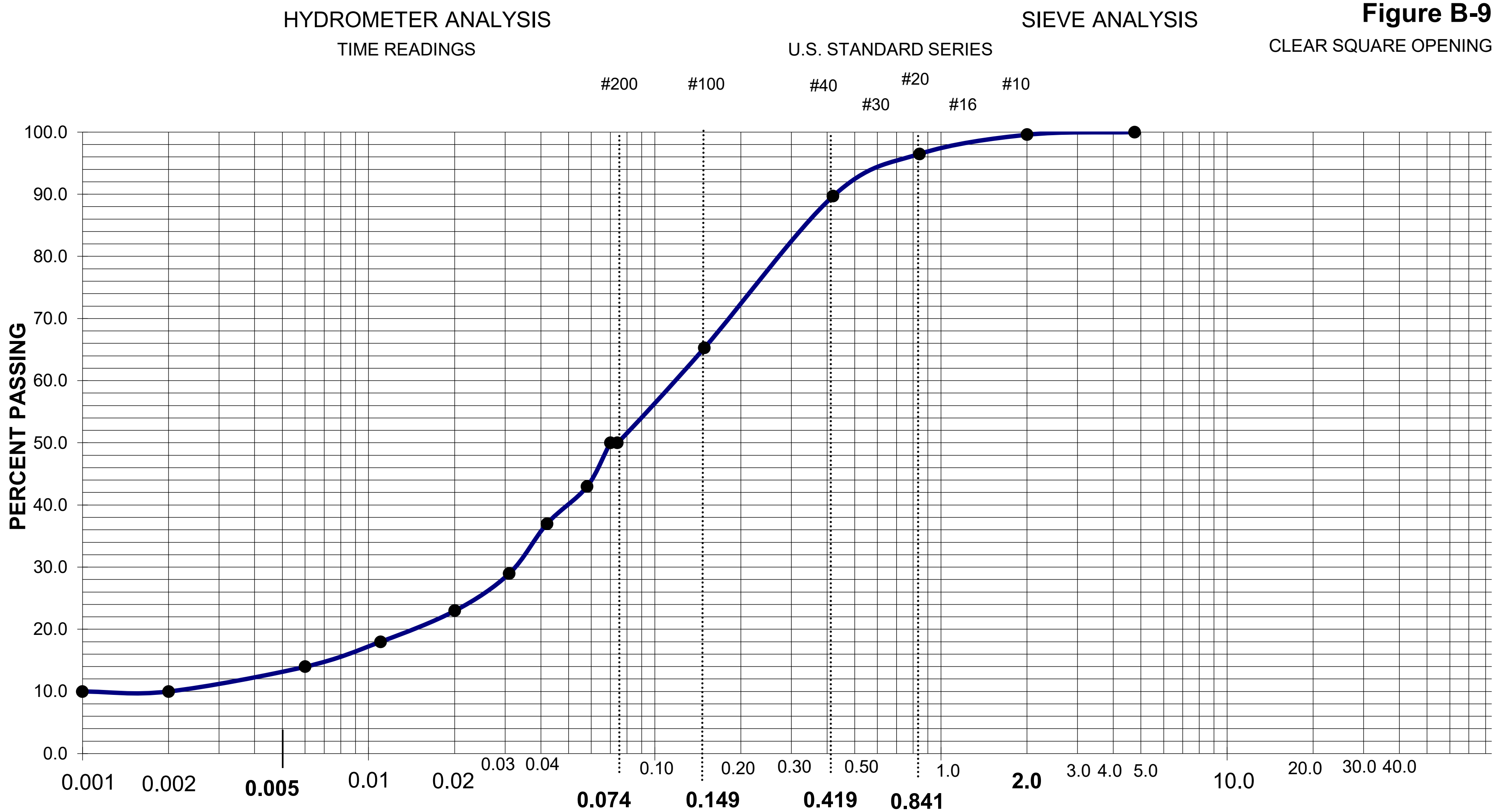
PARTICLE SIZE DISTRIBUTION DIAGRAM

% GRAVEL	% SAND	% SILT	% CLAY
0	33	41	26

ASR Engineering, Inc.

Project No. 12-22108
January 2022
Figure B-9

(B-7 @15')



CLAY (PLASTIC) TO SILT (NON-PLASTIC)	SAND			GRAVEL		COBBLE
	FINE	MEDIUM	COARSE	FINE	COARSE	

PARTICLE SIZE DISTRIBUTION DIAGRAM

% GRAVEL	% SAND	% SILT	% CLAY
0	50	36	14

ASR Engineering, Inc.

Appendix E

Seepage Design Calculations

Treehouse Almonds - Anaerobic

Lagoon Design Report - Appendix E
Tier 1 Lagoon Liner
Seepage Design Calculations

Inputs

81	ft	Nominal liquid length (along drainage trench)
81	ft	Nominal liquid width (across drainage trench)
17.0	ft	Nominal liquid depth (measured at center of length)
1.8	H:1V	Side slope
1		Number of defects per 4,000 m^2
1.08E-05	m^2	Area of defect
2.0		LCRS Factor of Safety

Calculations

Potential Leakage Area

610	m^2	Considered geomembrane surface area
0.2	acres	

Leakage per defect q=0.6*a*sqrt(2*g*h)

5.18	m	Hydraulic head on liner
6.51E-05	m^3/s	Leakage per defect
7.01E-04	ft^3/s	
0.34	gpm	

Total Potential Leakage

1		Potential defects in cell
6.51E-05	m^3/s	Potential leakage per cell
0.3	gpm	
1.30E-04	m^3/s	Minimum design flow capability for cell
0.7	gpm	

Treehouse Almonds - Aeration

Lagoon Design Report - Appendix E
Tier 1 Lagoon Liner
Seepage Design Calculations

Inputs

273	ft	Nominal liquid length (along drainage trench)
80	ft	Nominal liquid width (across drainage trench)
11.0	ft	Nominal liquid depth (measured at center of length)
1.8	H:1V	Side slope
1		Number of defects per 4,000 m^2
1.08E-05	m^2	Area of defect
2.0		LCRS Factor of Safety

Calculations

Potential Leakage Area

2,029	m^2	Considered geomembrane surface area
0.5	acres	

Leakage per defect q=0.6*a*sqrt(2*g*h)

3.35	m	Hydraulic head on liner
5.24E-05	m^3/s	Leakage per defect
5.64E-04	ft^3/s	
0.28	gpm	

Total Potential Leakage

1		Potential defects in cell
5.24E-05	m^3/s	Potential leakage per cell
0.3	gpm	
1.05E-04	m^3/s	Minimum design flow capability for cell
0.6	gpm	

Treehouse Almonds - Storage

Lagoon Design Report - Appendix E
Tier 1 Lagoon Liner
Seepage Design Calculations

Inputs

472	ft	Nominal liquid length (along drainage trench)
266	ft	Nominal liquid width (across drainage trench)
25.0	ft	Nominal liquid depth (measured at center of length)
2.0	H:1V	Side slope
1		Number of defects per 4,000 m^2
1.08E-05	m^2	Area of defect
2.0		LCRS Factor of Safety

Calculations

Potential Leakage Area

11,664	m^2	Considered geomembrane surface area
2.9	acres	

Leakage per defect q=0.6*a*sqrt(2*g*h)

7.62	m	Hydraulic head on liner
7.90E-05	m^3/s	Leakage per defect
8.50E-04	ft^3/s	
0.42	gpm	

Total Potential Leakage

3		Potential defects in cell
2.37E-04	m^3/s	Potential leakage per cell
1.2	gpm	
4.74E-04	m^3/s	Minimum design flow capability for cell
2.5	gpm	

APPENDIX F

Anchor Trench and Geomembrane Material Strength Calculations

Treehouse Almonds - Anaerobic

Lagoon Design Report - Appendix F
Tier 1 Lagoon Liner
Geosynthetic Liner Material Strength and Anchor Trench Calculations

Project Properties

Soil Properties *(from geotech report)*

Density	112	lb/ft^3
Friction angle	30	deg

Liner Properties *(from material supplier)*

Thickness - liners	60	mil each (nominal)
Thickness - geonet	225	mil (nominal)
Thickness - cover	80	mil (nominal)
Yield strength - liner	126	lb/in
Density - liner	58.7	lb/ft^3

Design Method

The tensile strength of the anchor trench is based on the methods presented by Koerner, *Designing with Geosynthetics, 6th Edition, 2012*

Anchor Trench Geometry

For anchor trench geometry, see Figures 1 & 2
Anchor trench backfill will be per Geotechnical Report guidance

Results

When there is a cover, there are 3 potential angles of the cover influencing the load onto the anchor trench. These could be down slope by weighted ballast, horizontal in-between ballasts, or in a ballooned condition. For the case of a cover, all the results are presented. Otherwise just the down slope condition is presented.

	Down Slope (plf)	Horizontal (plf)	Ballooned (plf)
Loading on the Primary liner*	27		
Anchor trench provides	3,475		
Resulting Safety Factor	128.7	No Cover	No Cover

Anchor trench being 3.0 ft wide
4.0 ft deep
0 *plf maximum load applied to primary layer by the cover included

Conclusion

The anchor trench is sufficient for the loadings used in the calculations

Check Liner Material Strength to Down Slope Loads

Material Strength	1,512	plf
Anchor Trench Hold	3,475	plf
Liner Loading	27	plf

Load Equations for Anchor Trench *(see Figures 1 & 2)*

$\sum F_x = 0$ (equation 5.27)

$T_{all}\cos\alpha = F_{u\sigma} + F_{L\sigma} + F_{LT} - P_a + P_p$

where:

B	is load of geomembrane layers (secondary, geonet, & primary) on side slope
C	is load of cover liner provided by installer
β	is the side slope angle
Δ	is the angle of attachment of the cover to the primary liner
T	is resultant tension of B and C
T_x	is the horizontal component of T
T_y	is the vertical component of T
α	α is angle of the resultant tension of T
T_{all}	is allowable resistance force provided by the anchor trench
$F_{U\sigma}$	is the shear force above geomembrane due to cover soil
$F_{L\sigma}$	is the shear force below geomembrane due to cover soil
F_{LT}	is shear force below geomembrane due to vertical component of B and C
P_A	is active earth pressure against the backfill side of the anchor trench
P_P	is passive earth pressure against the in-situ side of the anchor trench

$F_{U\sigma}=\sigma_n \tan\delta_U(L_{RO})$

$F_{L\sigma}=\sigma_n \tan\delta_L(L_{RO})$

$F_{LT}=T_{all}\sin\alpha\tan\delta_L$

$P_A=0.5\gamma_{AT}D_{AT}^2K_A$

$P_P=0.5\gamma_{AT}D_{AT}^2K_P$

$T_{all} = (F_{u\sigma} + F_{L\sigma} - P_a + P_p)/(\cos\alpha - \sin\alpha\tan\delta_L)$

where:

γ_{AT}	is unit weight of soil in anchor trench
D_{AT}	is depth of anchor trench
L_{RO}	is width of anchor trench
σ_n	is applied normal stress from cover soil = $\gamma_{AT}D_{AT}$
δ	is angle of shearing resistance between geomembrane and adjacent material
K_A	is coefficient of active earth pressure = $\tan^2(45-\phi/2)$
K_P	is coefficient of passive earth pressure = $\tan^2(45+\phi/2)$
ϕ	is angle of shearing resistance of respective soil

Inputs for Anchor Trench Equations

C	0	plf	load of cover liner (maximum calculated to achieve 1.5 Factor of Safety)
d	19.0	ft	Pond Depth
s	1.8	H:1V	Side Slope
β	29.7	deg	Side Slope
$\Delta 1$	29.7	deg	angle of cover at weighted pipe ballasts
$\Delta 2$	0.0	deg	angle of cover midway between weighted pipe ballasts
$\Delta 3$	19.0	deg	angle of cover that is allowed to balloon
γ_{AT}	112	lb/ft^3	unit weight of soil in anchor trench
D_{AT}	4.0	ft	depth of anchor trench
L_{RO}	3.0	ft	width of anchor trench
δ_U	18		friction angle between membrane and soil (Table 5.6, *Designing with Geosynthetics*)
δ_L	18		friction angle between membrane and soil (Table 5.6, *Designing with Geosynthetics*)
ϕ	30	deg	friction angle of soil

Calculations from Anchor Trench Equations

l	38	ft	average length of sloped pond side (pond varies in depth)
B_S	11	plf	loading due to the weight of the secondary liner (weight of material x slope length)
B_G	4	plf	loading due to the weight of the geonet liner (weight of material x slope length)
B_P	11	plf	loading due to the weight of the primary liner (weight of material x slope length)
B	27	plf	loading due to the weight of the geomembrane layers
σ_n	448	plf^2	normal stress
$F_{U\sigma}$	437	plf	is the shear force above geomembrane due to cover soil
$F_{L\sigma}$	437	plf	is the shear force below geomembrane due to cover soil
K_A	0.3		is coefficient of active earth pressure
K_P	3.0		is coefficient of passive earth pressure
P_A	299	plf	is active earth pressure against the backfill side of the anchor trench; and
P_P	2,688	plf	is passive earth pressure against the in-situ side of the anchor trench.
AT	1,344	plf	is weight of anchor trench

Calculations for T and α for different cover configurations

	Δ1: (Δ = β)	**Δ2: (Δ = 0)**	**Δ3: (Δ = 19 deg)**
T	27 plf	27 plf	27 plf
α	29.7 deg	29.7 deg	-29.7 deg
T_{all}	3475 plf	3475 plf	3475 plf
$T \le T_{all}$	OK	OK	OK

Check Anchor Trench will resist vertical force of T for different cover configurations

	Δ1: (Δ = β)	**Δ2: (Δ = 0)**	**Δ3: (Δ = 19 deg)**
T_x	3017 plf	3017 plf	3017 plf
T_y	0 plf*	0 plf*	-1724 plf
AT	1,344	1,344	1344 plf
$T_y \le AT$	OK	OK	OK

*Assume vertical component dissipates over the distance between top of bank and anchor trench

Figure 1 Anchor Trench Components

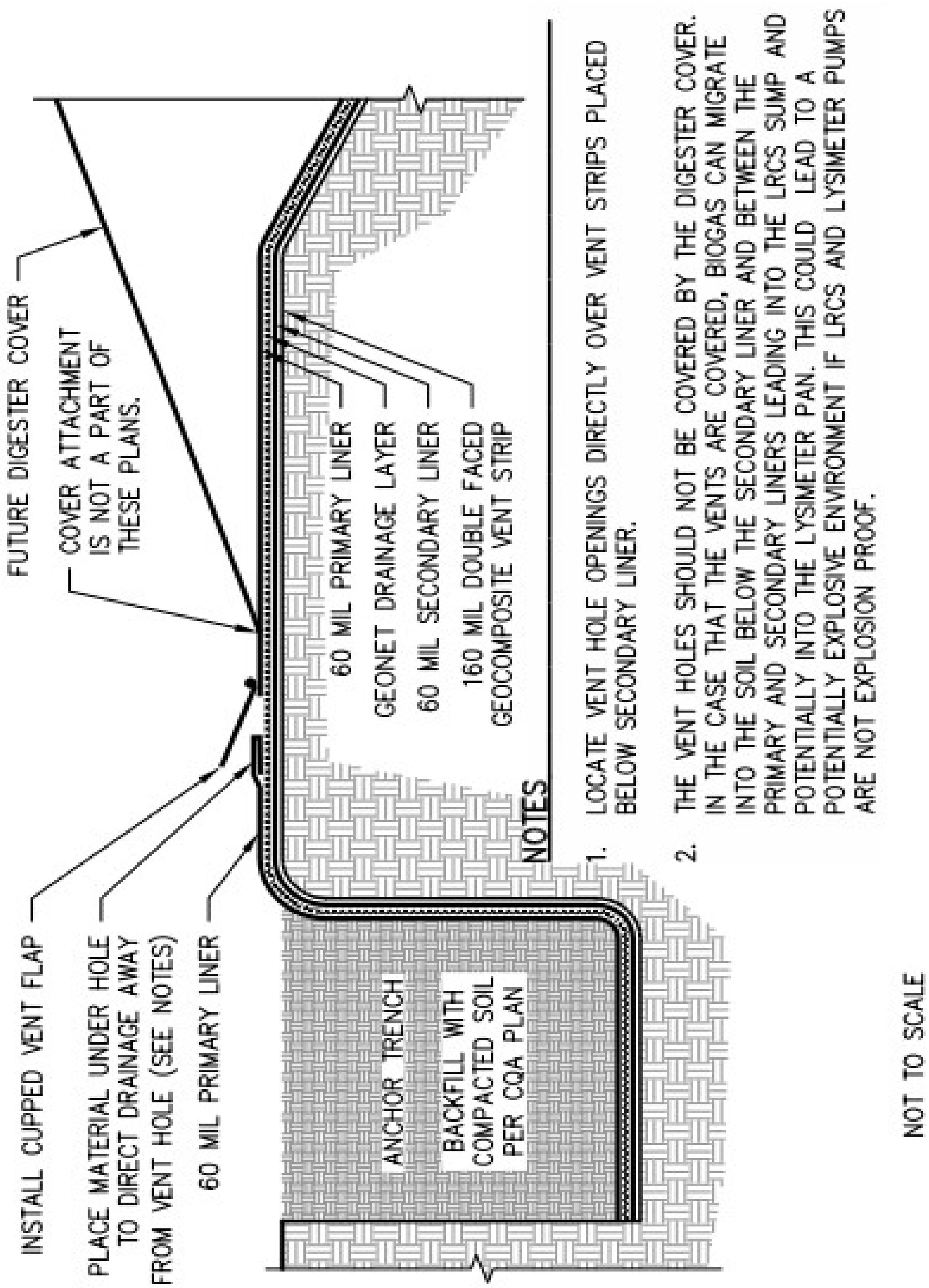
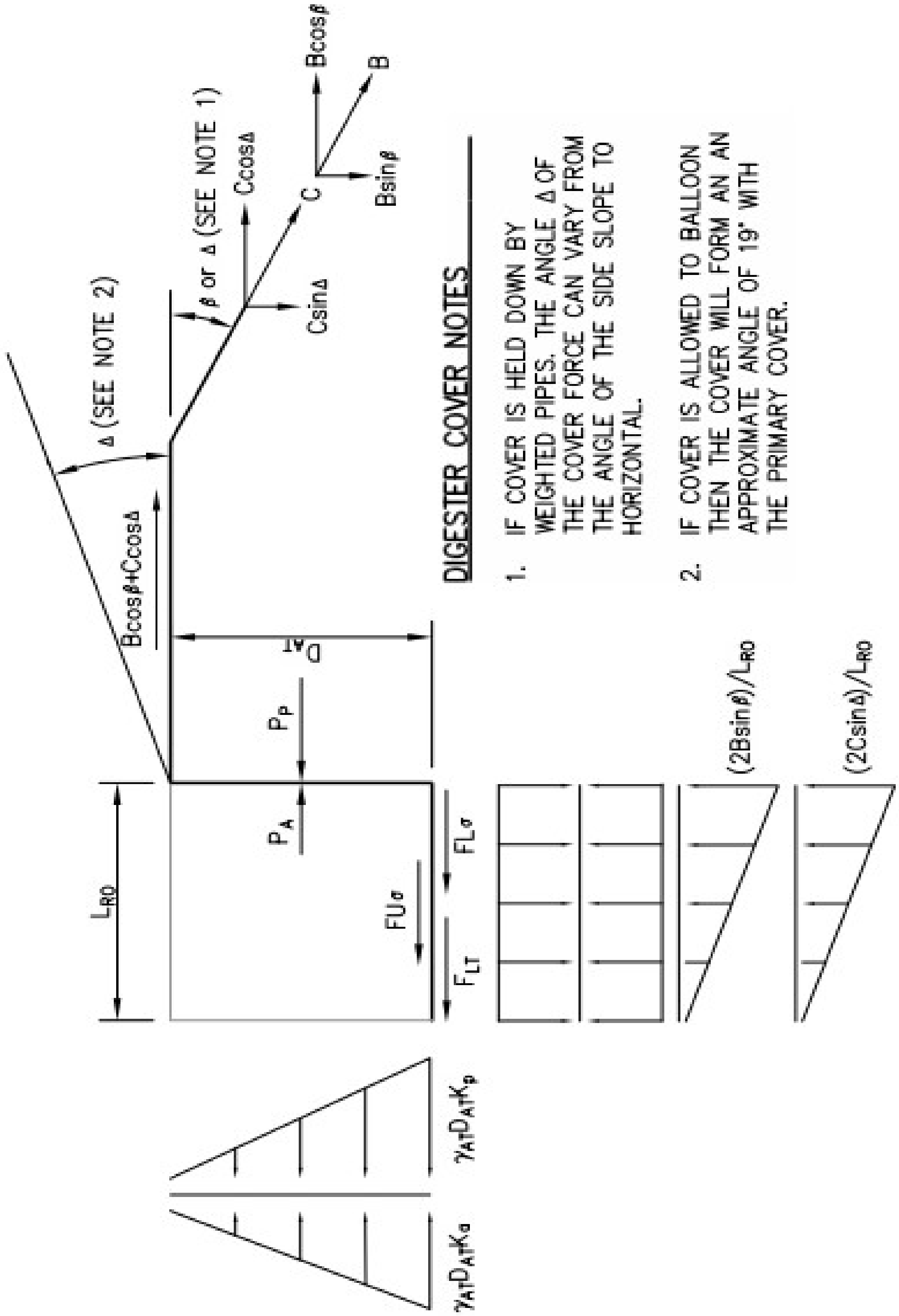


Figure 2 Anchor Trench Loads



Treehouse Almonds - Aeration

Lagoon Design Report - Appendix F
Tier 1 Lagoon Liner
Geosynthetic Liner Material Strength and Anchor Trench Calculations

Project Properties

Soil Properties *(from geotech report)*

Density	112	lb/ft^3
Friction angle	30	deg

Liner Properties *(from material supplier)*

Thickness - liners	60	mil each (nominal)
Thickness - geonet	175	mil (nominal)
Thickness - cover	80	mil (nominal)
Yield strength - liner	126	lb/in
Density - liner	58.7	lb/ft^3

Design Method

The tensile strength of the anchor trench is based on the methods presented by Koerner, *Designing with Geosynthetics, 6th Edition, 2012*

Anchor Trench Geometry

For anchor trench geometry, see Figures 1 & 2
Anchor trench backfill will be per Geotechnical Report guidance

Results

When there is a cover, there are 3 potential angles of the cover influencing the load onto the anchor trench.
These could be down slope by weighted ballast, horizontal in-between ballasts, or in a ballooned condition.
For the case of a cover, all the results are presented. Otherwise just the down slope condition is presented.

	Down Slope (plf)	Horizontal (plf)	Ballooned (plf)
Loading on the Primary liner*	19		
Anchor trench provides	532		
Resulting Safety Factor	28.0	No Cover	No Cover

Anchor trench being 1.5 ft wide
1.5 ft deep
0 *plf maximum load applied to primary layer by the cover included

Conclusion

The anchor trench is sufficient for the loadings used in the calculations

Check Liner Material Strength to Down Slope Loads

Material Strength	1,512	plf
Anchor Trench Hold	532	plf
Liner Loading	19	plf

Load Equations for Anchor Trench *(see Figures 1 & 2)*

$\sum F_x = 0$ (equation 5.27)

$T_{all}\cos\alpha = F_{u\sigma} + F_{L\sigma} + F_{LT} - P_a + P_p$

where:

B	is load of geomembrane layers (secondary, geonet, & primary) on side slope
C	is load of cover liner provided by installer
β	is the side slope angle
Δ	is the angle of attachment of the cover to the primary liner
T	is resultant tension of B and C
T_x	is the horizontal component of T
T_y	is the vertical component of T
α	α is angle of the resultant tension of T
T_{all}	is allowable resistance force provided by the anchor trench
$F_{U\sigma}$	is the shear force above geomembrane due to cover soil
$F_{L\sigma}$	is the shear force below geomembrane due to cover soil
F_{LT}	is shear force below geomembrane due to vertical component of B and C
P_A	is active earth pressure against the backfill side of the anchor trench
P_P	is passive earth pressure against the in-situ side of the anchor trench

$F_{U\sigma}=\sigma_n\tan\delta_U(L_{RO})$

$F_{L\sigma}=\sigma_n\tan\delta_L(L_{RO})$

$F_{LT}=T_{all}\sin\alpha\tan\delta_L$

$P_A=0.5\gamma_{AT}D_{AT}^2K_A$

$P_P=0.5\gamma_{AT}D_{AT}^2K_P$

$T_{all} = (F_{u\sigma} + F_{L\sigma} - P_a + P_p)/(\cos\alpha - \sin\alpha\tan\delta_L)$

where:

γ_{AT}	is unit weight of soil in anchor trench
D_{AT}	is depth of anchor trench
L_{RO}	is width of anchor trench
σ_n	is applied normal stress from cover soil = $\gamma_{AT}D_{AT}$
δ	is angle of shearing resistance between geomembrane and adjacent material
K_A	is coefficient of active earth pressure = $\tan^2(45-\phi/2)$
K_P	is coefficient of passive earth pressure = $\tan^2(45+\phi/2)$
ϕ	is angle of shearing resistance of respective soil

Inputs for Anchor Trench Equations

C	0	plf	load of cover liner (maximum calculated to achieve 1.5 Factor of Safety)
d	13.0	ft	Pond Depth
s	1.8	H:1V	Side Slope
β	29.7	deg	Side Slope
$\Delta 1$	29.7	deg	angle of cover at weighted pipe ballasts
$\Delta 2$	0.0	deg	angle of cover midway between weighted pipe ballasts
$\Delta 3$	19.0	deg	angle of cover that is allowed to balloon
γ_{AT}	112	lb/ft^3	unit weight of soil in anchor trench
D_{AT}	1.5	ft	depth of anchor trench
L_{RO}	1.5	ft	width of anchor trench
δ_U	18		friction angle between membrane and soil (Table 5.6, *Designing with Geosynthetics*)
δ_L	18		friction angle between membrane and soil (Table 5.6, *Designing with Geosynthetics*)
ϕ	30	deg	friction angle of soil

Calculations from Anchor Trench Equations

l	26 ft	average length of sloped pond side (pond varies in depth)
B_S	8 plf	loading due to the weight of the secondary liner (weight of material x slope length)
B_G	3 plf	loading due to the weight of the geonet liner (weight of material x slope length)
B_P	8 plf	loading due to the weight of the primary liner (weight of material x slope length)
B	19 plf	loading due to the weight of the geomembrane layers
σ_n	168 plf^2	normal stress
$F_{U\sigma}$	82 plf	is the shear force above geomembrane due to cover soil
$F_{L\sigma}$	82 plf	is the shear force below geomembrane due to cover soil
K_A	0.3	is coefficient of active earth pressure
K_P	3.0	is coefficient of passive earth pressure
P_A	42 plf	is active earth pressure against the backfill side of the anchor trench; and
P_P	378 plf	is passive earth pressure against the in-situ side of the anchor trench.
AT	252 plf	is weight of anchor trench

Calculations for T and α for different cover configurations

	Δ1: (Δ = β)	**Δ2: (Δ = 0)**	**Δ3: (Δ = 19 deg)**
T	19 plf	19 plf	19 plf
α	29.7 deg	29.7 deg	-29.7 deg
T_{all}	532 plf	532 plf	532 plf
$T \leq T_{all}$	OK	OK	OK

Check Anchor Trench will resist vertical force of T for different cover configurations

	Δ1: (Δ = β)	**Δ2: (Δ = 0)**	**Δ3: (Δ = 19 deg)**
T_x	462 plf	462 plf	462 plf
T_y	0 plf*	0 plf*	-264 plf
AT	252	252	252 plf
$T_y \leq AT$	OK	OK	OK

*Assume vertical component dissipates over the distance between top of bank and anchor trench

Figure 1 Anchor Trench Components

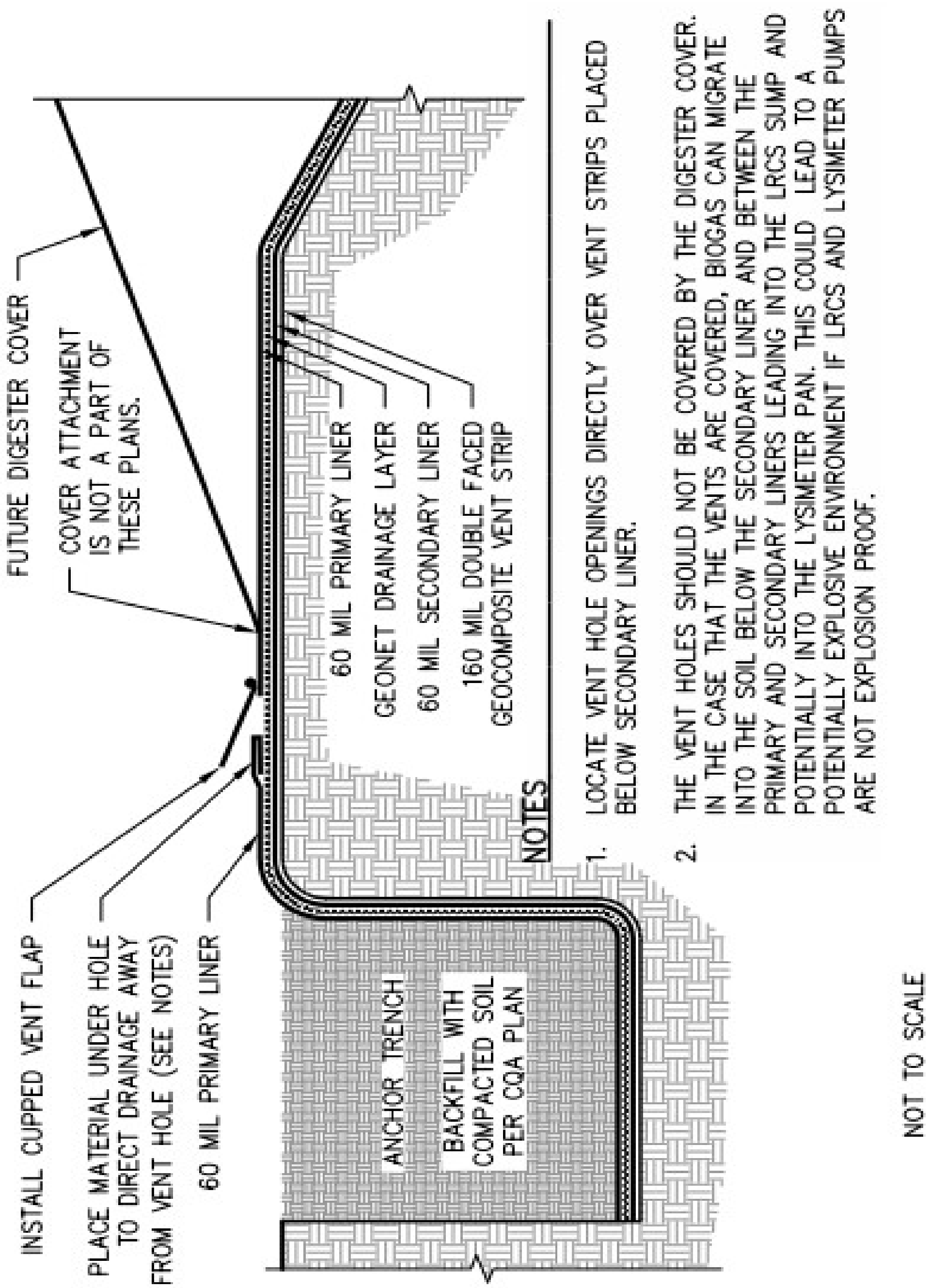
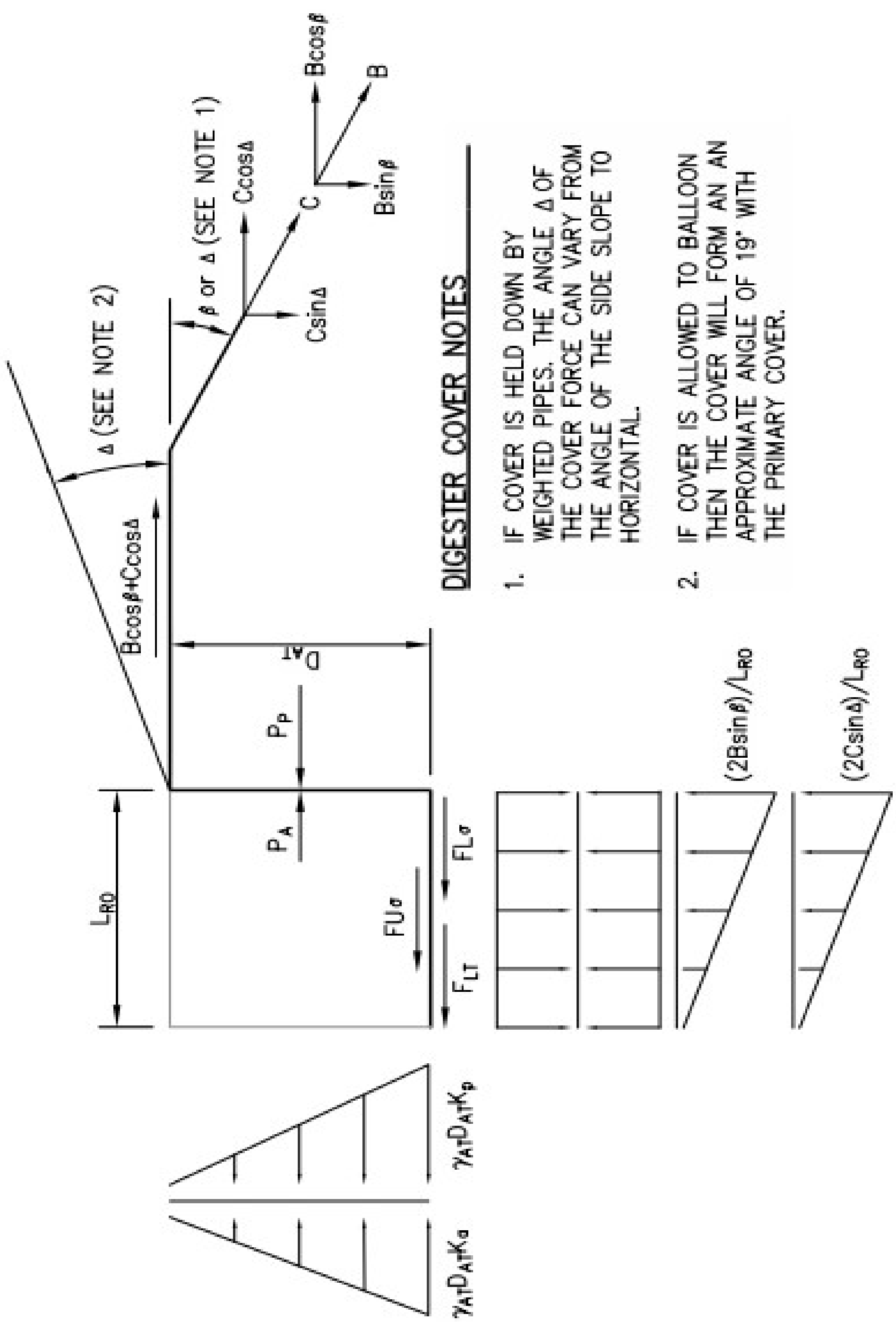


Figure 2 Anchor Trench Loads



Treehouse Almonds - Storage

Lagoon Design Report - Appendix F
Tier 1 Lagoon Liner
Geosynthetic Liner Material Strength and Anchor Trench Calculations

Project Properties

Soil Properties *(from geotech report)*

Density	112	lb/ft^3
Friction angle	30	deg

Liner Properties *(from material supplier)*

Thickness - liners	60	mil each (nominal)
Thickness - geonet	175	mil (nominal)
Thickness - cover	80	mil (nominal)
Yield strength - liner	126	lb/in
Density - liner	58.7	lb/ft^3

Design Method

The tensile strength of the anchor trench is based on the methods presented by Koerner, *Designing with Geosynthetics, 6th Edition, 2012*

Anchor Trench Geometry

For anchor trench geometry, see Figures 1 & 2
Anchor trench backfill will be per Geotechnical Report guidance

Results

When there is a cover, there are 3 potential angles of the cover influencing the load onto the anchor trench. These could be down slope by weighted ballast, horizontal in-between ballasts, or in a ballooned condition. For the case of a cover, all the results are presented. Otherwise just the down slope condition is presented.

	Down Slope (plf)	Horizontal (plf)	Ballooned (plf)
Loading on the Primary liner*	43		
Anchor trench provides	525		
Resulting Safety Factor	12.2	No Cover	No Cover

Anchor trench being 1.5 ft wide
1.5 ft deep
0 *plf maximum load applied to primary layer by the cover included

Conclusion

The anchor trench is sufficient for the loadings used in the calculations

Check Liner Material Strength to Down Slope Loads

Material Strength	1,512	plf
Anchor Trench Hold	525	plf
Liner Loading	43	plf

Load Equations for Anchor Trench *(see Figures 1 & 2)*

$\sum F_x = 0$ (equation 5.27)

$T_{all}\cos\alpha = F_{u\sigma} + F_{L\sigma} + F_{LT} - P_a + P_p$

where:

B	is load of geomembrane layers (secondary, geonet, & primary) on side slope
C	is load of cover liner provided by installer
β	is the side slope angle
Δ	is the angle of attachment of the cover to the primary liner
T	is resultant tension of B and C
T_x	is the horizontal component of T
T_y	is the vertical component of T
α	α is angle of the resultant tension of T
T_{all}	is allowable resistance force provided by the anchor trench
$F_{U\sigma}$	is the shear force above geomembrane due to cover soil
$F_{L\sigma}$	is the shear force below geomembrane due to cover soil
F_{LT}	is shear force below geomembrane due to vertical component of B and C
P_A	is active earth pressure against the backfill side of the anchor trench
P_P	is passive earth pressure against the in-situ side of the anchor trench

$F_{U\sigma}=\sigma_n \tan\delta_U (L_{RO})$

$F_{L\sigma}=\sigma_n \tan\delta_L (L_{RO})$

$F_{LT}=T_{all}\sin\alpha\tan\delta_L$

$P_A=0.5\gamma_{AT}D_{AT}^2K_A$

$P_P=0.5\gamma_{AT}D_{AT}^2K_P$

$T_{all} = (F_{u\sigma} + F_{L\sigma} - P_a + P_p)/(\cos\alpha - \sin\alpha\tan\delta_L)$

where:

γ_{AT}	is unit weight of soil in anchor trench
D_{AT}	is depth of anchor trench
L_{RO}	is width of anchor trench
σ_n	is applied normal stress from cover soil = $\gamma_{AT}D_{AT}$
δ	is angle of shearing resistance between geomembrane and adjacent material
K_A	is coefficient of active earth pressure = $\tan^2(45-\phi/2)$
K_P	is coefficient of passive earth pressure = $\tan^2(45+\phi/2)$
ϕ	is angle of shearing resistance of respective soil

Inputs for Anchor Trench Equations

C	0	plf	load of cover liner (maximum calculated to achieve 1.5 Factor of Safety)
d	27.0	ft	Pond Depth
s	2.0	H:1V	Side Slope
β	26.6	deg	Side Slope
$\Delta1$	26.6	deg	angle of cover at weighted pipe ballasts
$\Delta2$	0.0	deg	angle of cover midway between weighted pipe ballasts
$\Delta3$	19.0	deg	angle of cover that is allowed to balloon
γ_{AT}	112	lb/ft^3	unit weight of soil in anchor trench
D_{AT}	1.5	ft	depth of anchor trench
L_{RO}	1.5	ft	width of anchor trench
δ_U	18		friction angle between membrane and soil (Table 5.6, *Designing with Geosynthetics*)
δ_L	18		friction angle between membrane and soil (Table 5.6, *Designing with Geosynthetics*)
ϕ	30	deg	friction angle of soil

Calculations from Anchor Trench Equations

l	60	ft	average length of sloped pond side (pond varies in depth)
B_S	18	plf	loading due to the weight of the secondary liner (weight of material x slope length)
B_G	7	plf	loading due to the weight of the geonet liner (weight of material x slope length)
B_P	18	plf	loading due to the weight of the primary liner (weight of material x slope length)
B	43	plf	loading due to the weight of the geomembrane layers
σ_n	168	plf^2	normal stress
$F_{U\sigma}$	82	plf	is the shear force above geomembrane due to cover soil
$F_{L\sigma}$	82	plf	is the shear force below geomembrane due to cover soil
K_A	0.3		is coefficient of active earth pressure
K_P	3.0		is coefficient of passive earth pressure
P_A	42	plf	is active earth pressure against the backfill side of the anchor trench; and
P_P	378	plf	is passive earth pressure against the in-situ side of the anchor trench.
AT	252	plf	is weight of anchor trench

Calculations for T and α for different cover configurations

	Δ1: (Δ = β)	**Δ2: (Δ = 0)**	**Δ3: (Δ = 19 deg)**
T	43 plf	43 plf	43 plf
α	26.6 deg	26.6 deg	-26.6 deg
T_{all}	525 plf	525 plf	525 plf
$T \leq T_{all}$	OK	OK	OK

Check Anchor Trench will resist vertical force of T for different cover configurations

	Δ1: (Δ = β)	**Δ2: (Δ = 0)**	**Δ3: (Δ = 19 deg)**
T_x	470 plf	470 plf	470 plf
T_y	0 plf*	0 plf*	-235 plf
AT	252	252	252 plf
$T_y \leq AT$	OK	OK	OK

*Assume vertical component dissipates over the distance between top of bank and anchor trench

Figure 1 Anchor Trench Components

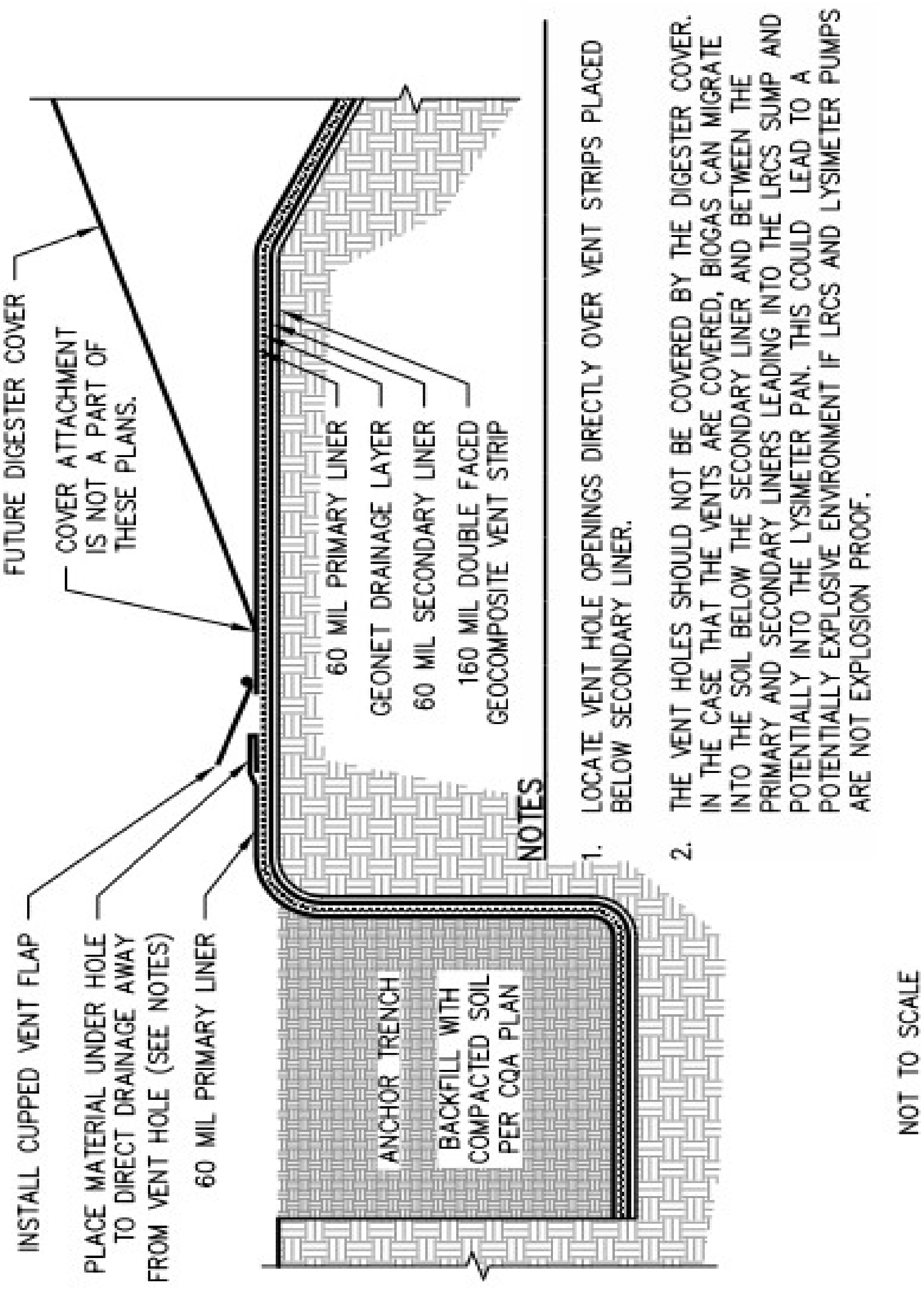
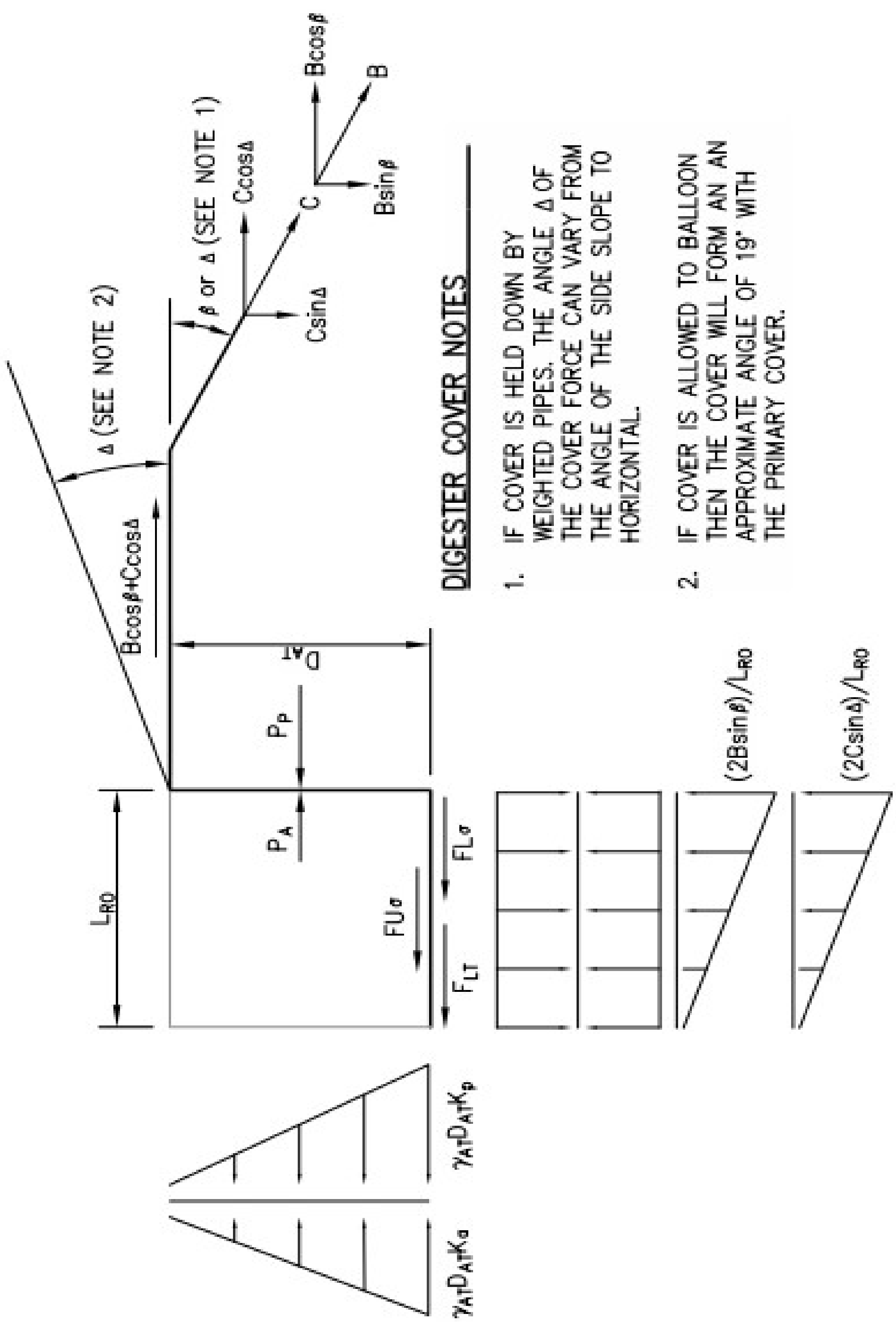


Figure 2 Anchor Trench Loads



Appendix G

Construction Quality Assurance Plan

Earthwork Specifications

Geomembrane Liner Specifications

Double Liner Earthwork Specification
For Construction of Dairy and Food Processing Ponds
In the Central Valley, RWQCB Region 5

Revision 8

Treehouse Almonds

1.0 General

1.1 Scope

This specification defines the minimum requirements for the preparation of the earthen basin for this project. This specification along with the project drawings are approved by the Regional Water Quality Control Board (RWQCB) for this project.

Any deviation from the approved drawings and specifications must be approved by the ENGINEER prior to performing.

The CONTRACTOR shall provide labor, materials, and equipment and perform operations necessary to prepare the basin and subgrade shown on the drawings, or as directed by the ENGINEER, GEOTECH TECH, or CQA OFFICER.

1.2 Responsibilities

Description	Role/Responsibility
OWNER	The owner or representative of the site that the pond will be constructed on
ENGINEER	The individual or firm responsible for the design and preparation of the project's plans and specifications. The ENGINEER may also serve as the CQA OFFICER
GEOTECH ENGR	The engineer responsible for confirming that the earthwork performed meets the requirements identified within the Geotechnical Investigation Report he has prepared
GEOTECH TECH	The field technician working under the supervision of the Geotechnical Engineer
CONTRACTOR	The party responsible for preparing the earthwork as outlined here

CQA OFFICER	The party responsible for observing and documenting activities relating to quality assurance that the construction is accomplished in accordance with the intent of the plans and specifications
CQA CONSULTANT	The party working under the responsible charge of the CQA OFFICER. Can oversee items identified as CQA OFFICER in this specification on-site in place of the CQA OFFICER
INSTALLER	The party responsible for installing the geomembrane. During the installation of the liner, a crew chief will be the on-site contact person

1.3 Reference Standards & Codes

Latest editions of published Codes & Standards, including any other standards referenced here for on-site testing, shall apply as of the date of issue of this Specification.

ASTM C136	Standard Test Methods for Sieve Analysis of Fine and Coarse Aggregates
ASTM D422	Standard Test Methods for Particle Size Analysis of Soils
ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort
ASTM D2216	Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D2248	Standard Practice for Description and Identification of Soils (Visual Manual Procedure)
ASTM D2937	Standard Test Method for Density of Soil in Place by the Drive-Cylinder Method
ASTM D6938	Standard Test Method for IN-Place Density and Water Content of Soil-Aggregate by Nuclear Methods (Shallow Depth)

1.4 Quality System Requirements

The GEOTECH TECH and/or CQA OFFICER reserves the right to inspect the materials and workmanship at any time. Materials or workmanship found not conforming to this specification may be rejected during the execution of the work. The CONTRACTOR shall be responsible for the removal and replacement of any work that is rejected, including any other work damaged as a result.

2.0 Preconstruction Preparation

2.1 Soil Fill Materials

The GEOTECH TECH shall identify suitable fill materials and prepare compaction curves prior to the start of earthwork according to Earthwork CQA Table 1.

2.2 GPS Model

Final surface grading of the basin, minus the LCRS, needs to be accomplished by GPS controlled equipment.

The ENGINEER shall provide to the CONTRACTOR the CAD model of the grading for this project to configure to the software of his grading equipment in sufficient time prior to commencing grading work.

The ENGINEER's survey will place GPS control points at 4 outside corners minimum and provide their location data to the CONTRACTOR. These control points need to remain in place through construction.

Stakes will be placed by the ENGINEER's survey locating a north/south orientation line and an east/west orientation line (typically a corner of the upper rim) such that the CONTRACTOR can verify the software conversion to his equipment and site positioning.

2.3 Earthwork Preconstruction Meeting

An earthwork preconstruction meeting shall be held at the site prior to the commencement of earthwork.

The main purpose of this meeting is to coordinate work between the CONTRACTOR and GEOTECH TECH and to identify location of suitable fill materials and location of stockpiling excess materials.

The general timeframe and stages of the project should be discussed as to when other project tasks may occur.

At a minimum the meeting shall be attended by the CQA OFFICER, CQA CONSULTANT, CONTRACTOR, and GEOTECH TECH. Others that could be included are – OWNER, ENGINEER, GEOTECH ENGR, INSTALLER, concrete contractor, plumbing contractor, NRCS representative (if a cost-share project) and RWQCB engineer.

3.0 Basin Excavation

Note: Items identified in this specification are typical general earthwork practices along with specific items taken from the Geotechnical Report prepared for this project. If a conflict is identified, the Geotechnical Report shall supersede.

3.1 Area Preparation

The OWNER should remove remaining items from the area of the basin to be excavated. The CONTRACTOR should remove identified items in demolition sheet(s) of the drawing package.

Where applicable, the upper few inches of soil (2 to 4 inches) containing vegetation and organic matter should be stripped and removed from the basin area extending at least 5 feet outside of the project area. If organic matter is encountered to deeper depths, remove as needed.

Soils containing organic materials will not be suitable for use as borrow material of the basin or embankments.

3.2 Excavation

Excavate the basin as depicted in the drawings and to the GPS model. Maintain sufficient moisture conditions to reduce dust and needed compaction.

Over excavate floor area by 12 inches, scarify 8 inches, and replace with suitable soils as directed by the GEOTECH TECH or CQA OFFICER to GPS model depth. Side slopes remain excavated at final contours with inspection by GEOTECH ENGINEER, GEOTECH TECH, or CQA OFFICER to confirm presence of a firm and unyielding surface.

Any organic material encountered near final grade shall be removed to a depth of 3 feet on the side slopes and 5 feet on the bottom. Consult with the CQA OFFICER and GEOTECH TECH on the extent if organic material persists or if limited to near final grade.

Any sand pockets encountered near final grade shall be removed to a depth of 3 feet on the side slopes and 1 foot on the bottom or as directed by the GEOTECH TECH or CQA OFFICER.

Any soil fill material shall be from suitable materials as identified by the GEOTECH TECH, placed in uniform lifts, moisture conditioned, and compacted as identified in Earthwork CQA Table 2.

Any additional lifts should not be placed if the previous lift did not meet the required moisture and compaction. Rework the area as necessary, then continue.

3.3 Embankments

Following stripping, except for the basin area to be cut,

- if the exposed surfaces are firm then they should be scarified to a depth identified in Earthwork CQA Table 2.
- if the exposed surfaces are determined by the GEOTECH TECH or CQA OFFICER to be loose, they should be over excavated to the depth identified in Earthwork CQA Table 2, then scarify per Earthwork CQA Table 2.
- if the exposed surfaces were an active agricultural field, over excavate to the depth identified in Earthwork CQA Table 2, then scarify per Earthwork CQA Table 2.

Grade surfaces as depicted in the drawings and to the GPS model.

Any soil fill material shall be from suitable materials as identified by the GEOTECH TECH, placed in uniform lifts, moisture conditioned, and compacted as identified in Earthwork CQA Table 2.

GEOTECH TECH shall verify lifts per Earthwork CQA Table 2. Any additional lifts should not be placed if the previous lift did not meet the required moisture and compaction. Rework the area as necessary, then continue.

Final grade surfaces shall be checked by the GEOTECH ENGR, GEOTECH TECH, or CQA OFFICER for acceptance per Earthwork Table 3.

3.4 Concrete Pads

If concrete pads are part of the design, place as shown in the drawings. Receive the HDPE T-Lock from the INSTALLER and embed while placing concrete. Concrete must be vibrated when placing the T-Lock.

3.5 LCRS Center Trench and Sump

Excavate the LCRS center trench and LCRS sump as shown in the drawings. Also excavate the trench for the LCRS pipes to lay on the side slope.

> *NOTE: Take care not to drive equipment onto the liner materials.*
> *Shovels or other sharp objects are not to come into contact with the liner.*
> *Notify the INSTALLER of any observed damage to the liner material.*

In coordination with the INSTALLER continue with the construction of the LCRS system.

Once the liner and fabric are placed in the center trench, fill the trench with the stainless-steel cable, Multi-Flow pipe, and gravel to the level of the floor as shown in the drawings.

Once the bottom Lysimeter pan and fabric to the LCRS are placed, place the first sump pipe on the side slope and partially fill the sump with gravel as shown in the drawings. Backfill the side slope pipe with soil as shown in the drawings. Sandbags should be placed at the transition between gravel and soil at the toe of slope.

Once the secondary pan and fabric to the LCRS are placed and liner & geonet are installed on the side slope pipe trench, place the second sump pipe on the side slope. Run the stainless-steel cable from the center trench through the LCRS sump and alongside this second pipe and out of the basin. Completely fill the sump to floor level with gravel as shown in the drawings. Backfill the side slope pipe with soil as shown in the drawings. Sandbags should be placed at the transition between gravel and soil at the toe of slope.

Remove all unused gravel from the basin. Clean-up the working area and verify that no stones are left behind.

3.6 Pipe Penetrations

Install all pipe penetrations identified in the drawings. Backfill the pipe trenches before cutting the anchor trench in that area.

For bootless pipe penetrations, provide to the INSTALLER the section of HDPE pipe in plenty of time to install the plate. Once the plate is attached, install the assembly.

3.7 Final Surface

The final basin surface shall be smoothed by rolling or similar method to the satisfaction of the INSTALLER and CQA OFFICER. The surface shall be smooth and free of projections per Earthwork Table 3 that could damage the liner.

3.8 Adverse Weather Conditions

In the times of the year that has a potential for rain events, the CONTRACTOR should be prepared to support with pumps the removal of rainwater from the basin. Once the surface has been lined, pumping of rainwater shall be the responsibility of the INSTALLER in order to continue with liner installation. If the soil liner layer is partially complete, both parties will work together to remove rainwater and minimize the effect on the installed liner and soil surface.

3.9 Anchor Trench

When all equipment work internal to the basin is complete, cut the anchor trench to the size shown in the drawings.

Blade down the cuttings and compact so that the perimeter around the basin can be used by the INSTALLER's equipment.

4.0 Surface Acceptance

4.1 Daily Inspection

The CQA OFFICER and INSTALLER shall inspect the earthen area planned to be lined each day for acceptance. The CONTRACTOR will be responsible for repairing needed surfaces. The INSTALLER and CQA OFFICER, shall accept the soil surface, after completion of re-work if needed, on which the geomembrane will be installed that day.

4.2 Anchor Trench Fill

When lining operations are complete, the CQA OFFICER will notify the CONTRACTOR to backfill the anchor trench.

Puncture a hole in the liner on the floor of the anchor trench approximately every 20 ft with a piece of rebar or equivalent.

Backfill the anchor trench, in reasonable lifts for trenches deeper than 2 feet to begin, with uniform moisture and compact. GEOTECH TECH shall verify compaction of the anchor trench for lagoons that are to be covered.

Be very careful not to touch the lining material with equipment. If material is torn, notify the INSTALLER immediately.

4.3 All Surfaces Outside of Lagoon

Touch up the final grade of all surfaces outside of the lagoon after the anchor trench is filled.

4.4 Subgrade Report

The GEOTECH TECH shall provide observations and testing data to the GEOTECH ENGR to prepare the Subgrade Report. When complete the GEOTECH ENGR shall provide to the CQA OFFICER this report to be incorporated into the Construction Quality Assurance (CQA) Report.

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Earthwork Table 1 - Soil Fill Materials[1] Evaluation

Test Parameter	Test Method	Frequency	Criteria Required
Compaction Curves	D1557	Min. 1 per 5,000 yds, 2 min. per selected area	N/A
All Fill Areas Except for Liner Layer of Single HDPE Liner	C136	Min. 1 per 500 yds	Min. 30% passing #200 sieve
Liner Layer of Single HDPE Liner	D422 (Sieve & Hydrometer)	Min. 1 per 500 yds	Min. 100% passing 3/8" sieve Min. 60% passing #200 sieve Min. 30% passing 5 micron sieve
Stone Size	Visual	Continous	Max. 3/8"
Stone Angularity	Visual	Continous	Angularity of stones that would be retained on the #10 sieve, either rounded or subrounded as defined in ASTM D2488

Notes

1 Suitable soil to be used for fill should be identified, checked, and stockpiled for use later

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Earthwork Table 2 - Grading

Test Parameter	Test Method	Frequency	Criteria Required
Over Excavate and Prepare			
Scarify			8 inches min., moisture and compact
Over Excavate for New Embankments Firm area Loose area Agricultural field	 Visual Geotech or CQA Officer Visual		 Scarify Over excavate 1 foot by 2 ft out, then scarify Over excavate 3 ft by 5 ft out, then scarify
Over Excavate Floor Area			Over excavate 1 foot then scarify
Lifts/Fill			
Lift Thickness	Visual	Continous	8 inches loose, 6 inches compacted
Moisture Content			Near optimum and uniform through lift
Verify Compaction		Per lift	(see below)
In-Place Moisture and Dry Density[1,2]			
Dry Density	D6938 (Nuclear Gauge)	3 per acre min.	Min. 90% of max. dry density
			Min. 95% for driveways, roads
Moisture Content			Within 2% of optimum moisture content
Nuclear Gauge Standardization			
Standardization Method	D2216 (Oven)	Daily per Nuclear Gauge	Moisture Content in footprint of gauge within 2% of nuclear test result
Standardization Method	D2937 (Drive Cylinder)	2 per wk per Nuclear Gauge	Density in footprint of gauge within 3.5 pcf of nuclear test result

Notes
1 Not required for Double HDPE liner below grade side slopes, except for repair areas
2 Single HDPE liner applies to side slope of Liner Layer

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Earthwork Table 3 - Final Grade

Test Parameter	Test Method	Frequency	Criteria Required
		Soil Texture	
All Fill Areas Except for Liner Layer of Single HDPE Liner	From Acceptable Stockpile	Finished Grade	As outlined in Earthwork Table 1
Liner Layer of Single HDPE Liner	From Acceptable Stockpile	Finished Grade	As outlined in Earthwork Table 1
Below Grade Non-Fill Surface Grade Single and Double HDPE[1]	Geotechnical Engr/Tech or CQA Officer visually inspect for firm and unyielding subgrade	Finished Grade	Side Slopes: All soils that are not amendable to a firm and unyielding subgrade shall be removed 3 ft min. and replaced with fill material
			Pond Bottom: Any soils that are not amendable to a firm and unyielding subgrade or meeting in-place density and moisture reqts, shall be removed 1 ft min. and replaced with fill material
		Anchor Trench	
Cut Anchor Trench			Grade down tailings
Fill Anchor Trench with Tailings			Moisture condition and compact to 90%
		Final Subgrade and Acceptance	
Rolled or Smoothed		Finished Grade	Maximum protusion height of 1/2 inch
Daily Liner Area Acceptance	Visual	Finished Grade	Liner Installer and CQA Officer accept area to be lined daily, Contractor to repair as needed

Notes

1 For side slopes of 2:1 or flatter. Steeper than 2:1 use All Fill Areas

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Double Liner Geomembrane Specification
For Construction of Dairy and Food Processing Ponds
In the Central Valley, RWQCB Region 5

Revision 16

Treehouse Almonds

1.0 General

1.1 Scope

This specification is adapted from the *International Association of Geosynthetic Installers (IAGI) HDPE and LLDPE Geomembrane Installation Specification* for construction of double lined ponds in the Central Valley for dairies and food processors.

This specification defines the minimum requirements for the supply, installation, and testing of the geomembrane liner for this project. This specification along with the project drawings are approved by the Regional Water Quality Control Board (RWQCB) for this project.

Any deviation from the approved drawings and specifications must be approved by the ENGINEER prior to performing.

Any deviation from the approved drawings and specifications that could affect ground water quality must also be reviewed and approved by the RWQCB, as such changes could invalidate staff approval.

The INSTALLER shall provide labor, materials, and equipment and perform operations necessary to install the geomembrane liner as specified, shown on the drawings, or as directed by the ENGINEER or CQA OFFICER.

1.2 Responsibilities

Description	Role/Responsibility
OWNER	The owner or representative of the site that the pond will be constructed on

ENGINEER	The individual or firm responsible for the design and preparation of the project's plans and specifications. The ENGINEER may also serve as the CQA OFFICER
MANUFACTURER	The party responsible for manufacturing the geomembrane
INSTALLER	The party responsible for installing the geomembrane. During the installation of the liner, a crew chief will be the on-site contact person
CONTRACTOR	The party responsible for preparing the earthwork
CQA OFFICER	The party responsible for observing and documenting activities relating to quality assurance that the construction is accomplished in accordance with the intent of the plans and specifications
CQA CONSULTANT	The party working under the responsible charge of the CQA OFFICER. Can oversee items identified as CQA OFFICER in this specification on -site in place of the CQA OFFICER

1.3 Reference Standards & Codes

Latest editions of published Codes & Standards, including any other standards referenced here for on-site testing, shall apply as of the date of issue of this Specification.

ASTM D5641	Standard Practice for Geomembrane Seam Evaluation by Vacuum Chamber
ASTM D5820	Standard Practice for Pressurized Air Channel Evaluation of Dual Seamed Geomembranes
ASTM D6365	Standard Practice for the Nondestructive Testing of Geomembrane Seams Using the Spark Test
ASTM D7002	Standard Practice for Leak Location of Exposed Geomembranes Using the Water Puddle System (Water Puddle Test)
ASTM D7007	Standard Practices for Electrical Methods for Locating Leaks in Geomembranes Covered with Water of Earth Materials (Dipole Test)
ASTM D7240	Standard Practice for Leak Location Using Geomembranes with an Insulating Layer in Intimate Contact with a Conductive Layer via Electrical Capacitance Technique (Conductive Geomembrane Spark Test)
GRI GM13	Test Methods, Test Properties, and Testing Frequency for High Density Polyethylene (HDPE) Smooth and Textured Geomembranes

GRI GM19a Standard Specification for Seam Strength and Related Properties of Thermally Bonded Polyolefin Geomembranes

1.4 Qualifications

1.4.1 Manufacturer Qualifications

Materials to be used must meet or exceed the Geosynthetic Research Institute's (GRI) GM13 specifications.

The geomembrane suppliers that are approved by the ENGINEER for this project are Solmax (Solmax-GSE) and Agru America.

Other manufacturers may be considered by the ENGINEER upon submittal of project data sheets and verified to meet the GRI GM13 specifications.

1.4.2 Installer Qualifications

If an INSTALLER has not previously worked with Provost & Pritchard, the following information shall be provided to the ENGINEER.

- List of completed installations of geomembrane in the last year, including name, location, and purpose of the facility
- Thickness and quantity of the installed geomembrane
- Name and contact information of the OWNER and ENGINEER of the listed projects

1.5 Quality System Requirements

The ENGINEER and/or CQA OFFICER reserves the right to inspect the materials and workmanship at any time. Materials or workmanship found not conforming to this specification may be rejected during the execution of the work. The INSTALLER shall be responsible for the removal and replacement of any work that is rejected, including any other work damaged as a result.

The INSTALLER shall have on his crew a person assigned to quality data collection, testing, and recording. These records, or a copy of them, when the project is complete shall be turned over to the CQA OFFICER.

1.6 Warranty

The MANUFACTURER shall furnish a written geomembrane warranty, which warrants the geomembrane material for a minimum of five (5) years from the date of installation.

The INSTALLER shall furnish a written warranty of the geomembrane installation against defect in the installation and workmanship for one (1) year, commencing with the date of final acceptance of the geomembrane.

The INSTALLER shall provide warranties for the geomembrane manufacturing and geomembrane installation to the OWNER.

2.0 Preconstruction Submittals

2.1 Panel Layout

The INSTALLER shall prepare a planned installation panel layout for each liner layer and provide to the ENGINEER. The panel layout may be varied in the field from what is prepared.

The panel layout seams shall be oriented perpendicular to the side slopes. Horizontal seams should not be located on the slope to within 5 feet of the toe of slope. Corner panels should connect at a 45-degree angle down the center of the corner, minimizing horizontal seam direction as much as practical.

For designs with a center drainage trench, the secondary layer shall have a panel(s) running the length of the trench offset to one side. This will allow the equipment filling the trench with gravel not to drive over liner and fill from the side with the least amount of liner.

Geonet orientation and vent strip layouts are provided in the drawings by the ENGINEER.

Installation details provided by the ENGINEER in his drawings shall take precedent over INSTALLERS drawings, except as approved by the ENGINEER.

2.1 Planned Materials

The INSTALLER shall provide to the ENGINEER the MANUFACTURER's material technical data sheets of the planned materials for this project. These are to include at minimum the geomembrane, geonet, and geocomposite as identified in the ENGINEER's drawings.

The ENGINEER shall notify the INSTALLER approval of the planned geomembrane, geonet, and geocomposite materials.

2.2 Selected Materials

The MANUFACTURER shall provide to the INSTALLER signed Manufacture's Quality Control (MQC) test results per roll of the geomembrane selected for this project. The material shall meet or exceed the properties identified in Liner CQA Table 1.

The MANUFACTURER shall provide to the INSTALLER signed Manufacture's Quality Control (MQC) test results per roll of the geonet selected for this project. The material shall meet or exceed the properties identified in Liner CQA Table 2.

The INSTALLER shall provide to the ENGINEER the MANUFACTURER's MQC test results received of the geomembrane and geonet for approval prior to shipment to the site.

2.3 Conformance Testing

The RWQCB has waived independent laboratory testing of representative samples of the selected geomembrane and geonet materials prior to shipment to the site. This was confirmed to P&P as of December 2019.

3.0 Liner Installation

3.1 Material Receiving and Storage

Rolls of geomembrane, geonet, and geocomposite will be prepared to ship by appropriate means to prevent damage to the material during transit.

Rolls of geomembrane, geonet, and geocomposite received shall be placed at a convenient location at the project site and stored in a manner to prevent damage.

The CQA OFFICER shall perform an inventory of received material comparing it to the MQC documentation. Damaged materials from handling shall be identified and brought to the INSTALLER's attention.

3.2 Liner Preconstruction Meeting

A liner preconstruction meeting shall be held at the site prior to the installation of the geomembrane. This should be done in a timeframe of nearing completion of the earthwork and an anticipated completion timeframe is relatively known.

The main purpose of this meeting is to coordinate work between the CONTRACTOR completing the earthwork tasks and the INSTALLER preparing to begin liner work.

At a minimum the meeting shall be attended by the CQA OFFICER, CQA CONSULTANT, CONTRACTOR, and INSTALLER. Others that could be included are –

OWNER, ENGINEER, geotechnical technician, concrete contractor, plumbing contractor, NRCS representative (if a cost-share project) and RWQCB engineer.

3.3 Subgrade Acceptance

The CQA OFFICER and INSTALLER shall inspect the earthen area planned to be lined each day for acceptance. The CONTRACTOR will be responsible for repairing needed surfaces. The INSTALLER and CQA OFFICER, shall accept the soil surface, after completion of re-work if needed, on which the geomembrane will be installed that day. This will be recorded on a *Certificate of Acceptance of Soil Subgrade Surface* memorandum supplied by the CQA OFFICER.

In the times of the year that has a potential for rain events, the CONTRACTOR should be prepared to support with pumps the removal of rainwater from the basin. Once the surface has been lined, pumping of rainwater shall be the responsibility of the INSTALLER in order to continue with liner installation. If the soil liner layer is partially complete, both parties will work together to remove rainwater and minimize the effect on the installed liner and soil surface.

If a rain event is eminent and partial subgrade is still exposed, the INSTALLER shall devote all resources possible to “black-out” the surface prior to the rain event.

3.4 Adverse Weather Conditions

Geomembrane deployment shall proceed between ambient temperatures of 32 and 104 degrees F measured 1 foot above the liner. Placement and seaming can proceed outside those limits after it has been verified by the INSTALLER and CQA OFFICER that satisfactory trial welds can be seamed.

Geomembrane deployment shall not be done during precipitation events or in the presence of excessive moisture (fog, dew) such that the seaming area cannot be dried prior to seaming. Seaming can proceed after it has been verified by the INSTALLER and CQA OFFICER that satisfactory trial welds can be seamed.

Geomembrane deployment shall not be done during the presence of excessive winds, as determined by the INSTALLER.

3.5 General Installation of Liner Material

A member of the INSTALLER’s crew shall be assigned to document the following minimum items as they occur. Data sheets are provided in this specification if the INSTALLER does not have equivalent data sheets.

- Trial welds including date, time, operator id, machine id, temp, speed, peel and shear results
- Panel number, map of location, and the roll number of the panel
- Wedge weld seams including date, time, panels id, operator id, machine id, temp, and speed
- Air channel test of wedge seams including date, panels id, start time & pressure, stop time & pressure, results
- Destruct samples including sample id, panels id, machine id, operator id, peel and shear results
- Repair/Patch seams including date, repair id, panels id, operator id, machine id, repair type (seam corner patch, repair patch, extrusion bead repair, cap strip)
- Vacuum test of repairs/patches including date, repair id, results

Vent strips shall be placed as presented by the construction drawings prepared by the ENGINEER prior to geomembrane deployment covering soil. Lay out these strips as to what is anticipated to be covered by liner material in a day, for they easily move with wind. Mark the backside of the anchor trench as to the location of these strips.

Geomembrane shall be rolled out into location and seamed to adjoining panels with 4 to 6 inches of overlap. Either end of the panel or both shall be allowed to expand and contract, through sandbags, etc. at least one day/night thermal cycle prior to a final tie-in or permanent anchoring. Panels seamed together that are perpendicular to other seamed panels such as a side and corners, shall have the tie-in seam left open through a thermal cycle and shall be seamed in the cool of a morning when the material is most contracted.

As the geomembrane is rolled out and cut into a panel, the panel number and roll number shall be identified in a visible location to be recorded and mapped.

For a conductive layer, electrically connect panel to panel by placing a piece of conductive liner with the conductive layer facing up underneath crossing a seam. If the electrically connecting piece is placed on a slope such as a corner area, place piece at a corner patch and heat bond in place so that it does not dislodge.

Un-seamed edges during period of work stoppage, such as end of shift or an un-worked end, shall be sufficiently sand bagged to prevent uplift from winds.

In the cool of a morning, observation for “trampolining”, where the liner is not in contact with the surface below, shall be repaired if found so that the liner makes contact.

Geonet shall be deployed in an orientation presented by the construction drawings prepared by the ENGINEER. These shall be zip-tied together with about 4 to 6 inches minimum of overlap. Zip-ties shall be spaced approximately 5 feet on the sides and approximately 1 foot on the ends. Zip-tie ends shall lay flat on the geonet.

Personnel working on the geosynthetic materials shall not smoke or wear damaging shoes.

No vehicular traffic will be allowed on the geomembrane, except for rubber tired ATV's if the wheel contact pressure is less than 8 psi.

3.6 Seaming

Trial welds of each machine to be used shall be satisfactorily completed at the beginning of a work period prior to welding any panels or repair/patches.

Welding shall be done with a double hot wedge welder producing an air gap channel in-between the pressure rollers wherever possible. Extrusion welding shall be done where fusion welding is not possible or practicable.

The seam contact areas need to be clean and dry prior to seaming.

Liner that is on soil surface needs to be seamed with a temporary pull-along liner barrier between the soil surface and the liner material to be seamed.

Panel end seams shall be avoided within 5 feet from toe of slope. Horizontal seaming shall also be avoided on the side slopes and with as much vertical pitch as practical in the corner areas.

Seams shall be marked on the liner as to seam date, start and stop time, operator, machine, temp, and speed to record this information later in the data sheets.

3.7 LCRS Center Trench and Sump

The CONTRACTOR will excavate the center trench, LCRS sump and the trench for the LCRS pipes to lay on the side slope.

In coordination with the CONTRACTOR continue with the construction of the LCRS system.

When ready with the center trench, install short vent strips laid out per the drawing perpendicular the center trench and then place the secondary liner into the center trench and then the fabric per the drawings. The CONTRACTOR will then fill the center trench. Wrap the fabric over the gravel when complete.

When ready with the LCRS sump, install the Lysimeter Pan. Seam and vacuum test this pan, then place the fabric. The CONTRACTOR will fill the Lysimeter Pan with gravel.

When ready to continue with the LCRS sump, place fabric over the gravel. Install the secondary layer into the sump and up the side slope. Seam and vacuum test this pan, then place the fabric. Also place the geonet on the side slope pipe trench. Place fabric over the gravel when the CONTRACTOR is complete.

3.8 Pipe Penetration Boots

Pipe boots will wrap the pipe with liner material and connect to the liner as shown in the ENGINEER's drawings. At the base of the boot and along any seam that can't be vacuum tested, a wire shall be installed prior to extrusion welding to be tested after welding by a spark test, ASTM D6365. All seams shall be extrusion welded after heat bonding the seams and lightly grinding. Vacuum test all available seams.

3.9 Bootless Pipe Penetration Assembly

The CONTRACTOR is to provide to the INSTALLER the HDPE section of pipe for this penetration. The INSTALLER will provide the HDPE plate.

The HDPE plate is to be cut and fitted to the HDPE pipe section at the correct slope and location on the pipe as shown in the ENGINEER's drawings. At the base connecting joint, both sides, install a wire prior to extrusion welding to be tested after welding by a spark test, ASTM D6365. Lightly grind and extrusion weld the pipe and plate together.

The CONTRACTOR will install this assembly when ready.

3.10 HDPE Joints to Liner

HDPE plate for bootless pipe penetrations, HDPE T-lock embedded into concrete, or other uses of HDPE joining to liner mechanisms, the area of joining needs to have the liner heat bonded to the joint, lightly ground, and then an extrusion bead applied all around. The joint area is to be vacuum tested when complete.

For the primary layer following the extrusion welding and vacuum test, install a cap over the joint, extrusion weld, and vacuum test.

3.11 Panel Corner Patches

Fusion welded seam end points to a panel are to be covered with a patch after the seam air channel testing is completed. The patch is to be heat bonded to the liner, edges lightly ground, then an extrusion bead applied all around. The patch is to be vacuum tested when complete.

Corner patches shall be marked on the liner as to their sequential number to be recorded in the data sheets.

For the primary layer, panel corner patches following the extrusion welding and vacuum testing of the patch, install a second patch over the first, extrusion weld, and vacuum test.

4.0 Testing

4.1 Trial Welds

Sample seams shall be approximately 10 feet long for fusion welding and approximately 3 feet long for extrusion welding.

4 specimens shall be cut from each end of the test seams. 2 specimens shall be used to test for shear and 2 specimens for peel. Each specimen shall be 1-inch wide and tested per standard protocols (ASTM D6392) and test equipment on site. All the specimens shall pass the criteria identified in Liner CQA Table 3 (GRI GM19a).

If a trial seam fails, the equipment shall not be used until the deficiencies are corrected and a successful trial weld is achieved.

Trial welds shall be recorded in data sheets.

4.2 Air Channel Test

Wedge weld seams shall be air channel tested per ASTM D5820. 25 to 30 psi of pressure shall be held for a minimum of 5 minutes. The opposite side to the pressurizing side should be used to deflate the air channel – validating that pressure was applied for the whole length.

If the seam fails to hold pressure, locate the faulty area and successfully test to either side of the failed point. The faulty area needs to be identified and recorded for repairs in the data sheets.

The liner shall be marked at the pressurizing side as to the test date, start time & pressure, stop time & pressure, and results. This information is to be recorded in the data sheets.

4.3 Vacuum Test

Extrusion seams shall be vacuum tested per ASTM D5641. Sufficient soapy solution shall be applied to the area being tested. Vacuum shall be achieved for 5 to 10 seconds.

If air bubbles are seen that seam area has failed. The faulty area needs to be identified and recorded for repairs in the data sheets.

The liner area is to be marked with the test date and results. This information is to be recorded in the data sheets.

4.4 Destruct Test

Destruct samples shall be taken from finished seams at approximately 500-foot intervals per machine. Floor area or anchor trench are preferred areas. Side slopes should be avoided especially within 20% of length near toe of slope since that is where wrinkles tend to form on the slope. INSTALLER and CQA OFFICER shall together decide on appropriate locations.

The 500-foot length determines potential rework length, in BOTH directions, if a destruct fails. So, it is best to not overdue the interval. And for length intervals under 500 feet, a patch repair is not as robust of a seam as the wedge weld, so too short of an interval should be minimized as well.

A 2 foot long by 1 foot wide sample shall be taken with the seam central in the width. The destruct number shall be marked on the liner adjacent to the removed section. The repair needed shall be recorded in the data sheets. On the sample taken, the center foot shall be marked with the sample id, panels id, machine id, and operator id.

The outer 2 sides of the entire 6-inches (5 samples each side) shall be tested on site in the same manner as the trial welds. Test results shall be recorded in the data sheet. If the seams pass, the remaining center section shall be sent by the CQA OFFICER to an independent lab for controlled environment testing using ASTM D6392.

4.4.1 If Destruct Sample Fails

The INSTALLER shall stop the use of that machine immediately. The machine needs to be inspected and repaired for the discrepancy. It can be used again, after passing trial welds.

The installed seam by that machine needs to be investigated in BOTH directions to the next destruct sample that passed. The INSTALLER and CQA OFFICER need to determine appropriate locations to take more destruct samples and test in the same manner as outlined prior. Samples should not be taken at less than 10 feet from the failed destruct sample.

Once the further destruct samples are found to be good, the portion of failing seam length needs to be cap stripped, or cap strip all failing seam length to minimize the number of destruct samples taken in the investigation process.

4.5 Panel Leak Check of Finished Layer

4.5.1 Secondary Layer

For dairy and food processors ponds within RWQCB Region 5 it is accepted as sufficient practice to perform visual observation for defects of each panel meets the intent of the panel leak check of the secondary layer.

4.5.2 Primary Layer

A bare geomembrane integrity survey in accordance with ASTM D7240 will be performed by the INSTALLER and observed by the CQA OFFICER.

The panels are the target of this test for the seams have already passed testing by either air channel or vacuum box. False indications can occur at seams due to the electrical field disruption cause by gaps in the conductive layer.

If “hits” are found by the electrical survey equipment, verify/confirm by vacuum box testing. If a leak is confirmed, the liner in the area of the leak needs to be marked and recorded for repairs.

5.0 Liner Defects, Patches, and Repairs

5.1 Visual Inspections

All seams and non-seam areas of the geomembrane shall be inspected by the CQA OFFICER for defects, holes, blisters, and any sign of contamination by foreign matter. Any discrepancy noted shall be brought to the attention of the INSTALLER to be marked and recorded for repairs in the data sheets.

5.2 Wrinkles

Wrinkles that can fold over and do not contract sufficiently in cool temperature, shall be repaired by cutting out the excess material and fusion seaming or cap stripping. This condition shall be marked on the liner and recorded for repairs in the data sheets.

5.3 Small Repairs

An extrusion bead repair is acceptable for visual discrepancies, defects, or tears of 0.5 inches or less in diameter or length. The area is to be lightly grinded to facilitate bonding prior to applying the extrusion bead.

5.4 Repair Patches

Defects or tears that are greater than 0.5 inches in diameter or length, require a patch covering the area. The patch is to be heat bonded to the liner, edges lightly ground, then an extrusion bead applied all around. The patch is to be vacuum tested when complete.

Repair patches shall be marked on the liner as to their sequential number to be recorded in the data sheets.

For the primary layer, repair patches following the extrusion welding and vacuum testing of the patch, install a second patch over the first and vacuum test.

5.6 Cap Strip

This is a long patch covering areas too short to wedge weld or a test failure area of a wedge weld seam, found either by air channel test or destruct test. Placement of the cap and testing is the same as a repair patch.

Cap strips shall be marked on the liner as to their sequential number to be recorded in the data sheets.

For the primary layer, cap strips following the extrusion welding and vacuum testing of the cap, install a second cap strip over the first, extrusion weld, and vacuum test.

Alternatively, for the case of a failed destruct seam area and the cap is to be placed between good destruct sample end points. After consulting with the CQA OFFICER and if the air channel test passed, the upper flap of a wedge weld seam can be extrusion welded to the liner along the entire length of a suspect seam area. This weld provides the seam strength around the wedge seam, while the leakage issued is eliminated by the air test of the wedge seam passing.

6.0 Acceptance

6.1 Data Sheets Provided

The INSTALLER shall provide to the CQA OFFICER copies of all data sheets and maps created during the installation process soon after completion.

6.2 Construction Quality Assurance (CQA) Report

The CQA OFFICER will prepare a CQA Report and the ENGINEER will review and stamp the report. The report will identify the project, participants in the construction, dates and sequence of construction, summary of material selection and testing, summary of earthwork performed, summary of liner installation, deviations from the work plan, and a certification statement from the ENGINEER.

The CQA report shall be submitted to the RWQCB for review. After review and approval, the RWQCB shall issue a letter of acceptance and authorize the use of the pond with wastewater.

The CQA report will also include the following:

- Design drawings submitted with the Lagoon Design Report
- CQA Plan submitted with the Lagoon Design Report
- Material Data Sheets of the selected materials – liner and geonet
- MQC test data of the rolls delivered to the project
- Subgrade report from the Geotech Engineer
- Subgrade Acceptance Forms
- Destruct testing results
- Drawings of Record – updated design drawings included changes
- Construction photos
- Data sheets and maps prepared by the INSTALLER

Double Liner Geomembrane Specification
For Construction of Dairy and Food Processing Ponds
RWQCB Region 5, Revision 16

Liner Table 1 - Geomembrane

Properties[1]	Test Method	60 mils Smooth	60 mils Textured	80 mils Smooth
Thickness (avg) - mils	D5199/D5994	nom.	57 - 60	nom.
Lowest individual for 8 of 10 values			54	
Lowest individual of 10 values		54	51	72
Asperity height (min avg) - mils	D7466		16	
Density (min avg) - g/cc	D1505/D792	0.940	0.940	0.940
Tensile properties (min avg)	D6693			
Yield strength - lb/in		126	126	168
Yield elongation - %		12	12	12
Break strength - lb/in		228	90	304
Break elongation - %		700	100	700
Tear resistance (min avg) - lb	D1004	42	42	56
Puncture resistance (min avg) - lb	D4833	108	90	144
Carbon black content - %	D4218	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0
Carbon black dispersion	D5596	Note 2	Note 2	Note 2

Notes

1 Methods and values taken from GRI GM13 Standard Specification - *Test Methods, Test Properties and Testing Frequency for High Density Polyethylene (HDPE Smooth and Textured Geomembranes*. If there is conflict with this Table and GM13, the GM13 values shall be used.

2 For 10 different views - min of 9 in Categories 1 or 2 and 1 allowed in Category 3

Liner Table 2 - Geonet

Properties	Test Method	Selected Thickness
Thickness (avg) - mils	D5199	nom.
Density (min avg) - g/cc	D1505	0.940
Tensile strength - lb/in	D7179	> 40
Carbon black content - %	D4218	2.0 - 3.0

Double LIner Geomembrane Specification
For Construction of Dairy and Food Processing Ponds
RWQCB Region 5, Revision 16

Liner Table 3 - Testing

Test Parameter	Test Method	Frequency	60 mils Smooth	60 mils Textured	80 mils Smooth
Nondestructive Seam Test					
Air channel	D5820	Continuous	25 to 30 psi, hold for 5 min		
Vacuum box	D5641		Vacuum hold for 5 to 10 sec		
Spark	D6365		No spark		
Dual Hot Wedge Seam Test	GRI GM 19a	Trial welds & destruct samples			
Shear strength - lb/in			120	120	160
Shear elongation at break[1] - %			50	50	50
Peel strength - lb/in			91	91	121
Peel separation - %			25	25	25
Extrusion Fillet Seam Test	GRI GM 19a	Trial welds & destruct samples			
Shear strength - lb/in			120	120	160
Shear elongation at break[1] - %			50	50	50
Peel strength - lb/in			91	91	121
Peel separation - %			25	25	25
Panel Test					
Exposed surface (water puddle)	D7002	Non-conductive liner	Calibrate equipment to 1 mm diameter test hole		
Exposed surface (spark test)	D7240	Conductive liner	Calibrate equipment to 1 mm diameter test hole		
Covered surface (water or soil)	D7007	Both conductive and non-conductive	Calibrate equipment to 6 mm diameter test hole		

Notes
1 Elongation measurements should be omitted for field testing

Trial Weld Log

Project Name ____________________________

Layer ____________________________

Material ____________________________

Date	Time	Operator	Machine			Peel					Sheer				
			#	Temp	Speed	Results					Results				

Panel Log

Project Name ______________________

Layer ______________________

Material ______________________

Date	Panel #	Roll #	Location

Date	Panel #	Roll #	Location

Wedge Seam Weld & Air Test Log

Project Name ______________________

Layer ______________________

Material ______________________

Seam	Panel	Seam	Start	Operator	Machine			Air Test	Start		Stop		Results	Notes
Date	#s	Length	Time		#	Temp	Speed	Date	Time	Pressure	Time	Pressure	(P - F)	(Record DS #)

Extrusion Seam Weld & Test Log

Project Name ______________________________

Layer ______________________________

Material ______________________________

Seam Date	Repair #	Panel #s	Repair Type	Operator	Machine #	Test Date	Vac or Spark	Test Date	Primary Air	Notes

Patch/Repair Type

- **CP** Seam corner patch
- **PB** Pipe boot
- **RP** Repair patch
- **EB** Extrusion bead repair
- **CS** Cap strip repair

Destruct Sample Log

Project Name ______________________

Layer ______________________

Material ______________________

Date	DS #	Panel #s	Machine #	Peel Results					Sheer Results					Results (P - F)

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Appendix D – Pond O&M Plan

TIER I

DOUBLE LINED PONDS

OPERATIONS & MAINTENANCE PLAN

Prepared for

Treehouse California Almonds LLC

6914 Road 160
Earlimart, CA 93219

Tulare County

June 5, 2023

Prepared by:

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2912-19-001

ENGINEERING CERTIFICATION

I have reviewed this document and certify that this was prepared by me or under my responsible charge, as a registered Civil Engineer who is registered to practice in California pursuant to California law.

Signature:

Print: Edward J Caminata

Date: June 5, 2023

Limitations

Provost & Pritchard performs its services in a manner consistent with the standards of care and skill ordinarily exercised by members of the profession practicing under similar conditions in the geographic vicinity. This report was prepared in accordance with generally accepted engineering practices which existed at the time it was written. No warranty, expressed or implied, is made. This report is based on information provided to Provost & Pritchard by materials suppliers and other project subcontractors. Provost & Pritchard is not responsible for misinformation or product use, misuse or defects, and cannot warranty any work conducted by others. If any changes are implemented that materially alter the project, additional engineering services and/or Regional Water Quality Control Board approval may be required, along with revisions to the recommendations given herein.

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Scope

This Tier 1 Double Lined Ponds Operations and Maintenance (O&M) Plan has been prepared to provide specific technical details to properly operate and maintain the integrity of the liner of the ponds on both a daily and design life basis.

Revision Record

This O&M Plan issued to this facility are the current practices at the time. If changes become necessary, the O&M Plan for this facility will be updated as appropriate. This record will serve as a basis to record those changes.

Revision	Date	Item #	Section	General Description
New	06/05/23	All	All	P&P - Tier 1 O&M Plan, Revision 10

I. INTRODUCTION

This Ponds Operation and Maintenance (O&M) Plan was prepared for the new ponds lined with a geomembrane liner for this facility. A properly operated pond is a valuable asset. The service life of a liner can be assured and possibly extended by developing and carrying out a good operations and maintenance program.

The operator of this facility will be responsible for all monitoring and maintenance after construction is completed. Regularly scheduled inspections and timely maintenance by personnel will be required. If desired, Provost & Pritchard can be contacted to perform the monitoring tasks.

If the owner or operator of this facility changes, the current owner and operator are responsible for transferring this O&M Plan to the new owner or operator. Reporting of the ongoing monitoring is required to be submitted with the annual reports.

Repairs to liners will need to be completed by personnel experienced with installation and repair of geosynthetic material. Failure could potentially affect public safety and cause environmental degradation. The following are recommended components of a maintenance program.

II. LINER SYSTEM

The liner system installed is identified as a “Tier 1” or a “Double Liner”. It is actually three layers of material. These layers are comprised of two layers of High Density Polyethylene (HDPE) geomembrane with a geonet drainage mesh sandwiched between those two layers. This drainage mesh allows any potential leakage from the liner in contact with the pond water to drain and collect into a Leak Collection / Return System (LCRS) located under the pond floor.

There is also a vent system beneath the layers of liner material to allow for gases to escape without causing a bubble or “whale” to the liner. These vents are at the upper perimeter of the ponds at equal intervals.

III. TERMINOLOGY

The following terms are used throughout this text:

- The **Primary Liner** is the top layer of geomembrane or the liner in contact with the wastewater.
- The **Secondary Liner** is a lower layer of geomembrane installed beneath the primary liner & geonet mesh and is in contact with the soil.
- The **Leakage Collection / Return System** (**LCRS**) technically includes the geonet mesh between the primary & secondary liners but usually refers to the sump area beneath the pond floor that collects any potential leakage from the

primary liner. There is a conduit pipe installed from this sump area up to the top of the pond to provide access for pumping and/or testing equipment.

- The **Pan Lysimeter** (or, **"Lysimeter**") is a sump located beneath the LCRS sump that is provided to monitor for potential leakage through the liner at the LCRS sump. If the secondary liner were to leak, it would most likely occur where leakage is pooled (in the LCRS) so therefore this sump provides for that check. It also has a conduit pipe installed from this sump area up to the top of the pond to provide access for pumping and/or testing equipment.

- The **Potential Leakage Rate** is the liner leakage rate based on undetectable potential defects in the liner material during installation testing. Leakage rates below this rate could be expected to occur. However, leakage rates above this rate needs to have further investigation and evaluation.

IV. OPERATION OF THE PONDS

A. Treatment and Storage Ponds

Anaerobic Ponds

After mechanical screening, water will gravity flow through two anaerobic ponds in series. Water enters a pond near the floor and exits near the surface. These ponds will always remain full. Weir boxes at the outlets will maintain water level at 2 feet of freeboard.

Near the floor of the second anaerobic pond (south pond) is a suction pipe for a mixing system. Mixing water will be distributed into both ponds also near the floor to activate the heavy particles aiding in digestion of the material. Mixing will be continuous. The mixing pump discharge has a valve and blind flange to be used for pond water removal/cleaning.

The first anaerobic pond (north pond) has a suction pipe from near the floor and emerges at the surface at the outside of the perimeter road with a blind flange. This is to be used for pond water removal/cleaning.

Aeration Pond

Water from the second anaerobic pond will gravity flow into the aeration pond. This pond will also always remain full.

This pond will be mechanically aerated by blowers and a main duct pipe along the side of the pond to individual lines in the pond and fine bubble diffusers located near the floor.

A weir box at the outlet will allow for outflow to the storage pond if water rises above the 2-foot freeboard. A pump is placed in this weir box to pump water to the clarifier. The clarifier will send clarified water to the storage pond while the heavy particles from the clarifier will be returned to the aeration pond for 45 minutes per hour or to the first anaerobic pond for 15 minutes per hour.

Water level of the weir box will be monitored by instrumentation. When the plant is not operating and providing new wastewater, the aeration pond water level will go down. When it reaches a trigger level (minus 6 inches), a valve at the clarifier will shift to stop sending water to the storage pond and divert the water back to the aeration pond. When the aeration pond water level returns to normal operating level (minus 2 inches from weir overflow), the valve will shift back, sending water to the storage pond.

Storage Pond

Water from the clarifier will gravity drain into the storage pond. Water is stored in the pond until it is delivered to the fields via a floating pump connected to the irrigation system at a standpipe. There is sufficient capacity in the pond for the water produced and rainfall for the non-irrigation periods identified in the Nutrient Management Plan.

A Depth Gauge (see **Appendix A**) is located on the side of the pond (welded to the HDPE liner) to indicate the water level in the storage pond and freeboard level.

B. LCRS Monitoring

The initial fill of the ponds requires close monitoring of the LCRS sumps. See **Section V - LCRS Operating Procedure**. Also, during normal operation this leakage detection system must be monitored at appropriate intervals.

C. Freeboard Level

At no time should the water level be allowed to rise above the 2-foot freeboard level of a pond.

The treatment ponds have weir boxes that will overflow at the 2-foot freeboard level. The 2x4 board on top of the weir wall allows for flushing the lines between ponds by lifting the board. This flushing should be done periodically to keep the pipes between the ponds clean of any sediments.

The storage pond has adequate storage capacity to handle non-irrigation periods and rainfall. If the water level begins to near the freeboard level, irrigations must be performed to maintain or reduce the water level. Contact your agronomist for any issues relating to additional irrigations.

If water level neared the vent ports, perform an inspection of the vent ports of the liner for indications that the water level reached them. If there is evidence that water entered the vents, corrective action will be required under the guidance of a California Registered Civil Engineer.

V. LCRS OPERATING PROCEDURE

A. General

The LCRS system is designed to (1) drain water that might leak through defects in the primary liner and route towards the LCRS sump, (2) contain leakage water in the LCRS and by that making no hydraulic head pressure through any defects in the secondary liner causing the secondary liner to be essentially "leak free", and (3) accommodate removal of accumulated water by providing a means of pumping it from the LCRS sump.

P&P recommends a *Little Giant Effluent Pump C1 Series, Model No. 20C1-05P4-2W115*. This is a ½ hp pump with a 1-¼ inch discharge that can deliver about 20 gpm at the depths of most ponds. 1-inch red "milk barn" hose is a good durable hose to use for this task.

With 1 foot of freeboard due to the center trench entering the sump, the LCRS volume is approximately 534 ft^3 and lysimeter volume is approximately 160 ft^3. Both are filled with gravel. The void area around gravel is approximately 30% of the volume, therefore the water containing capacity of the LCRS is approximately 1,200 gallons and the lysimeter is approximately 360 gallons.

During liner installation, the liner area is tested to find defects down to a hole size of approximately 1 mm (1/32"). There is an assumption made that there is one defect per 4,000 m^2 (1 acre) just under this size that cannot be detected by the testing equipment. By the size of the liner area and the summation of undetectable defects at a full pond level, the pond has a potential leakage rate that repairs may not find because they could be smaller than the ability of the testing equipment. Regulatory standards require that the LCRS pump must be able to pump at twice this potential leakage rate. The potential leakage rate and pump rate for these ponds has been determined to be the following.

Pond Id	Potential Leakage Rate (gpm)	Minimum LCRS Pump Rate (gpm)
Anaerobic	0.3	0.7
Aerobic	0.3	0.6
Storage	1.2	2.5

Periodic pumping of any wastewater at rates and frequencies sufficient to prevent water from rising above the rim of the LCRS sump will be required while wastewater is in the pond.

Settled solids in wastewater tends to plug the "undetectable" holes such that little to no leakage is typically observed. Or over time little leakage stops. However, if there is a hole that can be found by test equipment (larger than 1 mm, 1/32 inch) leakage will not likely diminish.

If the pond was constructed during a rain event and the inner layer was exposed to rainfall, there will be trapped water in the LCRS system. This takes a lot of time to drip drain to the LCRS. Also, if an electrical leak check is performed and the inner layer is filled with water to conduct the test, this too will take much time to remove, up to months. In this period of time decerning between a leak and residual is difficult, and time and repeat checking is needed.

B. Differentiate Condensate vs. Wastewater

During construction, rainwater or moisture from the air may be trapped within the LCRS and as it cools may collect within the sump. This water typically will have an electrical conductivity much different than wastewater. This will be used to determine if any leakage found in the sump is condensate or an actual leak within the liner system. However, dust and dirt from construction mixed with water can have elevated levels as well.

Electrical conductivity of the source water that would be contained during construction typically has electrical conductivity ranging between **200 and 900 µmhos/cm**. If water found in the LCRS sump has an electrical conductivity in this range or less, it will be assumed to be condensation or rainwater.

If electrical conductivity of the source water is found to be **above 900 µmhos/cm**, then it will be assumed to be a wastewater leak and the appropriate action needs to be taken as defined in the next two sections.

C. Initial Pond Fill

Provost & Pritchard will routinely monitor the LCRS during initial fill. The LCRS sump needs be monitored regularly for water while the pond is being filled. These intervals need to be distinct enough that if water is found in the sump, an estimate of the location of where the leak could be, can be determined. Once the floor is covered, the new exposed liner area underwater becomes much less for a given time interval and checks can become less frequent.

If water is found in the sump during initial fill:

- The removed water should be tested for electrical conductivity to determine if it is condensate or wastewater. If a rain event occurred during construction, clear water could be found in the sump.

- The amount of leakage needs to be determined. Halting filling or continuing to fill needs to be evaluated. If there is leakage above the allowed rate, investigation into the source needs to be conducted.

- Fines in the water can plug small holes and leakage can stop on its own. So, for small amounts of leakage, waiting for a period to see what develops as the pond continues to fill can be beneficial.

Once the initial fill is complete, the LCRS should be checked and then wait 1-week and check again. If the LCRS has no leakage or an acceptable amount of leakage, the engineer will submit a letter to the RWQCB verifying that the leakage rate is within acceptable amounts.

If there is some leakage, the engineer will determine if less than a monthly monitoring interval is needed or recommend installing a permanent pump. A monthly interval is planned to start, however a LCRS monitoring interval is needed such that the LCRS contains the leakage – see **E. Ongoing LCRS Monitoring** section.

D. Procedure to Determine Leakage Rate

When leakage is pumped out of a sump for the first time, there is no discernable way to know from the quantity pumped a leakage rate without knowing the amount of time the leakage has been occurring.

The sump needs to be pumped down and allowed some time to refill. Upon return after a known interval of time, the sump is pumped down again recording the time elapsed between pumping events and quantity pumped. By dividing the gallons pumped by the interval of time, a gallons per minute flow rate can be determined.

To determine the quantity pumped out of the sump there are 2 basic options.

- If there is little leakage. Pump the leakage into a 5-gallon bucket. Dump buckets quickly to minimize the loss of measuring during the dumping. Count the number of buckets.
- If there is more significant leakage. Pump the leakage into a 5-gallon bucket measuring the time to fill. Dump quickly and repeat several times to determine an average. Time both full duration to drain the sump and the time to fill individual buckets. From the bucket timing, a gallons per minute rating of the pump can be determined. Once the pump rate is determined, the full-time duration of pumping the sump down is used to find the leakage rate.

E. Ongoing LCRS Monitoring

The LCRS will need to be checked monthly for at least the first 6 months of operation. If 6 or more months of monitoring events show that the monitoring frequency can be reduced and still maintain sufficient capacity in the LCRS, a lessor frequency can be proposed to the RWQCB. Any proposal to revise the monitoring frequency must be at least semi-annual.

When facing the pipes and the pond, the LCRS will be the pipe on the right. Measure depth of water in the LCRS and record in **Appendix B – LCRS Leakage Log**.

Collected leakage needs to be maintained at a volume of less than 90% of LCRS capacity which is approximately 1,080 gallons. If the volume is nearing this amount, perform the procedure to determine the leakage rate and notify the engineer. Based on the rate determined, the engineer may need to alter the monitoring interval.

If, at any point during operation of the pond, total leakage exceeds the potential leakage rate on an ongoing basis, a California Registered Civil Engineer will need to be retained to oversee the investigation and repairs to restore primary liner integrity and/or LCRS performance such that the LCRS system can remove at least twice the actual leakage rate.

VI. LYSIMETER MONITORING

The Lysimeter sump is directly below the LCRS sump and is there to monitor if there is leakage out of the LCRS sump. It does not monitor the lining of the pond. Monitoring of the pan lysimeter will be performed at the same interval as the LCRS.

If 6 or more months of monitoring events show that the monitoring frequency can be reduced and still maintain sufficient capacity in the Lysimeter, a lessor frequency in conjunction with the LCRS interval can be proposed to the RWQCB. Any proposal to revise the monitoring frequency must be at least semi-annual.

When facing the pipes and pond the Lysimeter will be the pipe on the left. Measure depth of water in the Lysimeter and record in **Appendix C – Lysimeter Leakage Log**.

The Lysimeter will need to be pumped out before it reaches a volume of less than 90% of Lysimeter capacity which is approximately 325 gallons. If the volume is nearing this amount, perform the procedure to determine the leakage rate and notify the engineer. Based on the rate determined, the engineer may need to alter the monitoring interval.

If leakage is found in the Lysimeter, then investigation into this leakage will need to be undertaken by a California Registered Civil Engineer.

VII. GENERAL MAINTENANCE

The facility operator will be responsible for all maintenance after the wastewater storage ponds have been constructed. Regularly scheduled inspections and timely maintenance by personnel will be required.

Repairs to liners will need to be completed by personnel experienced with installation and repair of geosynthetic material. Failure could potentially affect public safety and cause environmental degradation.

The WDR for this facility has monitoring and reporting requirements that include items for the ponds. The following are components of a maintenance program specifically concerning the liner.

A. Visual Inspections of the Liner

Monthly visual inspections of the ponds should be performed.

1. Pond sides and surface areas for items such as: weeds, algae, animal holes, and erosion.

2. Drainage and swales are free from obstructions, ponding, and erosion.

3. Drainage inlets and piping are free from obstructions and are flowing.

4. Valves are operating and lubricated.

5. Document inspections in **Appendix D – Visual Inspection Log**.

B. Electrical Leak Detection

Normally the LCRS and Lysimeter sumps will provide the means necessary to detect leakage in a Tier 1 liner system.

After cleaning that equipment was placed in a pond, a leak detection test should be performed to verify that the liner was not damaged during the cleaning process, although the LCRS will monitor for leakage. The two anaerobic ponds have pipes to clean/remove without equipment going into the ponds and an electrical leak check is not necessary.

An electrical leak detection survey using ASTM Test Method D 7007 (Standard Practices for Electrical Methods for Locating Leaks in Geomembranes Covered with Water or Earth Materials) may be performed with a full or nearly full wastewater storage pond. Note – only the portion covered by water will be tested.

Electrical leak location surveying is performed by:

Leak Location Services, Inc.
16124 University Oak
San Antonio, TX 78249
(210) 408-1241

Document surveys in **Appendix E – Electrical Leak Detection Log**.

C. Repair Procedures for the Liner

During the routine inspections, if any portion of the liner exhibits a significant defect, it shall be repaired. This would include items such as tears, cuts or cracks in the liner. Any slope failures, excessive embankment settlement, eroded banks and management of burrowing animals shall require detailed evaluation for repairs.

Repairs are to be completed by personnel experienced with installation and repair of geosynthetic material.

Document repairs in **Appendix F – Synthetic Liner Repair Record**. The following procedures will ensure proper repair:

1. The water level will be lowered to below the leak elevation to dry the area of the leak.

2. The leak will be patched and tested in accordance with the Construction Quality Assurance Plan contained in the Pond Design Report prepared for the pond.

D. Emergency Procedures for Liner Damage

In the case of a bank breach or there is a broken or plugged pipeline running through the sides of the pond causing spillage, perform the following:

1. Contain all spillage that is possible by creating an earthen dam using a loader or similar equipment. Do not use dry manure to contain spillage.

2. Pump down the pond (to other pond), if possible to reduce spillage.

3. Notify the RWQCB by phone about spills **within 24 hours**. Submit a written follow up notification **within 2 weeks**. Contact information is located in (**Appendix G – Discharge Report**).

VIII. SOLIDS REMOVAL & DISPOSAL

Disposal of the removed solids should be planned and incorporated into the annual update to the Nutrient Management Plan (NMP) of this facility prior to performing cleaning operations. If the solids are to be delivered to a third party, a **Manure/Process Wastewater Tracking Manifest**, (**Appendix H**) should be prepared prior to performing cleaning operations, consistent with the facility's Monitoring and Reporting Provisions.

The following steps should be undertaken to ensure that the synthetic liner does not become damaged during the cleaning process:

1. Using the drawings, determine and mark the location of the toe of the side slopes on the rim of the pond to locate the actual floor of the pond. Also identify the location of any pipes or other items that may be hidden from view.

2. Ensure that the equipment that enters the pond is placed and removed in such a manner that it does not cause any damage to the synthetic lining. Water may need to be added during the cleaning process for the removal of equipment at the completion of cleaning.

3. Determine/verify the floor depth and the depth of the sludge material to be removed.

4. Clean primarily over the floor area of the pond avoiding the side slopes. Sludge should continue to slide down the slopes to the floor area during cleaning.

5. Verify/ensure that the cleaning equipment does not come into contact with the synthetic liner while performing the actual cleaning operations. Observe water level changes to verify clearances are adequate.

6. Document all solid removal operations in **Appendix I - Solids Removal Log**.

7. Document all off-site transfers of wastewater or solids using the manifest form in **Appendix H - Manure/Process Wastewater Tracking Manifest**.

8. Perform the leak detection survey identified in **Section VII.B – Electrical Leak Detection** of this document when cleaning is completed.

IX. SAFETY RECOMMENDATIONS

A pond can present a serious safety hazard due to a potentially slippery surface, which can make it difficult or impossible to climb. The following safety features should be considered at the owner's discretion:

1. Fencing and gates should be secured to limit access around the entire pond area (a minimum of 20 feet clear of the edges of any ponds for Mosquito Abatement

District access) to prevent damage from vandals, livestock, vehicles, or farm equipment.

2. Warning signs should be posted in languages understood by all personnel entering the area.

3. Life rings, lifelines, poles, ropes, boats, or ladders may be provided to aid in getting out of the pond if someone or something falls in.

X. RECORDKEEPING REQUIREMENTS

All records identified by this plan will be kept at the facility for a period of 5 years. The owner/operator shall perform the inspections or assign personnel to be responsible for completing the inspections when required. Assigned personnel shall be instructed in all the requirements identified within this Plan.

If this Operations and Maintenance Plan is revised, the previous version will be kept on site and available for inspection for a period of 5 years.

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Appendix A

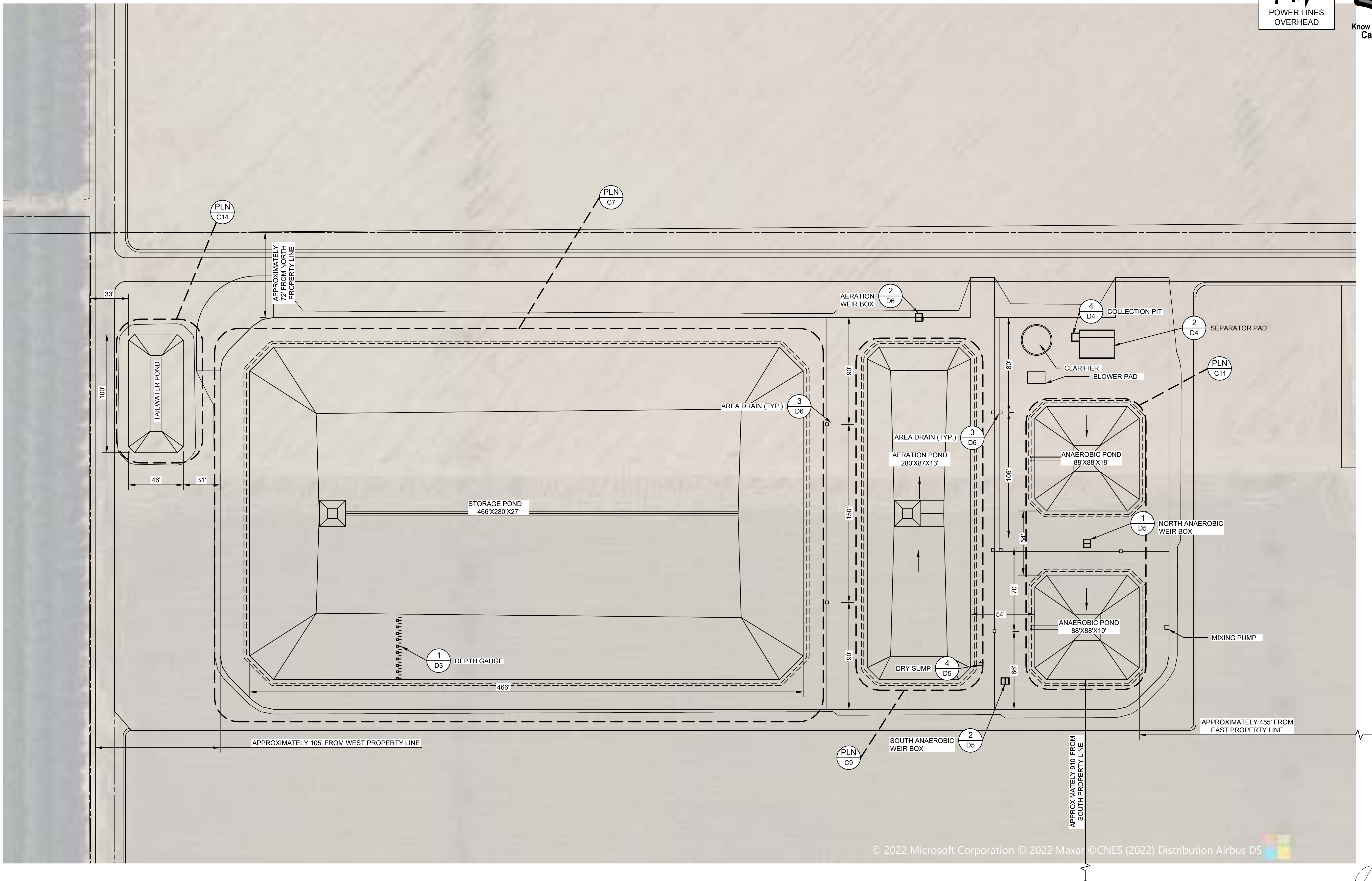
Drawings

Sheet	Description
C4	Proposed Ponds
C7	Plan View – Storage Pond
C8	Section View – Storage Pond
C9	Plan View – Aeration Pond
C10	Section View – Aeration Pond
C11	Plan View – Anaerobic Ponds
C12	Section View – Anaerobic Ponds
P2	Proposed Plumbing Plans
P3	Mixing System Plan
D2	LCRS and Lysimeter

WARNING

POWER LINES OVERHEAD

Know what's below. Call before you dig.



SCALE IN FEET

0 20 40 80

PLN C4

No.	REVISION	BY	DATE

FOR REVIEW 6/7/2023

FOR REVIEW ONLY

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

CIVIL

PROPOSED PONDS

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
400 E. MAIN STREET, SUITE 300
VISALIA, CALIFORNIA 93291-6337
559/636-1166 FAX 559/636-1177
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

DRAFTED BY: NPA | CHECKED BY: SCB

DATE: 06/07/2023

JOB NO: 291219001

PROJECT NO: 291219001

PHASE:

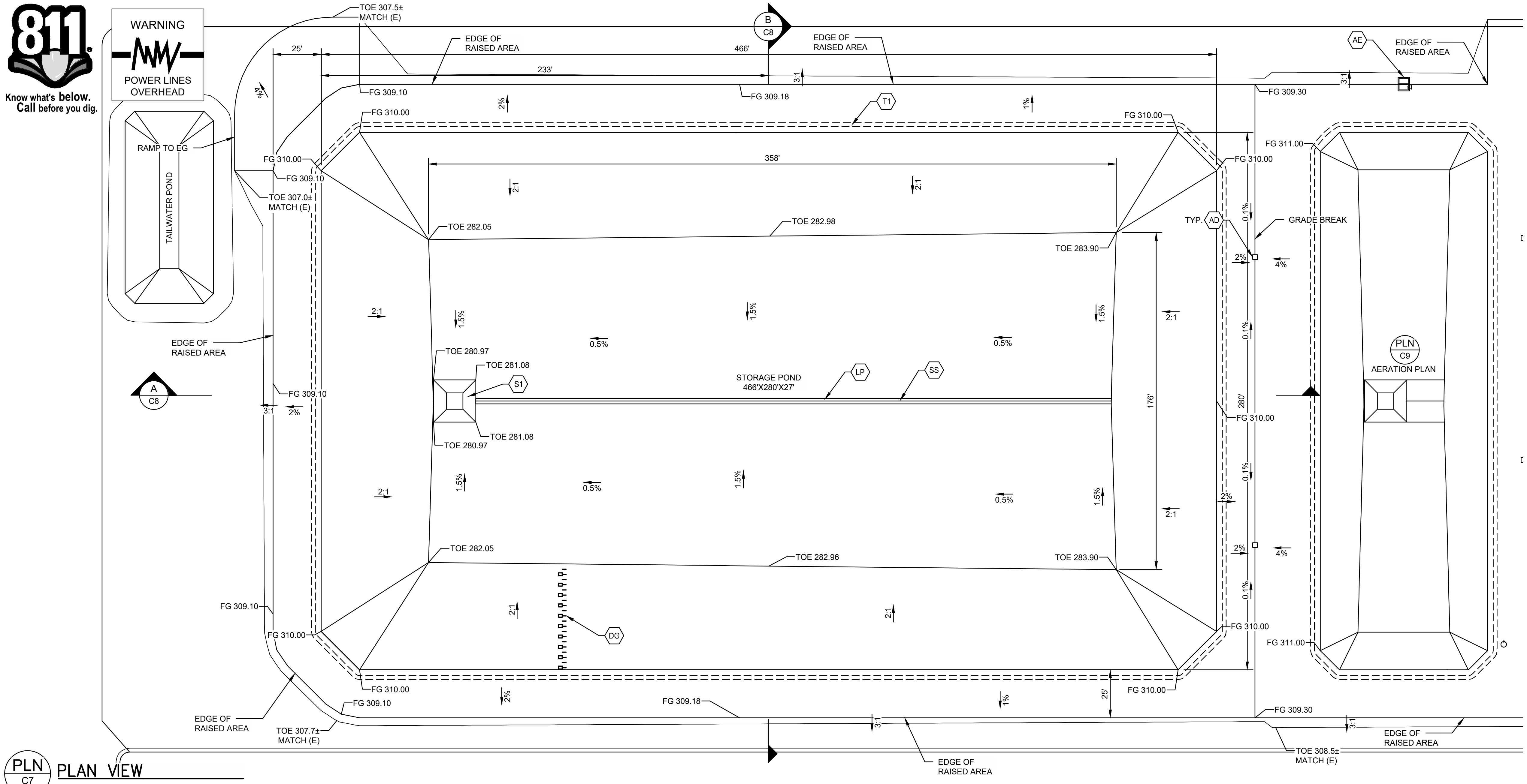
0 1"

ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C4

7 OF 36

6/7/2023 11:37 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C4 PROPOSED PONDS.dwg -Evan Freitas



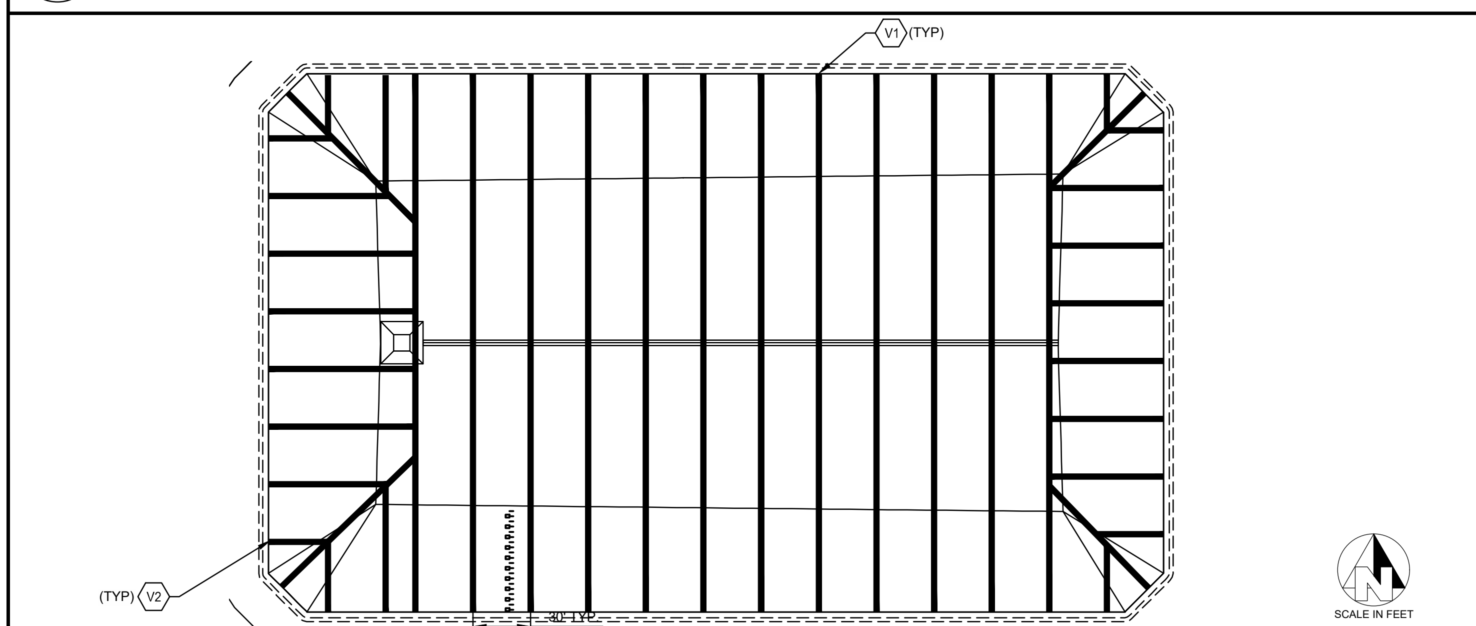
PLN C7 PLAN VIEW

NOTES

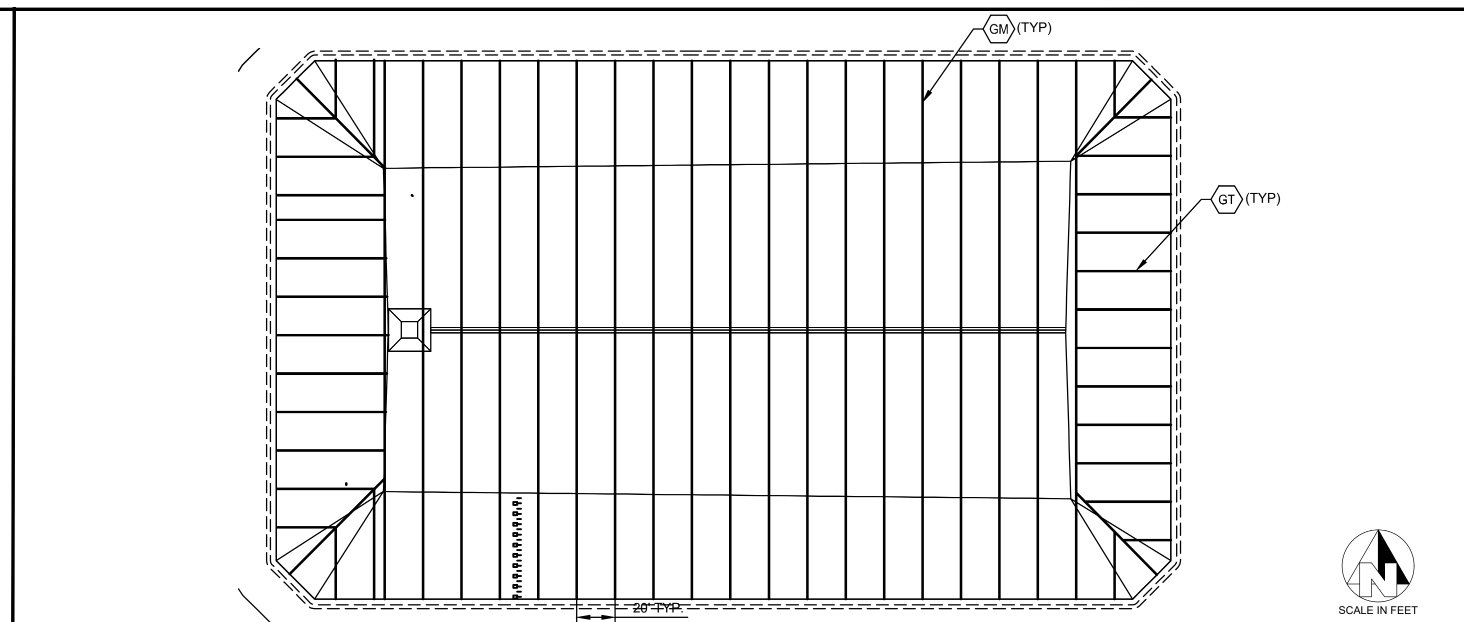
1. POND SUBGRADE AND LINER SHALL BE INSTALLED IN ACCORDANCE WITH THE POND DESIGN WORK PLAN THAT HAS BEEN APPROVED BY THE REGIONAL WATER QUALITY CONTROL BOARD.
2. HIGH WATER LINE (HWL) IS THE FREEBOARD LEVEL.
3. POINTS WILL BE GIVEN FOR GPS LOCATION OF GRADING EQUIPMENT.
4. CONSTRUCT LAGOON UPPER PERIMETER SURFACE TO THE INSIDE ELEVATION CALLED OUT. WHEN FILLING THE ANCHOR TRENCH, POST LINING INSTALLATION, ADJUST OUTER SURFACE TO THE LOWER ELEVATION CALLED OUT.
5. VENT STRIPS REQUIRE 30' SPACING WITH GAS ROUTE TO FLOOR. ADJUSTMENTS TO WHAT IS SHOWN CAN OCCUR DURING INSTALLATION.

CONSTRUCTION LEGEND

AD	AREA DRAIN	3 / D6
AE	AERATION WEIR BOX	1 / D6
DG	DEPTH GAUGE	1 / D3
GM	OVERLAP GEONET EDGES A MINIMUM OF 3 INCHES. INSTALL PLASTIC CABLE TIES EVERY 5 FEET.	
GT	OVERLAP GEONET ENDS OR END TO EDGE WITH MATERIALS SHINGLED DOWN A MINIMUM 5 FEET FROM THE TOE OF POND IN THE DIRECTION OF THE SLOPE A MINIMUM OF 12 INCHES. INSTALL PLASTIC CABLE TIES EVERY 12 INCHES.	
LP	LEAKAGE PIPE AT CENTER OF POND TO SUMP-DOUBLE LINER	
S1	LCRS/LYSIMETER SUMPS	6 / D2
SS	1/8" STAINLESS STEEL CABLE LOCATED IN CENTER TRENCH AND EXITS AT SURFACE.	
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1
V1	VENT ORIFICE	5 / D1
V2	2' WIDE DOUBLE FACED 160ML MINIMUM GEOCOMPOSITE DRAINAGE VENT STRIPS. (MATERIAL TO BE APPROVED BY ENGINEER)	



VENT STRIP PLAN



GEONET LAYOUT PLAN

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

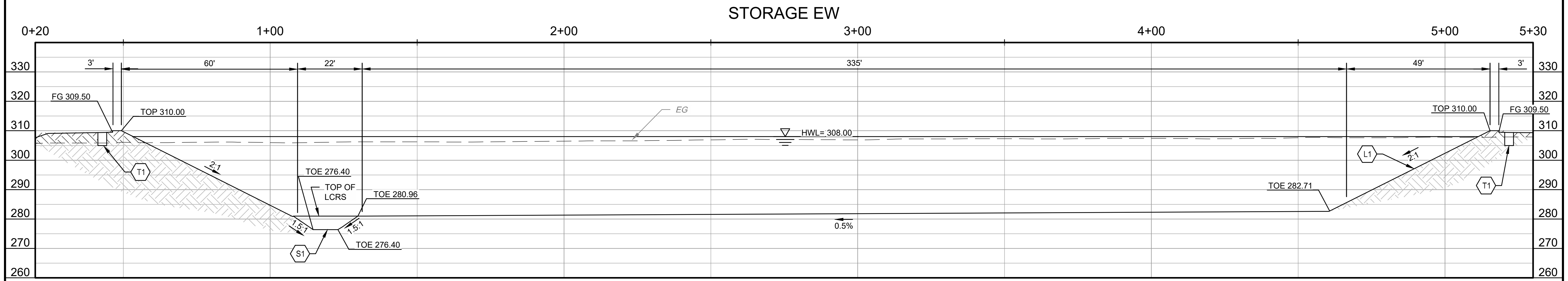
WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL
STORAGE PLAN VIEW

EST. 1968 PROVOST & PRITCHARD CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

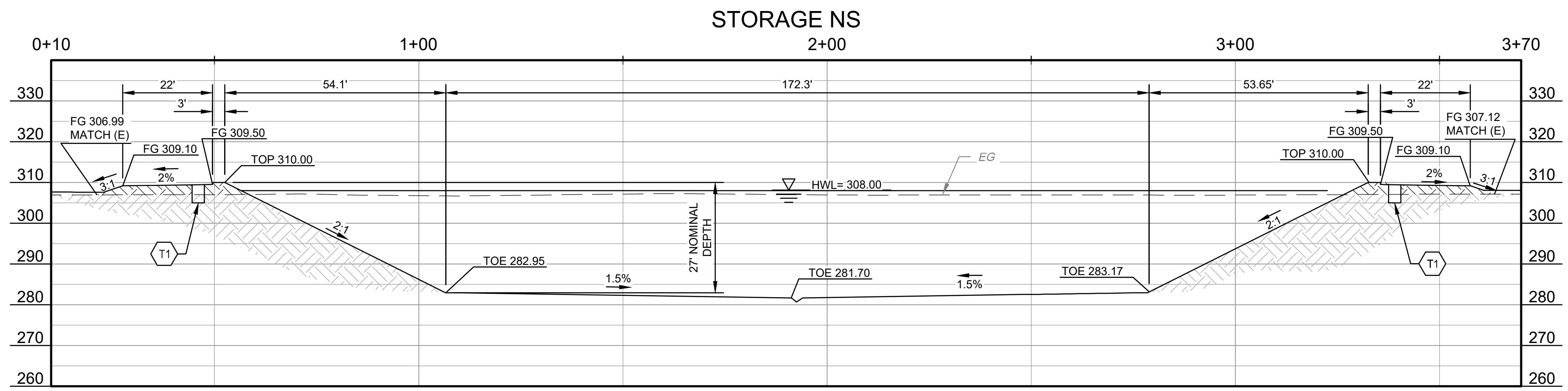
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C7



A
C8

POND PROFILE VIEW



B
C8

POND CROSS SECTION VIEW

WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.

CONSTRUCTION LEGEND

L1	DOUBLE LINER LAYERING	1 / D1
S1	LCRS/LYSIMETER SUMPS	6 / D2
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1

HATCH LEGEND

EXISTING EARTH

FINISHED EARTH

SCALE IN FEET
0 10 20 40

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
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CIVIL
STATE OF CALIFORNIA
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WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL

STORAGE SECTION VIEW

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CLOVIS, CALIFORNIA 93611-9166
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DATE: 06/07/2023
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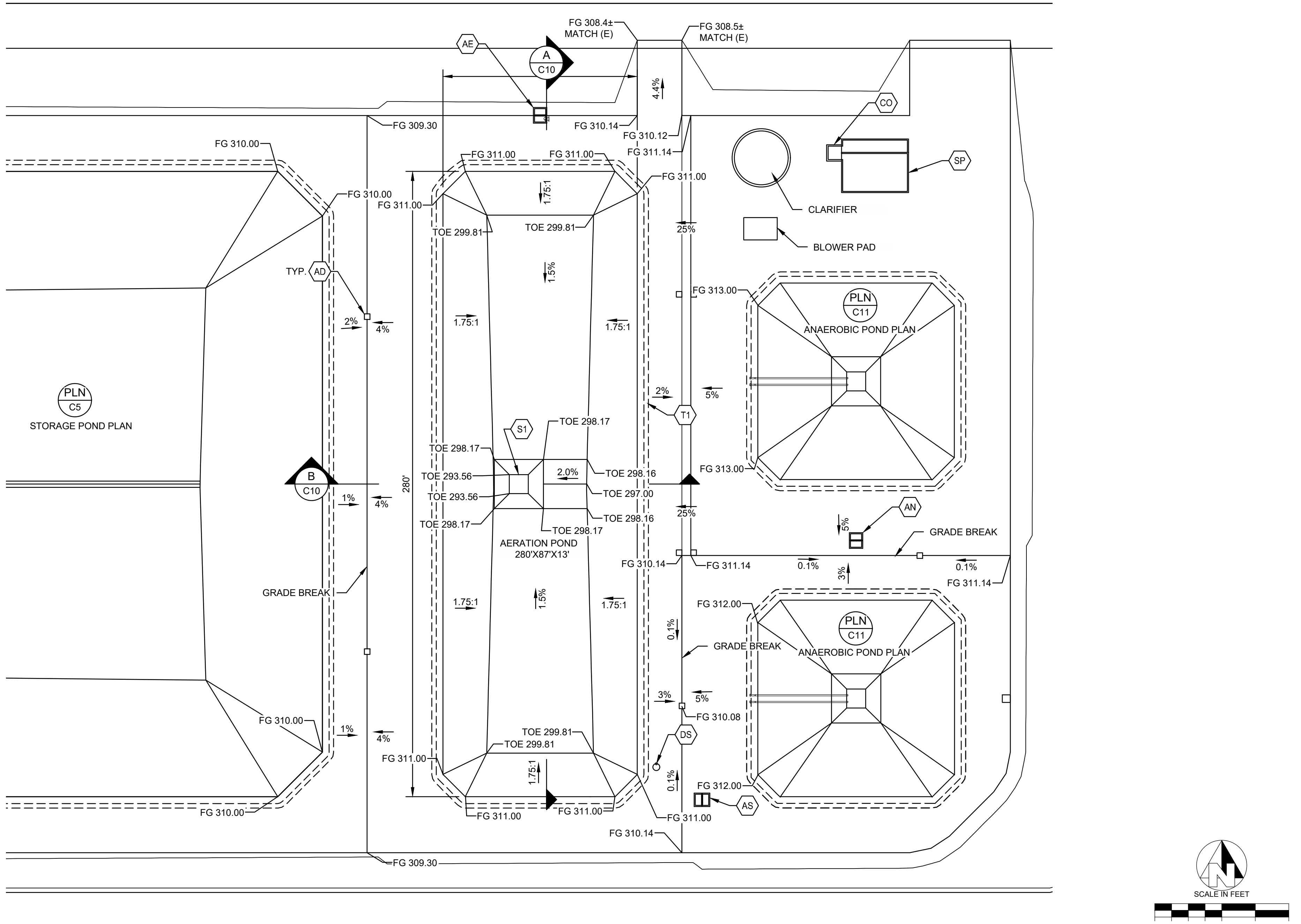
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C8

WARNING
POWER LINES OVERHEAD

811
Know what's below.
Call before you dig.



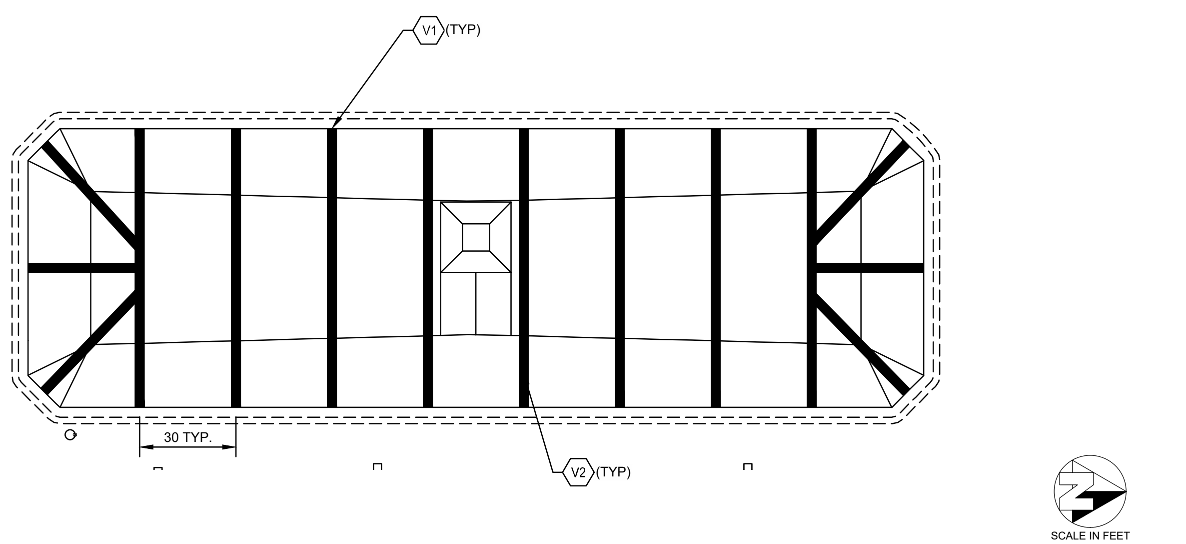
PLN
C9
PLAN VIEW

NOTES

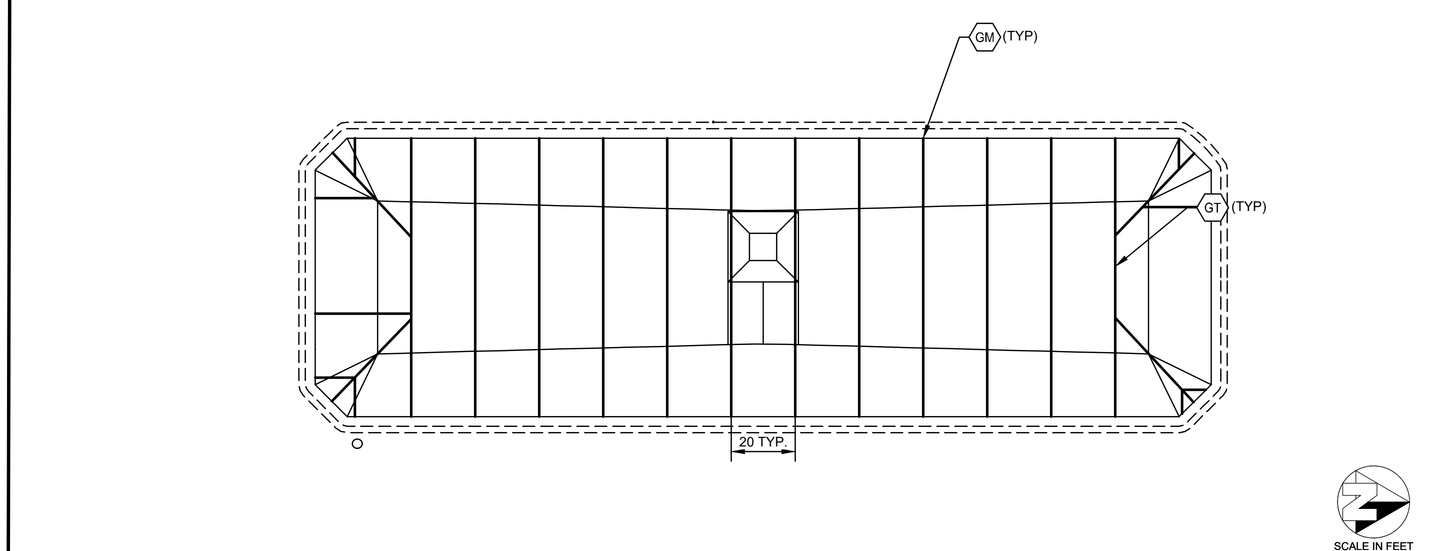
1. ... LINER S... ...ED ... THE PO... ... APPRO... ...ITY CO...
2. ...) IS THE FRE... ...LEVEL.
3. ... FOR GPS LOCATION OF GRADING EQUIPMENT.
4. CONSTRUCT LAGOON UPPER PERIMETER SURFACE TO THE INSIDE ELEVATION CALLED OUT. WHEN FILLING THE ANCHOR TRENCH, POST LINING INSTALLATION, ADJUST OUTER SURFACE TO THE LOWER ELEVATION CALLED OUT.
5. VENT STRIPS REQUIRE 30' SPACING WITH GAS ROUTE TO FLOOR. ADJUSTMENTS TO WHAT IS SHOWN CAN OCCUR DURING INSTALLATION.

CONSTRUCTION LEGEND

AD	AREA DRAIN	3 / D6
AE	AERATION WEIR BOX	1 / D6
AN	NORTH ANAEROBIC WEIR BOX	1 / D5
AS	SOUTH ANAEROBIC WEIR BOX	2 / D5
CO	COLLECTION PIT	4 / D4
DS	DRY SUMP	4 / D5
GM	OVERLAP GEONET EDGES A MINIMUM OF 3 INCHES. INSTALL PLASTIC CABLE TIES EVERY 5 FEET.	
GT	OVERLAP GEONET ENDS OR END TO EDGE WITH MATERIALS SHINGLED DOWN A MINIMUM 5 FEET FROM THE TOE OF POND IN THE DIRECTION OF THE SLOPE A MINIMUM OF 12 INCHES. INSTALL PLASTIC CABLE TIES EVERY 12 INCHES.	
S1	LCRS/LYSIMETER SUMPS	6 / D2
SP	SEPARATOR PAD	2 / D4
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1
V1	VENT ORIFICE	5 / D1
V2	2' WIDE DOUBLE FACED 160ML MINIMUM GEOCOMPOSITE DRAINAGE VENT STRIPS. (MATERIAL TO BE APPROVED BY ENGINEER)	



VENT STRIP PLAN



GEONET LAYOUT PLAN

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

FOR CONSTRUCTION
6/7/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL
AERATION PLAN VIEW

EST. 1968
PROVOST & PRITCHARD
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An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C9

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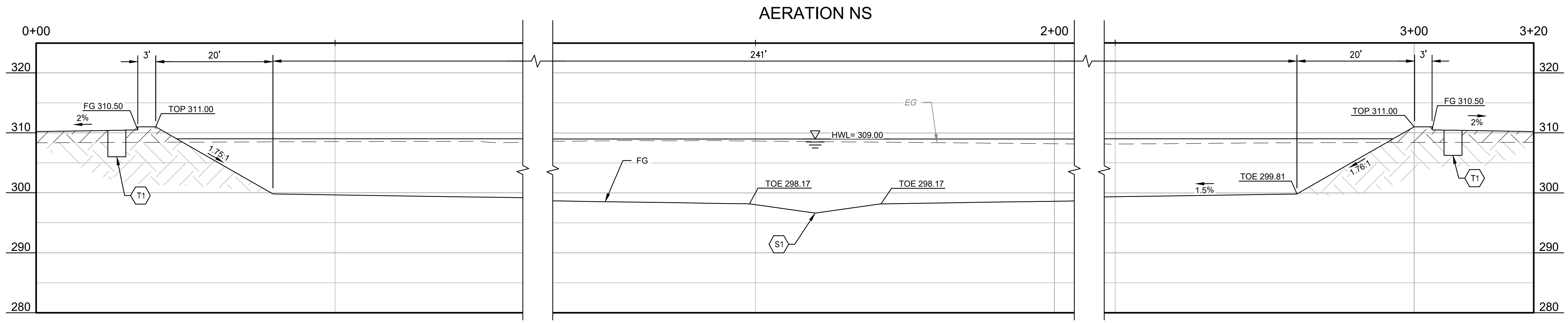
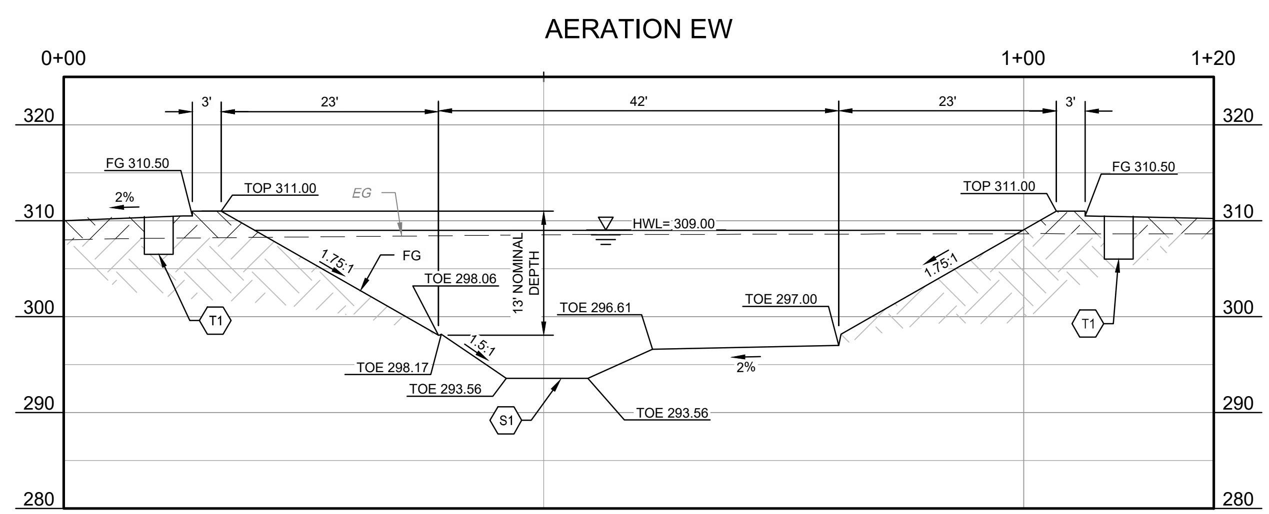


A
C10

POND PROFILE VIEW



B
C10

POND CROSS SECTION VIEW

WARNING
POWER LINES OVERHEAD

811
Know what's below. Call before you dig.

CONSTRUCTION LEGEND

L1	DOUBLE LINER LAYERING	1 / D1
S1	LCRS/LYSIMETER SUMPS	6 / D2
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1

HATCH LEGEND

EXISTING EARTH

FINISHED EARTH

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
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CIVIL
STATE OF CALIFORNIA
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WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL

AERATION SECTION VIEW

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559/449-2700 FAX 559/449-2715
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DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

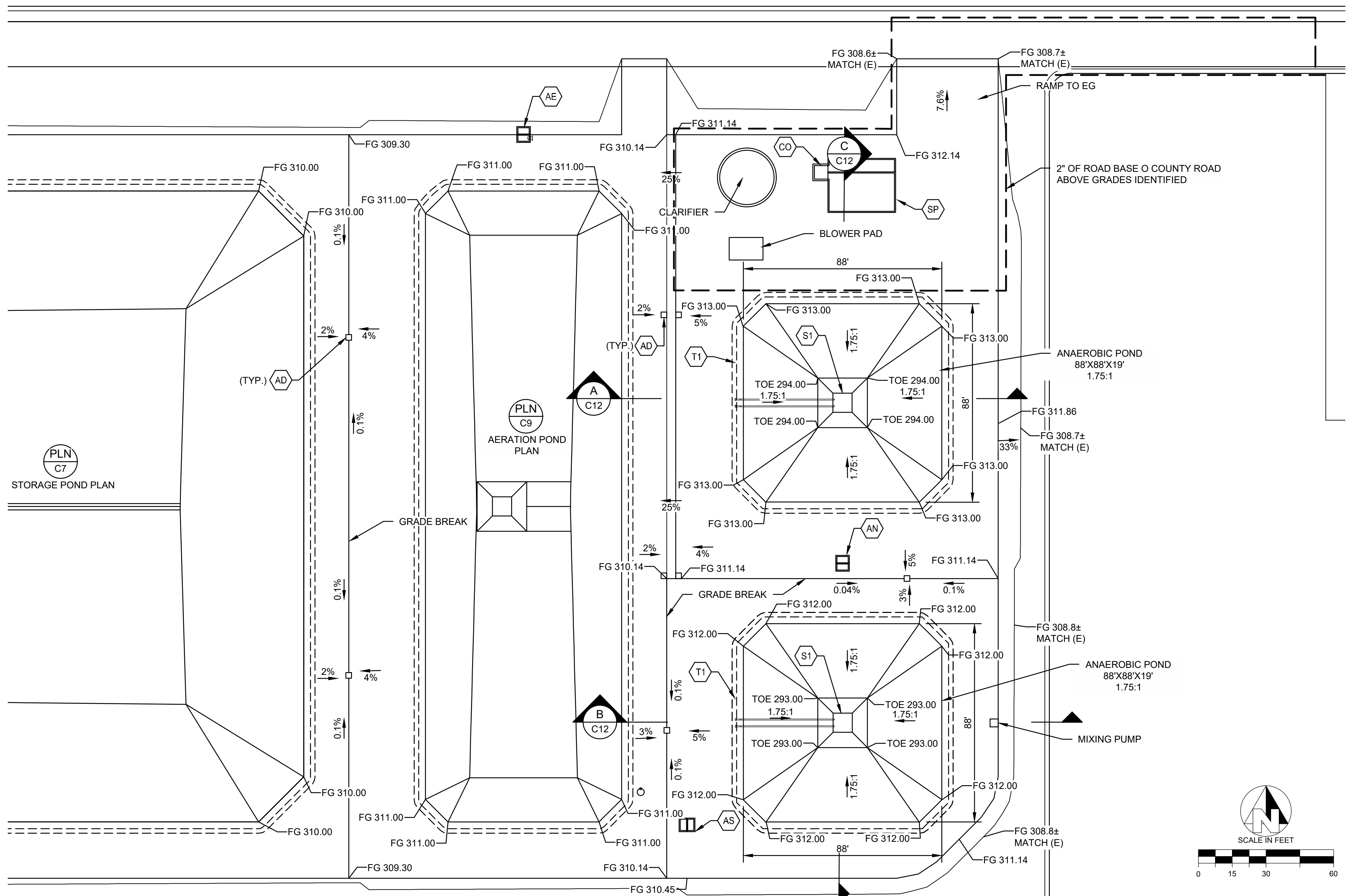
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SCALE IN FEET
0 5 10 20

SHEET C10
13 OF 36

811
Know what's below. Call before you dig.

WARNING
POWER LINES OVERHEAD



PLN C11 PLAN VIEW

NOTES

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CONSTRUCTION LEGEND

AD	AREA DRAIN	3 / D6
AE	AERATION WEIR BOX	1 / D6
AN	NORTH ANAEROBIC WEIR BOX	1 / D5
AS	SOUTH ANAEROBIC WEIR BOX	2 / D5
CO	COLLECTION PIT	4 / D4
DS	DRY SUMP	4 / D5
GM	OVERLAP GEONET EDGES A MINIMUM OF 3 INCHES. INSTALL PLASTIC CABLE TIES EVERY 5 FEET.	
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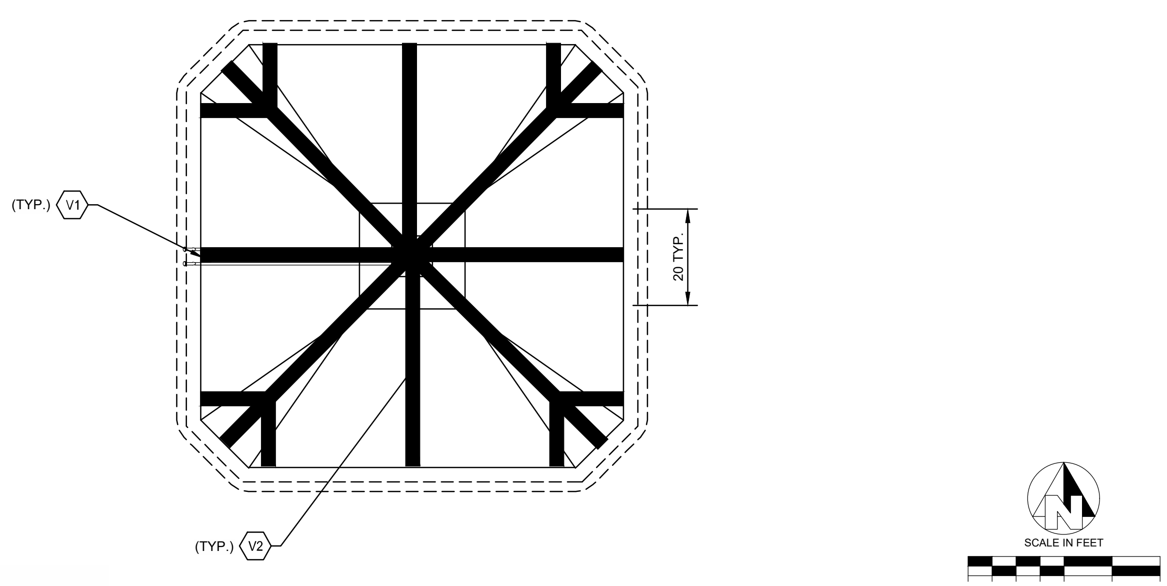
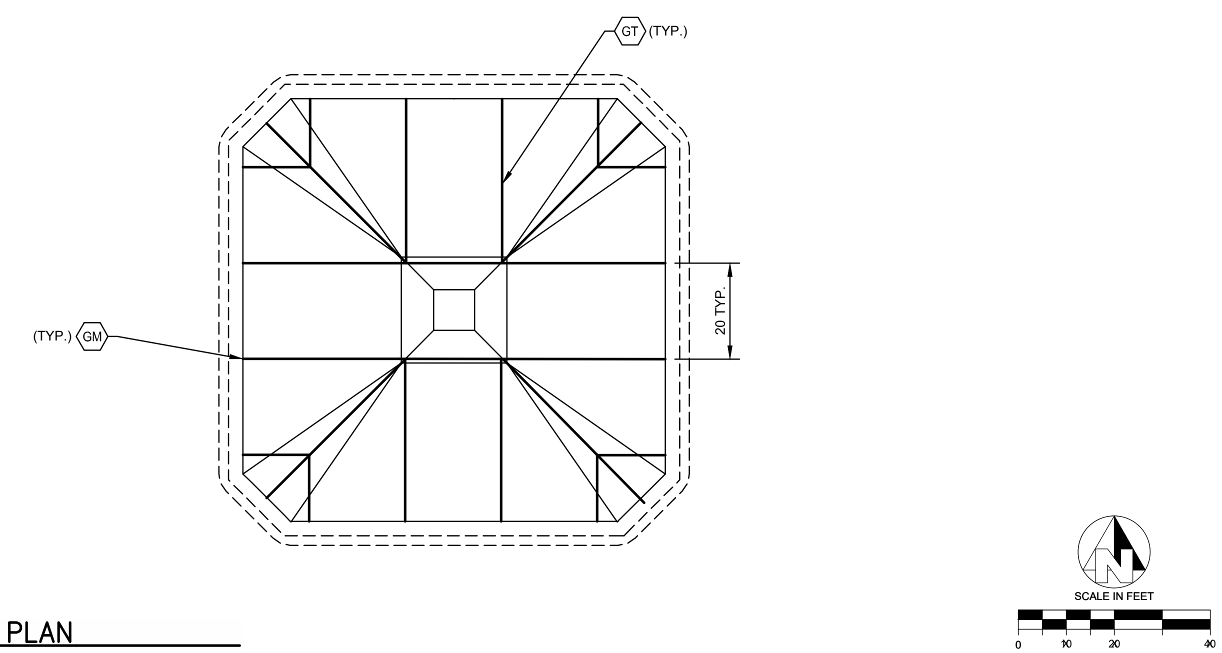
S1	LCRS/LYSIMETER SUMPS	6 / D2
SP	SEPARATOR PAD	2 / D4
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1
V1	VENT ORIFICE	5 / D1
V2	2' WIDE DOUBLE FACED 160ML MINIMUM GEOCOMPOSITE DRAINAGE VENT STRIPS. (MATERIAL TO BE APPROVED BY ENGINEER)	



VENT STRIP PLAN



GEONET LAYOUT PLAN

FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER · EDWARD J. CAMINATA · No. C88473 · CIVIL · STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
CIVIL

ANAEROBIC PLAN VIEW

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

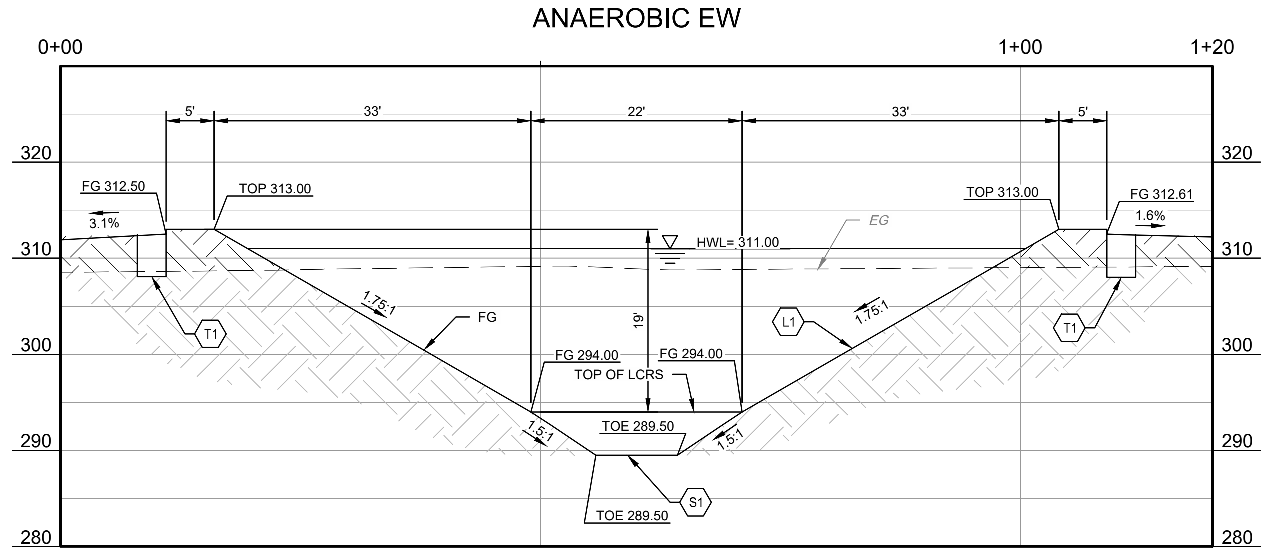
DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

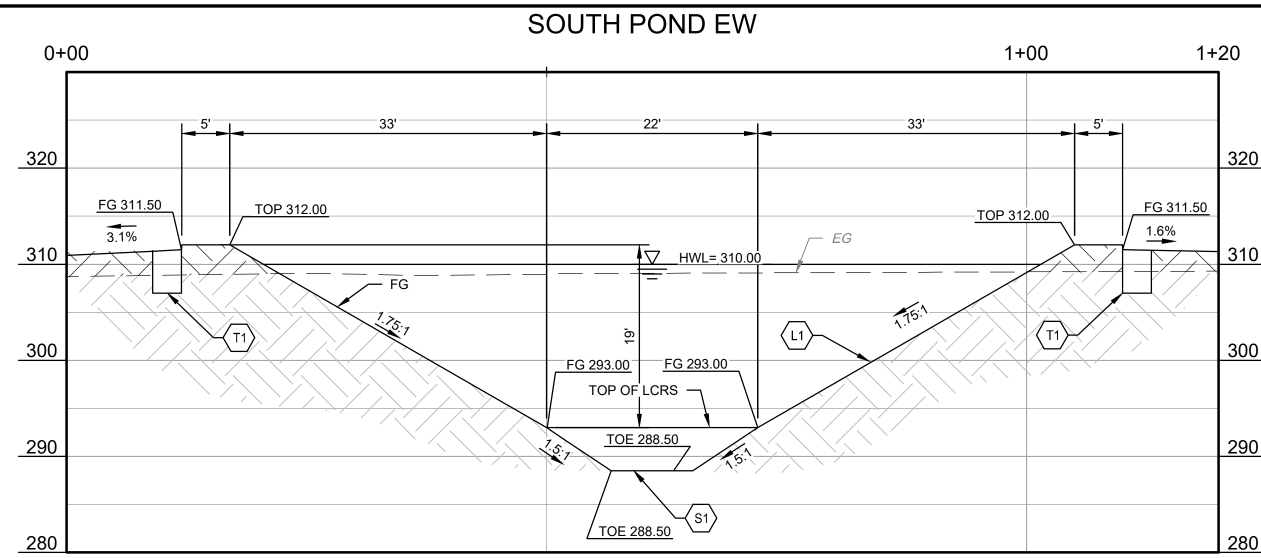
SHEET C11

6/7/2023 11:39 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage td\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C11 ANAEROBIC PLAN VIEW.dwg -Evan Freitas



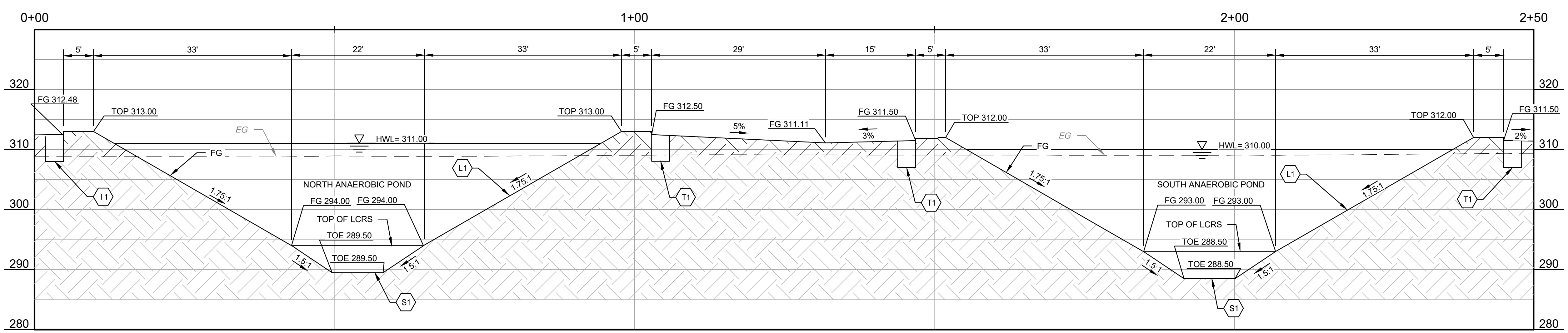
A
C12

NORTH POND CROSS SECTION VIEW



B
C12

SOUTH POND CROSS SECTION VIEW



C
C12

POND PROFILE VIEW

WARNING

POWER LINES OVERHEAD

811

Know what's below. Call before you dig.

CONSTRUCTION LEGEND

L1	DOUBLE LINER LAYERING	1 / D1
S1	LCRS/LYSIMETER SUMPS	6 / D2
T1	ANCHOR TRENCH (TYPICAL AROUND PERIMETER OF POND)	3 / D1

HATCH LEGEND

(hatch)	EXISTING EARTH
(hatch)	FINISHED EARTH

SCALE IN FEET
0 5 10 20

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

FOR CONSTRUCTION
6/7/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

CIVIL

ANAEROBIC SECTION VIEW

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA LICENSE NO: 88473	
DRAFTED BY: NPA	CHECKED BY: SCB
DATE: 06/07/2023	
JOB NO: 291219001	
PROJECT NO: 291219001	
PHASE:	

0 1"

ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C12

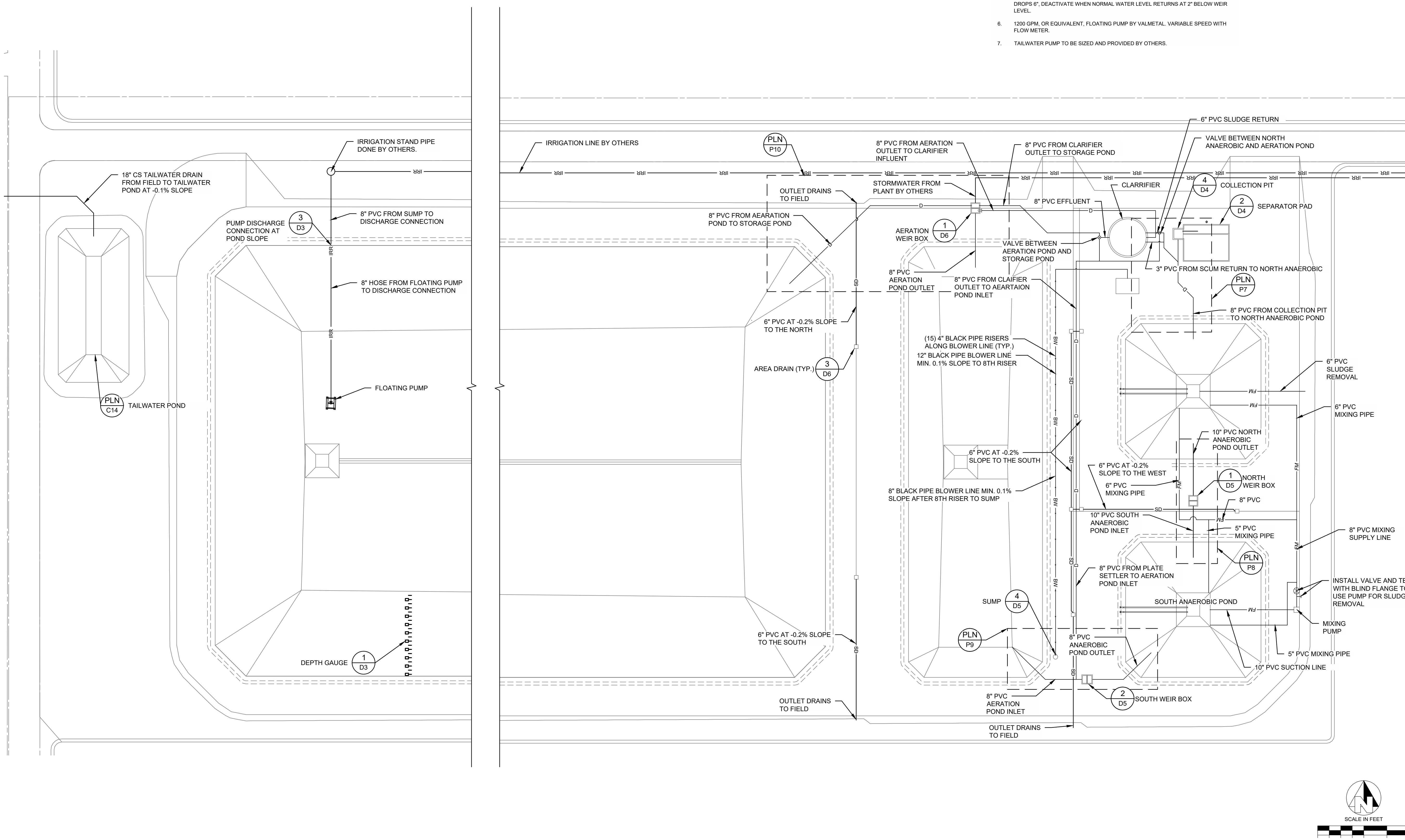
6/7/2023 11:40 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\02_Plans_Maps\TREATMENT PONDS\C12 ANAEROBIC SECTION VIEW.dwg Evan Freitas

NOTES:

1. PIPES PENETRATING LINER WILL BE INSTALLED AFTER EXCAVATION AND PRIOR TO LINER INSTALLATION, TEMPORARILY CAPPED AND BACKFILLED. ONCE LINER INSTALLATION IS COMPLETE, REMAINDER OF THE PIPE ROUTES CAN BE INSTALLED.
2. ANAEROBIC MIXING PUMP - 10 HP, 1,000 GPM.
3. AERATION POND WEIR PUMP - 225 GPM
4. CLARIFIER SELECTION VALVE - SLUDGE RETURN. NORMALLY OPEN TO AERATION POND. ACTIVATE VALVE TO COLLECTION PIT FOR 15 MINUTES EVERY HOUR.
5. CLARIFIER SELECTION VALVE - CLARIFIED WATER. NORMALLY OPEN TO STORAGE POND. ACTIVATE VALVE TO AERATION POND WHEN AERATION POND WATER LEVEL DROPS 6", DEACTIVATE WHEN NORMAL WATER LEVEL RETURNS AT 2" BELOW WEIR LEVEL.
6. 1200 GPM, OR EQUIVALENT, FLOATING PUMP BY VALMETAL. VARIABLE SPEED WITH FLOW METER.
7. TAILWATER PUMP TO BE SIZED AND PROVIDED BY OTHERS.

WARNING
POWER LINES OVERHEAD

811
Know what's below.
Call before you dig.



No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

FOR CONSTRUCTION
6/7/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA
DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
PLUMBING

PROPOSED PLUMBING

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473

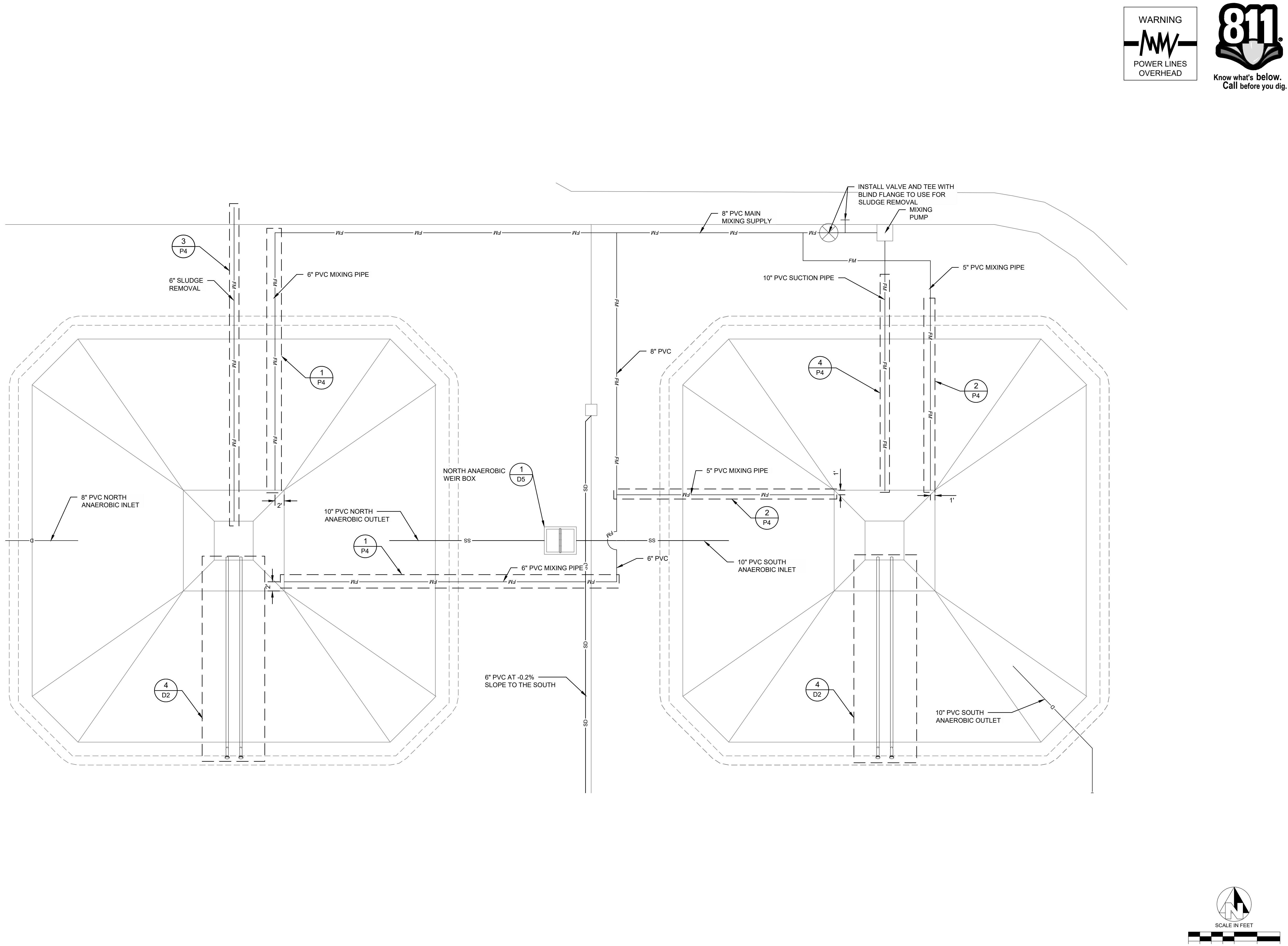
DRAFTED BY:	CHECKED BY:
NPA	SCB

DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET P2

6/7/2023 11:42 AM g:\treehouse ca almonds-2912\291219001-treatmt+storage td\DWG\40_sheet sets\07_Utilities\TREATMENT PONDS\P2 PROPOSED PLUMBING.dwg-Evan Freitas



FOR CONSTRUCTION
6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. CAMINATA
No. C88473
CIVIL
STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM

TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA

PLUMBING

MIXING SYSTEM PLAN

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

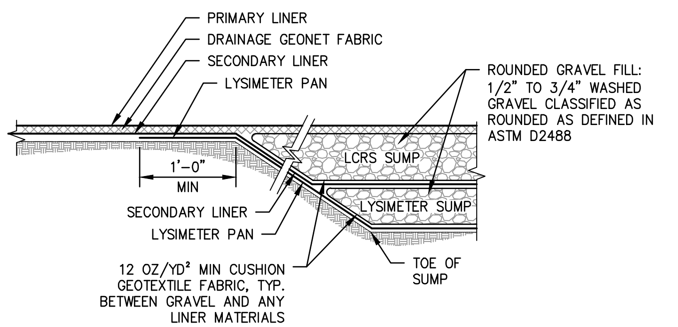
DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA
CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET P3

6/7/2023 11:42 AM g:\treehouse ca almonds-2912\291219001-treatmt-storage ld\DWG\40_sheet sets\07_Utilities\TREATMENT PONDS\P3 MIXING SYSTEM PLAN.dwg -Evan Freitas

PC-0212

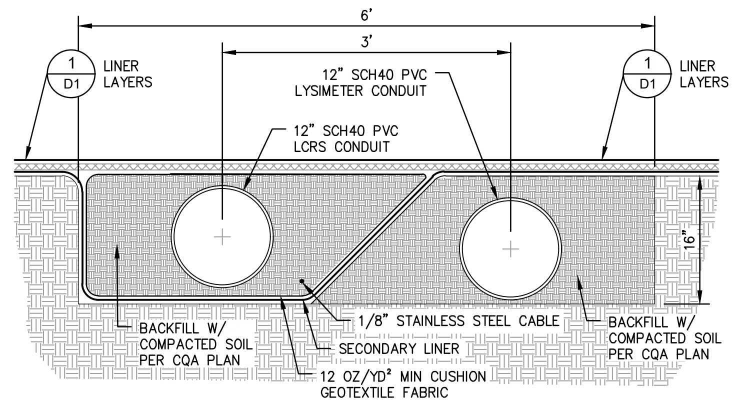


NOT TO SCALE

1 / D2 TYPICAL LINER LAYERS AT SUMP

NOTES

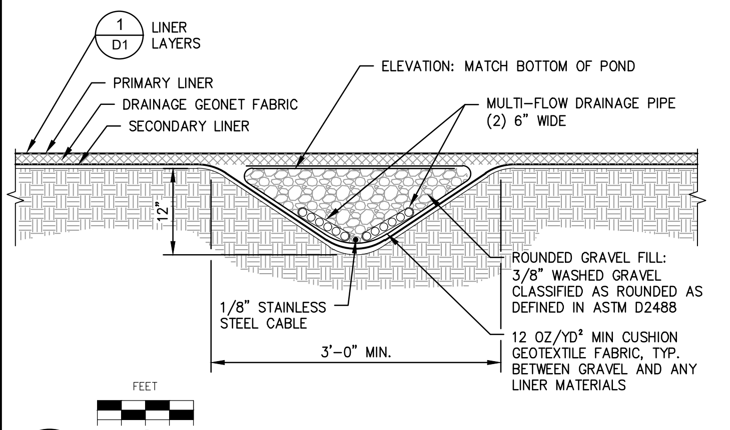
1. 12" SCH 40 CAN BE SUBSTITUTED W/ CLASS 125



NOT TO SCALE

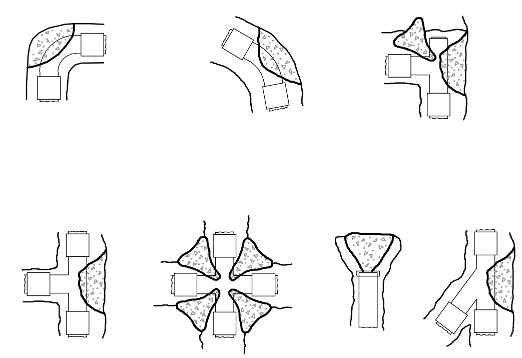
4 / D2 LINER LAYERS AT LCRS & LYSIMETER PIPES

PC-0404



2 / D2 LEAKAGE PIPE—DOUBLE LINER

PPNG



MAX INTERNAL PRESSURE (PSI)	50
SOIL BEARING PRESSURE (PSF)	1500
SAFETY FACTOR	1.5

MINIMUM BEARING AREA (SF)

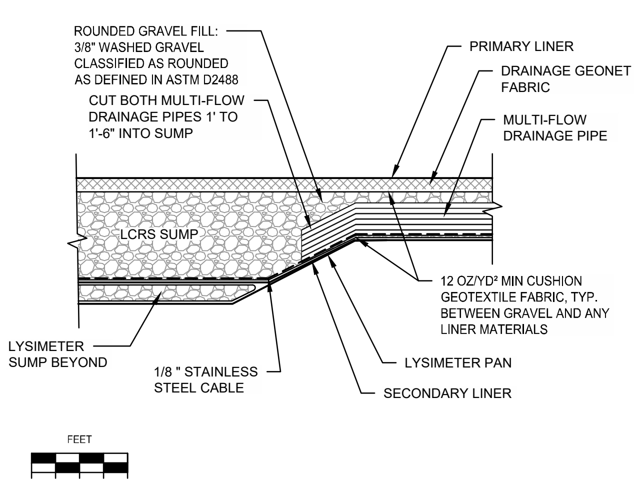
PIPE SIZE	DEAD END OR TEE	90° BEND	45° BEND	22.5° BEND	11.25° BEND
3	0.4	0.5	0.3	0.1	0.1
4	0.6	0.9	0.5	0.2	0.1
6	1.4	2.0	1.1	0.6	0.3
8	2.5	3.6	1.9	1.0	0.5
10	3.9	5.6	3.0	1.5	0.8
12	5.7	8.0	4.3	2.2	1.1
16	10.1	14.2	7.7	3.9	2.0
18	12.7	18.0	9.7	5.0	2.5
20	15.7	22.2	12.0	6.1	3.1
24	22.6	32.0	17.3	8.8	4.4
30	35.3	50.0	27.1	13.8	6.9
36	50.9	72.0	39.0	19.9	10.0
42	69.3	98.0	53.0	27.0	13.6
48	90.5	128.0	69.2	35.3	17.7

NOTES

1. ALL FITTINGS TO BE WRAPPED IN 4 MIL VISQUEEN.
2. CONCRETE SHALL NOT ENCROACH ON END FITTINGS.
3. CONCRETE SHALL BEAR AGAINST UNDISTURBED SOIL.
4. CONCRETE TO HAVE ULTIMATE STRENGTH OF 3000 PSI @ 28 DAYS.
5. THRUST BLOCK DATA FOR VERTICAL PIPE BENDS MAY REQUIRE ENGINEERING NOT INCLUDED IN THIS DETAIL.

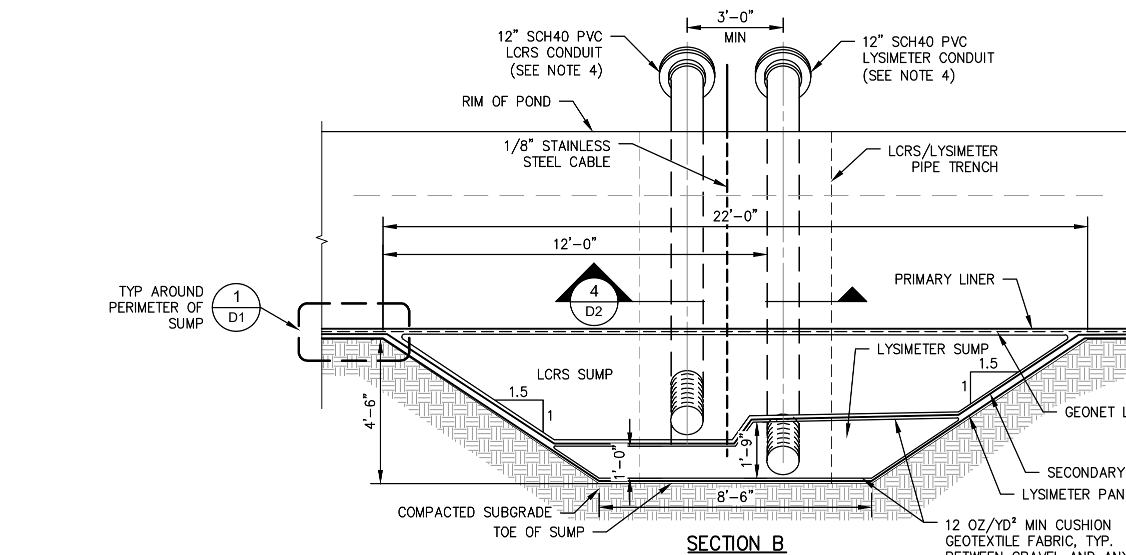
5 / D2 THRUST BLOCKS

LIBRARY FOLDER NAME



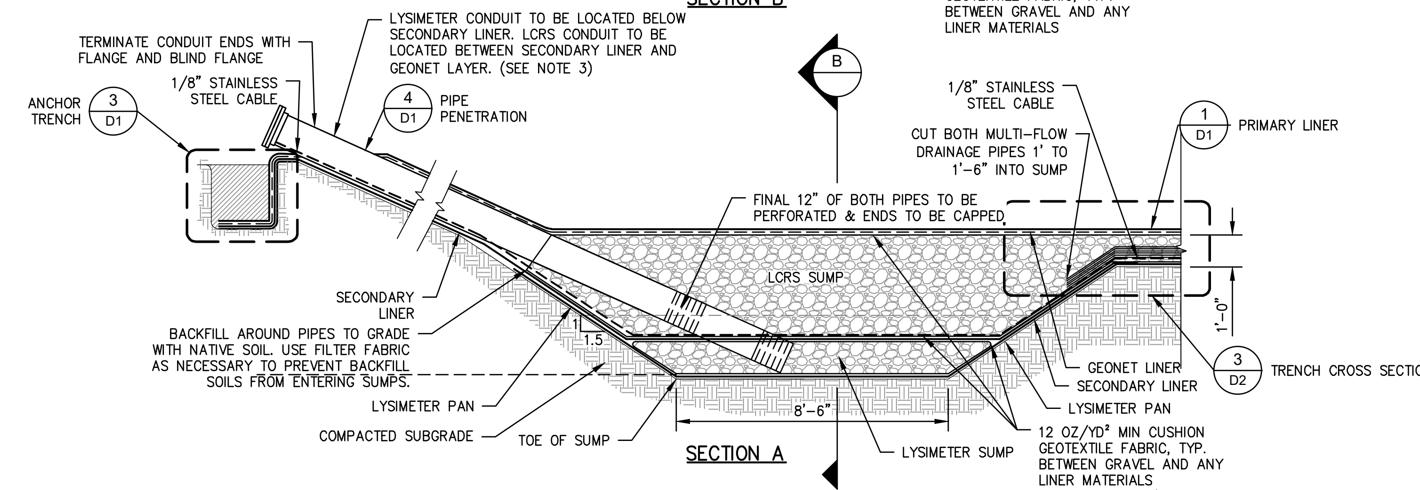
3 / D2 TRENCH CROSS SECTION

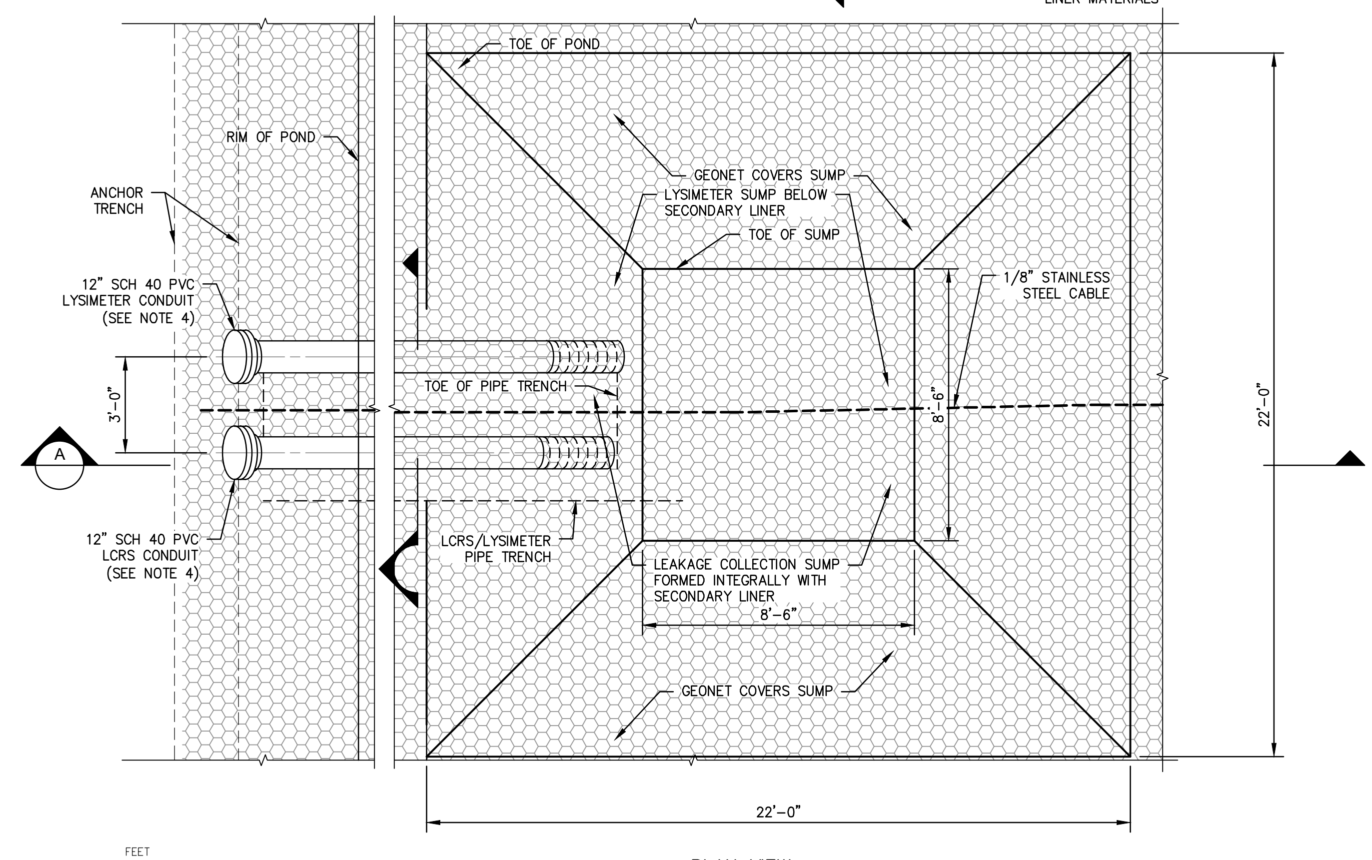
PC-0403



NOTES

1. FILL BOTH LYSIMETER AND LCRS SUMPS WITH ROUNDED GRAVEL. 1/2" TO 3/4" WASHED GRAVEL CLASSIFIED AS ROUNDED AS DEFINED IN ASTM D2488.
2. DURING CONSTRUCTION GEOTEXTILE FABRIC SHALL EXTEND 2 FT BEYOND EDGE OF LINER.
3. LCRS/LYSIMETER PIPE LAYOUT IS NOT TO SCALE DUE TO ANGLE OF PIPE INTRUSION INTO THE SUMP. DIMENSIONS MAY VARY. WHEN LOOKING DOWN AT THE SUMP FROM THE RIM, LYSIMETER WILL BE ON THE LEFT AND LCRS WILL BE ON THE RIGHT.
4. 12" SCH 40 CAN BE SUBSTITUTED WITH CLASS 125.
5. WHEN INSTALLING LINER BOOTS ON THE LCRS/LYSIMETER PIPES, CONTINUE BOOTS TO FLANGES
6. CONTRACTOR TO SUPPLY OWNER A SUMP PUMP (RECOMMENDED LITTLE GIANT WE10G05P4-21 OR ENGINEER APPROVED) PREPARED WITH HOSE AND CORD TO REACH SUMP.





6 / D2 LCRS & LYSIMETER DRAINAGE SUMPS

FOR CONSTRUCTION 6/7/2023

No.	REVISION	BY	DATE
0	DRAWINGS ISSUED	SCB	06/07/2023

REGISTERED PROFESSIONAL ENGINEER EDWARD J. CAMINATA No. C88473 CIVIL STATE OF CALIFORNIA

DATE SIGNED: 6/7/2023

WASTEWATER TREATMENT AND STORAGE SYSTEM
TREEHOUSE CALIFORNIA ALMONDS
EARLIMART, CA
DETAILS
DETAILS 2

EST. 1968 PROVOST & PRITCHARD CONSULTING GROUP
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DESIGN ENGINEER: E. CAMINATA
LICENSE NO: 88473
DRAFTED BY: NPA | CHECKED BY: SCB
DATE: 06/07/2023
JOB NO: 291219001
PROJECT NO: 291219001
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET D2

Appendix B

Storage Pond

LCRS Leakage Log

Date	Wet/Dry	Quantity Pumped (gal)	Pump Time (min)	Leak Rate (gpm)

Appendix B

Aeration Pond

LCRS Leakage Log

Date	Wet/Dry	Quantity Pumped (gal)	Pump Time (min)	Leak Rate (gpm)

Appendix B

Anaerobic Pond 1 (North)

LCRS Leakage Log

Date	Wet/Dry	Quantity Pumped (gal)	Pump Time (min)	Leak Rate (gpm)

Appendix B

Anaerobic Pond 2 (South)

LCRS Leakage Log

Date	Wet/Dry	Quantity Pumped (gal)	Pump Time (min)	Leak Rate (gpm)

Appendix C

Storage Pond

Lysimeter Leakage Log

Date	Wet/Dry	Quantity Pumped (gal)	Pump Time (min)	Leak Rate (gpm)

Appendix C

Aeration Pond

Lysimeter Leakage Log

Date	Wet/Dry	Quantity Pumped (gal)	Pump Time (min)	Leak Rate (gpm)

Appendix C

Anaerobic Pond 1 (North)

Lysimeter Leakage Log

Date	Wet/Dry	Quantity Pumped (gal)	Pump Time (min)	Leak Rate (gpm)

Appendix C

Anaerobic Pond 2 (South)

Lysimeter Leakage Log

Date	Wet/Dry	Quantity Pumped (gal)	Pump Time (min)	Leak Rate (gpm)

Appendix D

Storage Pond

Visual Inspection Log

Date	Drainage & Swales	Drainage Inlets & Piping	Valves	Corrective Action

Appendix D

Aeration Pond

Visual Inspection Log

Date	Drainage & Swales	Drainage Inlets & Piping	Valves	Corrective Action

Appendix D

Anaerobic Pond 1 (North)

Visual Inspection Log

Date	Drainage & Swales	Drainage Inlets & Piping	Valves	Corrective Action

Appendix D

Anaerobic Pond 2 (South)

Visual Inspection Log

Date	Drainage & Swales	Drainage Inlets & Piping	Valves	Corrective Action

Appendix E

Storage Pond

Electrical Leak Detection Log

Date	Signature	Identified Location of Leak (Mark Drawing in Appendix A)	Corrective Action

Appendix E

Aeration Pond

Electrical Leak Detection Log

Date	Signature	Identified Location of Leak (Mark Drawing in Appendix A)	Corrective Action

Appendix E

Anaerobic Pond 1 (North)

Electrical Leak Detection Log

Date	Signature	Identified Location of Leak (Mark Drawing in Appendix A)	Corrective Action

Appendix E

Anaerobic Pond 2 (South)

Electrical Leak Detection Log

Date	Signature	Identified Location of Leak (Mark Drawing in Appendix A)	Corrective Action

Appendix F

Storage Pond

Synthetic Liner Repair Record

Date	Signature	Identified Location of Leak (Mark Drawing in Appendix A)	Corrective Action

Appendix F

Aeration Pond

Synthetic Liner Repair Record

Date	Signature	Identified Location of Leak (Mark Drawing in Appendix A)	Corrective Action

Appendix F

Anaerobic Pond 1 (North)

Synthetic Liner Repair Record

Date	Signature	Identified Location of Leak (Mark Drawing in Appendix A)	Corrective Action

Appendix F

Anaerobic Pond 2 (South)

Synthetic Liner Repair Record

Date	Signature	Identified Location of Leak (Mark Drawing in Appendix A)	Corrective Action

Appendix G

Discharge Report

DISCHARGE REPORTING FORM

Reporting Year: ________________________

Dairy Name: ____

Dairy Address: ____

Response is required within 24 hours of becoming aware of the occurrence. Information and the report generated **must be submitted** in the Annual Report of the year of the occurrence. Notify California Regional Water Quality Control Board, Local Environmental Health Department and California Office of Emergency Services (24/7) within 24 hours of Land Discharges, Non-15. Contact Information is as follows:

A. Information Needed for Notifications:

Date: ______________________ Time: ____________________________

Location of Discharge: ____

Destination of Discharge: ____

Approximant Volume: ____

Check Type of Discharge:

_____Manure or process wastewater from production area to surface water or land areas not according to NMP.

_____Storm water form production area to surface water.

_____Any discharge from land application area receiving manure to surface water.

B. Notify the following 3 agencies within 24 hours of becoming aware of the occurrence:

1. California Regional Water Quality Control Board

Rancho Cordova Office: (916) 464-3291
(Merced, Stanislaus, Tuolomne Counties only)
Back-up email to: daniel.gamon@waterboards.ca.gov

Fresno Office: (559) 445-5116
(Fresno, Kern, Kings, Madera, Mariposa, and Tulare Counties only)
Back-up email to: dale.harvey@waterboards.ca.gov

2. Contact Local Environmental Health and Human Services

Fresno County Environmental Health
1221 Fulton Mall, Third Floor
P. O. Box 11867
Fresno, CA 93775
(559) 445–3357 FAX (559) 445–3379

Kern County Environmental Health Services
2700 M Street, Suite 300
Bakersfield, CA 93301
(661) 862–8700 FAX (661) 862–8701

Kings County Environmental Health Services
300 Campus Drive
Hanford, CA 93230
(559) 584–1411 FAX (559) 584–6040

Madera County Department of Environmental Health
2037 West Cleveland Avenue MS–E
Madera, CA 93637
(559) 675–7823 FAX (559) 675–7919

Merced County Health Department
Division of Environmental Health
777 West 22nd Street
Merced, CA 95340
(209) 381–1100 FAX (209) 384–1593

Tulare County Environmental Health Department
5957 South Mooney Boulevard
Visalia, CA 93277
(559) 733–6441

3. Contact California Office of Emergency Services (24/7)

3650 Schriever Ave, Mather, CA 95655
Main Number (916) 845-8510
Website www.oes.ca.gov

C. Sampling and Written Reports Needed:

Detailed requirements outlined in Priority Reporting of Significant Events, pages MRP 10 through MRP 11 of the General Order.

Notifications Completed by: ______________________________

Date ___________

Appendix H

Manure/Process Wastewater Tracking Manifest

Manure/Process Wastewater Tracking Manifest

Instructions:
1. Complete one manifest for each hauling event, for each destination. A hauling event may last for several days, as long as the manure is being hauled to the same destination.
2. If there are multiple destinations, complete a separate form for each destination.
3. The operator must obtain the signature of the hauler upon completion of each manure-hauling event.
4. The operator shall submit copies of manure/process wastewater tracking manifest(s) with the Annual Monitoring Report.

Dairy Information:

Name of Dairy

Owner/Operator

Address City Zip Code

Contact Person: Phone Number

Solid Manure Hauler Information:

Name of Hauling Company/Person:

Address City Zip Code

Contact Person: Phone Number

Destination Information:

Name of Composting Facility / Broker / Farmer / Other (please identify which)

Address City Zip Code

Contact Person: Phone Number

APN's

Manure/Process Wastewater Tracking Manifest

(Continued)

Solid Manure:

Start Date: __________________ End Date: __________________

Amount Hauled:

OR

_______________ Tons @ _______________ % Moisture

_______________ Yds^3 @ _______________ Density (lb/ft^3)

Method used to determine amount: ____________________________________

____

Process Wastewater:

A signed Third Party Wastewater Agreement is required. Dairy Operator to sign acknowledging this requirement.

Operator's Signature: ________________________ Date: _________________

Start Date: __________________ End Date: __________________

Amount Pumped:

OR

_______________ Gallons

_______________ Acre-inches

Method used to determine amount: ____________________________________

____

Certification:

I declare under the penalty of law that I personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Operator's Signature: ________________________ Date: _________________

Hauler's Signature: ________________________ Date: _________________

Appendix I

Storage Pond

Solids Removal Log

Date	Signature	Cleaning Operator

Appendix I

Aeration Pond

Solids Removal Log

Date	Signature	Cleaning Operator

Appendix I

Anaerobic Pond 1 (North)

Solids Removal Log

Date	Signature	Cleaning Operator

Appendix I

Anaerobic Pond 2 (South)

Solids Removal Log

Date	Signature	Cleaning Operator

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Appendix E – Soil Water Balances and Loading Rates

Appendix E1. Generalized Land Application Area soil-water balance - Corn-wheat rotation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	66		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	--
Total Yield (tons/acre):	25	32	--
Annual Crop N Removed (lbs):	33,228		

STORAGE POND INFORMATION		
Est. Pond Surface Area:	3.02	acres
	131,520	ft^2
Est. Total Usable Pond Volume:	17.202	MG
	52.811	acre-feet
	2,299,627	ft^3
Oct 1 Carryover:	0	MG
--	--	--
--	--	--

EFFLUENT STORAGE POND: PUMPS AND FLOW RATE INFORMATION		
# of Pond Eff Pumps:	1	
Pump 1 Flow Rate:	1,500	gpm
Pump 2 Flow Rate:	--	gpm
Total Effluent Flow:	1,500	gpm
Max Daily (24-hour)	2,160,000	GPD
	2.16	MGD
Max Depth to LAA:	1.21	in/day
--	--	--

IRRIGATION AND SOIL INFORMATION		
Irrigation System:	Surface - Border Check	
Assumed Distribution Uniformity (DU):	0.80	
Assumed Surface Runoff and Soil/Spray Evap:	30%	
Generalized Avg Irrigation Efficiency Factor:	70%	
Predominant Soil Series & Phase:	Crosscreek-Kai assoc	
Assumed Root Zone:	60	inches
Root Zone Soil AWHC: [1]	**8.1**	**inches**
Mgmt Allow. Depletion (MAD):	70%	of AWHC
Max Soil Moisture Depletion (SMD):	5.6	inches
October 1 Soil Water Content: [1]	100%	of AWHC
	8.1	inches

MONTH	WEEK #	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	ACRES	INFLUENT FLOW	------- STORAGE [3] ------- Volumes			---- INPUTS ---- Gross Hydraulic Loading 5						Net Hydraulic Loading [6]				--- OUTPUTS --- Evapotranspiration [7]		Actual SMD (Soil Water) [8]	Estimated Deep Percolation [9]	SOIL WATER ÷ AWHC [10]
								Total Input	Total Output	End	Precip [4]	Storage Effluent Irrigation		Fresh Irrigation		Total	Effective Precip [4]	Effluent Irrigation	Fresh Irrigation	Total Input	Potential ETc	Estimated ETc			
							MG	MG			inches	MG	inches	MG	inches		inches						inches		%
OCTOBER	1	10/1	Corn	Dry corn & field for harvest	NO	66	0.150	0.154	0.010	0.143	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.14	7.9	0.0	98%
	1	10/2	Corn	Dry corn & field for harvest	NO	66	0.150	0.154	0.010	0.287	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.14	7.8	0.0	97%
	1	10/3	Corn	Dry corn & field for harvest	NO	66	0.000	0.004	0.010	0.280	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.14	7.7	0.0	95%
	1	10/4	Corn	Dry corn & field for harvest	NO	66	0.150	0.154	0.010	0.424	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.14	7.5	0.0	93%
	1	10/5	Corn	Dry corn & field for harvest	NO	66	0.150	0.154	0.010	0.567	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.14	7.4	0.0	92%
	1	10/6	Corn	Dry corn & field for harvest	NO	66	0.150	0.154	0.010	0.711	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.14	7.3	0.0	90%
	1	10/7	Corn	Dry corn & field for harvest	NO	66	0.150	0.154	0.010	0.854	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.14	7.1	0.0	89%
	2	10/8	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	66	0.150	0.154	0.010	0.998	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.14	7.0	0.0	87%
	2	10/9	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	66	0.150	0.154	0.010	1.141	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.13	6.9	0.0	85%
	2	10/10	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	66	0.000	0.004	0.010	1.134	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.13	6.7	0.0	84%
	2	10/11	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	66	0.150	0.154	0.010	1.278	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.13	6.6	0.0	82%
	2	10/12	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	66	0.150	0.154	0.010	1.421	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.13	6.5	0.0	80%
	2	10/13	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	66	0.150	0.154	0.010	1.565	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.13	6.4	0.0	79%
	2	10/14	Corn	Disc & Incorporate WF Stubble 2x	NO	66	0.150	0.154	0.010	1.708	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.13	6.2	0.0	77%
	3	10/15	Corn	Disc & Incorporate WF Stubble 2x	NO	66	0.150	0.154	0.010	1.852	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.14	0.13	6.1	0.0	76%
	3	10/16	Fallow	Finish Disc (2x)	NO	66	0.150	0.154	0.010	1.995	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.1	0.0	75%
	3	10/17	Fallow	Finish Disc (2x)	NO	66	0.000	0.004	0.010	1.989	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.1	0.0	75%
	3	10/18	Fallow	Collect fall soil samples for analysis	NO	66	0.150	0.154	0.010	2.132	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.1	0.0	75%
	3	10/19	Fallow	Collect fall soil samples for analysis	NO	66	0.150	0.154	0.010	2.276	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.0	0.0	75%
	3	10/20	Fallow	Form Border Check Borders (~100' wide)	NO	66	0.150	0.154	0.010	2.419	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.0	0.0	75%
	3	10/21	Fallow	Form Border Check Borders (~100' wide)	NO	66	0.150	0.154	0.010	2.562	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.0	0.0	75%
	4	10/22	Fallow	Preirrigation Event (~8")	--	66	0.150	0.154	0.756	1.960	0.0	0.396	0.2	0.0		0.2	0.0	0.2	0.0	0.2	0.02	0.02	6.2	0.0	76%
	4	10/23	Fallow	Preirrigation Event (~8")	--	66	0.150	0.154	0.756	1.357	0.0	0.396	0.2	0.0		0.2	0.0	0.2	0.0	0.2	0.02	0.02	6.3	0.0	78%
	4	10/24	Fallow	Preirrigation Event (~8")	--	66	0.000	0.004	0.756	0.605	0.0	0.396	0.2	0.0		0.2	0.0	0.2	0.0	0.2	0.02	0.02	6.5	0.0	80%
	4	10/25	Fallow	Preirrigation Event (~8")	--	66	0.150	0.154	0.758	0.000	0.0	0.398	0.2	0.0		0.2	0.0	0.2	0.0	0.2	0.02	0.02	6.6	0.0	82%
	4	10/26	Fallow	Field Drying for Planting	NO	66	0.150	0.154	0.010	0.144	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.6	0.0	82%
	4	10/27	Fallow	|	NO	66	0.150	0.154	0.010	0.287	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.6	0.0	82%
	4	10/28	Fallow	|	NO	66	0.150	0.154	0.010	0.431	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.6	0.0	81%
	5	10/29	Fallow	|	NO	66	0.150	0.154	0.010	0.574	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.6	0.0	81%
	5	10/30	Fallow	|	NO	66	0.150	0.154	0.010	0.717	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.5	0.0	81%
	5	10/31	Fallow	|	NO	66	0.000	0.004	0.010	0.711	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.02	0.02	6.5	0.0	81%

Appendix E1. Generalized Land Application Area soil-water balance - Corn-wheat rotation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	66		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	--
Total Yield (tons/acre):	25	32	--
Annual Crop N Removed (lbs):	33,228		

STORAGE POND INFORMATION		
Est. Pond Surface Area:	3.02	acres
	131,520	ft^2
Est. Total Usable Pond Volume:	17.202	MG
	52.811	acre-feet
	2,299,627	ft^3
Oct 1 Carryover:	0	MG
--	--	--
--	--	--

EFFLUENT STORAGE POND: PUMPS AND FLOW RATE INFORMATION		
# of Pond Eff Pumps:	1	
Pump 1 Flow Rate:	1,500	gpm
Pump 2 Flow Rate:	--	gpm
Total Effluent Flow:	1,500	gpm
Max Daily (24-hour)	2,160,000	GPD
	2.16	MGD
Max Depth to LAA:	1.21	in/day
--	--	--

IRRIGATION AND SOIL INFORMATION		
Irrigation System:	Surface - Border Check	
Assumed Distribution Uniformity (DU):	0.80	
Assumed Surface Runoff and Soil/Spray Evap:	30%	
Generalized Avg Irrigation Efficiency Factor:	70%	
Predominant Soil Series & Phase:	Crosscreek-Kai assoc	
Assumed Root Zone:	60	inches
Root Zone Soil AWHC: [1]	**8.1**	**inches**
Mgmt Allow. Depletion (MAD):	70%	of AWHC
Max Soil Moisture Depletion (SMD):	5.6	inches
October 1 Soil Water Content: [1]	100%	of AWHC
	8.1	inches

MONTH	WEEK #	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	ACRES	INFLUENT FLOW	------- STORAGE [3] ------- Volumes: Total Input	Total Output	End	INPUTS – Gross Hydraulic Loading 5: Precip [4]	Storage Effluent Irrigation		Fresh Irrigation		Total	Net Hydraulic Loading [6]: Effective Precip [4]	Effluent Irrigation	Fresh Irrigation	Total Input	OUTPUTS – Evapotranspiration [7]: Potential ETc	Estimated ETc	Actual SMD (Soil Water) [8]	Estimated Deep Percolation [9]	SOIL WATER ÷ AWHC [10]
							MG	MG	MG	MG	inches	MG	inches	MG	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	%
NOVEMBER	5	11/1	WF	Plant Winter Forage	NO	66	0.150	0.158	0.005	0.864	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.04	6.5	0.0	81%
	5	11/2	WF	Plant Winter Forage	NO	66	0.150	0.158	0.005	1.017	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.04	6.5	0.0	81%
	5	11/3	WF	Plant Winter Forage	NO	66	0.150	0.158	0.005	1.170	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.04	6.5	0.0	81%
	5	11/4	WF	Plant Winter Forage	NO	66	0.150	0.158	0.005	1.323	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.04	6.5	0.0	81%
	6	11/5	WF	Winter Forage Growing	--	66	0.150	0.158	0.205	1.276	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	6.6	0.0	82%
	6	11/6	WF	|	--	66	0.150	0.158	0.205	1.229	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	6.7	0.0	83%
	6	11/7	WF	|	--	66	0.000	0.008	0.205	1.032	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	6.8	0.0	84%
	6	11/8	WF	|	--	66	0.150	0.158	0.205	0.985	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	6.9	0.0	85%
	6	11/9	WF	|	--	66	0.150	0.158	0.205	0.939	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	7.0	0.0	86%
	6	11/10	WF	|	--	66	0.150	0.158	0.205	0.892	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	7.0	0.0	87%
	6	11/11	WF	|	--	66	0.150	0.158	0.205	0.845	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	7.1	0.0	88%
	7	11/12	WF	|	--	66	0.150	0.158	0.205	0.798	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	7.2	0.0	90%
	7	11/13	WF	|	--	66	0.150	0.158	0.205	0.751	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	7.3	0.0	91%
	7	11/14	WF	|	--	66	0.000	0.008	0.205	0.554	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	7.4	0.0	92%
	7	11/15	WF	|	--	66	0.150	0.158	0.205	0.507	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.04	0.04	7.5	0.0	93%
	7	11/16	WF	|	--	66	0.150	0.158	0.205	0.460	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.01	0.01	7.6	0.0	94%
	7	11/17	WF	|	--	66	0.150	0.158	0.205	0.413	0.1	0.200	0.1	0.0		0.2	0.0	0.1	0.0	0.1	0.01	0.01	7.7	0.0	95%
	7	11/18	WF	|	--	66	0.150	0.158	0.005	0.566	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	7.7	0.0	96%
	8	11/19	WF	|	--	66	0.150	0.158	0.005	0.719	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	7.7	0.0	96%
	8	11/20	WF	|	--	66	0.150	0.158	0.005	0.872	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	7.8	0.0	96%
	8	11/21	WF	|	--	66	0.000	0.008	0.005	0.875	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	7.8	0.0	97%
	8	11/22	WF	|	--	66	0.150	0.158	0.005	1.029	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	7.8	0.0	97%
	8	11/23	WF	|	--	66	0.150	0.158	0.005	1.182	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	7.9	0.0	98%
	8	11/24	WF	|	--	66	0.150	0.158	0.005	1.335	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	7.9	0.0	98%
	8	11/25	WF	|	--	66	0.150	0.158	0.005	1.488	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	7.9	0.0	98%
	9	11/26	WF	|	--	66	0.150	0.158	0.005	1.641	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	8.0	0.0	99%
	9	11/27	WF	|	--	66	0.150	0.158	0.005	1.794	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	8.0	0.0	99%
	9	11/28	WF	|	--	66	0.000	0.008	0.005	1.797	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	8.0	0.0	99%
	9	11/29	WF	|	--	66	0.150	0.158	0.005	1.950	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	8.0	0.0	100%
	9	11/30	WF	|	--	66	0.150	0.158	0.005	2.103	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.01	0.01	8.1	0.0	100%
DECEMBER	9	12/1	WF	|	--	66	0.150	0.160	0.003	2.261	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	9	12/2	WF	|	--	66	0.150	0.160	0.003	2.419	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	10	12/3	WF	|	--	66	0.150	0.160	0.003	2.576	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	10	12/4	WF	|	--	66	0.150	0.160	0.003	2.734	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	10	12/5	WF	|	--	66	0.000	0.010	0.003	2.742	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	10	12/6	WF	|	--	66	0.150	0.160	0.003	2.899	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	10	12/7	WF	|	--	66	0.150	0.160	0.003	3.057	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	10	12/8	WF	|	--	66	0.150	0.160	0.003	3.215	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	10	12/9	WF	|	--	66	0.150	0.160	0.003	3.373	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	11	12/10	WF	|	--	66	0.150	0.160	0.003	3.530	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	11	12/11	WF	|	--	66	0.150	0.160	0.003	3.688	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	11	12/12	WF	|	--	66	0.000	0.010	0.003	3.696	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	11	12/13	WF	|	--	66	0.150	0.160	0.003	3.854	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	11	12/14	WF	|	--	66	0.150	0.160	0.003	4.011	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	11	12/15	WF	|	--	66	0.150	0.160	0.003	4.169	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	11	12/16	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	4.327	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	12	12/17	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	4.485	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	12	12/18	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	4.642	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	12	12/19	WF	Winter Soil Salinity Leaching	--	66	0.000	0.010	0.003	4.650	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	12	12/20	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	4.808	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	12	12/21	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	4.965	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	12	12/22	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	5.123	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	12	12/23	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	5.281	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	13	12/24	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	5.439	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	13	12/25	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	5.596	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	13	12/26	WF	Winter Soil Salinity Leaching	--	66	0.000	0.010	0.003	5.604	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	13	12/27	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	5.762	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	13	12/28	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	5.920	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	13	12/29	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	6.077	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	13	12/30	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	6.235	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%
	14	12/31	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	6.393	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.02	0.02	8.1	0.0	100%

Appendix E1. Generalized Land Application Area soil-water balance - Corn-wheat rotation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	66		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	--
Total Yield (tons/acre):	25	32	--
Annual Crop N Removed (lbs):	33,228		

STORAGE POND INFORMATION		
Est. Pond Surface Area:	3.02	acres
	131,520	ft^2
Est. Total Usable Pond Volume:	**17.202**	MG
	52.811	acre-feet
	2,299,627	ft^3
Oct 1 Carryover:	0	MG
--	--	--
--	--	--

EFFLUENT STORAGE POND: PUMPS AND FLOW RATE INFORMATION		
# of Pond Eff Pumps:	1	
Pump 1 Flow Rate:	1,500	gpm
Pump 2 Flow Rate:	--	gpm
Total Effluent Flow:	1,500	gpm
Max Daily (24-hour)	2,160,000	GPD
	2.16	MGD
Max Depth to LAA:	1.21	in/day
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IRRIGATION AND SOIL INFORMATION		
Irrigation System:	Surface - Border Check	
Assumed Distribution Uniformity (DU):	0.80	
Assumed Surface Runoff and Soil/Spray Evap:	30%	
Generalized Avg Irrigation Efficiency Factor:	70%	
Predominant Soil Series & Phase:	Crosscreek-Kai assoc	
Assumed Root Zone:	60	inches
Root Zone Soil AWHC: [1]	**8.1**	**inches**
Mgmt Allow. Depletion (MAD):	70%	of AWHC
Max Soil Moisture Depletion (SMD):	5.6	inches
October 1 Soil Water Content: [1]	100%	of AWHC
	8.1	inches

MONTH	WEEK #	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	ACRES	INFLUENT FLOW	STORAGE [3] Volumes: Total Input	Total Output	End	INPUTS Gross Hydraulic Loading 5: Precip [4]	Storage Effluent Irrigation		Fresh Irrigation		Total	Net Hydraulic Loading [6]: Effective Precip [4]	Effluent Irrigation	Fresh Irrigation	Total Input	OUTPUTS Evapotranspiration [7]: Potential ETc	Estimated ETc	Actual SMD (Soil Water) [8]	Estimated Deep Percolation [9]	SOIL WATER ÷ AWHC [10]
							MG	MG	MG	MG	inches	MG	inches	MG	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	%
JANUARY	14	1/1	WF	Winter Soil Salinity Leaching	--	66	0.150	0.756	0.003	7.145	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	14	1/2	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	7.301	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	14	1/3	WF	Winter Soil Salinity Leaching	--	66	0.000	0.010	0.003	7.308	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	14	1/4	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	7.464	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	14	1/5	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	7.621	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	14	1/6	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	7.777	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	15	1/7	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	7.934	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	15	1/8	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	8.090	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	15	1/9	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	8.246	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	15	1/10	WF	Winter Soil Salinity Leaching	--	66	0.000	0.010	0.003	8.253	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	15	1/11	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	8.409	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	15	1/12	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	8.566	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	15	1/13	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	8.722	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	16	1/14	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	8.878	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	16	1/15	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	9.035	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.02	0.02	8.1	0.1	100%
	16	1/16	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	9.191	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	16	1/17	WF	Winter Soil Salinity Leaching	--	66	0.000	0.010	0.003	9.198	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	16	1/18	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	9.354	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	16	1/19	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	9.510	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	16	1/20	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	9.667	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	17	1/21	WF	Post-Emergent Herbicide Application	NO	66	0.150	0.160	0.003	9.823	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	17	1/22	WF	Post-Emergent Herbicide Application	NO	66	0.150	0.160	0.003	9.980	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	17	1/23	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	10.136	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	17	1/24	WF	Winter Soil Salinity Leaching	--	66	0.000	0.010	0.003	10.142	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	17	1/25	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	10.299	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	17	1/26	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	10.455	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	17	1/27	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	10.612	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	18	1/28	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	10.768	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	18	1/29	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	10.924	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	18	1/30	WF	Winter Soil Salinity Leaching	--	66	0.150	0.160	0.003	11.081	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
	18	1/31	WF	Winter Soil Salinity Leaching	--	66	0.000	0.010	0.003	11.087	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.04	0.04	8.1	0.0	100%
FEBRUARY	18	2/1	WF	Post-Emergent Herbicide Application	NO	66	0.150	0.160	0.006	11.241	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	18	2/2	WF	Post-Emergent Herbicide Application	NO	66	0.150	0.160	0.006	11.396	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	18	2/3	WF	Post-Emergent Herbicide Application	NO	66	0.150	0.160	0.006	11.550	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	19	2/4	WF	I	--	66	0.150	0.160	0.006	11.704	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	19	2/5	WF	I	--	66	0.150	0.160	0.006	11.859	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	19	2/6	WF	I	--	66	0.150	0.160	0.006	12.013	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	19	2/7	WF	I	--	66	0.000	0.010	0.006	12.017	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	19	2/8	WF	I	--	66	0.150	0.160	0.006	12.171	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	19	2/9	WF	I	--	66	0.150	0.160	0.006	12.326	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	19	2/10	WF	I	--	66	0.150	0.160	0.006	12.480	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	20	2/11	WF	I	--	66	0.150	0.160	0.006	12.634	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	20	2/12	WF	I	--	66	0.150	0.160	0.006	12.789	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	20	2/13	WF	I	--	66	0.150	0.160	0.006	12.943	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	20	2/14	WF	I	--	66	0.000	0.010	0.006	12.947	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.07	0.07	8.1	0.0	100%
	20	2/15	WF	I	--	66	0.150	0.160	0.006	13.101	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	8.0	0.0	100%
	20	2/16	WF	I	--	66	0.150	0.160	0.006	13.256	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	8.0	0.0	99%
	20	2/17	WF	I	--	66	0.150	0.160	0.006	13.410	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	8.0	0.0	99%
	21	2/18	WF	I	--	66	0.150	0.160	0.006	13.564	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	8.0	0.0	99%
	21	2/19	WF	I	--	66	0.150	0.160	0.006	13.718	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.9	0.0	99%
	21	2/20	WF	I	--	66	0.150	0.160	0.006	13.873	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.9	0.0	98%
	21	2/21	WF	I	--	66	0.000	0.010	0.006	13.877	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.9	0.0	98%
	21	2/22	WF	I	--	66	0.150	0.160	0.006	14.031	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.9	0.0	98%
	21	2/23	WF	I	--	66	0.150	0.160	0.006	14.186	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.8	0.0	97%
	21	2/24	WF	I	--	66	0.150	0.160	0.006	14.340	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.8	0.0	97%
	22	2/25	WF	I	--	66	0.150	0.160	0.006	14.494	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.8	0.0	97%
	22	2/26	WF	I	--	66	0.150	0.160	0.006	14.648	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.8	0.0	96%
	22	2/27	WF	I	--	66	0.150	0.160	0.006	14.803	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.8	0.0	96%
	22	2/28	WF	I	--	66	0.000	0.010	0.006	14.807	0.1		0.0	0.0		0.1	0.1	0.0	0.0	0.1	0.10	0.10	7.7	0.0	96%

Appendix E1. Generalized Land Application Area soil-water balance - Corn-wheat rotation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	66		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	--
Total Yield (tons/acre):	25	32	--
Annual Crop N Removed (lbs):	33,228		

STORAGE POND INFORMATION		
Est. Pond Surface Area:	3.02	acres
	131,520	ft^2
Est. Total Usable Pond Volume:	17.202	MG
	52.811	acre-feet
	2,299,627	ft^3
Oct 1 Carryover:	0	MG
--	--	--
--	--	--

EFFLUENT STORAGE POND: PUMPS AND FLOW RATE INFORMATION		
# of Pond Eff Pumps:	1	
Pump 1 Flow Rate:	1,500	gpm
Pump 2 Flow Rate:	--	gpm
Total Effluent Flow:	1,500	gpm
Max Daily (24-hour)	2,160,000	GPD
	2.16	MGD
Max Depth to LAA:	1.21	in/day
--	--	--

IRRIGATION AND SOIL INFORMATION		
Irrigation System:	Surface - Border Check	
Assumed Distribution Uniformity (DU):	0.80	
Assumed Surface Runoff and Soil/Spray Evap:	30%	
Generalized Avg Irrigation Efficiency Factor:	70%	
Predominant Soil Series & Phase:	Crosscreek-Kai assoc	
Assumed Root Zone:	60	inches
Root Zone Soil AWHC: [1]	**8.1**	**inches**
Mgmt Allow. Depletion (MAD):	70%	of AWHC
Max Soil Moisture Depletion (SMD):	5.6	inches
October 1 Soil Water Content: [1]	100%	of AWHC
	8.1	inches

MONTH	WEEK #	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	ACRES	INFLUENT FLOW (MG)	STORAGE [3] Volumes: Total Input (MG)	Total Output (MG)	End (MG)	INPUTS Gross Hydraulic Loading 5: Precip [4] (inches)	Storage Effluent Irrigation (MG)	Storage Effluent Irrigation (inches)	Fresh Irrigation (MG)	Fresh Irrigation (inches)	Total (inches)	Net Hydraulic Loading [6]: Effective Precip [4] (inches)	Effluent Irrigation (inches)	Fresh Irrigation (inches)	Total Input (inches)	OUTPUTS Evapotranspiration [7]: Potential ETc (inches)	Estimated ETc (inches)	Actual SMD (Soil Water) [8] (inches)	Estimated Deep Percolation [9] (inches)	SOIL WATER ÷ AWHC [10] (%)
MARCH	22	3/1	WF	I	--	66	0.150	0.159	0.219	14.746	0.1	0.210	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.13	0.12	7.8	0.0	96%
	22	3/2	WF	I	--	66	0.150	0.159	0.219	14.685	0.1	0.210	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.13	0.12	7.8	0.0	96%
	22	3/3	WF	I	--	66	0.150	0.159	0.219	14.624	0.1	0.210	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.13	0.12	7.8	0.0	97%
	23	3/4	WF	I	--	66	0.150	0.159	0.219	14.563	0.1	0.210	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.13	0.12	7.8	0.0	97%
	23	3/5	WF	I	--	66	0.150	0.159	0.219	14.503	0.1	0.210	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.13	0.12	7.9	0.0	97%
	23	3/6	WF	I	--	66	0.150	0.159	0.219	14.442	0.1	0.210	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.13	0.12	7.9	0.0	98%
	23	3/7	WF	I	--	66	0.000	0.009	0.219	14.231	0.1	0.210	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.13	0.12	7.9	0.0	98%
	23	3/8	WF	I	--	66	0.150	0.159	0.209	14.180	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.13	0.12	7.9	0.0	98%
	23	3/9	WF	I	--	66	0.150	0.159	0.209	14.129	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.13	0.12	7.9	0.0	99%
	23	3/10	WF	I	--	66	0.150	0.159	0.209	14.078	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.13	0.12	8.0	0.0	99%
	24	3/11	WF	I	--	66	0.150	0.159	0.209	14.027	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.13	0.13	8.0	0.0	99%
	24	3/12	WF	I	--	66	0.150	0.159	0.209	13.976	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.13	0.13	8.0	0.0	99%
	24	3/13	WF	I	--	66	0.150	0.159	0.209	13.925	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.13	0.13	8.0	0.0	100%
	24	3/14	WF	I	--	66	0.000	0.009	0.209	13.725	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.13	0.13	8.1	0.0	100%
	24	3/15	WF	I	--	66	0.150	0.159	0.209	13.674	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.13	0.13	8.1	0.0	100%
	24	3/16	WF	I	--	66	0.150	0.159	0.209	13.623	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.16	0.16	8.1	0.0	100%
	24	3/17	WF	I	--	66	0.150	0.159	0.209	13.572	0.1	0.200	0.1	0.0		0.2	0.1	0.1	0.0	0.1	0.16	0.16	8.0	0.0	100%
	25	3/18	WF	I	--	66	0.150	0.159	0.239	13.491	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.0	0.0	100%
	25	3/19	WF	I	--	66	0.150	0.159	0.239	13.410	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.0	0.0	100%
	25	3/20	WF	I	--	66	0.150	0.159	0.239	13.329	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	25	3/21	WF	I	--	66	0.000	0.009	0.239	13.098	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	25	3/22	WF	I	--	66	0.150	0.159	0.239	13.018	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	25	3/23	WF	I	--	66	0.150	0.159	0.239	12.937	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	25	3/24	WF	I	--	66	0.150	0.159	0.239	12.856	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	26	3/25	WF	I	--	66	0.150	0.159	0.239	12.775	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	26	3/26	WF	I	--	66	0.150	0.159	0.239	12.694	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	26	3/27	WF	I	--	66	0.150	0.159	0.239	12.613	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	26	3/28	WF	I	--	66	0.000	0.009	0.239	12.382	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	26	3/29	WF	I	--	66	0.150	0.159	0.239	12.301	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	26	3/30	WF	I	--	66	0.150	0.159	0.239	12.220	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
	26	3/31	WF	I	--	66	0.150	0.159	0.239	12.140	0.1	0.230	0.1	0.0		0.2	0.1	0.1	0.0	0.2	0.16	0.16	8.1	0.0	100%
APRIL	27	4/1	WF	I	--	66	0.150	0.155	0.445	11.850	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	27	4/2	WF	I	--	66	0.150	0.155	0.445	11.561	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	27	4/3	WF	I	--	66	0.150	0.155	0.445	11.272	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	27	4/4	WF	I	--	66	0.000	0.005	0.445	10.833	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	27	4/5	WF	I	--	66	0.150	0.155	0.445	10.543	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	27	4/6	WF	I	--	66	0.150	0.155	0.445	10.254	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	27	4/7	WF	I	--	66	0.150	0.155	0.445	9.965	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	28	4/8	WF	I	--	66	0.150	0.155	0.445	9.676	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	28	4/9	WF	I	--	66	0.150	0.155	0.445	9.386	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	28	4/10	WF	I	--	66	0.150	0.155	0.445	9.097	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	28	4/11	WF	I	--	66	0.000	0.005	0.445	8.658	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	28	4/12	WF	I	--	66	0.150	0.155	0.445	8.369	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	28	4/13	WF	I	--	66	0.150	0.155	0.445	8.080	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	28	4/14	WF	I	--	66	0.150	0.155	0.445	7.790	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	29	4/15	WF	I	--	66	0.150	0.155	0.445	7.501	0.1	0.430	0.2	0.0		0.3	0.0	0.2	0.0	0.2	0.20	0.20	8.1	0.0	100%
	29	4/16	WF	I	--	66	0.150	0.155	0.565	7.092	0.1	0.550	0.3	0.0		0.4	0.0	0.2	0.0	0.3	0.24	0.24	8.1	0.0	100%
	29	4/17	WF	I	--	66	0.150	0.155	0.545	6.703	0.1	0.530	0.3	0.0		0.3	0.0	0.2	0.0	0.2	0.24	0.24	8.1	0.0	100%
	29	4/18	WF	I	--	66	0.000	0.005	0.545	6.163	0.1	0.530	0.3	0.0		0.3	0.0	0.2	0.0	0.2	0.24	0.24	8.1	0.0	100%
	29	4/19	WF	I	--	66	0.150	0.155	0.545	5.774	0.1	0.530	0.3	0.0		0.3	0.0	0.2	0.0	0.2	0.24	0.24	8.1	0.0	100%
	29	4/20	WF	I	--	66	0.150	0.155	0.545	5.385	0.1	0.530	0.3	0.0		0.3	0.0	0.2	0.0	0.2	0.24	0.24	8.1	0.0	100%
	29	4/21	WF	I	--	66	0.150	0.155	0.535	5.006	0.1	0.520	0.3	0.0		0.3	0.0	0.2	0.0	0.2	0.24	0.24	8.1	0.0	100%
	30	4/22	WF	Harvest/Chop/Haul WF	NO	66	0.150	0.155	0.015	5.146	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.24	0.24	7.9	0.0	97%
	30	4/23	WF	Harvest/Chop/Haul WF	NO	66	0.150	0.155	0.015	5.287	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.24	0.24	7.7	0.0	95%
	30	4/24	WF	Harvest/Chop/Haul WF	NO	66	0.150	0.155	0.015	5.428	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.24	0.24	7.5	0.0	92%
	30	4/25	WF	Harvest/Chop/Haul WF	NO	66	0.000	0.005	0.015	5.419	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.24	0.23	7.2	0.0	90%
	30	4/26	WF	Harvest/Chop/Haul WF	NO	66	0.150	0.155	0.015	5.559	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.24	0.23	7.0	0.0	87%
	30	4/27	WF	Harvest/Chop/Haul WF	NO	66	0.150	0.155	0.015	5.700	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.24	0.23	6.8	0.0	85%
	30	4/28	WF	Harvest/Chop/Haul WF	NO	66	0.150	0.155	0.015	5.841	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.24	0.22	6.6	0.0	82%
	31	4/29	WF	Collect spring soil samples for analysis	NO	66	0.150	0.155	0.015	5.982	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.24	0.22	6.4	0.0	80%
	31	4/30	WF	Collect spring soil samples for analysis	NO	66	0.150	0.155	0.015	6.123	0.1		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.24	0.22	6.2	0.0	77%

Appendix E1. Generalized Land Application Area soil-water balance - Corn-wheat rotation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	66		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	--
Total Yield (tons/acre):	25	32	--
Annual Crop N Removed (lbs):	33,228		

STORAGE POND INFORMATION		
Est. Pond Surface Area:	3.02	acres
	131,520	ft^2
Est. Total Usable Pond Volume:	**17.202**	MG
	52.811	acre-feet
	2,299,627	ft^3
Oct 1 Carryover:	0	MG
--	--	--
--	--	--

EFFLUENT STORAGE POND: PUMPS AND FLOW RATE INFORMATION		
# of Pond Eff Pumps:	1	
Pump 1 Flow Rate:	1,500	gpm
Pump 2 Flow Rate:	--	gpm
Total Effluent Flow:	1,500	gpm
Max Daily (24-hour)	2,160,000	GPD
	2.16	MGD
Max Depth to LAA:	1.21	in/day
--	--	--

IRRIGATION AND SOIL INFORMATION		
Irrigation System:	Surface - Border Check	
Assumed Distribution Uniformity (DU):	0.80	
Assumed Surface Runoff and Soil/Spray Evap:	30%	
Generalized Avg Irrigation Efficiency Factor:	70%	
Predominant Soil Series & Phase:	Crosscreek-Kai assoc	
Assumed Root Zone:	60	inches
Root Zone Soil AWHC: [1]	**8.1**	**inches**
Mgmt Allow. Depletion (MAD):	70%	of AWHC
Max Soil Moisture Depletion (SMD):	5.6	inches
October 1 Soil Water Content: [1]	100%	of AWHC
	8.1	inches

MONTH	WEEK #	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	ACRES	INFLUENT FLOW	STORAGE [3] Volumes: Total Input	Total Output	End	INPUTS Gross Hydraulic Loading 5: Precip [4]	Storage Effluent Irrigation		Fresh Irrigation		Total	Net Hydraulic Loading [6]: Effective Precip [4]	Effluent Irrigation	Fresh Irrigation	Total Input	OUTPUTS Evapotranspiration [7]: Potential ETc	Estimated ETc	Actual SMD (Soil Water) [8]	Estimated Deep Percolation [9]	SOIL WATER ÷ AWHC [10]
							MG	MG	MG	MG	inches	MG	inches	MG	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	%
MAY	31	5/1	Fallow	Apply & Spread Solid Manure/Compost	NO	66	0.150	0.152	0.019	6.256	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.04	6.2	0.0	77%
	31	5/2	Fallow	Apply & Spread Solid Manure/Compost	NO	66	0.000	0.002	0.019	6.239	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.04	6.2	0.0	76%
	31	5/3	Fallow	Disc & Incorporate WF Stubble 2x	NO	66	0.150	0.152	0.019	6.372	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.04	6.1	0.0	76%
	31	5/4	Fallow	Disc & Incorporate WF Stubble 2x	NO	66	0.150	0.152	0.019	6.505	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.04	6.1	0.0	75%
	31	5/5	Fallow	Pull/Ridge/Shape Borders (~100 ft width)	NO	66	0.150	0.152	0.019	6.638	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.04	6.0	0.0	75%
	32	5/6	Fallow	Pull/Ridge/Shape Borders (~100 ft width)	NO	66	0.150	0.152	0.019	6.772	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.04	6.0	0.0	74%
	32	5/7	Fallow	Preirrigation Event (~8")	--	66	0.150	0.152	1.819	5.105	0.0	1.800	1.0	0.0		1.0	0.0	0.7	0.0	0.7	0.05	0.04	6.7	0.0	83%
	32	5/8	Fallow	Preirrigation Event (~8")	--	66	0.150	0.152	1.819	3.438	0.0	1.800	1.0	0.0		1.0	0.0	0.7	0.0	0.7	0.05	0.04	7.3	0.0	91%
	32	5/9	Fallow	Preirrigation Event (~8")	--	66	0.000	0.002	1.819	1.621	0.0	1.800	1.0	0.0		1.0	0.0	0.7	0.0	0.7	0.05	0.05	8.0	0.0	99%
	32	5/10	Fallow	Field Drying	NO	66	0.150	0.152	0.019	1.754	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.05	8.0	0.0	99%
	32	5/11	Fallow	Knockdown Borders	NO	66	0.150	0.152	0.019	1.887	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.05	7.9	0.0	98%
	32	5/12	Fallow	Finish/Offset Disc to Prepare Seedbed (2x)	NO	66	0.150	0.152	0.019	2.021	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.05	7.9	0.0	98%
	33	5/13	Fallow	Finish/Offset Disc to Prepare Seedbed (2x)	NO	66	0.150	0.152	0.019	2.154	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.05	7.8	0.0	97%
	33	5/14	Fallow	Finish/Offset Disc to Prepare Seedbed (2x)	NO	66	0.150	0.152	0.019	2.287	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.05	7.8	0.0	97%
	33	5/15	Fallow	Plant Corn Silage w/ insecticide+fertilizer	NO	66	0.150	0.152	0.019	2.420	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.05	0.05	7.8	0.0	96%
	33	5/16	Corn	Plant Corn Silage w/ insecticide+fertilizer	NO	66	0.000	0.002	0.019	2.403	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.12	0.12	7.7	0.0	95%
	33	5/17	Corn	Plant Corn Silage w/ insecticide+fertilizer	NO	66	0.150	0.152	0.019	2.536	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.12	0.12	7.6	0.0	94%
	33	5/18	Corn	Plant Corn Silage w/ insecticide+fertilizer	NO	66	0.150	0.152	0.019	2.669	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.12	0.11	7.4	0.0	92%
	33	5/19	Corn	Plant Corn Silage w/ insecticide+fertilizer	NO	66	0.150	0.152	0.019	2.803	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.12	0.11	7.3	0.0	91%
	34	5/20	Corn	Corn Silage Growing	--	66	0.150	0.152	0.119	2.836	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	7.3	0.0	90%
	34	5/21	Corn	|	--	66	0.150	0.152	0.119	2.869	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	7.2	0.0	89%
	34	5/22	Corn	|	--	66	0.150	0.152	0.119	2.902	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	7.1	0.0	88%
	34	5/23	Corn	|	--	66	0.000	0.002	0.119	2.785	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	7.1	0.0	88%
	34	5/24	Corn	|	--	66	0.150	0.152	0.119	2.818	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	7.0	0.0	87%
	34	5/25	Corn	|	--	66	0.150	0.152	0.119	2.852	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	6.9	0.0	86%
	34	5/26	Corn	|	--	66	0.150	0.152	0.119	2.885	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	6.9	0.0	85%
	35	5/27	Corn	|	--	66	0.150	0.152	0.119	2.918	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	6.8	0.0	84%
	35	5/28	Corn	|	--	66	0.150	0.152	0.119	2.951	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	6.7	0.0	83%
	35	5/29	Corn	|	--	66	0.150	0.152	0.119	2.984	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	6.6	0.0	82%
	35	5/30	Corn	|	--	66	0.000	0.002	0.119	2.867	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	6.6	0.0	82%
	35	5/31	Corn	|	--	66	0.150	0.152	0.119	2.901	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.12	0.11	6.5	0.0	81%
JUNE	35	6/1	Corn	Irrigation #1	--	66	0.150	0.150	0.122	2.929	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.03	6.5	0.0	81%
	35	6/2	Corn	|	--	66	0.150	0.150	0.122	2.957	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.03	6.5	0.0	81%
	36	6/3	Corn	Herbicide Application: Roundup	NO	66	0.150	0.150	0.022	3.085	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.04	0.03	6.5	0.0	80%
	36	6/4	Corn	Insecticide Application: Comite for spider mites	NO	66	0.150	0.150	0.022	3.213	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.04	0.03	6.4	0.0	80%
	36	6/5	Corn	|	--	66	0.150	0.150	0.122	3.241	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.03	6.4	0.0	80%
	36	6/6	Corn	|	--	66	0.000	0.000	0.122	3.119	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.03	6.4	0.0	80%
	36	6/7	Corn	|	--	66	0.150	0.150	0.122	3.147	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.03	6.4	0.0	80%
	36	6/8	Corn	|	--	66	0.150	0.150	0.122	3.176	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.03	6.4	0.0	80%
	36	6/9	Corn	|	--	66	0.150	0.150	0.122	3.204	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.03	6.4	0.0	80%
	37	6/10	Corn	|	--	66	0.150	0.150	0.122	3.232	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.03	6.4	0.0	80%
	37	6/11	Corn	Cultivated for weeds/furrowed	NO	66	0.150	0.150	0.022	3.360	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.04	0.03	6.4	0.0	80%
	37	6/12	Corn	Cultivated for weeds/furrowed	NO	66	0.150	0.150	0.022	3.488	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.04	0.03	6.4	0.0	79%
	37	6/13	Corn	Cultivated for weeds/furrowed	NO	66	0.000	0.000	0.022	3.466	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.04	0.03	6.3	0.0	79%
	37	6/14	Corn	Cultivated for weeds/furrowed	NO	66	0.150	0.150	0.022	3.594	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.04	0.03	6.3	0.0	78%
	37	6/15	Corn	Corn Silage Growing	--	66	0.150	0.150	0.122	3.622	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.04	0.03	6.3	0.0	78%
	37	6/16	Corn	|	--	66	0.150	0.150	0.122	3.650	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.3	0.0	78%
	38	6/17	Corn	|	--	66	0.150	0.150	0.122	3.679	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.2	0.0	77%
	38	6/18	Corn	|	--	66	0.150	0.150	0.122	3.707	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.2	0.0	77%
	38	6/19	Corn	|	--	66	0.150	0.150	0.122	3.735	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.2	0.0	77%
	38	6/20	Corn	|	--	66	0.000	0.000	0.122	3.613	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.1	0.0	76%
	38	6/21	Corn	|	--	66	0.150	0.150	0.122	3.641	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.1	0.0	76%
	38	6/22	Corn	|	--	66	0.150	0.150	0.122	3.669	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.1	0.0	75%
	38	6/23	Corn	|	--	66	0.150	0.150	0.122	3.697	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.0	0.0	75%
	39	6/24	Corn	|	--	66	0.150	0.150	0.122	3.725	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.0	0.0	75%
	39	6/25	Corn	|	--	66	0.150	0.150	0.122	3.753	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.0	0.0	74%
	39	6/26	Corn	|	--	66	0.150	0.150	0.122	3.781	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	6.0	0.0	74%
	39	6/27	Corn	|	--	66	0.000	0.000	0.122	3.660	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	5.9	0.0	73%
	39	6/28	Corn	|	--	66	0.150	0.150	0.122	3.688	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	5.9	0.0	73%
	39	6/29	Corn	|	--	66	0.150	0.150	0.122	3.716	0.0	0.100	0.1	0.0		0.1	0.0	0.0	0.0	0.0	0.07	0.06	5.9	0.0	73%
	39	6/30	Corn	|	--	66	0.150	0.150	0.122	3.744	0.0	0.100	0.1	0.9	0.50	0.6	0.0	0.0	0.4	0.4	0.07	0.06	6.2	0.0	77%

Appendix E1. Generalized Land Application Area soil-water balance - Corn-wheat rotation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	66		
--	**Crop 1**	**Crop 2**	**Crop 3**
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	--
Total Yield (tons/acre):	25	32	--
Annual Crop N Removed (lbs):	33,228		

STORAGE POND INFORMATION		
Est. Pond Surface Area:	3.02	acres
	131,520	ft^2
Est. Total Usable Pond Volume:	**17.202**	MG
	52.811	acre-feet
	2,299,627	ft^3
Oct 1 Carryover:	0	MG
--	--	--
--	--	--

EFFLUENT STORAGE POND: PUMPS AND FLOW RATE INFORMATION		
# of Pond Eff Pumps:	1	
Pump 1 Flow Rate:	1,500	gpm
Pump 2 Flow Rate:	--	gpm
Total Effluent Flow:	1,500	gpm
Max Daily (24-hour)	2,160,000	GPD
	2.16	MGD
Max Depth to LAA:	1.21	in/day
--	--	--

IRRIGATION AND SOIL INFORMATION		
Irrigation System:	Surface - Border Check	
Assumed Distribution Uniformity (DU):	0.80	
Assumed Surface Runoff and Soil/Spray Evap:	30%	
Generalized Avg Irrigation Efficiency Factor:	70%	
Predominant Soil Series & Phase:	Crosscreek-Kai assoc	
Assumed Root Zone:	60	inches
Root Zone Soil AWHC: [1]	**8.1**	**inches**
Mgmt Allow. Depletion (MAD):	70%	of AWHC
Max Soil Moisture Depletion (SMD):	5.6	inches
October 1 Soil Water Content: [1]	100%	of AWHC
	8.1	inches

MONTH	WEEK #	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	ACRES	INFLUENT FLOW	STORAGE [3]: Volumes: Total Input	Total Output	End	INPUTS: Gross Hydraulic Loading 5: Precip [4]	Storage Effluent Irrigation		Fresh Irrigation		Total	Net Hydraulic Loading [6]: Effective Precip [4]	Effluent Irrigation	Fresh Irrigation	Total Input	OUTPUTS: Evapotranspiration [7]: Potential ETc	Estimated ETc	Actual SMD (Soil Water) [8]	Estimated Deep Percolation [9]	SOIL WATER ÷ AWHC [10]
							MG	MG	MG	MG	inches	MG	inches	MG	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	%
JULY	40	7/1	Corn	Herbicide Application: Clarity	NO	66	0.150	0.150	0.022	3.872	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.16	0.14	6.0	0.0	75%
	40	7/2	Corn	Herbicide Application: Clarity	NO	66	0.150	0.150	0.022	3.999	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.16	0.14	5.8	0.0	73%
	40	7/3	Corn	Corn Silage Growing	--	66	0.150	0.150	0.202	3.947	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.16	0.14	6.1	0.0	76%
	40	7/4	Corn		--	66	0.000	0.000	0.202	3.744	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.16	0.14	6.0	0.0	75%
	40	7/5	Corn		--	66	0.150	0.150	0.202	3.692	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.16	0.14	5.9	0.0	73%
	40	7/6	Corn		--	66	0.150	0.150	0.202	3.640	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.16	0.14	5.8	0.0	72%
	40	7/7	Corn		--	66	0.150	0.150	0.202	3.587	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.16	0.14	5.7	0.0	71%
	41	7/8	Corn		--	66	0.150	0.150	0.202	3.535	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.16	0.14	6.0	0.0	74%
	41	7/9	Corn		--	66	0.150	0.150	0.202	3.482	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.16	0.14	5.9	0.0	73%
	41	7/10	Corn		--	66	0.150	0.150	0.202	3.430	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.16	0.14	5.8	0.0	72%
	41	7/11	Corn		--	66	0.000	0.000	0.202	3.228	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.16	0.14	5.7	0.0	71%
	41	7/12	Corn		--	66	0.150	0.150	0.202	3.175	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.16	0.14	6.0	0.0	74%
	41	7/13	Corn		--	66	0.150	0.150	0.202	3.123	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.16	0.14	5.9	0.0	73%
	41	7/14	Corn		--	66	0.150	0.150	0.202	3.071	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.16	0.14	5.8	0.0	72%
	42	7/15	Corn		--	66	0.150	0.150	0.202	3.018	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.16	0.14	6.1	0.0	75%
	42	7/16	Corn		--	66	0.150	0.150	0.202	2.966	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.23	5.9	0.0	73%
	42	7/17	Corn		--	66	0.150	0.150	0.202	2.913	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	74%
	42	7/18	Corn		--	66	0.000	0.000	0.202	2.711	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.23	5.8	0.0	72%
	42	7/19	Corn		--	66	0.150	0.150	0.202	2.659	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	74%
	42	7/20	Corn		--	66	0.150	0.150	0.202	2.606	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.23	5.8	0.0	71%
	42	7/21	Corn		--	66	0.150	0.150	0.202	2.554	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	5.9	0.0	73%
	43	7/22	Corn		--	66	0.150	0.150	0.202	2.501	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	75%
	43	7/23	Corn		--	66	0.150	0.150	0.202	2.449	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.23	5.8	0.0	73%
	43	7/24	Corn		--	66	0.150	0.150	0.202	2.397	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	74%
	43	7/25	Corn		--	66	0.000	0.000	0.202	2.194	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.23	5.8	0.0	72%
	43	7/26	Corn		--	66	0.150	0.150	0.202	2.142	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	5.9	0.0	74%
	43	7/27	Corn		--	66	0.150	0.150	0.202	2.090	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.23	5.7	0.0	71%
	43	7/28	Corn		--	66	0.150	0.150	0.202	2.037	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	5.9	0.0	73%
	44	7/29	Corn		--	66	0.150	0.150	0.202	1.985	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	75%
	44	7/30	Corn		--	66	0.150	0.150	0.202	1.932	0.0	0.180	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.23	5.8	0.0	73%
	44	7/31	Corn		--	66	0.150	0.150	0.202	1.880	0.0	0.180	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	74%
AUGUST	44	8/1	Corn		--	66	0.000	0.000	0.160	1.720	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	6.1	0.0	76%
	44	8/2	Corn		--	66	0.150	0.150	0.160	1.711	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.31	0.27	5.8	0.0	72%
	44	8/3	Corn		--	66	0.150	0.150	0.160	1.701	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	5.9	0.0	73%
	44	8/4	Corn		--	66	0.150	0.150	0.160	1.691	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	6.0	0.0	75%
	45	8/5	Corn		--	66	0.150	0.150	0.160	1.681	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	6.1	0.0	76%
	45	8/6	Corn		--	66	0.150	0.150	0.160	1.672	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.31	0.27	5.8	0.0	72%
	45	8/7	Corn		--	66	0.150	0.150	0.160	1.662	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	5.9	0.0	74%
	45	8/8	Corn		--	66	0.000	0.000	0.160	1.502	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	6.0	0.0	75%
	45	8/9	Corn		--	66	0.150	0.150	0.160	1.492	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.31	0.27	5.8	0.0	71%
	45	8/10	Corn		--	66	0.150	0.150	0.160	1.483	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	5.8	0.0	73%
	45	8/11	Corn		--	66	0.150	0.150	0.160	1.473	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	5.9	0.0	74%
	46	8/12	Corn		--	66	0.150	0.150	0.160	1.463	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	6.0	0.0	75%
	46	8/13	Corn		--	66	0.150	0.150	0.160	1.453	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.31	0.27	5.8	0.0	72%
	46	8/14	Corn		--	66	0.150	0.150	0.160	1.444	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	5.9	0.0	73%
	46	8/15	Corn		--	66	0.000	0.000	0.160	1.284	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.31	0.27	5.9	0.0	74%
	46	8/16	Corn		--	66	0.150	0.150	0.160	1.274	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.1	0.0	75%
	46	8/17	Corn		--	66	0.150	0.150	0.160	1.264	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.24	5.9	0.0	73%
	46	8/18	Corn		--	66	0.150	0.150	0.160	1.255	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	74%
	47	8/19	Corn		--	66	0.150	0.150	0.160	1.245	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.24	5.8	0.0	72%
	47	8/20	Corn		--	66	0.150	0.150	0.160	1.235	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	5.9	0.0	73%
	47	8/21	Corn		--	66	0.150	0.150	0.160	1.226	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	75%
	47	8/22	Corn		--	66	0.000	0.000	0.160	1.066	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.24	5.8	0.0	72%
	47	8/23	Corn		--	66	0.150	0.150	0.160	1.056	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	5.9	0.0	74%
	47	8/24	Corn		--	66	0.150	0.150	0.160	1.046	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.1	0.0	75%
	47	8/25	Corn		--	66	0.150	0.150	0.160	1.037	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.24	5.9	0.0	73%
	48	8/26	Corn		--	66	0.150	0.150	0.160	1.027	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	74%
	48	8/27	Corn		--	66	0.150	0.150	0.160	1.017	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.24	5.8	0.0	72%
	48	8/28	Corn		--	66	0.150	0.150	0.160	1.007	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	5.9	0.0	73%
	48	8/29	Corn		--	66	0.000	0.000	0.160	0.848	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	6.0	0.0	75%
	48	8/30	Corn		--	66	0.150	0.150	0.160	0.838	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.27	0.24	5.8	0.0	72%
	48	8/31	Corn		--	66	0.150	0.150	0.160	0.828	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.27	0.23	5.9	0.0	74%

Appendix E1. Generalized Land Application Area soil-water balance - Corn-wheat rotation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	66		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	--
Total Yield (tons/acre):	25	32	--
Annual Crop N Removed (lbs):	33,228		

STORAGE POND INFORMATION		
Est. Pond Surface Area:	3.02	acres
	131,520	ft^2
Est. Total Usable Pond Volume:	17.202	MG
	52.811	acre-feet
	2,299,627	ft^3
Oct 1 Carryover:	0	MG
--	--	--
--	--	--

EFFLUENT STORAGE POND: PUMPS AND FLOW RATE INFORMATION		
# of Pond Eff Pumps:	1	
Pump 1 Flow Rate:	1,500	gpm
Pump 2 Flow Rate:	--	gpm
Total Effluent Flow:	1,500	gpm
Max Daily (24-hour)	2,160,000	GPD
	2.16	MGD
Max Depth to LAA:	1.21	in/day
--	--	--

IRRIGATION AND SOIL INFORMATION		
Irrigation System:	Surface - Border Check	
Assumed Distribution Uniformity (DU):	0.80	
Assumed Surface Runoff and Soil/Spray Evap:	30%	
Generalized Avg Irrigation Efficiency Factor:	70%	
Predominant Soil Series & Phase:	Crosscreek-Kai assoc	
Assumed Root Zone:	60	inches
Root Zone Soil AWHC: [1]	**8.1**	**inches**
Mgmt Allow. Depletion (MAD):	70%	of AWHC
Max Soil Moisture Depletion (SMD):	5.6	inches
October 1 Soil Water Content: [1]	100%	of AWHC
	8.1	inches

MONTH	WEEK #	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	ACRES	INFLUENT FLOW	STORAGE [3]: Volumes: Total Input	Total Output	End	INPUTS: Gross Hydraulic Loading 5: Precip [4]	Storage Effluent Irrigation		Fresh Irrigation		Total	Net Hydraulic Loading [6]: Effective Precip [4]	Effluent Irrigation	Fresh Irrigation	Total Input	OUTPUTS: Evapotranspiration [7]: Potential ETc	Estimated ETc	Actual SMD (Soil Water) [8]	Estimated Deep Percolation [9]	SOIL WATER ÷ AWHC [10]
							MG	MG	MG	MG	inches	MG	inches	MG	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	%
SEPTEMBER	48	9/1	Corn	I	--	66	0.150	0.151	0.155	0.824	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.25	0.21	6.1	0.0	76%
	49	9/2	Corn	I	--	66	0.150	0.151	0.155	0.819	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.25	0.22	5.9	0.0	73%
	49	9/3	Corn	I	--	66	0.150	0.151	0.155	0.815	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.25	0.21	6.1	0.0	75%
	49	9/4	Corn	I	--	66	0.150	0.151	0.155	0.811	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.25	0.22	5.9	0.0	73%
	49	9/5	Corn	I	--	66	0.000	0.001	0.155	0.656	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.25	0.21	6.0	0.0	75%
	49	9/6	Corn	I	--	66	0.150	0.151	0.155	0.652	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.25	0.21	5.8	0.0	72%
	49	9/7	Corn	I	--	66	0.150	0.151	0.155	0.648	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.25	0.21	6.0	0.0	74%
	49	9/8	Corn	I	--	66	0.150	0.151	0.155	0.643	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.25	0.21	5.8	0.0	72%
	50	9/9	Corn	I	--	66	0.150	0.151	0.155	0.639	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.25	0.21	6.0	0.0	74%
	50	9/10	Corn	I	--	66	0.150	0.151	0.155	0.635	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.25	0.21	6.1	0.0	76%
	50	9/11	Corn	I	--	66	0.150	0.151	0.155	0.630	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.25	0.22	5.9	0.0	74%
	50	9/12	Corn	I	--	66	0.000	0.001	0.155	0.476	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.25	0.21	6.1	0.0	76%
	50	9/13	Corn	I	--	66	0.150	0.151	0.155	0.471	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.25	0.22	5.9	0.0	73%
	50	9/14	Corn	I	--	66	0.150	0.151	0.155	0.467	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.25	0.21	6.1	0.0	75%
	50	9/15	Corn	I	--	66	0.150	0.151	0.155	0.463	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.25	0.21	5.9	0.0	73%
	51	9/16	Corn	I	--	66	0.150	0.151	0.155	0.458	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.19	0.16	6.1	0.0	75%
	51	9/17	Corn	I	--	66	0.150	0.151	0.155	0.454	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.19	0.17	5.9	0.0	74%
	51	9/18	Corn	I	--	66	0.150	0.151	0.155	0.450	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.19	0.16	5.8	0.0	72%
	51	9/19	Corn	I	--	66	0.000	0.001	0.155	0.295	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.19	0.16	6.0	0.0	75%
	51	9/20	Corn	I	--	66	0.150	0.151	0.155	0.291	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.19	0.16	5.9	0.0	73%
	51	9/21	Corn	I	--	66	0.150	0.151	0.155	0.287	0.0	0.140	0.1	0.9	0.50	0.6	0.0	0.1	0.4	0.4	0.19	0.16	6.1	0.0	76%
	51	9/22	Corn	I	--	66	0.150	0.151	0.155	0.282	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.19	0.17	6.0	0.0	74%
	52	9/23	Corn	I	--	66	0.150	0.151	0.155	0.278	0.0	0.140	0.1	0.0		0.1	0.0	0.1	0.0	0.1	0.19	0.16	5.8	0.0	72%
	52	9/24	Corn	I	--	66	0.150	0.151	0.155	0.273	0.0	0.140	0.1	1.3	0.70	0.8	0.0	0.1	0.5	0.5	0.19	0.16	6.2	0.0	77%
	52	9/25	Corn	I	--	66	0.150	0.151	0.155	0.269	0.0	0.140	0.1	1.3	0.70	0.8	0.0	0.1	0.5	0.5	0.19	0.17	6.5	0.0	81%
	52	9/26	Corn	I	--	66	0.000	0.001	0.155	0.115	0.0	0.140	0.1	1.3	0.70	0.8	0.0	0.1	0.5	0.5	0.19	0.17	6.9	0.0	85%
	52	9/27	Corn	I	--	66	0.150	0.151	0.155	0.110	0.0	0.140	0.1	1.3	0.70	0.8	0.0	0.1	0.5	0.5	0.19	0.18	7.2	0.0	90%
	52	9/28	Corn	I	--	66	0.150	0.151	0.155	0.106	0.0	0.140	0.1	1.3	0.70	0.8	0.0	0.1	0.5	0.5	0.19	0.18	7.6	0.0	94%
	52	9/29	Corn	I	--	66	0.150	0.151	0.155	0.102	0.0	0.140	0.1	1.1	0.60	0.7	0.0	0.1	0.4	0.5	0.19	0.19	7.9	0.0	98%
	53	9/30	Corn	I	--	66	0.150	0.151	0.155	0.097	0.0	0.140	0.1	1.1	0.62	0.7	0.0	0.1	0.4	0.5	0.19	0.19	8.1	0.1	100%
Total (inches)						--	--	--	--	--	15.7	--	24.1	--	27.7	67.6	11.5	16.9	19.4	47.8	44.9	41.1	--	2.9	--
Total MG						--	46.9	49.4	49.3	--	28.2	43.3	--	49.7	--	93.0	20.7	30.3	34.8	85.7	80.5	73.6	--	5.2	--

LEACHING VARIABLES		
Average Daily Effluent Flow:	0.119	MGD
Flow-weighted Effluent ECw:	1,875	µmhos/cm
Rain Water ECr:	50	µmhos/cm
Flow-weighted Supplemental Fresh Water ECw:	500	µmhos/cm
Target Soil ECe to Maintain Root Zone Salinity [10]:	3,000	µmhos/cm
Flow-weighted Cumlative ECiw:	887	µmhos/cm
Estimated Drainage Water EC:	14,113	µmhos/cm

Leaching Fraction [9]	**4.3%**	**percent**
	2.9	inches
	5.230	MG
Leaching Requirement [10]	**6.3%**	**percent**
	4.2	inches
	7.609	MG
--		

NOTES:

Abbreviations: AWHC = available water holding capacity; Effective Precip = effective precipitation; Est. = estimated; ETc = crop evapotranspiration; in/ac = inches per acre; LAA = land application area; MG = million gallons.

1 Soil Available Water Holding Capacity (AWHC) as reported by the USDA NRCS custom soil resource report for Eastern Fresno Area, California.
Initial Soil Water Content assumed to be 100% as a result of winter precipitation and irrigation.

2 General cultural practice. Applies more directly to individual fields, not necessarily an aggregation of fields.

3 Storage pond information comes from a daily pond water balance that is ran in conjunction with the soil-water balance.

4 Effective Precipitation is the average precipitation from the CIMIS station #15 in Stratford, CA multiplied by an equation to account for water that evaporates and does not infiltrate the soil.

5 Gross Irrigation: effluent = effluent available to irrigation system; Fresh = supplemental freshwater irrigation from irrigation wells.

6 Net Irrigation = Gross Irrigation * 50% Irrigation Efficiency. Total input = Net Irrigation + effective precipitation.

7 Evapotranspiration: Estimated ET = Potential ET * (previous month's Soil Water Content / Soil Water Holding Capacity)$^{0.5}$.

8 Soil Water = water held in soil for crop use from previous month. Dependent on estimated ETc, Net Total Input, and previous month Soil Water (does not exceed Soil Water Holding Capacity)
Maximum allowable depletion based on % of soil water holding capacity of 70%.

9 Deep Percolation: Soil Water in excess of the Soil Water Holding Capacity which drains out of the root zone.
Deep Percolation = previous month's Soil Water + Net Total Input - ET estimate - current month's Soil Water.

10 The percentage of calculated soil water of the soils AWHC. Management and irrigation of this LAA aims to maintain a maximum allowed depletion of 70%.

11 Leaching Fraction = % of gross water input estimated to percolate beyond root zone = Surplus / (Precip + gross irrigation (effluent + fresh)).

12 Leaching Requirement calculated from flow-weighted EC (precip, effluent, fresh) using formula by Rhodes (1982) and a target soil electrical conductivity (EC).

Appendix E2. Land Application Area loading rates from the generalized soil-water balance - Corn-wheat roation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	20		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	1
Total Yield (tons/acre):	25.00	32	25
--	--	--	--

Date	GROSS NITROGEN LOADING									NET NITROGEN LOADING												SALT (FDS) LOADING							BOD LOADING		Irrigation Efficiency
	Effluent		Fresh Water		Fertilizer and Other N		Total		Cumulative	Effluent		Fresh Water		Fertilizer and Other N		Total		Crop Demand		Cumulative Crop Demand	Net Cumulative Applied	Effluent		Fresh Water		Total		Cumulative	Effluent		
	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac			lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	
10/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70%
10/22	281	4	0	0	0	0	281	4	4	265	4	0	0	0	0	265	4	0	0	0	4	2,411	37	0	0	2,411	37	37	198	3	70%
10/23	281	4	0	0	0	0	281	4	4	265	4	0	0	0	0	265	4	0	0	0	8	2,411	37	0	0	2,411	37	37	198	3	70%
10/24	281	4	0	0	0	0	281	4	4	265	4	0	0	0	0	265	4	0	0	0	12	2,411	37	0	0	2,411	37	37	198	3	70%
10/25	282	4	0	0	0	0	282	4	4	266	4	0	0	0	0	266	4	0	0	0	16	2,423	37	0	0	2,423	37	37	199	3	70%
10/26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%
10/27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%
10/28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%
10/29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%
10/30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%
10/31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%

Appendix E2. Land Application Area loading rates from the generalized soil-water balance - Corn-wheat roation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	20		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	1
Total Yield (tons/acre):	25.00	32	25
--	--	--	--

Date	GROSS NITROGEN LOADING									NET NITROGEN LOADING													SALT (FDS) LOADING							BOD LOADING		Irrigation Efficiency
	Effluent		Fresh Water		Fertilizer and Other N		Total		Cumulative	Effluent		Fresh Water		Fertilizer and Other N		Total		Crop Demand		Cumulative Crop Demand	Net Cumulative Applied	Effluent		Fresh Water		Total		Cumulative	Effluent		
	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac			lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	
11/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%
11/2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%
11/3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%
11/4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	70%
11/5	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	18	1,218	18	0	0	1,218	18	18	100	2	70%
11/6	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	20	1,218	18	0	0	1,218	18	18	100	2	70%
11/7	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	22	1,218	18	0	0	1,218	18	18	100	2	70%
11/8	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	24	1,218	18	0	0	1,218	18	18	100	2	70%
11/9	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	26	1,218	18	0	0	1,218	18	18	100	2	70%
11/10	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	28	1,218	18	0	0	1,218	18	18	100	2	70%
11/11	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	30	1,218	18	0	0	1,218	18	18	100	2	70%
11/12	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	32	1,218	18	0	0	1,218	18	18	100	2	70%
11/13	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	34	1,218	18	0	0	1,218	18	18	100	2	70%
11/14	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	36	1,218	18	0	0	1,218	18	18	100	2	70%
11/15	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	38	1,218	18	0	0	1,218	18	18	100	2	70%
11/16	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	40	1,218	18	0	0	1,218	18	18	100	2	70%
11/17	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	42	1,218	18	0	0	1,218	18	18	100	2	70%
11/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
11/30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
12/31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%

Appendix E2. Land Application Area loading rates from the generalized soil-water balance - Corn-wheat roation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	20		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	1
Total Yield (tons/acre):	25.00	32	25
--	--	--	--

Date	GROSS NITROGEN LOADING									NET NITROGEN LOADING												SALT (FDS) LOADING							BOD LOADING		Irrigation Efficiency
	Effluent		Fresh Water		Fertilizer and Other N		Total		Cumulative	Effluent		Fresh Water		Fertilizer and Other N		Total		Crop Demand		Cumulative Crop Demand	Net Cumulative Applied	Effluent		Fresh Water		Total		Cumulative	Effluent		
	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac			lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	
1/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
1/31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%
2/28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	70%

Appendix E2. Land Application Area loading rates from the generalized soil-water balance - Corn-wheat roation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	20		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	1
Total Yield (tons/acre):	25.00	32	25
--	--	--	--

Date	GROSS NITROGEN LOADING									NET NITROGEN LOADING												SALT (FDS) LOADING							BOD LOADING		Irrigation Efficiency
	Effluent		Fresh Water		Fertilizer and Other N		Total		Cumulative	Effluent		Fresh Water		Fertilizer and Other N		Total		Crop Demand		Cumulative Crop Demand	Net Cumulative Applied	Effluent		Fresh Water		Total		Cumulative	Effluent		
	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac			lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	
3/1	149	2	0	0	0	0	149	2	2	141	2	0	0	0	0	141	2	0	0	0	45	1,279	19	0	0	1,279	19	19	105	2	70%
3/2	149	2	0	0	0	0	149	2	2	141	2	0	0	0	0	141	2	0	0	0	47	1,279	19	0	0	1,279	19	19	105	2	70%
3/3	149	2	0	0	0	0	149	2	2	141	2	0	0	0	0	141	2	0	0	0	49	1,279	19	0	0	1,279	19	19	105	2	70%
3/4	149	2	0	0	0	0	149	2	2	141	2	0	0	0	0	141	2	0	0	0	51	1,279	19	0	0	1,279	19	19	105	2	70%
3/5	149	2	0	0	0	0	149	2	2	141	2	0	0	0	0	141	2	0	0	0	53	1,279	19	0	0	1,279	19	19	105	2	70%
3/6	149	2	0	0	0	0	149	2	2	141	2	0	0	0	0	141	2	0	0	0	55	1,279	19	0	0	1,279	19	19	105	2	70%
3/7	149	2	0	0	0	0	149	2	2	141	2	0	0	0	0	141	2	0	0	0	57	1,279	19	0	0	1,279	19	19	105	2	70%
3/8	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	59	1,218	18	0	0	1,218	18	18	100	2	70%
3/9	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	61	1,218	18	0	0	1,218	18	18	100	2	70%
3/10	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	63	1,218	18	0	0	1,218	18	18	100	2	70%
3/11	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	65	1,218	18	0	0	1,218	18	18	100	2	70%
3/12	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	67	1,218	18	0	0	1,218	18	18	100	2	70%
3/13	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	70	1,218	18	0	0	1,218	18	18	100	2	70%
3/14	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	72	1,218	18	0	0	1,218	18	18	100	2	70%
3/15	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	74	1,218	18	0	0	1,218	18	18	100	2	70%
3/16	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	76	1,218	18	0	0	1,218	18	18	100	2	70%
3/17	142	2	0	0	0	0	142	2	2	134	2	0	0	0	0	134	2	0	0	0	78	1,218	18	0	0	1,218	18	18	100	2	70%
3/18	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	80	1,400	21	0	0	1,400	21	21	115	2	70%
3/19	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	82	1,400	21	0	0	1,400	21	21	115	2	70%
3/20	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	85	1,400	21	0	0	1,400	21	21	115	2	70%
3/21	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	87	1,400	21	0	0	1,400	21	21	115	2	70%
3/22	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	89	1,400	21	0	0	1,400	21	21	115	2	70%
3/23	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	92	1,400	21	0	0	1,400	21	21	115	2	70%
3/24	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	94	1,400	21	0	0	1,400	21	21	115	2	70%
3/25	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	96	1,400	21	0	0	1,400	21	21	115	2	70%
3/26	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	99	1,400	21	0	0	1,400	21	21	115	2	70%
3/27	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	101	1,400	21	0	0	1,400	21	21	115	2	70%
3/28	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	103	1,400	21	0	0	1,400	21	21	115	2	70%
3/29	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	106	1,400	21	0	0	1,400	21	21	115	2	70%
3/30	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	108	1,400	21	0	0	1,400	21	21	115	2	70%
3/31	163	2	0	0	0	0	163	2	2	154	2	0	0	0	0	154	2	0	0	0	110	1,400	21	0	0	1,400	21	21	115	2	70%
4/1	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	115	2,618	40	0	0	2,618	40	40	215	3	70%
4/2	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	119	2,618	40	0	0	2,618	40	40	215	3	70%
4/3	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	123	2,618	40	0	0	2,618	40	40	215	3	70%
4/4	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	128	2,618	40	0	0	2,618	40	40	215	3	70%
4/5	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	132	2,618	40	0	0	2,618	40	40	215	3	70%
4/6	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	136	2,618	40	0	0	2,618	40	40	215	3	70%
4/7	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	141	2,618	40	0	0	2,618	40	40	215	3	70%
4/8	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	145	2,618	40	0	0	2,618	40	40	215	3	70%
4/9	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	150	2,618	40	0	0	2,618	40	40	215	3	70%
4/10	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	154	2,618	40	0	0	2,618	40	40	215	3	70%
4/11	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	158	2,618	40	0	0	2,618	40	40	215	3	70%
4/12	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	163	2,618	40	0	0	2,618	40	40	215	3	70%
4/13	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	167	2,618	40	0	0	2,618	40	40	215	3	70%
4/14	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	171	2,618	40	0	0	2,618	40	40	215	3	70%
4/15	305	5	0	0	0	0	305	5	5	288	4	0	0	0	0	288	4	0	0	0	176	2,618	40	0	0	2,618	40	40	215	3	70%
4/16	390	6	0	0	0	0	390	6	6	368	6	0	0	0	0	368	6	0	0	0	181	3,349	51	0	0	3,349	51	51	275	4	70%
4/17	376	6	0	0	0	0	376	6	6	355	5	0	0	0	0	355	5	0	0	0	187	3,227	49	0	0	3,227	49	49	265	4	70%
4/18	376	6	0	0	0	0	376	6	6	355	5	0	0	0	0	355	5	0	0	0	192	3,227	49	0	0	3,227	49	49	265	4	70%
4/19	376	6	0	0	0	0	376	6	6	355	5	0	0	0	0	355	5	0	0	0	197	3,227	49	0	0	3,227	49	49	265	4	70%
4/20	376	6	0	0	0	0	376	6	6	355	5	0	0	0	0	355	5	0	0	0	203	3,227	49	0	0	3,227	49	49	265	4	70%
4/21	369	6	0	0	0	0	369	6	6	348	5	0	0	0	0	348	5	0	0	0	208	3,166	48	0	0	3,166	48	48	260	4	70%
4/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
4/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
4/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
4/25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
4/26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
4/27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
4/28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
4/29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
4/30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%

Appendix E2. Land Application Area loading rates from the generalized soil-water balance - Corn-wheat roation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	20		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	1
Total Yield (tons/acre):	25.00	32	25
--	--	--	--

Date	GROSS NITROGEN LOADING									NET NITROGEN LOADING														SALT (FDS) LOADING							BOD LOADING		Irrigation Efficiency
	Effluent		Fresh Water		Fertilizer and Other N		Total		Cumulative	Effluent		Fresh Water		Fertilizer and Other N		Total		Crop Demand		Cumulative Crop Demand	Net Cumulative Applied	Effluent		Fresh Water		Total		Cumulative	Effluent		
	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac			lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	
5/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
5/2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
5/3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
5/4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
5/5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
5/6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	70%
5/7	1,276	19	0	0	0	0	1,276	19	19	1,205	18	0	0	0	0	1,205	18	0	0	0	226	10,959	166	0	0	10,959	166	166	901	14	70%
5/8	1,276	19	0	0	0	0	1,276	19	19	1,205	18	0	0	0	0	1,205	18	0	0	0	245	10,959	166	0	0	10,959	166	166	901	14	70%
5/9	1,276	19	0	0	0	0	1,276	19	19	1,205	18	0	0	0	0	1,205	18	0	0	0	263	10,959	166	0	0	10,959	166	166	901	14	70%
5/10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	0	0	0	0	0	0	0	0	0	70%
5/20	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	264	609	9	0	0	609	9	9	50	1	70%
5/21	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	265	609	9	0	0	609	9	9	50	1	70%
5/22	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	266	609	9	0	0	609	9	9	50	1	70%
5/23	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	267	609	9	0	0	609	9	9	50	1	70%
5/24	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	268	609	9	0	0	609	9	9	50	1	70%
5/25	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	269	609	9	0	0	609	9	9	50	1	70%
5/26	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	270	609	9	0	0	609	9	9	50	1	70%
5/27	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	271	609	9	0	0	609	9	9	50	1	70%
5/28	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	272	609	9	0	0	609	9	9	50	1	70%
5/29	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	273	609	9	0	0	609	9	9	50	1	70%
5/30	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	274	609	9	0	0	609	9	9	50	1	70%
5/31	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	275	609	9	0	0	609	9	9	50	1	70%
6/1	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	276	609	9	0	0	609	9	9	50	1	70%
6/2	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	277	609	9	0	0	609	9	9	50	1	70%
6/3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	277	0	0	0	0	0	0	0	0	0	70%
6/4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	277	0	0	0	0	0	0	0	0	0	70%
6/5	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	278	609	9	0	0	609	9	9	50	1	70%
6/6	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	279	609	9	0	0	609	9	9	50	1	70%
6/7	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	280	609	9	0	0	609	9	9	50	1	70%
6/8	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	281	609	9	0	0	609	9	9	50	1	70%
6/9	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	282	609	9	0	0	609	9	9	50	1	70%
6/10	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	283	609	9	0	0	609	9	9	50	1	70%
6/11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	283	0	0	0	0	0	0	0	0	0	70%
6/12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	283	0	0	0	0	0	0	0	0	0	70%
6/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	283	0	0	0	0	0	0	0	0	0	70%
6/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	283	0	0	0	0	0	0	0	0	0	70%
6/15	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	284	609	9	0	0	609	9	9	50	1	70%
6/16	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	285	609	9	0	0	609	9	9	50	1	70%
6/17	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	286	609	9	0	0	609	9	9	50	1	70%
6/18	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	287	609	9	0	0	609	9	9	50	1	70%
6/19	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	288	609	9	0	0	609	9	9	50	1	70%
6/20	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	289	609	9	0	0	609	9	9	50	1	70%
6/21	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	290	609	9	0	0	609	9	9	50	1	70%
6/22	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	291	609	9	0	0	609	9	9	50	1	70%
6/23	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	292	609	9	0	0	609	9	9	50	1	70%
6/24	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	293	609	9	0	0	609	9	9	50	1	70%
6/25	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	294	609	9	0	0	609	9	9	50	1	70%
6/26	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	295	609	9	0	0	609	9	9	50	1	70%
6/27	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	296	609	9	0	0	609	9	9	50	1	70%
6/28	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	297	609	9	0	0	609	9	9	50	1	70%
6/29	71	1	0	0	0	0	71	1	1	67	1	0	0	0	0	67	1	0	0	0	298	609	9	0	0	609	9	9	50	1	70%
6/30	71	1	37	1	0	0	108	2	2	67	1	35	1	0	0	102	2	0	0	0	300	609	9	1,495	23	2,103	32	32	50	1	70%

Appendix E2. Land Application Area loading rates from the generalized soil-water balance - Corn-wheat roation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	20		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	1
Total Yield (tons/acre):	25.00	32	25
--	--	--	--

Date	GROSS NITROGEN LOADING									NET NITROGEN LOADING												SALT (FDS) LOADING							BOD LOADING		Irrigation Efficiency
	Effluent		Fresh Water		Fertilizer and Other N		Total		Cumulative	Effluent		Fresh Water		Fertilizer and Other N		Total		Crop Demand		Cumulative Crop Demand	Net Cumulative Applied	Effluent		Fresh Water		Total		Cumulative	Effluent		
	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac			lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	
7/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	300	0	0	0	0	0	0	0	0	0	70%
7/2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	300	0	0	0	0	0	0	0	0	0	70%
7/3	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	302	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/4	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	304	1,096	17	0	0	1,096	17	17	90	1	70%
7/5	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	306	1,096	17	0	0	1,096	17	17	90	1	70%
7/6	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	308	1,096	17	0	0	1,096	17	17	90	1	70%
7/7	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	310	1,096	17	0	0	1,096	17	17	90	1	70%
7/8	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	312	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/9	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	314	1,096	17	0	0	1,096	17	17	90	1	70%
7/10	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	316	1,096	17	0	0	1,096	17	17	90	1	70%
7/11	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	317	1,096	17	0	0	1,096	17	17	90	1	70%
7/12	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	320	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/13	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	322	1,096	17	0	0	1,096	17	17	90	1	70%
7/14	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	323	1,096	17	0	0	1,096	17	17	90	1	70%
7/15	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	326	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/16	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	328	1,096	17	0	0	1,096	17	17	90	1	70%
7/17	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	330	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/18	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	332	1,096	17	0	0	1,096	17	17	90	1	70%
7/19	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	334	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/20	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	336	1,096	17	0	0	1,096	17	17	90	1	70%
7/21	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	338	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/22	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	341	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/23	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	342	1,096	17	0	0	1,096	17	17	90	1	70%
7/24	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	345	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/25	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	347	1,096	17	0	0	1,096	17	17	90	1	70%
7/26	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	349	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/27	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	351	1,096	17	0	0	1,096	17	17	90	1	70%
7/28	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	353	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/29	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	356	1,096	17	1,495	23	2,591	39	39	90	1	70%
7/30	128	2	0	0	0	0	128	2	2	120	2	0	0	0	0	120	2	0	0	0	357	1,096	17	0	0	1,096	17	17	90	1	70%
7/31	128	2	37	1	0	0	165	2	2	120	2	35	1	0	0	156	2	0	0	0	360	1,096	17	1,495	23	2,591	39	39	90	1	70%
8/1	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	362	852	13	1,495	23	2,347	36	36	70	1	70%
8/2	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	363	852	13	0	0	852	13	13	70	1	70%
8/3	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	365	852	13	1,495	23	2,347	36	36	70	1	70%
8/4	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	367	852	13	1,495	23	2,347	36	36	70	1	70%
8/5	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	369	852	13	1,495	23	2,347	36	36	70	1	70%
8/6	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	370	852	13	0	0	852	13	13	70	1	70%
8/7	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	372	852	13	1,495	23	2,347	36	36	70	1	70%
8/8	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	374	852	13	1,495	23	2,347	36	36	70	1	70%
8/9	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	376	852	13	0	0	852	13	13	70	1	70%
8/10	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	378	852	13	1,495	23	2,347	36	36	70	1	70%
8/11	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	380	852	13	1,495	23	2,347	36	36	70	1	70%
8/12	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	382	852	13	1,495	23	2,347	36	36	70	1	70%
8/13	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	383	852	13	0	0	852	13	13	70	1	70%
8/14	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	385	852	13	1,495	23	2,347	36	36	70	1	70%
8/15	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	387	852	13	1,495	23	2,347	36	36	70	1	70%
8/16	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	389	852	13	1,495	23	2,347	36	36	70	1	70%
8/17	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	390	852	13	0	0	852	13	13	70	1	70%
8/18	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	392	852	13	1,495	23	2,347	36	36	70	1	70%
8/19	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	394	852	13	0	0	852	13	13	70	1	70%
8/20	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	396	852	13	1,495	23	2,347	36	36	70	1	70%
8/21	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	398	852	13	1,495	23	2,347	36	36	70	1	70%
8/22	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	399	852	13	0	0	852	13	13	70	1	70%
8/23	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	401	852	13	1,495	23	2,347	36	36	70	1	70%
8/24	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	403	852	13	1,495	23	2,347	36	36	70	1	70%
8/25	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	404	852	13	0	0	852	13	13	70	1	70%
8/26	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	406	852	13	1,495	23	2,347	36	36	70	1	70%
8/27	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	408	852	13	0	0	852	13	13	70	1	70%
8/28	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	410	852	13	1,495	23	2,347	36	36	70	1	70%
8/29	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	412	852	13	1,495	23	2,347	36	36	70	1	70%
8/30	99	2	0	0	0	0	99	2	2	94	1	0	0	0	0	94	1	0	0	0	413	852	13	0	0	852	13	13	70	1	70%
8/31	99	2	37	1	0	0	137	2	2	94	1	35	1	0	0	129	2	0	0	0	415	852	13	1,495	23	2,347	36	36	70	1	70%

Appendix E2. Land Application Area loading rates from the generalized soil-water balance - Corn-wheat roation.

FIELD AND CROP INFOFORMATION			
Year:	--		
Field:	All		
Acres:	20		
--	Crop 1	Crop 2	Crop 3
Crop & Harvest Method:	Triticale Forage	Crop Silage	Triticale Forage
Acres:	66	66	66
Planted:	--	--	--
Harvested:	--	--	--
# of Cuttings:	1	1	1
Total Yield (tons/acre):	25.00	32	25
--	--	--	--

Date	GROSS NITROGEN LOADING								
	Effluent		Fresh Water		Fertilizer and Other N		Total		Cumulative
	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	
9/1	99	2	37	1	0	0	137	2	2
9/2	99	2	0	0	0	0	99	2	2
9/3	99	2	37	1	0	0	137	2	2
9/4	99	2	0	0	0	0	99	2	2
9/5	99	2	37	1	0	0	137	2	2
9/6	99	2	0	0	0	0	99	2	2
9/7	99	2	37	1	0	0	137	2	2
9/8	99	2	0	0	0	0	99	2	2
9/9	99	2	37	1	0	0	137	2	2
9/10	99	2	37	1	0	0	137	2	2
9/11	99	2	0	0	0	0	99	2	2
9/12	99	2	37	1	0	0	137	2	2
9/13	99	2	0	0	0	0	99	2	2
9/14	99	2	37	1	0	0	137	2	2
9/15	99	2	0	0	0	0	99	2	2
9/16	99	2	37	1	0	0	137	2	2
9/17	99	2	0	0	0	0	99	2	2
9/18	99	2	0	0	0	0	99	2	2
9/19	99	2	37	1	0	0	137	2	2
9/20	99	2	0	0	0	0	99	2	2
9/21	99	2	37	1	0	0	137	2	2
9/22	99	2	0	0	0	0	99	2	2
9/23	99	2	0	0	0	0	99	2	2
9/24	99	2	52	1	0	0	152	2	2
9/25	99	2	52	1	0	0	152	2	2
9/26	99	2	52	1	0	0	152	2	2
9/27	99	2	52	1	0	0	152	2	2
9/28	99	2	52	1	0	0	152	2	2
9/29	99	2	45	1	0	0	144	2	2
9/30	99	2	46	1	0	0	146	2	2
--	30,678	465	2,072	31	0	0	32,750	496	--
--	--	--	--	--			--	--	--

Date	NET NITROGEN LOADING											
	Effluent		Fresh Water		Fertilizer and Other N		Total		Crop Demand		Cumulative Crop Demand	Net Cumulative Applied
	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		
9/1	94	1	35	1	0	0	129	2	0	0	0	417
9/2	94	1	0	0	0	0	94	1	0	0	0	418
9/3	94	1	35	1	0	0	129	2	0	0	0	420
9/4	94	1	0	0	0	0	94	1	0	0	0	422
9/5	94	1	35	1	0	0	129	2	0	0	0	424
9/6	94	1	0	0	0	0	94	1	0	0	0	425
9/7	94	1	35	1	0	0	129	2	0	0	0	427
9/8	94	1	0	0	0	0	94	1	0	0	0	429
9/9	94	1	35	1	0	0	129	2	0	0	0	431
9/10	94	1	35	1	0	0	129	2	0	0	0	433
9/11	94	1	0	0	0	0	94	1	0	0	0	434
9/12	94	1	35	1	0	0	129	2	0	0	0	436
9/13	94	1	0	0	0	0	94	1	0	0	0	437
9/14	94	1	35	1	0	0	129	2	0	0	0	439
9/15	94	1	0	0	0	0	94	1	0	0	0	441
9/16	94	1	35	1	0	0	129	2	0	0	0	443
9/17	94	1	0	0	0	0	94	1	0	0	0	444
9/18	94	1	0	0	0	0	94	1	0	0	0	445
9/19	94	1	35	1	0	0	129	2	0	0	0	447
9/20	94	1	0	0	0	0	94	1	0	0	0	449
9/21	94	1	35	1	0	0	129	2	0	0	0	451
9/22	94	1	0	0	0	0	94	1	0	0	0	452
9/23	94	1	0	0	0	0	94	1	0	0	0	454
9/24	94	1	50	1	0	0	143	2	0	0	0	456
9/25	94	1	50	1	0	0	143	2	0	0	0	458
9/26	94	1	50	1	0	0	143	2	0	0	0	460
9/27	94	1	50	1	0	0	143	2	0	0	0	462
9/28	94	1	50	1	0	0	143	2	0	0	0	465
9/29	94	1	43	1	0	0	136	2	0	0	0	467
9/30	94	1	44	1	0	0	138	2	0	0	0	469
--	28,964	439	1,968	30	0	0	30,932	469	0	0	--	--
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Date	SALT (FDS) LOADING							BOD LOADING		Irrigation Efficiency
	Effluent		Fresh Water		Total		Cumulative	Effluent		
	lbs	lbs/ac	lbs	lbs/ac	lbs	lbs/ac		lbs	lbs/ac	
9/1	852	13	1,495	23	2,347	36	36	70	1	70%
9/2	852	13	0	0	852	13	13	70	1	70%
9/3	852	13	1,495	23	2,347	36	36	70	1	70%
9/4	852	13	0	0	852	13	13	70	1	70%
9/5	852	13	1,495	23	2,347	36	36	70	1	70%
9/6	852	13	0	0	852	13	13	70	1	70%
9/7	852	13	1,495	23	2,347	36	36	70	1	70%
9/8	852	13	0	0	852	13	13	70	1	70%
9/9	852	13	1,495	23	2,347	36	36	70	1	70%
9/10	852	13	1,495	23	2,347	36	36	70	1	70%
9/11	852	13	0	0	852	13	13	70	1	70%
9/12	852	13	1,495	23	2,347	36	36	70	1	70%
9/13	852	13	0	0	852	13	13	70	1	70%
9/14	852	13	1,495	23	2,347	36	36	70	1	70%
9/15	852	13	0	0	852	13	13	70	1	70%
9/16	852	13	1,495	23	2,347	36	36	70	1	70%
9/17	852	13	0	0	852	13	13	70	1	70%
9/18	852	13	0	0	852	13	13	70	1	70%
9/19	852	13	1,495	23	2,347	36	36	70	1	70%
9/20	852	13	0	0	852	13	13	70	1	70%
9/21	852	13	1,495	23	2,347	36	36	70	1	70%
9/22	852	13	0	0	852	13	13	70	1	70%
9/23	852	13	0	0	852	13	13	70	1	70%
9/24	852	13	2,093	32	2,945	45	45	70	1	70%
9/25	852	13	2,093	32	2,945	45	45	70	1	70%
9/26	852	13	2,093	32	2,945	45	45	70	1	70%
9/27	852	13	2,093	32	2,945	45	45	70	1	70%
9/28	852	13	2,093	32	2,945	45	45	70	1	70%
9/29	852	13	1,794	27	2,646	40	40	70	1	70%
9/30	852	13	1,853	28	2,706	41	41	70	1	70%
--	263,473	3,992	82,864	1,256	346,337	5,248	--	21,655	328	70%
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Appendix F – Daily Pond Water Balance

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: **0.000** **MG**

Date	------------------- INPUT -------------------					------------------- OUTPUT -------------------					Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	Direct Pond Precipitation	Stormwater From Unsurfaced	Stormwater From Surfaced	Influent Flow	Total Input	Effluent Flow	Pond Evap	Percolation	Mechanical Evaporation	Total Output			
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
10/1	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.376	**0.143**
10/2	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.520	**0.287**
10/3	0.002	0.001	0.000	0.000	0.004	0.000	0.010	0	0	0.010	-0.007	0.513	**0.280**
10/4	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.657	**0.424**
10/5	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.800	**0.567**
10/6	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.944	**0.711**
10/7	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	1.087	**0.854**
10/8	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	1.231	**0.998**
10/9	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	1.374	**1.141**
10/10	0.002	0.001	0.000	0.000	0.004	0.000	0.010	0	0	0.010	-0.007	1.367	**1.134**
10/11	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	1.511	**1.278**
10/12	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	1.654	**1.421**
10/13	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	1.798	**1.565**
10/14	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	1.941	**1.708**
10/15	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	2.085	**1.852**
10/16	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	2.228	**1.995**
10/17	0.002	0.001	0.000	0.000	0.004	0.000	0.010	0	0	0.010	-0.007	2.222	**1.989**
10/18	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	2.365	**2.132**
10/19	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	2.508	**2.276**
10/20	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	2.652	**2.419**
10/21	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	2.795	**2.562**
10/22	0.002	0.001	0.000	0.150	0.154	0.746	0.010	0	0	0.756	-0.603	2.193	**1.960**
10/23	0.002	0.001	0.000	0.150	0.154	0.746	0.010	0	0	0.756	-0.603	1.590	**1.357**
10/24	0.002	0.001	0.000	0.000	0.004	0.746	0.010	0	0	0.756	-0.753	0.838	**0.605**
10/25	0.002	0.001	0.000	0.150	0.154	0.748	0.010	0	0	0.758	-0.605	0.233	**0.000**
10/26	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.377	**0.144**
10/27	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.520	**0.287**
10/28	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.664	**0.431**
10/29	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.807	**0.574**
10/30	0.002	0.001	0.000	0.150	0.154	0.000	0.010	0	0	0.010	0.143	0.950	**0.717**
10/31	0.002	0.001	0.000	0.000	0.004	0.000	0.010	0	0	0.010	-0.007	0.944	**0.711**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: **0.000** **MG**

Date	INPUT					OUTPUT					Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	Direct Pond Precipitation	Stormwater From Unsurfaced	Stormwater From Surfaced	Influent Flow	Total Input	Effluent Flow	Pond Evap	Percolation	Mechanical Evaporation	Total Output			
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
11/1	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.097	**0.864**
11/2	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.250	**1.017**
11/3	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.403	**1.170**
11/4	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.556	**1.323**
11/5	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	1.509	**1.276**
11/6	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	1.462	**1.229**
11/7	0.005	0.002	0.001	0.000	0.008	0.200	0.005	0	0	0.205	-0.197	1.265	**1.032**
11/8	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	1.218	**0.985**
11/9	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	1.172	**0.939**
11/10	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	1.125	**0.892**
11/11	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	1.078	**0.845**
11/12	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	1.031	**0.798**
11/13	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	0.984	**0.751**
11/14	0.005	0.002	0.001	0.000	0.008	0.200	0.005	0	0	0.205	-0.197	0.787	**0.554**
11/15	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	0.740	**0.507**
11/16	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	0.693	**0.460**
11/17	0.005	0.002	0.001	0.150	0.158	0.200	0.005	0	0	0.205	-0.047	0.646	**0.413**
11/18	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	0.799	**0.566**
11/19	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	0.952	**0.719**
11/20	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.105	**0.872**
11/21	0.005	0.002	0.001	0.000	0.008	0.000	0.005	0	0	0.005	0.003	1.108	**0.875**
11/22	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.261	**1.029**
11/23	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.415	**1.182**
11/24	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.568	**1.335**
11/25	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.721	**1.488**
11/26	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	1.874	**1.641**
11/27	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	2.027	**1.794**
11/28	0.005	0.002	0.001	0.000	0.008	0.000	0.005	0	0	0.005	0.003	2.030	**1.797**
11/29	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	2.183	**1.950**
11/30	0.005	0.002	0.001	0.150	0.158	0.000	0.005	0	0	0.005	0.153	2.336	**2.103**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: **0.000** **MG**

Date	---- INPUT ----					---- OUTPUT ----					Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	Direct Pond Precipitation	Stormwater From Unsurfaced	Stormwater From Surfaced	Influent Flow	Total Input	Effluent Flow	Pond Evap	Percolation	Mechanical Evaporation	Total Output			
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
12/1	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	2.494	**2.261**
12/2	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	2.652	**2.419**
12/3	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	2.809	**2.576**
12/4	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	2.967	**2.734**
12/5	0.005	0.004	0.001	0.000	0.010	0.000	0.003	0	0	0.003	0.008	2.975	**2.742**
12/6	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	3.132	**2.899**
12/7	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	3.290	**3.057**
12/8	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	3.448	**3.215**
12/9	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	3.606	**3.373**
12/10	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	3.763	**3.530**
12/11	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	3.921	**3.688**
12/12	0.005	0.004	0.001	0.000	0.010	0.000	0.003	0	0	0.003	0.008	3.929	**3.696**
12/13	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	4.087	**3.854**
12/14	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	4.244	**4.011**
12/15	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	4.402	**4.169**
12/16	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	4.560	**4.327**
12/17	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	4.718	**4.485**
12/18	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	4.875	**4.642**
12/19	0.005	0.004	0.001	0.000	0.010	0.000	0.003	0	0	0.003	0.008	4.883	**4.650**
12/20	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	5.041	**4.808**
12/21	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	5.198	**4.965**
12/22	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	5.356	**5.123**
12/23	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	5.514	**5.281**
12/24	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	5.672	**5.439**
12/25	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	5.829	**5.596**
12/26	0.005	0.004	0.001	0.000	0.010	0.000	0.003	0	0	0.003	0.008	5.837	**5.604**
12/27	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	5.995	**5.762**
12/28	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	6.153	**5.920**
12/29	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	6.310	**6.077**
12/30	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	6.468	**6.235**
12/31	0.005	0.004	0.001	0.150	0.160	0.000	0.003	0	0	0.003	0.158	6.626	**6.393**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: 0.000 MG

Date	---- INPUT ----					---- OUTPUT ----					Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	Direct Pond Precipitation	Stormwater From Unsurfaced	Stormwater From Surfaced	Influent Flow	Total Input	Effluent Flow	Pond Evap	Percolation	Mechanical Evaporation	Total Output			
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
1/1	0.008	0.596	0.002	0.150	0.756	0.000	0.003	0	0	0.003	0.752	7.378	**7.145**
1/2	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	7.534	**7.301**
1/3	0.008	0.000	0.002	0.000	0.010	0.000	0.003	0	0	0.003	0.006	7.541	**7.308**
1/4	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	7.697	**7.464**
1/5	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	7.854	**7.621**
1/6	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	8.010	**7.777**
1/7	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	8.166	**7.934**
1/8	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	8.323	**8.090**
1/9	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	8.479	**8.246**
1/10	0.008	0.000	0.002	0.000	0.010	0.000	0.003	0	0	0.003	0.006	8.486	**8.253**
1/11	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	8.642	**8.409**
1/12	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	8.799	**8.566**
1/13	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	8.955	**8.722**
1/14	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	9.111	**8.878**
1/15	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	9.268	**9.035**
1/16	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	9.424	**9.191**
1/17	0.008	0.000	0.002	0.000	0.010	0.000	0.003	0	0	0.003	0.006	9.431	**9.198**
1/18	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	9.587	**9.354**
1/19	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	9.743	**9.510**
1/20	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	9.900	**9.667**
1/21	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	10.056	**9.823**
1/22	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	10.213	**9.980**
1/23	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	10.369	**10.136**
1/24	0.008	0.000	0.002	0.000	0.010	0.000	0.003	0	0	0.003	0.006	10.375	**10.142**
1/25	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	10.532	**10.299**
1/26	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	10.688	**10.455**
1/27	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	10.845	**10.612**
1/28	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	11.001	**10.768**
1/29	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	11.157	**10.924**
1/30	0.008	0.000	0.002	0.150	0.160	0.000	0.003	0	0	0.003	0.156	11.314	**11.081**
1/31	0.008	0.000	0.002	0.000	0.010	0.000	0.003	0	0	0.003	0.006	11.320	**11.087**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: 0.000 MG

Date	INPUT: Direct Pond Precipitation	INPUT: Stormwater From Unsurfaced	INPUT: Stormwater From Surfaced	INPUT: Influent Flow	INPUT: Total Input	OUTPUT: Effluent Flow	OUTPUT: Pond Evap	OUTPUT: Percolation	OUTPUT: Mechanical Evaporation	OUTPUT: Total Output	Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
2/1	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	11.474	**11.241**
2/2	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	11.629	**11.396**
2/3	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	11.783	**11.550**
2/4	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	11.937	**11.704**
2/5	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	12.092	**11.859**
2/6	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	12.246	**12.013**
2/7	0.008	0.000	0.002	0.000	0.010	0.000	0.006	0	0	0.006	0.004	12.250	**12.017**
2/8	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	12.404	**12.171**
2/9	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	12.559	**12.326**
2/10	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	12.713	**12.480**
2/11	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	12.867	**12.634**
2/12	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	13.022	**12.789**
2/13	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	13.176	**12.943**
2/14	0.008	0.000	0.002	0.000	0.010	0.000	0.006	0	0	0.006	0.004	13.180	**12.947**
2/15	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	13.334	**13.101**
2/16	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	13.489	**13.256**
2/17	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	13.643	**13.410**
2/18	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	13.797	**13.564**
2/19	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	13.951	**13.718**
2/20	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	14.106	**13.873**
2/21	0.008	0.000	0.002	0.000	0.010	0.000	0.006	0	0	0.006	0.004	14.110	**13.877**
2/22	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	14.264	**14.031**
2/23	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	14.419	**14.186**
2/24	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	14.573	**14.340**
2/25	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	14.727	**14.494**
2/26	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	14.881	**14.648**
2/27	0.008	0.000	0.002	0.150	0.160	0.000	0.006	0	0	0.006	0.154	15.036	**14.803**
2/28	0.008	0.000	0.002	0.000	0.010	0.000	0.006	0	0	0.006	0.004	15.040	**14.807**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: 0.000 MG

Date	INPUT					OUTPUT					Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	Direct Pond Precipitation	Stormwater From Unsurfaced	Stormwater From Surfaced	Influent Flow	Total Input	Effluent Flow	Pond Evap	Percolation	Mechanical Evaporation	Total Output			
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
3/1	0.007	0.000	0.001	0.150	0.159	0.210	0.009	0	0	0.219	-0.061	14.979	**14.746**
3/2	0.007	0.000	0.001	0.150	0.159	0.210	0.009	0	0	0.219	-0.061	14.918	**14.685**
3/3	0.007	0.000	0.001	0.150	0.159	0.210	0.009	0	0	0.219	-0.061	14.857	**14.624**
3/4	0.007	0.000	0.001	0.150	0.159	0.210	0.009	0	0	0.219	-0.061	14.796	**14.563**
3/5	0.007	0.000	0.001	0.150	0.159	0.210	0.009	0	0	0.219	-0.061	14.736	**14.503**
3/6	0.007	0.000	0.001	0.150	0.159	0.210	0.009	0	0	0.219	-0.061	14.675	**14.442**
3/7	0.007	0.000	0.001	0.000	0.009	0.210	0.009	0	0	0.219	-0.211	14.464	**14.231**
3/8	0.007	0.000	0.001	0.150	0.159	0.200	0.009	0	0	0.209	-0.051	14.413	**14.180**
3/9	0.007	0.000	0.001	0.150	0.159	0.200	0.009	0	0	0.209	-0.051	14.362	**14.129**
3/10	0.007	0.000	0.001	0.150	0.159	0.200	0.009	0	0	0.209	-0.051	14.311	**14.078**
3/11	0.007	0.000	0.001	0.150	0.159	0.200	0.009	0	0	0.209	-0.051	14.260	**14.027**
3/12	0.007	0.000	0.001	0.150	0.159	0.200	0.009	0	0	0.209	-0.051	14.209	**13.976**
3/13	0.007	0.000	0.001	0.150	0.159	0.200	0.009	0	0	0.209	-0.051	14.158	**13.925**
3/14	0.007	0.000	0.001	0.000	0.009	0.200	0.009	0	0	0.209	-0.201	13.958	**13.725**
3/15	0.007	0.000	0.001	0.150	0.159	0.200	0.009	0	0	0.209	-0.051	13.907	**13.674**
3/16	0.007	0.000	0.001	0.150	0.159	0.200	0.009	0	0	0.209	-0.051	13.856	**13.623**
3/17	0.007	0.000	0.001	0.150	0.159	0.200	0.009	0	0	0.209	-0.051	13.805	**13.572**
3/18	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	13.724	**13.491**
3/19	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	13.643	**13.410**
3/20	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	13.562	**13.329**
3/21	0.007	0.000	0.001	0.000	0.009	0.230	0.009	0	0	0.239	-0.231	13.331	**13.098**
3/22	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	13.251	**13.018**
3/23	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	13.170	**12.937**
3/24	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	13.089	**12.856**
3/25	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	13.008	**12.775**
3/26	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	12.927	**12.694**
3/27	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	12.846	**12.613**
3/28	0.007	0.000	0.001	0.000	0.009	0.230	0.009	0	0	0.239	-0.231	12.615	**12.382**
3/29	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	12.534	**12.301**
3/30	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	12.453	**12.220**
3/31	0.007	0.000	0.001	0.150	0.159	0.230	0.009	0	0	0.239	-0.081	12.373	**12.140**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: 0.000 MG

Date	INPUT					OUTPUT					Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	Direct Pond Precipitation	Stormwater From Unsurfaced	Stormwater From Surfaced	Influent Flow	Total Input	Effluent Flow	Pond Evap	Percolation	Mechanical Evaporation	Total Output			
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
4/1	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	12.083	**11.850**
4/2	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	11.794	**11.561**
4/3	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	11.505	**11.272**
4/4	0.004	0.000	0.001	0.000	0.005	0.430	0.015	0	0	0.445	-0.439	11.066	**10.833**
4/5	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	10.776	**10.543**
4/6	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	10.487	**10.254**
4/7	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	10.198	**9.965**
4/8	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	9.909	**9.676**
4/9	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	9.619	**9.386**
4/10	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	9.330	**9.097**
4/11	0.004	0.000	0.001	0.000	0.005	0.430	0.015	0	0	0.445	-0.439	8.891	**8.658**
4/12	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	8.602	**8.369**
4/13	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	8.313	**8.080**
4/14	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	8.023	**7.790**
4/15	0.004	0.000	0.001	0.150	0.155	0.430	0.015	0	0	0.445	-0.289	7.734	**7.501**
4/16	0.004	0.000	0.001	0.150	0.155	0.550	0.015	0	0	0.565	-0.409	7.325	**7.092**
4/17	0.004	0.000	0.001	0.150	0.155	0.530	0.015	0	0	0.545	-0.389	6.936	**6.703**
4/18	0.004	0.000	0.001	0.000	0.005	0.530	0.015	0	0	0.545	-0.539	6.396	**6.163**
4/19	0.004	0.000	0.001	0.150	0.155	0.530	0.015	0	0	0.545	-0.389	6.007	**5.774**
4/20	0.004	0.000	0.001	0.150	0.155	0.530	0.015	0	0	0.545	-0.389	5.618	**5.385**
4/21	0.004	0.000	0.001	0.150	0.155	0.520	0.015	0	0	0.535	-0.379	5.239	**5.006**
4/22	0.004	0.000	0.001	0.150	0.155	0.000	0.015	0	0	0.015	0.141	5.379	**5.146**
4/23	0.004	0.000	0.001	0.150	0.155	0.000	0.015	0	0	0.015	0.141	5.520	**5.287**
4/24	0.004	0.000	0.001	0.150	0.155	0.000	0.015	0	0	0.015	0.141	5.661	**5.428**
4/25	0.004	0.000	0.001	0.000	0.005	0.000	0.015	0	0	0.015	-0.009	5.652	**5.419**
4/26	0.004	0.000	0.001	0.150	0.155	0.000	0.015	0	0	0.015	0.141	5.792	**5.559**
4/27	0.004	0.000	0.001	0.150	0.155	0.000	0.015	0	0	0.015	0.141	5.933	**5.700**
4/28	0.004	0.000	0.001	0.150	0.155	0.000	0.015	0	0	0.015	0.141	6.074	**5.841**
4/29	0.004	0.000	0.001	0.150	0.155	0.000	0.015	0	0	0.015	0.141	6.215	**5.982**
4/30	0.004	0.000	0.001	0.150	0.155	0.000	0.015	0	0	0.015	0.141	6.356	**6.123**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: 0.000 MG

Date	INPUT: Direct Pond Precipitation	INPUT: Stormwater From Unsurfaced	INPUT: Stormwater From Surfaced	INPUT: Influent Flow	INPUT: Total Input	OUTPUT: Effluent Flow	OUTPUT: Pond Evap	OUTPUT: Percolation	OUTPUT: Mechanical Evaporation	OUTPUT: Total Output	Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
5/1	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	6.489	**6.256**
5/2	0.002	0.000	0.000	0.000	0.002	0.000	0.019	0	0	0.019	-0.017	6.472	**6.239**
5/3	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	6.605	**6.372**
5/4	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	6.738	**6.505**
5/5	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	6.871	**6.638**
5/6	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	7.005	**6.772**
5/7	0.002	0.000	0.000	0.150	0.152	1.800	0.019	0	0	1.819	-1.667	5.338	**5.105**
5/8	0.002	0.000	0.000	0.150	0.152	1.800	0.019	0	0	1.819	-1.667	3.671	**3.438**
5/9	0.002	0.000	0.000	0.000	0.002	1.800	0.019	0	0	1.819	-1.817	1.854	**1.621**
5/10	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	1.987	**1.754**
5/11	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	2.120	**1.887**
5/12	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	2.253	**2.021**
5/13	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	2.387	**2.154**
5/14	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	2.520	**2.287**
5/15	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	2.653	**2.420**
5/16	0.002	0.000	0.000	0.000	0.002	0.000	0.019	0	0	0.019	-0.017	2.636	**2.403**
5/17	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	2.769	**2.536**
5/18	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	2.902	**2.669**
5/19	0.002	0.000	0.000	0.150	0.152	0.000	0.019	0	0	0.019	0.133	3.036	**2.803**
5/20	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.069	**2.836**
5/21	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.102	**2.869**
5/22	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.135	**2.902**
5/23	0.002	0.000	0.000	0.000	0.002	0.100	0.019	0	0	0.119	-0.117	3.018	**2.785**
5/24	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.051	**2.818**
5/25	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.085	**2.852**
5/26	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.118	**2.885**
5/27	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.151	**2.918**
5/28	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.184	**2.951**
5/29	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.217	**2.984**
5/30	0.002	0.000	0.000	0.000	0.002	0.100	0.019	0	0	0.119	-0.117	3.100	**2.867**
5/31	0.002	0.000	0.000	0.150	0.152	0.100	0.019	0	0	0.119	0.033	3.134	**2.901**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: 0.000 MG

Date	INPUT					OUTPUT					Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	Direct Pond Precipitation	Stormwater From Unsurfaced	Stormwater From Surfaced	Influent Flow	Total Input	Effluent Flow	Pond Evap	Percolation	Mechanical Evaporation	Total Output			
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
6/1	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.162	**2.929**
6/2	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.190	**2.957**
6/3	0.000	0.000	0.000	0.150	0.150	0.000	0.022	0	0	0.022	0.128	3.318	**3.085**
6/4	0.000	0.000	0.000	0.150	0.150	0.000	0.022	0	0	0.022	0.128	3.446	**3.213**
6/5	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.474	**3.241**
6/6	0.000	0.000	0.000	0.000	0.000	0.100	0.022	0	0	0.122	-0.122	3.352	**3.119**
6/7	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.380	**3.147**
6/8	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.409	**3.176**
6/9	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.437	**3.204**
6/10	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.465	**3.232**
6/11	0.000	0.000	0.000	0.150	0.150	0.000	0.022	0	0	0.022	0.128	3.593	**3.360**
6/12	0.000	0.000	0.000	0.150	0.150	0.000	0.022	0	0	0.022	0.128	3.721	**3.488**
6/13	0.000	0.000	0.000	0.000	0.000	0.000	0.022	0	0	0.022	-0.022	3.699	**3.466**
6/14	0.000	0.000	0.000	0.150	0.150	0.000	0.022	0	0	0.022	0.128	3.827	**3.594**
6/15	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.855	**3.622**
6/16	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.883	**3.650**
6/17	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.911	**3.679**
6/18	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.940	**3.707**
6/19	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.968	**3.735**
6/20	0.000	0.000	0.000	0.000	0.000	0.100	0.022	0	0	0.122	-0.122	3.846	**3.613**
6/21	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.874	**3.641**
6/22	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.902	**3.669**
6/23	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.930	**3.697**
6/24	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.958	**3.725**
6/25	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.986	**3.753**
6/26	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	4.014	**3.781**
6/27	0.000	0.000	0.000	0.000	0.000	0.100	0.022	0	0	0.122	-0.122	3.893	**3.660**
6/28	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.921	**3.688**
6/29	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.949	**3.716**
6/30	0.000	0.000	0.000	0.150	0.150	0.100	0.022	0	0	0.122	0.028	3.977	**3.744**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: 0.000 MG

Date	Direct Pond Precipitation	Stormwater From Unsurfaced	Stormwater From Surfaced	Influent Flow	Total Input	Effluent Flow	Pond Evap	Percolation	Mechanical Evaporation	Total Output	Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	INPUT					OUTPUT							
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
7/1	0.000	0.000	0.000	0.150	0.150	0.000	0.022	0	0	0.022	0.128	4.105	**3.872**
7/2	0.000	0.000	0.000	0.150	0.150	0.000	0.022	0	0	0.022	0.128	4.232	**3.999**
7/3	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	4.180	**3.947**
7/4	0.000	0.000	0.000	0.000	0.000	0.180	0.022	0	0	0.202	-0.202	3.977	**3.744**
7/5	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.925	**3.692**
7/6	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.873	**3.640**
7/7	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.820	**3.587**
7/8	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.768	**3.535**
7/9	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.715	**3.482**
7/10	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.663	**3.430**
7/11	0.000	0.000	0.000	0.000	0.000	0.180	0.022	0	0	0.202	-0.202	3.461	**3.228**
7/12	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.408	**3.175**
7/13	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.356	**3.123**
7/14	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.304	**3.071**
7/15	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.251	**3.018**
7/16	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.199	**2.966**
7/17	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	3.146	**2.913**
7/18	0.000	0.000	0.000	0.000	0.000	0.180	0.022	0	0	0.202	-0.202	2.944	**2.711**
7/19	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.892	**2.659**
7/20	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.839	**2.606**
7/21	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.787	**2.554**
7/22	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.734	**2.501**
7/23	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.682	**2.449**
7/24	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.630	**2.397**
7/25	0.000	0.000	0.000	0.000	0.000	0.180	0.022	0	0	0.202	-0.202	2.427	**2.194**
7/26	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.375	**2.142**
7/27	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.323	**2.090**
7/28	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.270	**2.037**
7/29	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.218	**1.985**
7/30	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.165	**1.932**
7/31	0.000	0.000	0.000	0.150	0.150	0.180	0.022	0	0	0.202	-0.052	2.113	**1.880**

Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: 0.000 MG

Date	INPUT					OUTPUT					Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	Direct Pond Precipitation	Stormwater From Unsurfaced	Stormwater From Surfaced	Influent Flow	Total Input	Effluent Flow	Pond Evap	Percolation	Mechanical Evaporation	Total Output			
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
8/1	0.000	0.000	0.000	0.000	0.000	0.140	0.020	0	0	0.160	-0.160	1.953	**1.720**
8/2	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.944	**1.711**
8/3	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.934	**1.701**
8/4	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.924	**1.691**
8/5	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.914	**1.681**
8/6	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.905	**1.672**
8/7	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.895	**1.662**
8/8	0.000	0.000	0.000	0.000	0.000	0.140	0.020	0	0	0.160	-0.160	1.735	**1.502**
8/9	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.725	**1.492**
8/10	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.716	**1.483**
8/11	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.706	**1.473**
8/12	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.696	**1.463**
8/13	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.686	**1.453**
8/14	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.677	**1.444**
8/15	0.000	0.000	0.000	0.000	0.000	0.140	0.020	0	0	0.160	-0.160	1.517	**1.284**
8/16	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.507	**1.274**
8/17	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.497	**1.264**
8/18	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.488	**1.255**
8/19	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.478	**1.245**
8/20	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.468	**1.235**
8/21	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.458	**1.226**
8/22	0.000	0.000	0.000	0.000	0.000	0.140	0.020	0	0	0.160	-0.160	1.299	**1.066**
8/23	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.289	**1.056**
8/24	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.279	**1.046**
8/25	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.270	**1.037**
8/26	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.260	**1.027**
8/27	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.250	**1.017**
8/28	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.240	**1.007**
8/29	0.000	0.000	0.000	0.000	0.000	0.140	0.020	0	0	0.160	-0.160	1.081	**0.848**
8/30	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.071	**0.838**
8/31	0.000	0.000	0.000	0.150	0.150	0.140	0.020	0	0	0.160	-0.010	1.061	**0.828**

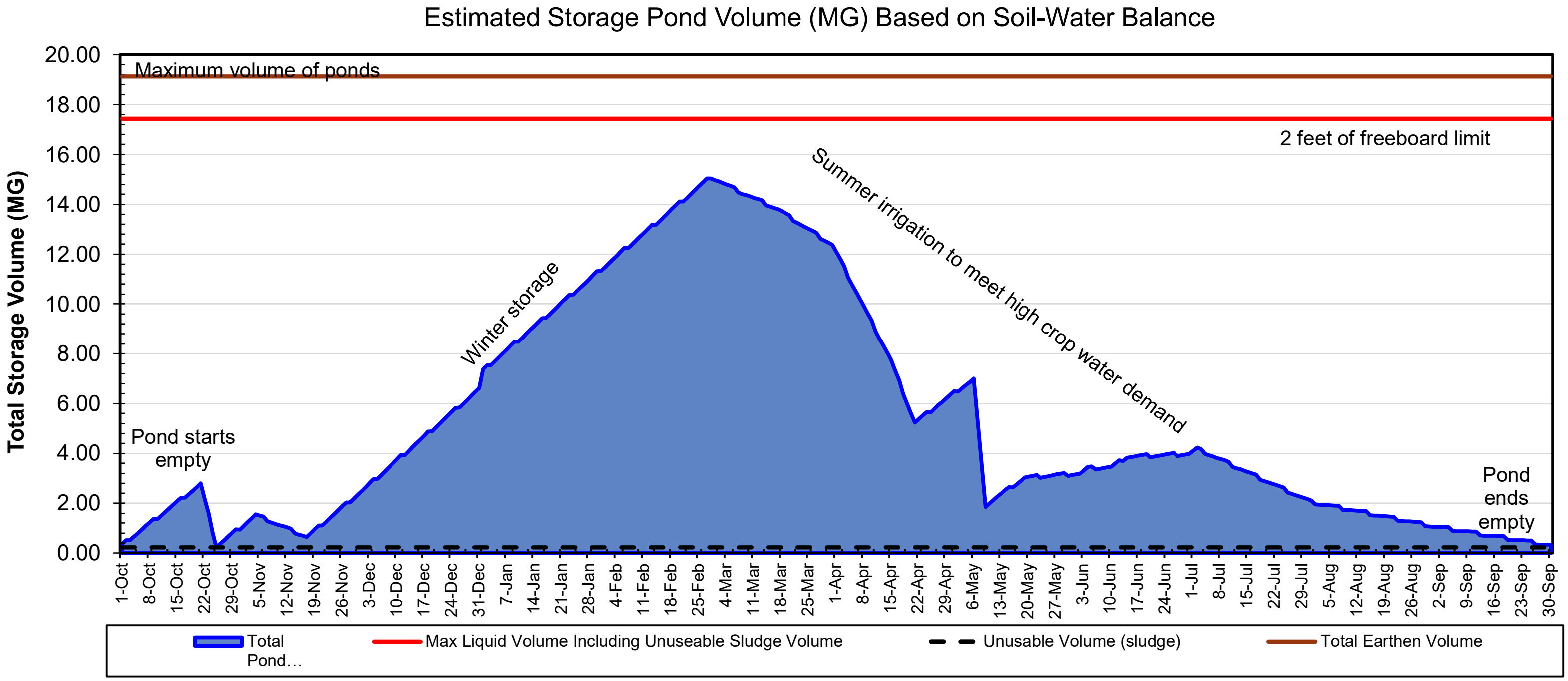
Appendix F. Storage pond water balance.

Beginning (Oct 1) Pond Volume: 0.000 MG

Date	INPUT: Direct Pond Precipitation	INPUT: Stormwater From Unsurfaced	INPUT: Stormwater From Surfaced	INPUT: Influent Flow	INPUT: Total Input	OUTPUT: Effluent Flow	OUTPUT: Pond Evap	OUTPUT: Percolation	OUTPUT: Mechanical Evaporation	OUTPUT: Total Output	Influent - Effluent	Total Pond Volume	Total Usable Pond Volume
	MG	MG	MG	MG	MG	MG	MG	MG		MG	MG	MG	MG
9/1	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	1.057	**0.824**
9/2	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	1.052	**0.819**
9/3	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	1.048	**0.815**
9/4	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	1.044	**0.811**
9/5	0.001	0.000	0.000	0.000	0.001	0.140	0.015	0	0	0.155	-0.154	0.889	**0.656**
9/6	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.885	**0.652**
9/7	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.881	**0.648**
9/8	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.876	**0.643**
9/9	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.872	**0.639**
9/10	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.867	**0.635**
9/11	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.863	**0.630**
9/12	0.001	0.000	0.000	0.000	0.001	0.140	0.015	0	0	0.155	-0.154	0.709	**0.476**
9/13	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.704	**0.471**
9/14	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.700	**0.467**
9/15	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.696	**0.463**
9/16	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.691	**0.458**
9/17	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.687	**0.454**
9/18	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.683	**0.450**
9/19	0.001	0.000	0.000	0.000	0.001	0.140	0.015	0	0	0.155	-0.154	0.528	**0.295**
9/20	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.524	**0.291**
9/21	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.520	**0.287**
9/22	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.515	**0.282**
9/23	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.511	**0.278**
9/24	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.506	**0.273**
9/25	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.502	**0.269**
9/26	0.001	0.000	0.000	0.000	0.001	0.140	0.015	0	0	0.155	-0.154	0.348	**0.115**
9/27	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.343	**0.110**
9/28	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.339	**0.106**
9/29	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.335	**0.102**
9/30	0.001	0.000	0.000	0.150	0.151	0.140	0.015	0	0	0.155	-0.004	0.330	**0.097**

Appendix G – Figure of Water Balance

Appendix G. Illustration of pond water balance.



Appendix H – Irrigation Plan

Appendix H1. Generalized soil-water balance to evaluate land application area loading rates - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan		
					Field:	1	2
					Note:	Scenario 1 - 100% Corn-Wheat Rotation	
					Acres:	38.0	28.0
					Effluent Irrig:	inches/acre of effluent	
OCTOBER	10/1	Corn	Dry corn & field for harvest	NO	10/1	--	--
	10/2	Corn	Dry corn & field for harvest	NO	10/2	--	--
	10/3	Corn	Dry corn & field for harvest	NO	10/3	--	--
	10/4	Corn	Dry corn & field for harvest	NO	10/4	--	--
	10/5	Corn	Dry corn & field for harvest	NO	10/5	--	--
	10/6	Corn	Dry corn & field for harvest	NO	10/6	--	--
	10/7	Corn	Dry corn & field for harvest	NO	10/7	--	--
	10/8	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	10/8	--	--
	10/9	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	10/9	--	--
	10/10	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	10/10	--	--
	10/11	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	10/11	--	--
	10/12	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	10/12	--	--
	10/13	Corn	Harvest: Cut, Haul, & Pack Corn Silage	NO	10/13	--	--
	10/14	Corn	Disc & Incorporate WF Stubble 2x	NO	10/14	--	--
	10/15	Corn	Disc & Incorporate WF Stubble 2x	NO	10/15	--	--
	10/16	Fallow	Finish Disc (2x)	NO	10/16	--	--
	10/17	Fallow	Finish Disc (2x)	NO	10/17	--	--
	10/18	Fallow	Collect fall soil samples for analysis	NO	10/18	--	--
	10/19	Fallow	Collect fall soil samples for analysis	NO	10/19	--	--
	10/20	Fallow	Form Border Check Borders (~100' wide)	NO	10/20	--	--
	10/21	Fallow	Form Border Check Borders (~100' wide)	NO	10/21	--	--
	10/22	Fallow	Preirrigation Event (~8")	--	10/22	0.22	0.22
	10/23	Fallow	Preirrigation Event (~8")	--	10/23	0.22	0.22
	10/24	Fallow	Preirrigation Event (~8")	--	10/24	0.22	0.22
	10/25	Fallow	Preirrigation Event (~8")	--	10/25	0.22	0.22
	10/26	Fallow	Field Drying for Planting	NO	10/26	--	--
	10/27	Fallow	|	NO	10/27	--	--
	10/28	Fallow	|	NO	10/28	--	--
	10/29	Fallow	|	NO	10/29	--	--
	10/30	Fallow	|	NO	10/30	--	--
	10/31	Fallow	|	NO	10/31	--	--
NOVEMBER	11/1	WF	Plant Winter Forage	NO	11/1	--	--
	11/2	WF	Plant Winter Forage	NO	11/2	--	--
	11/3	WF	Plant Winter Forage	NO	11/3	--	--
	11/4	WF	Plant Winter Forage	NO	11/4	--	--
	11/5	WF	Winter Forage Growing	--	11/5	0.19	--
	11/6	WF	|	--	11/6	0.19	--
	11/7	WF	|	--	11/7	0.19	--
	11/8	WF	|	--	11/8	0.19	--
	11/9	WF	|	--	11/9	0.19	--
	11/10	WF	|	--	11/10	0.19	--
	11/11	WF	|	--	11/11	0.19	--
	11/12	WF	|	--	11/12	0.19	--
	11/13	WF	|	--	11/13	--	0.26
	11/14	WF	|	--	11/14	--	0.26
	11/15	WF	|	--	11/15	--	0.26
	11/16	WF	|	--	11/16	--	0.26
	11/17	WF	|	--	11/17	--	0.26
	11/18	WF	|	--	11/18	--	--
	11/19	WF	|	--	11/19	--	--
	11/20	WF	|	--	11/20	--	--
	11/21	WF	|	--	11/21	--	--
	11/22	WF	|	--	11/22	--	--
	11/23	WF	|	--	11/23	--	--
	11/24	WF	|	--	11/24	--	--
	11/25	WF	|	--	11/25	--	--
	11/26	WF	|	--	11/26	--	--
	11/27	WF	|	--	11/27	--	--
	11/28	WF	|	--	11/28	--	--
	11/29	WF	|	--	11/29	--	--
	11/30	WF	|	--	11/30	--	--

Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan			
Field:	1	2	Total Applied in BOD Plan
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	38.0	28.0	
Effluent Irrig:	million gallons of effluent (MG)		
10/1	--	--	0.00000
10/2	--	--	0.00000
10/3	--	--	0.00000
10/4	--	--	0.00000
10/5	--	--	0.00000
10/6	--	--	0.00000
10/7	--	--	0.00000
10/8	--	--	0.00000
10/9	--	--	0.00000
10/10	--	--	0.00000
10/11	--	--	0.00000
10/12	--	--	0.00000
10/13	--	--	0.00000
10/14	--	--	0.00000
10/15	--	--	0.00000
10/16	--	--	0.00000
10/17	--	--	0.00000
10/18	--	--	0.00000
10/19	--	--	0.00000
10/20	--	--	0.00000
10/21	--	--	0.00000
10/22	0.23	0.17	0.39600
10/23	0.23	0.17	0.39600
10/24	0.23	0.17	0.39600
10/25	0.23	0.17	0.39800
10/26	--	--	0.00000
10/27	--	--	0.00000
10/28	--	--	0.00000
10/29	--	--	0.00000
10/30	--	--	0.00000
10/31	--	--	0.00000
11/1	--	--	0.00000
11/2	--	--	0.00000
11/3	--	--	0.00000
11/4	--	--	0.00000
11/5	0.20	--	0.20000
11/6	0.20	--	0.20000
11/7	0.20	--	0.20000
11/8	0.20	--	0.20000
11/9	0.20	--	0.20000
11/10	0.20	--	0.20000
11/11	0.20	--	0.20000
11/12	0.20	--	0.20000
11/13	--	0.20	0.20000
11/14	--	0.20	0.20000
11/15	--	0.20	0.20000
11/16	--	0.20	0.20000
11/17	--	0.20	0.20000
11/18	--	--	0.00000
11/19	--	--	0.00000
11/20	--	--	0.00000
11/21	--	--	0.00000
11/22	--	--	0.00000
11/23	--	--	0.00000
11/24	--	--	0.00000
11/25	--	--	0.00000
11/26	--	--	0.00000
11/27	--	--	0.00000
11/28	--	--	0.00000
11/29	--	--	0.00000
11/30	--	--	0.00000

Appendix H1. Generalized soil-water balance to evaluate land application area loading rates - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan		
					Field:	1	2
					Note:	Scenario 1 - 100% Corn-Wheat Rotation	
					Acres:	38.0	28.0
					Effluent Irrig:	inches/acre of effluent	
DECEMBER	12/1	WF	|	--	12/1	--	--
	12/2	WF	|	--	12/2	--	--
	12/3	WF	|	--	12/3	--	--
	12/4	WF	|	--	12/4	--	--
	12/5	WF	|	--	12/5	--	--
	12/6	WF	|	--	12/6	--	--
	12/7	WF	|	--	12/7	--	--
	12/8	WF	|	--	12/8	--	--
	12/9	WF	|	--	12/9	--	--
	12/10	WF	|	--	12/10	--	--
	12/11	WF	|	--	12/11	--	--
	12/12	WF	|	--	12/12	--	--
	12/13	WF	|	--	12/13	--	--
	12/14	WF	|	--	12/14	--	--
	12/15	WF	|	--	12/15	--	--
	12/16	WF	Winter Soil Salinity Leaching	--	12/16	--	--
	12/17	WF	Winter Soil Salinity Leaching	--	12/17	--	--
	12/18	WF	Winter Soil Salinity Leaching	--	12/18	--	--
	12/19	WF	Winter Soil Salinity Leaching	--	12/19	--	--
	12/20	WF	Winter Soil Salinity Leaching	--	12/20	--	--
	12/21	WF	Winter Soil Salinity Leaching	--	12/21	--	--
	12/22	WF	Winter Soil Salinity Leaching	--	12/22	--	--
	12/23	WF	Winter Soil Salinity Leaching	--	12/23	--	--
	12/24	WF	Winter Soil Salinity Leaching	--	12/24	--	--
	12/25	WF	Winter Soil Salinity Leaching	--	12/25	--	--
	12/26	WF	Winter Soil Salinity Leaching	--	12/26	--	--
	12/27	WF	Winter Soil Salinity Leaching	--	12/27	--	--
	12/28	WF	Winter Soil Salinity Leaching	--	12/28	--	--
	12/29	WF	Winter Soil Salinity Leaching	--	12/29	--	--
	12/30	WF	Winter Soil Salinity Leaching	--	12/30	--	--
	12/31	WF	Winter Soil Salinity Leaching	--	12/31	--	--
JANUARY	1/1	WF	Winter Soil Salinity Leaching	--	1/1	--	--
	1/2	WF	Winter Soil Salinity Leaching	--	1/2	--	--
	1/3	WF	Winter Soil Salinity Leaching	--	1/3	--	--
	1/4	WF	Winter Soil Salinity Leaching	--	1/4	--	--
	1/5	WF	Winter Soil Salinity Leaching	--	1/5	--	--
	1/6	WF	Winter Soil Salinity Leaching	--	1/6	--	--
	1/7	WF	Winter Soil Salinity Leaching	--	1/7	--	--
	1/8	WF	Winter Soil Salinity Leaching	--	1/8	--	--
	1/9	WF	Winter Soil Salinity Leaching	--	1/9	--	--
	1/10	WF	Winter Soil Salinity Leaching	--	1/10	--	--
	1/11	WF	Winter Soil Salinity Leaching	--	1/11	--	--
	1/12	WF	Winter Soil Salinity Leaching	--	1/12	--	--
	1/13	WF	Winter Soil Salinity Leaching	--	1/13	--	--
	1/14	WF	Winter Soil Salinity Leaching	--	1/14	--	--
	1/15	WF	Winter Soil Salinity Leaching	--	1/15	--	--
	1/16	WF	Winter Soil Salinity Leaching	--	1/16	--	--
	1/17	WF	Winter Soil Salinity Leaching	--	1/17	--	--
	1/18	WF	Winter Soil Salinity Leaching	--	1/18	--	--
	1/19	WF	Winter Soil Salinity Leaching	--	1/19	--	--
	1/20	WF	Winter Soil Salinity Leaching	--	1/20	--	--
	1/21	WF	Post-Emergent Herbicide Application	NO	1/21	--	--
	1/22	WF	Post-Emergent Herbicide Application	NO	1/22	--	--
	1/23	WF	Winter Soil Salinity Leaching	--	1/23	--	--
	1/24	WF	Winter Soil Salinity Leaching	--	1/24	--	--
	1/25	WF	Winter Soil Salinity Leaching	--	1/25	--	--
	1/26	WF	Winter Soil Salinity Leaching	--	1/26	--	--
	1/27	WF	Winter Soil Salinity Leaching	--	1/27	--	--
	1/28	WF	Winter Soil Salinity Leaching	--	1/28	--	--
	1/29	WF	Winter Soil Salinity Leaching	--	1/29	--	--
	1/30	WF	Winter Soil Salinity Leaching	--	1/30	--	--
	1/31	WF	Winter Soil Salinity Leaching	--	1/31	--	--

Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan			
Field:	1	2	Total Applied in BOD Plan
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	38.0	28.0	
Effluent Irrig:	million gallons of effluent (MG)		
12/1	--	--	0.00000
12/2	--	--	0.00000
12/3	--	--	0.00000
12/4	--	--	0.00000
12/5	--	--	0.00000
12/6	--	--	0.00000
12/7	--	--	0.00000
12/8	--	--	0.00000
12/9	--	--	0.00000
12/10	--	--	0.00000
12/11	--	--	0.00000
12/12	--	--	0.00000
12/13	--	--	0.00000
12/14	--	--	0.00000
12/15	--	--	0.00000
12/16	--	--	0.00000
12/17	--	--	0.00000
12/18	--	--	0.00000
12/19	--	--	0.00000
12/20	--	--	0.00000
12/21	--	--	0.00000
12/22	--	--	0.00000
12/23	--	--	0.00000
12/24	--	--	0.00000
12/25	--	--	0.00000
12/26	--	--	0.00000
12/27	--	--	0.00000
12/28	--	--	0.00000
12/29	--	--	0.00000
12/30	--	--	0.00000
12/31	--	--	0.00000
1/1	--	--	0.00000
1/2	--	--	0.00000
1/3	--	--	0.00000
1/4	--	--	0.00000
1/5	--	--	0.00000
1/6	--	--	0.00000
1/7	--	--	0.00000
1/8	--	--	0.00000
1/9	--	--	0.00000
1/10	--	--	0.00000
1/11	--	--	0.00000
1/12	--	--	0.00000
1/13	--	--	0.00000
1/14	--	--	0.00000
1/15	--	--	0.00000
1/16	--	--	0.00000
1/17	--	--	0.00000
1/18	--	--	0.00000
1/19	--	--	0.00000
1/20	--	--	0.00000
1/21	--	--	0.00000
1/22	--	--	0.00000
1/23	--	--	0.00000
1/24	--	--	0.00000
1/25	--	--	0.00000
1/26	--	--	0.00000
1/27	--	--	0.00000
1/28	--	--	0.00000
1/29	--	--	0.00000
1/30	--	--	0.00000
1/31	--	--	0.00000

Appendix H1. Generalized soil-water balance to evaluate land application area loading rates - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan		
					Field:	1	2
					Note:	Scenario 1 - 100% Corn-Wheat Rotation	
					Acres:	38.0	28.0
					Effluent Irrig:	inches/acre of effluent	
FEBRUARY	2/1	WF	Post-Emergent Herbicide Application	NO	2/1	--	--
	2/2	WF	Post-Emergent Herbicide Application	NO	2/2	--	--
	2/3	WF	Post-Emergent Herbicide Application	NO	2/3	--	--
	2/4	WF		--	2/4	--	--
	2/5	WF		--	2/5	--	--
	2/6	WF		--	2/6	--	--
	2/7	WF		--	2/7	--	--
	2/8	WF		--	2/8	--	--
	2/9	WF		--	2/9	--	--
	2/10	WF		--	2/10	--	--
	2/11	WF		--	2/11	--	--
	2/12	WF		--	2/12	--	--
	2/13	WF		--	2/13	--	--
	2/14	WF		--	2/14	--	--
	2/15	WF		--	2/15	--	--
	2/16	WF		--	2/16	--	--
	2/17	WF		--	2/17	--	--
	2/18	WF		--	2/18	--	--
	2/19	WF		--	2/19	--	--
	2/20	WF		--	2/20	--	--
	2/21	WF		--	2/21	--	--
	2/22	WF		--	2/22	--	--
	2/23	WF		--	2/23	--	--
	2/24	WF		--	2/24	--	--
	2/25	WF		--	2/25	--	--
	2/26	WF		--	2/26	--	--
	2/27	WF		--	2/27	--	--
	2/28	WF		--	2/28	--	--
MARCH	3/1	WF		--	3/1	0.20	--
	3/2	WF		--	3/2	0.20	--
	3/3	WF		--	3/3	0.20	--
	3/4	WF		--	3/4	0.20	--
	3/5	WF		--	3/5	0.20	--
	3/6	WF		--	3/6	0.20	--
	3/7	WF		--	3/7	0.20	--
	3/8	WF		--	3/8	0.19	--
	3/9	WF		--	3/9	--	0.26
	3/10	WF		--	3/10	--	0.26
	3/11	WF		--	3/11	--	0.26
	3/12	WF		--	3/12	--	0.26
	3/13	WF		--	3/13	--	0.26
	3/14	WF		--	3/14	--	0.26
	3/15	WF		--	3/15	0.19	--
	3/16	WF		--	3/16	0.19	--
	3/17	WF		--	3/17	0.19	--
	3/18	WF		--	3/18	0.22	--
	3/19	WF		--	3/19	0.22	--
	3/20	WF		--	3/20	0.22	--
	3/21	WF		--	3/21	0.22	--
	3/22	WF		--	3/22	0.22	--
	3/23	WF		--	3/23	--	0.30
	3/24	WF		--	3/24	--	0.30
	3/25	WF		--	3/25	--	0.30
	3/26	WF		--	3/26	--	0.30
	3/27	WF		--	3/27	--	0.30
	3/28	WF		--	3/28	--	0.30
	3/29	WF		--	3/29	0.22	--
	3/30	WF		--	3/30	0.22	--
	3/31	WF		--	3/31	0.22	--

Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan			
Field:	1	2	Total Applied in BOD Plan
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	38.0	28.0	
Effluent Irrig:	million gallons of effluent (MG)		
2/1	--	--	0.00000
2/2	--	--	0.00000
2/3	--	--	0.00000
2/4	--	--	0.00000
2/5	--	--	0.00000
2/6	--	--	0.00000
2/7	--	--	0.00000
2/8	--	--	0.00000
2/9	--	--	0.00000
2/10	--	--	0.00000
2/11	--	--	0.00000
2/12	--	--	0.00000
2/13	--	--	0.00000
2/14	--	--	0.00000
2/15	--	--	0.00000
2/16	--	--	0.00000
2/17	--	--	0.00000
2/18	--	--	0.00000
2/19	--	--	0.00000
2/20	--	--	0.00000
2/21	--	--	0.00000
2/22	--	--	0.00000
2/23	--	--	0.00000
2/24	--	--	0.00000
2/25	--	--	0.00000
2/26	--	--	0.00000
2/27	--	--	0.00000
2/28	--	--	0.00000
3/1	0.21	--	0.21000
3/2	0.21	--	0.21000
3/3	0.21	--	0.21000
3/4	0.21	--	0.21000
3/5	0.21	--	0.21000
3/6	0.21	--	0.21000
3/7	0.21	--	0.21000
3/8	0.20	--	0.20000
3/9	--	0.20	0.20000
3/10	--	0.20	0.20000
3/11	--	0.20	0.20000
3/12	--	0.20	0.20000
3/13	--	0.20	0.20000
3/14	--	0.20	0.20000
3/15	0.20	--	0.20000
3/16	0.20	--	0.20000
3/17	0.20	--	0.20000
3/18	0.23	--	0.23000
3/19	0.23	--	0.23000
3/20	0.23	--	0.23000
3/21	0.23	--	0.23000
3/22	0.23	--	0.23000
3/23	--	0.23	0.23000
3/24	--	0.23	0.23000
3/25	--	0.23	0.23000
3/26	--	0.23	0.23000
3/27	--	0.23	0.23000
3/28	--	0.23	0.23000
3/29	0.23	--	0.23000
3/30	0.23	--	0.23000
3/31	0.23	--	0.23000

Appendix H1. Generalized soil-water balance to evaluate land application area loading rates - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan		
					Field:	1	2
					Note:	Scenario 1 - 100% Corn-Wheat Rotation	
					Acres:	38.0	28.0
					Effluent Irrig:	inches/acre of effluent	
APRIL	4/1	WF	|	--	4/1	0.42	--
	4/2	WF	|	--	4/2	0.42	--
	4/3	WF	|	--	4/3	0.42	--
	4/4	WF	|	--	4/4	0.42	--
	4/5	WF	|	--	4/5	0.42	--
	4/6	WF	|	--	4/6	--	0.57
	4/7	WF	|	--	4/7	--	0.57
	4/8	WF	|	--	4/8	--	0.57
	4/9	WF	|	--	4/9	--	0.57
	4/10	WF	|	--	4/10	--	0.57
	4/11	WF	|	--	4/11	0.42	--
	4/12	WF	|	--	4/12	0.42	--
	4/13	WF	|	--	4/13	0.42	--
	4/14	WF	|	--	4/14	0.42	--
	4/15	WF	|	--	4/15	0.42	--
	4/16	WF	|	--	4/16	0.53	--
	4/17	WF	|	--	4/17	0.51	--
	4/18	WF	|	--	4/18	0.51	--
	4/19	WF	|	--	4/19	0.51	--
	4/20	WF	|	--	4/20	0.51	--
	4/21	WF	|	--	4/21	0.50	--
	4/22	WF	Harvest/Chop/Haul WF	NO	4/22	--	--
	4/23	WF	Harvest/Chop/Haul WF	NO	4/23	--	--
	4/24	WF	Harvest/Chop/Haul WF	NO	4/24	--	--
	4/25	WF	Harvest/Chop/Haul WF	NO	4/25	--	--
	4/26	WF	Harvest/Chop/Haul WF	NO	4/26	--	--
	4/27	WF	Harvest/Chop/Haul WF	NO	4/27	--	--
	4/28	WF	Harvest/Chop/Haul WF	NO	4/28	--	--
	4/29	WF	Collect spring soil samples for analysis	NO	4/29	--	--
	4/30	WF	Collect spring soil samples for analysis	NO	4/30	--	--
MAY	5/1	Fallow	Apply & Spread Solid Manure/Compost	NO	5/1	--	--
	5/2	Fallow	Apply & Spread Solid Manure/Compost	NO	5/2	--	--
	5/3	Fallow	Disc & Incorporate WF Stubble 2x	NO	5/3	--	--
	5/4	Fallow	Disc & Incorporate WF Stubble 2x	NO	5/4	--	--
	5/5	Fallow	Pull/Ridge/Shape Borders (~100 ft width)	NO	5/5	--	--
	5/6	Fallow	Pull/Ridge/Shape Borders (~100 ft width)	NO	5/6	--	--
	5/7	Fallow	Preirrigation Event (~8")	--	5/7	--	2.37
	5/8	Fallow	Preirrigation Event (~8")	--	5/8	--	2.37
	5/9	Fallow	Preirrigation Event (~8")	--	5/9	--	2.37
	5/10	Fallow	Field Drying	NO	5/10	--	--
	5/11	Fallow	Knockdown Borders	NO	5/11	--	--
	5/12	Fallow	Finish/Offset Disc to Prepare Seedbed (2x)	NO	5/12	--	--
	5/13	Fallow	Finish/Offset Disc to Prepare Seedbed (2x)	NO	5/13	--	--
	5/14	Fallow	Finish/Offset Disc to Prepare Seedbed (2x)	NO	5/14	--	--
	5/15	Fallow	Plant Corn Silage w/ insecticide+fertilizer	NO	5/15	--	--
	5/16	Corn	Plant Corn Silage w/ insecticide+fertilizer	NO	5/16	--	--
	5/17	Corn	Plant Corn Silage w/ insecticide+fertilizer	NO	5/17	--	--
	5/18	Corn	Plant Corn Silage w/ insecticide+fertilizer	NO	5/18	--	--
	5/19	Corn	Plant Corn Silage w/ insecticide+fertilizer	NO	5/19	--	--
	5/20	Corn	Corn Silage Growing	--	5/20	0.10	--
	5/21	Corn	|	--	5/21	0.10	--
	5/22	Corn	|	--	5/22	0.10	--
	5/23	Corn	|	--	5/23	0.10	--
	5/24	Corn	|	--	5/24	0.10	--
	5/25	Corn	|	--	5/25	0.10	--
	5/26	Corn	|	--	5/26	0.10	--
	5/27	Corn	|	--	5/27	0.10	--
	5/28	Corn	|	--	5/28	--	0.13
	5/29	Corn	|	--	5/29	--	0.13
	5/30	Corn	|	--	5/30	--	0.13
	5/31	Corn	|	--	5/31	--	0.13

Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan			Total Applied in BOD Plan
Field:	1	2	
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	38.0	28.0	
Effluent Irrig:	million gallons of effluent (MG)		
4/1	0.43	--	0.43000
4/2	0.43	--	0.43000
4/3	0.43	--	0.43000
4/4	0.43	--	0.43000
4/5	0.43	--	0.43000
4/6	--	0.43	0.43000
4/7	--	0.43	0.43000
4/8	--	0.43	0.43000
4/9	--	0.43	0.43000
4/10	--	0.43	0.43000
4/11	0.43	--	0.43000
4/12	0.43	--	0.43000
4/13	0.43	--	0.43000
4/14	0.43	--	0.43000
4/15	0.43	--	0.43000
4/16	0.55	--	0.55000
4/17	0.53	--	0.53000
4/18	0.53	--	0.53000
4/19	0.53	--	0.53000
4/20	0.53	--	0.53000
4/21	0.52	--	0.52000
4/22	--	--	0.00000
4/23	--	--	0.00000
4/24	--	--	0.00000
4/25	--	--	0.00000
4/26	--	--	0.00000
4/27	--	--	0.00000
4/28	--	--	0.00000
4/29	--	--	0.00000
4/30	--	--	0.00000
5/1	--	--	0.00000
5/2	--	--	0.00000
5/3	--	--	0.00000
5/4	--	--	0.00000
5/5	--	--	0.00000
5/6	--	--	0.00000
5/7	--	1.80	1.80000
5/8	--	1.80	1.80000
5/9	--	1.80	1.80000
5/10	--	--	0.00000
5/11	--	--	0.00000
5/12	--	--	0.00000
5/13	--	--	0.00000
5/14	--	--	0.00000
5/15	--	--	0.00000
5/16	--	--	0.00000
5/17	--	--	0.00000
5/18	--	--	0.00000
5/19	--	--	0.00000
5/20	0.10	--	0.10000
5/21	0.10	--	0.10000
5/22	0.10	--	0.10000
5/23	0.10	--	0.10000
5/24	0.10	--	0.10000
5/25	0.10	--	0.10000
5/26	0.10	--	0.10000
5/27	0.10	--	0.10000
5/28	--	0.10	0.10000
5/29	--	0.10	0.10000
5/30	--	0.10	0.10000
5/31	--	0.10	0.10000

Appendix H1. Generalized soil-water balance to evaluate land application area loading rates - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan		
					Field:	1	2
					Note:	Scenario 1 - 100% Corn-Wheat Rotation	
					Acres:	38.0	28.0
					Effluent Irrig:	inches/acre of effluent	
JUNE	6/1	Corn	Irrigation #1	--	6/1	0.10	--
	6/2	Corn		--	6/2	0.10	--
	6/3	Corn	Herbicide Application: Roundup	NO	6/3	--	--
	6/4	Corn	Insecticide Application: Comite for spider mites	NO	6/4	--	--
	6/5	Corn		--	6/5	0.10	--
	6/6	Corn		--	6/6	0.10	--
	6/7	Corn		--	6/7	0.10	--
	6/8	Corn		--	6/8	0.10	--
	6/9	Corn		--	6/9	0.10	--
	6/10	Corn		--	6/10	0.10	--
	6/11	Corn	Cultivated for weeds/furrowed	NO	6/11	--	--
	6/12	Corn	Cultivated for weeds/furrowed	NO	6/12	--	--
	6/13	Corn	Cultivated for weeds/furrowed	NO	6/13	--	--
	6/14	Corn	Cultivated for weeds/furrowed	NO	6/14	--	--
	6/15	Corn	Corn Silage Growing	--	6/15	--	0.13
	6/16	Corn		--	6/16	--	0.13
	6/17	Corn		--	6/17	--	0.13
	6/18	Corn		--	6/18	--	0.13
	6/19	Corn		--	6/19	--	0.13
	6/20	Corn		--	6/20	--	0.13
	6/21	Corn		--	6/21	0.10	--
	6/22	Corn		--	6/22	0.10	--
	6/23	Corn		--	6/23	0.10	--
	6/24	Corn		--	6/24	0.10	--
	6/25	Corn		--	6/25	0.10	--
	6/26	Corn		--	6/26	0.10	--
	6/27	Corn		--	6/27	0.10	--
	6/28	Corn		--	6/28	0.10	--
	6/29	Corn		--	6/29	--	0.13
	6/30	Corn		--	6/30	--	0.13
JULY	7/1	Corn	Herbicide Application: Clarity	NO	7/1	--	--
	7/2	Corn	Herbicide Application: Clarity	NO	7/2	--	--
	7/3	Corn	Corn Silage Growing	--	7/3	--	0.24
	7/4	Corn		--	7/4	--	0.24
	7/5	Corn		--	7/5	--	0.24
	7/6	Corn		--	7/6	0.17	--
	7/7	Corn		--	7/7	0.17	--
	7/8	Corn		--	7/8	0.17	--
	7/9	Corn		--	7/9	0.17	--
	7/10	Corn		--	7/10	0.17	--
	7/11	Corn		--	7/11	0.17	--
	7/12	Corn		--	7/12	0.17	--
	7/13	Corn		--	7/13	0.17	--
	7/14	Corn		--	7/14	0.17	--
	7/15	Corn		--	7/15	--	0.24
	7/16	Corn		--	7/16	--	0.24
	7/17	Corn		--	7/17	--	0.24
	7/18	Corn		--	7/18	--	0.24
	7/19	Corn		--	7/19	--	0.24
	7/20	Corn		--	7/20	0.17	--
	7/21	Corn		--	7/21	0.17	--
	7/22	Corn		--	7/22	0.17	--
	7/23	Corn		--	7/23	0.17	--
	7/24	Corn		--	7/24	0.17	--
	7/25	Corn		--	7/25	0.17	--
	7/26	Corn		--	7/26	0.17	--
	7/27	Corn		--	7/27	0.17	--
	7/28	Corn		--	7/28	0.17	--
	7/29	Corn		--	7/29	--	0.24
	7/30	Corn		--	7/30	--	0.24
	7/31	Corn		--	7/31	--	0.24

Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan			
Field:	1	2	Total Applied in BOD Plan
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	38.0	28.0	
Effluent Irrig:	million gallons of effluent (MG)		
6/1	0.10	--	0.10000
6/2	0.10	--	0.10000
6/3	--	--	0.00000
6/4	--	--	0.00000
6/5	0.10	--	0.10000
6/6	0.10	--	0.10000
6/7	0.10	--	0.10000
6/8	0.10	--	0.10000
6/9	0.10	--	0.10000
6/10	0.10	--	0.10000
6/11	--	--	0.00000
6/12	--	--	0.00000
6/13	--	--	0.00000
6/14	--	--	0.00000
6/15	--	0.10	0.10000
6/16	--	0.10	0.10000
6/17	--	0.10	0.10000
6/18	--	0.10	0.10000
6/19	--	0.10	0.10000
6/20	--	0.10	0.10000
6/21	0.10	--	0.10000
6/22	0.10	--	0.10000
6/23	0.10	--	0.10000
6/24	0.10	--	0.10000
6/25	0.10	--	0.10000
6/26	0.10	--	0.10000
6/27	0.10	--	0.10000
6/28	0.10	--	0.10000
6/29	--	0.10	0.10000
6/30	--	0.10	0.10000
7/1	--	--	0.00000
7/2	--	--	0.00000
7/3	--	0.18	0.18000
7/4	--	0.18	0.18000
7/5	--	0.18	0.18000
7/6	0.18	--	0.18000
7/7	0.18	--	0.18000
7/8	0.18	--	0.18000
7/9	0.18	--	0.18000
7/10	0.18	--	0.18000
7/11	0.18	--	0.18000
7/12	0.18	--	0.18000
7/13	0.18	--	0.18000
7/14	0.18	--	0.18000
7/15	--	0.18	0.18000
7/16	--	0.18	0.18000
7/17	--	0.18	0.18000
7/18	--	0.18	0.18000
7/19	--	0.18	0.18000
7/20	0.18	--	0.18000
7/21	0.18	--	0.18000
7/22	0.18	--	0.18000
7/23	0.18	--	0.18000
7/24	0.18	--	0.18000
7/25	0.18	--	0.18000
7/26	0.18	--	0.18000
7/27	0.18	--	0.18000
7/28	0.18	--	0.18000
7/29	--	0.18	0.18000
7/30	--	0.18	0.18000
7/31	--	0.18	0.18000

Appendix H1. Generalized soil-water balance to evaluate land application area loading rates - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	CULTURAL PRACTICE [2]	Irrigation Allowed?	Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan		
					Field:	1	2
					Note:	Scenario 1 - 100% Corn-Wheat Rotation	
					Acres:	38.0	28.0
					Effluent Irrig:	inches/acre of effluent	
AUGUST	8/1	Corn	I	--	8/1	--	0.18
	8/2	Corn	I	--	8/2	--	0.18
	8/3	Corn	I	--	8/3	0.14	--
	8/4	Corn	I	--	8/4	0.14	--
	8/5	Corn	I	--	8/5	0.14	--
	8/6	Corn	I	--	8/6	0.14	--
	8/7	Corn	I	--	8/7	0.14	--
	8/8	Corn	I	--	8/8	0.14	--
	8/9	Corn	I	--	8/9	0.14	--
	8/10	Corn	I	--	8/10	0.14	--
	8/11	Corn	I	--	8/11	0.14	--
	8/12	Corn	I	--	8/12	--	0.18
	8/13	Corn	I	--	8/13	--	0.18
	8/14	Corn	I	--	8/14	--	0.18
	8/15	Corn	I	--	8/15	--	0.18
	8/16	Corn	I	--	8/16	--	0.18
	8/17	Corn	I	--	8/17	0.14	--
	8/18	Corn	I	--	8/18	0.14	--
	8/19	Corn	I	--	8/19	0.14	--
	8/20	Corn	I	--	8/20	0.14	--
	8/21	Corn	I	--	8/21	0.14	--
	8/22	Corn	I	--	8/22	0.14	--
	8/23	Corn	I	--	8/23	0.14	--
	8/24	Corn	I	--	8/24	0.14	--
	8/25	Corn	I	--	8/25	0.14	--
	8/26	Corn	I	--	8/26	--	0.18
	8/27	Corn	I	--	8/27	--	0.18
	8/28	Corn	I	--	8/28	--	0.18
	8/29	Corn	I	--	8/29	--	0.18
	8/30	Corn	I	--	8/30	--	0.18
	8/31	Corn	I	--	8/31	0.14	--
SEPTEMBER	9/1	Corn	I	--	9/1	0.14	--
	9/2	Corn	I	--	9/2	0.14	--
	9/3	Corn	I	--	9/3	0.14	--
	9/4	Corn	I	--	9/4	0.14	--
	9/5	Corn	I	--	9/5	0.14	--
	9/6	Corn	I	--	9/6	0.14	--
	9/7	Corn	I	--	9/7	0.14	--
	9/8	Corn	I	--	9/8	0.14	--
	9/9	Corn	I	--	9/9	--	0.18
	9/10	Corn	I	--	9/10	--	0.18
	9/11	Corn	I	--	9/11	--	0.18
	9/12	Corn	I	--	9/12	--	0.18
	9/13	Corn	I	--	9/13	--	0.18
	9/14	Corn	I	--	9/14	0.14	--
	9/15	Corn	I	--	9/15	0.14	--
	9/16	Corn	I	--	9/16	0.14	--
	9/17	Corn	I	--	9/17	0.14	--
	9/18	Corn	I	--	9/18	0.14	--
	9/19	Corn	I	--	9/19	0.14	--
	9/20	Corn	I	--	9/20	0.14	--
	9/21	Corn	I	--	9/21	0.14	--
	9/22	Corn	I	--	9/22	0.14	--
	9/23	Corn	I	--	9/23	--	0.18
	9/24	Corn	I	--	9/24	--	0.18
	9/25	Corn	I	--	9/25	--	0.18
	9/26	Corn	I	--	9/26	--	0.18
	9/27	Corn	I	--	9/27	--	0.18
	9/28	Corn	I	--	9/28	0.14	--
	9/29	Corn	I	--	9/29	0.14	--
	9/30	Corn	I	--	9/30	0.14	--
Total Applied (inches)				--	--	24.43	23.76
--				--	--	--	--

Land Application Area Irrigation Plan to Manage BOD Loading - Irrigation Plan			
Field:	1	2	Total Applied in BOD Plan
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	38.0	28.0	
Effluent Irrig:	million gallons of effluent (MG)		
8/1	--	0.14	0.14000
8/2	--	0.14	0.14000
8/3	0.14	--	0.14000
8/4	0.14	--	0.14000
8/5	0.14	--	0.14000
8/6	0.14	--	0.14000
8/7	0.14	--	0.14000
8/8	0.14	--	0.14000
8/9	0.14	--	0.14000
8/10	0.14	--	0.14000
8/11	0.14	--	0.14000
8/12	--	0.14	0.14000
8/13	--	0.14	0.14000
8/14	--	0.14	0.14000
8/15	--	0.14	0.14000
8/16	--	0.14	0.14000
8/17	0.14	--	0.14000
8/18	0.14	--	0.14000
8/19	0.14	--	0.14000
8/20	0.14	--	0.14000
8/21	0.14	--	0.14000
8/22	0.14	--	0.14000
8/23	0.14	--	0.14000
8/24	0.14	--	0.14000
8/25	0.14	--	0.14000
8/26	--	0.14	0.14000
8/27	--	0.14	0.14000
8/28	--	0.14	0.14000
8/29	--	0.14	0.14000
8/30	--	0.14	0.14000
8/31	0.14	--	0.14000
9/1	0.14	--	0.14000
9/2	0.14	--	0.14000
9/3	0.14	--	0.14000
9/4	0.14	--	0.14000
9/5	0.14	--	0.14000
9/6	0.14	--	0.14000
9/7	0.14	--	0.14000
9/8	0.14	--	0.14000
9/9	--	0.14	0.14000
9/10	--	0.14	0.14000
9/11	--	0.14	0.14000
9/12	--	0.14	0.14000
9/13	--	0.14	0.14000
9/14	0.14	--	0.14000
9/15	0.14	--	0.14000
9/16	0.14	--	0.14000
9/17	0.14	--	0.14000
9/18	0.14	--	0.14000
9/19	0.14	--	0.14000
9/20	0.14	--	0.14000
9/21	0.14	--	0.14000
9/22	0.14	--	0.14000
9/23	--	0.14	0.14000
9/24	--	0.14	0.14000
9/25	--	0.14	0.14000
9/26	--	0.14	0.14000
9/27	--	0.14	0.14000
9/28	0.14	--	0.14000
9/29	0.14	--	0.14000
9/30	0.14	--	0.14000
Total Applied	25.21	18.06	43.276
Max Daily	0.55	1.80	--

NOTES:

Appendix H2. BOD Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - BOD Loading Rates		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	BOD Applied (pounds/acre)	
OCTOBER	10/1	Corn	10/1	--	--
	10/2	Corn	10/2	--	--
	10/3	Corn	10/3	--	--
	10/4	Corn	10/4	--	--
	10/5	Corn	10/5	--	--
	10/6	Corn	10/6	--	--
	10/7	Corn	10/7	--	--
	10/8	Corn	10/8	--	--
	10/9	Corn	10/9	--	--
	10/10	Corn	10/10	--	--
	10/11	Corn	10/11	--	--
	10/12	Corn	10/12	--	--
	10/13	Corn	10/13	--	--
	10/14	Corn	10/14	--	--
	10/15	Corn	10/15	--	--
	10/16	Fallow	10/16	--	--
	10/17	Fallow	10/17	--	--
	10/18	Fallow	10/18	--	--
	10/19	Fallow	10/19	--	--
	10/20	Fallow	10/20	--	--
	10/21	Fallow	10/21	--	--
	10/22	Fallow	10/22	3	3
	10/23	Fallow	10/23	3	3
	10/24	Fallow	10/24	3	3
	10/25	Fallow	10/25	3	3
	10/26	Fallow	10/26	--	--
	10/27	Fallow	10/27	--	--
	10/28	Fallow	10/28	--	--
	10/29	Fallow	10/29	--	--
	10/30	Fallow	10/30	--	--
	10/31	Fallow	10/31	--	--
NOVEMBER	11/1	WF	11/1	--	--
	11/2	WF	11/2	--	--
	11/3	WF	11/3	--	--
	11/4	WF	11/4	--	--
	11/5	WF	11/5	3	--
	11/6	WF	11/6	3	--
	11/7	WF	11/7	3	--
	11/8	WF	11/8	3	--
	11/9	WF	11/9	3	--
	11/10	WF	11/10	3	--
	11/11	WF	11/11	3	--
	11/12	WF	11/12	3	--
	11/13	WF	11/13	--	4
	11/14	WF	11/14	--	4
	11/15	WF	11/15	--	4
	11/16	WF	11/16	--	4
	11/17	WF	11/17	--	4
	11/18	WF	11/18	--	--
	11/19	WF	11/19	--	--
	11/20	WF	11/20	--	--
	11/21	WF	11/21	--	--
	11/22	WF	11/22	--	--
	11/23	WF	11/23	--	--
	11/24	WF	11/24	--	--
	11/25	WF	11/25	--	--
	11/26	WF	11/26	--	--
	11/27	WF	11/27	--	--
	11/28	WF	11/28	--	--
	11/29	WF	11/29	--	--
	11/30	WF	11/30	--	--

Land Application Area Irrigation Plan to Manage BOD Loading			
Field:	1	2	Total Applied
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	26.6	19.6	
Effluent Irrig:	BOD Applied (pounds)		
10/1	--	--	0
10/2	--	--	0
10/3	--	--	0
10/4	--	--	0
10/5	--	--	0
10/6	--	--	0
10/7	--	--	0
10/8	--	--	0
10/9	--	--	0
10/10	--	--	0
10/11	--	--	0
10/12	--	--	0
10/13	--	--	0
10/14	--	--	0
10/15	--	--	0
10/16	--	--	0
10/17	--	--	0
10/18	--	--	0
10/19	--	--	0
10/20	--	--	0
10/21	--	--	0
10/22	80	59	139
10/23	80	59	139
10/24	80	59	139
10/25	80	59	139
10/26	--	--	0
10/27	--	--	0
10/28	--	--	0
10/29	--	--	0
10/30	--	--	0
10/31	--	--	0
11/1	--	--	0
11/2	--	--	0
11/3	--	--	0
11/4	--	--	0
11/5	70	--	70
11/6	70	--	70
11/7	70	--	70
11/8	70	--	70
11/9	70	--	70
11/10	70	--	70
11/11	70	--	70
11/12	70	--	70
11/13	--	70	70
11/14	--	70	70
11/15	--	70	70
11/16	--	70	70
11/17	--	70	70
11/18	--	--	0
11/19	--	--	0
11/20	--	--	0
11/21	--	--	0
11/22	--	--	0
11/23	--	--	0
11/24	--	--	0
11/25	--	--	0
11/26	--	--	0
11/27	--	--	0
11/28	--	--	0
11/29	--	--	0
11/30	--	--	0

Appendix H2. BOD Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - BOD Loading Rates		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	BOD Applied (pounds/acre)	
DECEMBER	12/1	WF	12/1	--	--
	12/2	WF	12/2	--	--
	12/3	WF	12/3	--	--
	12/4	WF	12/4	--	--
	12/5	WF	12/5	--	--
	12/6	WF	12/6	--	--
	12/7	WF	12/7	--	--
	12/8	WF	12/8	--	--
	12/9	WF	12/9	--	--
	12/10	WF	12/10	--	--
	12/11	WF	12/11	--	--
	12/12	WF	12/12	--	--
	12/13	WF	12/13	--	--
	12/14	WF	12/14	--	--
	12/15	WF	12/15	--	--
	12/16	WF	12/16	--	--
	12/17	WF	12/17	--	--
	12/18	WF	12/18	--	--
	12/19	WF	12/19	--	--
	12/20	WF	12/20	--	--
	12/21	WF	12/21	--	--
	12/22	WF	12/22	--	--
	12/23	WF	12/23	--	--
	12/24	WF	12/24	--	--
	12/25	WF	12/25	--	--
	12/26	WF	12/26	--	--
	12/27	WF	12/27	--	--
	12/28	WF	12/28	--	--
	12/29	WF	12/29	--	--
	12/30	WF	12/30	--	--
	12/31	WF	12/31	--	--
JANUARY	1/1	WF	1/1	--	--
	1/2	WF	1/2	--	--
	1/3	WF	1/3	--	--
	1/4	WF	1/4	--	--
	1/5	WF	1/5	--	--
	1/6	WF	1/6	--	--
	1/7	WF	1/7	--	--
	1/8	WF	1/8	--	--
	1/9	WF	1/9	--	--
	1/10	WF	1/10	--	--
	1/11	WF	1/11	--	--
	1/12	WF	1/12	--	--
	1/13	WF	1/13	--	--
	1/14	WF	1/14	--	--
	1/15	WF	1/15	--	--
	1/16	WF	1/16	--	--
	1/17	WF	1/17	--	--
	1/18	WF	1/18	--	--
	1/19	WF	1/19	--	--
	1/20	WF	1/20	--	--
	1/21	WF	1/21	--	--
	1/22	WF	1/22	--	--
	1/23	WF	1/23	--	--
	1/24	WF	1/24	--	--
	1/25	WF	1/25	--	--
	1/26	WF	1/26	--	--
	1/27	WF	1/27	--	--
	1/28	WF	1/28	--	--
	1/29	WF	1/29	--	--
	1/30	WF	1/30	--	--
	1/31	WF	1/31	--	--

Land Application Area Irrigation Plan to Manage BOD Loading			
Field:	1	2	Total Applied
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	26.6	19.6	
Effluent Irrig:	BOD Applied (pounds)		
12/1	--	--	0
12/2	--	--	0
12/3	--	--	0
12/4	--	--	0
12/5	--	--	0
12/6	--	--	0
12/7	--	--	0
12/8	--	--	0
12/9	--	--	0
12/10	--	--	0
12/11	--	--	0
12/12	--	--	0
12/13	--	--	0
12/14	--	--	0
12/15	--	--	0
12/16	--	--	0
12/17	--	--	0
12/18	--	--	0
12/19	--	--	0
12/20	--	--	0
12/21	--	--	0
12/22	--	--	0
12/23	--	--	0
12/24	--	--	0
12/25	--	--	0
12/26	--	--	0
12/27	--	--	0
12/28	--	--	0
12/29	--	--	0
12/30	--	--	0
12/31	--	--	0
1/1	--	--	0
1/2	--	--	0
1/3	--	--	0
1/4	--	--	0
1/5	--	--	0
1/6	--	--	0
1/7	--	--	0
1/8	--	--	0
1/9	--	--	0
1/10	--	--	0
1/11	--	--	0
1/12	--	--	0
1/13	--	--	0
1/14	--	--	0
1/15	--	--	0
1/16	--	--	0
1/17	--	--	0
1/18	--	--	0
1/19	--	--	0
1/20	--	--	0
1/21	--	--	0
1/22	--	--	0
1/23	--	--	0
1/24	--	--	0
1/25	--	--	0
1/26	--	--	0
1/27	--	--	0
1/28	--	--	0
1/29	--	--	0
1/30	--	--	0
1/31	--	--	0

Appendix H2. BOD Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - BOD Loading Rates		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	BOD Applied (pounds/acre)	
FEBRUARY	2/1	WF	2/1	--	--
	2/2	WF	2/2	--	--
	2/3	WF	2/3	--	--
	2/4	WF	2/4	--	--
	2/5	WF	2/5	--	--
	2/6	WF	2/6	--	--
	2/7	WF	2/7	--	--
	2/8	WF	2/8	--	--
	2/9	WF	2/9	--	--
	2/10	WF	2/10	--	--
	2/11	WF	2/11	--	--
	2/12	WF	2/12	--	--
	2/13	WF	2/13	--	--
	2/14	WF	2/14	--	--
	2/15	WF	2/15	--	--
	2/16	WF	2/16	--	--
	2/17	WF	2/17	--	--
	2/18	WF	2/18	--	--
	2/19	WF	2/19	--	--
	2/20	WF	2/20	--	--
	2/21	WF	2/21	--	--
	2/22	WF	2/22	--	--
	2/23	WF	2/23	--	--
	2/24	WF	2/24	--	--
	2/25	WF	2/25	--	--
	2/26	WF	2/26	--	--
	2/27	WF	2/27	--	--
	2/28	WF	2/28	--	--
MARCH	3/1	WF	3/1	3	--
	3/2	WF	3/2	3	--
	3/3	WF	3/3	3	--
	3/4	WF	3/4	3	--
	3/5	WF	3/5	3	--
	3/6	WF	3/6	3	--
	3/7	WF	3/7	3	--
	3/8	WF	3/8	3	--
	3/9	WF	3/9	--	4
	3/10	WF	3/10	--	4
	3/11	WF	3/11	--	4
	3/12	WF	3/12	--	4
	3/13	WF	3/13	--	4
	3/14	WF	3/14	--	4
	3/15	WF	3/15	3	--
	3/16	WF	3/16	3	--
	3/17	WF	3/17	3	--
	3/18	WF	3/18	3	--
	3/19	WF	3/19	3	--
	3/20	WF	3/20	3	--
	3/21	WF	3/21	3	--
	3/22	WF	3/22	3	--
	3/23	WF	3/23	--	4
	3/24	WF	3/24	--	4
	3/25	WF	3/25	--	4
	3/26	WF	3/26	--	4
	3/27	WF	3/27	--	4
	3/28	WF	3/28	--	4
	3/29	WF	3/29	3	--
	3/30	WF	3/30	3	--
	3/31	WF	3/31	3	--

Land Application Area Irrigation Plan to Manage BOD Loading			
Field:	1	2	Total Applied
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	26.6	19.6	
Effluent Irrig:	BOD Applied (pounds)		
2/1	--	--	0
2/2	--	--	0
2/3	--	--	0
2/4	--	--	0
2/5	--	--	0
2/6	--	--	0
2/7	--	--	0
2/8	--	--	0
2/9	--	--	0
2/10	--	--	0
2/11	--	--	0
2/12	--	--	0
2/13	--	--	0
2/14	--	--	0
2/15	--	--	0
2/16	--	--	0
2/17	--	--	0
2/18	--	--	0
2/19	--	--	0
2/20	--	--	0
2/21	--	--	0
2/22	--	--	0
2/23	--	--	0
2/24	--	--	0
2/25	--	--	0
2/26	--	--	0
2/27	--	--	0
2/28	--	--	0
3/1	74	--	74
3/2	74	--	74
3/3	74	--	74
3/4	74	--	74
3/5	74	--	74
3/6	74	--	74
3/7	74	--	74
3/8	70	--	70
3/9	--	70	70
3/10	--	70	70
3/11	--	70	70
3/12	--	70	70
3/13	--	70	70
3/14	--	70	70
3/15	70	--	70
3/16	70	--	70
3/17	70	--	70
3/18	81	--	81
3/19	81	--	81
3/20	81	--	81
3/21	81	--	81
3/22	81	--	81
3/23	--	81	81
3/24	--	81	81
3/25	--	81	81
3/26	--	81	81
3/27	--	81	81
3/28	--	81	81
3/29	81	--	81
3/30	81	--	81
3/31	81	--	81

Appendix H2. BOD Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - BOD Loading Rates		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	BOD Applied (pounds/acre)	
APRIL	4/1	WF	4/1	6	--
	4/2	WF	4/2	6	--
	4/3	WF	4/3	6	--
	4/4	WF	4/4	6	--
	4/5	WF	4/5	6	--
	4/6	WF	4/6	--	8
	4/7	WF	4/7	--	8
	4/8	WF	4/8	--	8
	4/9	WF	4/9	--	8
	4/10	WF	4/10	--	8
	4/11	WF	4/11	6	--
	4/12	WF	4/12	6	--
	4/13	WF	4/13	6	--
	4/14	WF	4/14	6	--
	4/15	WF	4/15	6	--
	4/16	WF	4/16	7	--
	4/17	WF	4/17	7	--
	4/18	WF	4/18	7	--
	4/19	WF	4/19	7	--
	4/20	WF	4/20	7	--
	4/21	WF	4/21	7	--
	4/22	WF	4/22	--	--
	4/23	WF	4/23	--	--
	4/24	WF	4/24	--	--
	4/25	WF	4/25	--	--
	4/26	WF	4/26	--	--
	4/27	WF	4/27	--	--
	4/28	WF	4/28	--	--
	4/29	WF	4/29	--	--
	4/30	WF	4/30	--	--
MAY	5/1	Fallow	5/1	--	--
	5/2	Fallow	5/2	--	--
	5/3	Fallow	5/3	--	--
	5/4	Fallow	5/4	--	--
	5/5	Fallow	5/5	--	--
	5/6	Fallow	5/6	--	--
	5/7	Fallow	5/7	--	32
	5/8	Fallow	5/8	--	32
	5/9	Fallow	5/9	--	32
	5/10	Fallow	5/10	--	--
	5/11	Fallow	5/11	--	--
	5/12	Fallow	5/12	--	--
	5/13	Fallow	5/13	--	--
	5/14	Fallow	5/14	--	--
	5/15	Fallow	5/15	--	--
	5/16	Corn	5/16	--	--
	5/17	Corn	5/17	--	--
	5/18	Corn	5/18	--	--
	5/19	Corn	5/19	--	--
	5/20	Corn	5/20	1	--
	5/21	Corn	5/21	1	--
	5/22	Corn	5/22	1	--
	5/23	Corn	5/23	1	--
	5/24	Corn	5/24	1	--
	5/25	Corn	5/25	1	--
	5/26	Corn	5/26	1	--
	5/27	Corn	5/27	1	--
	5/28	Corn	5/28	--	2
	5/29	Corn	5/29	--	2
	5/30	Corn	5/30	--	2
	5/31	Corn	5/31	--	2

Land Application Area Irrigation Plan to Manage BOD Loading			
Field:	1	2	Total Applied
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	26.6	19.6	
Effluent Irrig:	BOD Applied (pounds)		
4/1	151	--	151
4/2	151	--	151
4/3	151	--	151
4/4	151	--	151
4/5	151	--	151
4/6	--	151	151
4/7	--	151	151
4/8	--	151	151
4/9	--	151	151
4/10	--	151	151
4/11	151	--	151
4/12	151	--	151
4/13	151	--	151
4/14	151	--	151
4/15	151	--	151
4/16	193	--	193
4/17	186	--	186
4/18	186	--	186
4/19	186	--	186
4/20	186	--	186
4/21	182	--	182
4/22	--	--	0
4/23	--	--	0
4/24	--	--	0
4/25	--	--	0
4/26	--	--	0
4/27	--	--	0
4/28	--	--	0
4/29	--	--	0
4/30	--	--	0
5/1	--	--	0
5/2	--	--	0
5/3	--	--	0
5/4	--	--	0
5/5	--	--	0
5/6	--	--	0
5/7	--	631	631
5/8	--	631	631
5/9	--	631	631
5/10	--	--	0
5/11	--	--	0
5/12	--	--	0
5/13	--	--	0
5/14	--	--	0
5/15	--	--	0
5/16	--	--	0
5/17	--	--	0
5/18	--	--	0
5/19	--	--	0
5/20	35	--	35
5/21	35	--	35
5/22	35	--	35
5/23	35	--	35
5/24	35	--	35
5/25	35	--	35
5/26	35	--	35
5/27	35	--	35
5/28	--	35	35
5/29	--	35	35
5/30	--	35	35
5/31	--	35	35

Appendix H2. BOD Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - BOD Loading Rates		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	BOD Applied (pounds/acre)	
JUNE	6/1	Corn	6/1	1	--
	6/2	Corn	6/2	1	--
	6/3	Corn	6/3	--	--
	6/4	Corn	6/4	--	--
	6/5	Corn	6/5	1	--
	6/6	Corn	6/6	1	--
	6/7	Corn	6/7	1	--
	6/8	Corn	6/8	1	--
	6/9	Corn	6/9	1	--
	6/10	Corn	6/10	1	--
	6/11	Corn	6/11	--	--
	6/12	Corn	6/12	--	--
	6/13	Corn	6/13	--	--
	6/14	Corn	6/14	--	--
	6/15	Corn	6/15	--	2
	6/16	Corn	6/16	--	2
	6/17	Corn	6/17	--	2
	6/18	Corn	6/18	--	2
	6/19	Corn	6/19	--	2
	6/20	Corn	6/20	--	2
	6/21	Corn	6/21	1	--
	6/22	Corn	6/22	1	--
	6/23	Corn	6/23	1	--
	6/24	Corn	6/24	1	--
	6/25	Corn	6/25	1	--
	6/26	Corn	6/26	1	--
	6/27	Corn	6/27	1	--
	6/28	Corn	6/28	1	--
	6/29	Corn	6/29	--	2
	6/30	Corn	6/30	--	2
JULY	7/1	Corn	7/1	--	--
	7/2	Corn	7/2	--	--
	7/3	Corn	7/3	--	3
	7/4	Corn	7/4	--	3
	7/5	Corn	7/5	--	3
	7/6	Corn	7/6	2	--
	7/7	Corn	7/7	2	--
	7/8	Corn	7/8	2	--
	7/9	Corn	7/9	2	--
	7/10	Corn	7/10	2	--
	7/11	Corn	7/11	2	--
	7/12	Corn	7/12	2	--
	7/13	Corn	7/13	2	--
	7/14	Corn	7/14	2	--
	7/15	Corn	7/15	--	3
	7/16	Corn	7/16	--	3
	7/17	Corn	7/17	--	3
	7/18	Corn	7/18	--	3
	7/19	Corn	7/19	--	3
	7/20	Corn	7/20	2	--
	7/21	Corn	7/21	2	--
	7/22	Corn	7/22	2	--
	7/23	Corn	7/23	2	--
	7/24	Corn	7/24	2	--
	7/25	Corn	7/25	2	--
	7/26	Corn	7/26	2	--
	7/27	Corn	7/27	2	--
	7/28	Corn	7/28	2	--
	7/29	Corn	7/29	--	3
	7/30	Corn	7/30	--	3
	7/31	Corn	7/31	--	3

Land Application Area Irrigation Plan to Manage BOD Loading			
Field:	1	2	Total Applied
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	26.6	19.6	
Effluent Irrig:	BOD Applied (pounds)		
6/1	35	--	35
6/2	35	--	35
6/3	--	--	0
6/4	--	--	0
6/5	35	--	35
6/6	35	--	35
6/7	35	--	35
6/8	35	--	35
6/9	35	--	35
6/10	35	--	35
6/11	--	--	0
6/12	--	--	0
6/13	--	--	0
6/14	--	--	0
6/15	--	35	35
6/16	--	35	35
6/17	--	35	35
6/18	--	35	35
6/19	--	35	35
6/20	--	35	35
6/21	35	--	35
6/22	35	--	35
6/23	35	--	35
6/24	35	--	35
6/25	35	--	35
6/26	35	--	35
6/27	35	--	35
6/28	35	--	35
6/29	--	35	35
6/30	--	35	35
7/1	--	--	0
7/2	--	--	0
7/3	--	63	63
7/4	--	63	63
7/5	--	63	63
7/6	63	--	63
7/7	63	--	63
7/8	63	--	63
7/9	63	--	63
7/10	63	--	63
7/11	63	--	63
7/12	63	--	63
7/13	63	--	63
7/14	63	--	63
7/15	--	63	63
7/16	--	63	63
7/17	--	63	63
7/18	--	63	63
7/19	--	63	63
7/20	63	--	63
7/21	63	--	63
7/22	63	--	63
7/23	63	--	63
7/24	63	--	63
7/25	63	--	63
7/26	63	--	63
7/27	63	--	63
7/28	63	--	63
7/29	--	63	63
7/30	--	63	63
7/31	--	63	63

Appendix H2. BOD Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - BOD Loading Rates		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	BOD Applied (pounds/acre)	
AUGUST	8/1	Corn	8/1	--	3
	8/2	Corn	8/2	--	3
	8/3	Corn	8/3	2	--
	8/4	Corn	8/4	2	--
	8/5	Corn	8/5	2	--
	8/6	Corn	8/6	2	--
	8/7	Corn	8/7	2	--
	8/8	Corn	8/8	2	--
	8/9	Corn	8/9	2	--
	8/10	Corn	8/10	2	--
	8/11	Corn	8/11	2	--
	8/12	Corn	8/12	--	3
	8/13	Corn	8/13	--	3
	8/14	Corn	8/14	--	3
	8/15	Corn	8/15	--	3
	8/16	Corn	8/16	--	3
	8/17	Corn	8/17	2	--
	8/18	Corn	8/18	2	--
	8/19	Corn	8/19	2	--
	8/20	Corn	8/20	2	--
	8/21	Corn	8/21	2	--
	8/22	Corn	8/22	2	--
	8/23	Corn	8/23	2	--
	8/24	Corn	8/24	2	--
	8/25	Corn	8/25	2	--
	8/26	Corn	8/26	--	3
	8/27	Corn	8/27	--	3
	8/28	Corn	8/28	--	3
	8/29	Corn	8/29	--	3
	8/30	Corn	8/30	--	3
	8/31	Corn	8/31	2	--
SEPTEMBER	9/1	Corn	9/1	2	--
	9/2	Corn	9/2	2	--
	9/3	Corn	9/3	2	--
	9/4	Corn	9/4	2	--
	9/5	Corn	9/5	2	--
	9/6	Corn	9/6	2	--
	9/7	Corn	9/7	2	--
	9/8	Corn	9/8	2	--
	9/9	Corn	9/9	--	3
	9/10	Corn	9/10	--	3
	9/11	Corn	9/11	--	3
	9/12	Corn	9/12	--	3
	9/13	Corn	9/13	--	3
	9/14	Corn	9/14	2	--
	9/15	Corn	9/15	2	--
	9/16	Corn	9/16	2	--
	9/17	Corn	9/17	2	--
	9/18	Corn	9/18	2	--
	9/19	Corn	9/19	2	--
	9/20	Corn	9/20	2	--
	9/21	Corn	9/21	2	--
	9/22	Corn	9/22	2	--
	9/23	Corn	9/23	--	3
	9/24	Corn	9/24	--	3
	9/25	Corn	9/25	--	3
	9/26	Corn	9/26	--	3
	9/27	Corn	9/27	--	3
	9/28	Corn	9/28	2	--
	9/29	Corn	9/29	2	--
	9/30	Corn	9/30	2	--
Total Applied				332	323
Max Daily				7	32

Land Application Area Irrigation Plan to Manage BOD Loading			
Field:	1	2	Total Applied
Note:	Scenario 1 - 100% Corn-Wheat Rotation		
Acres:	26.6	19.6	
Effluent Irrig:	BOD Applied (pounds)		
8/1	--	49	49
8/2	--	49	49
8/3	49	--	49
8/4	49	--	49
8/5	49	--	49
8/6	49	--	49
8/7	49	--	49
8/8	49	--	49
8/9	49	--	49
8/10	49	--	49
8/11	49	--	49
8/12	--	49	49
8/13	--	49	49
8/14	--	49	49
8/15	--	49	49
8/16	--	49	49
8/17	49	--	49
8/18	49	--	49
8/19	49	--	49
8/20	49	--	49
8/21	49	--	49
8/22	49	--	49
8/23	49	--	49
8/24	49	--	49
8/25	49	--	49
8/26	--	49	49
8/27	--	49	49
8/28	--	49	49
8/29	--	49	49
8/30	--	49	49
8/31	49	--	49
9/1	49	--	49
9/2	49	--	49
9/3	49	--	49
9/4	49	--	49
9/5	49	--	49
9/6	49	--	49
9/7	49	--	49
9/8	49	--	49
9/9	--	49	49
9/10	--	49	49
9/11	--	49	49
9/12	--	49	49
9/13	--	49	49
9/14	49	--	49
9/15	49	--	49
9/16	49	--	49
9/17	49	--	49
9/18	49	--	49
9/19	49	--	49
9/20	49	--	49
9/21	49	--	49
9/22	49	--	49
9/23	--	49	49
9/24	--	49	49
9/25	--	49	49
9/26	--	49	49
9/27	--	49	49
9/28	49	--	49
9/29	49	--	49
9/30	49	--	49
Total	8,832	6,327	--
--	--	--	--

NOTES:

Appendix H3. Nitrogen Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - GROSS Nitrogen Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Gross Nitrogen Applied (pounds/acre)	
OCTOBER	10/1	Corn	10/1	--	--
	10/2	Corn	10/2	--	--
	10/3	Corn	10/3	--	--
	10/4	Corn	10/4	--	--
	10/5	Corn	10/5	--	--
	10/6	Corn	10/6	--	--
	10/7	Corn	10/7	--	--
	10/8	Corn	10/8	--	--
	10/9	Corn	10/9	--	--
	10/10	Corn	10/10	--	--
	10/11	Corn	10/11	--	--
	10/12	Corn	10/12	--	--
	10/13	Corn	10/13	--	--
	10/14	Corn	10/14	--	--
	10/15	Corn	10/15	--	--
	10/16	Fallow	10/16	--	--
	10/17	Fallow	10/17	--	--
	10/18	Fallow	10/18	--	--
	10/19	Fallow	10/19	--	--
	10/20	Fallow	10/20	--	--
	10/21	Fallow	10/21	--	--
	10/22	Fallow	10/22	4	4
	10/23	Fallow	10/23	4	4
	10/24	Fallow	10/24	4	4
	10/25	Fallow	10/25	4	4
	10/26	Fallow	10/26	--	--
	10/27	Fallow	10/27	--	--
	10/28	Fallow	10/28	--	--
	10/29	Fallow	10/29	--	--
	10/30	Fallow	10/30	--	--
	10/31	Fallow	10/31	--	--
NOVEMBER	11/1	WF	11/1	--	--
	11/2	WF	11/2	--	--
	11/3	WF	11/3	--	--
	11/4	WF	11/4	--	--
	11/5	WF	11/5	4	--
	11/6	WF	11/6	4	--
	11/7	WF	11/7	4	--
	11/8	WF	11/8	4	--
	11/9	WF	11/9	4	--
	11/10	WF	11/10	4	--
	11/11	WF	11/11	4	--
	11/12	WF	11/12	4	--
	11/13	WF	11/13	--	5
	11/14	WF	11/14	--	5
	11/15	WF	11/15	--	5
	11/16	WF	11/16	--	5
	11/17	WF	11/17	--	5
	11/18	WF	11/18	--	--
	11/19	WF	11/19	--	--
	11/20	WF	11/20	--	--
	11/21	WF	11/21	--	--
	11/22	WF	11/22	--	--
	11/23	WF	11/23	--	--
	11/24	WF	11/24	--	--
	11/25	WF	11/25	--	--
	11/26	WF	11/26	--	--
	11/27	WF	11/27	--	--
	11/28	WF	11/28	--	--
	11/29	WF	11/29	--	--
	11/30	WF	11/30	--	--

Land Application Area Irrigation Plan to Manage BOD Loading - NET Nitrogen Loading		
Field:	1	2
Note:	Scenario 1 - 100% Corn-Wheat Rotation	
Acres:	38.0	28.0
Effluent Irrig:	Net Nitrogen Applied (pounds/acre)	
10/1	--	--
10/2	--	--
10/3	--	--
10/4	--	--
10/5	--	--
10/6	--	--
10/7	--	--
10/8	--	--
10/9	--	--
10/10	--	--
10/11	--	--
10/12	--	--
10/13	--	--
10/14	--	--
10/15	--	--
10/16	--	--
10/17	--	--
10/18	--	--
10/19	--	--
10/20	--	--
10/21	--	--
10/22	4	4
10/23	4	4
10/24	4	4
10/25	4	4
10/26	--	--
10/27	--	--
10/28	--	--
10/29	--	--
10/30	--	--
10/31	--	--
11/1	--	--
11/2	--	--
11/3	--	--
11/4	--	--
11/5	4	--
11/6	4	--
11/7	4	--
11/8	4	--
11/9	4	--
11/10	4	--
11/11	4	--
11/12	4	--
11/13	--	5
11/14	--	5
11/15	--	5
11/16	--	5
11/17	--	5
11/18	--	--
11/19	--	--
11/20	--	--
11/21	--	--
11/22	--	--
11/23	--	--
11/24	--	--
11/25	--	--
11/26	--	--
11/27	--	--
11/28	--	--
11/29	--	--
11/30	--	--

Appendix H3. Nitrogen Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - GROSS Nitrogen Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Gross Nitrogen Applied (pounds/acre)	
DECEMBER	12/1	WF	12/1	--	--
	12/2	WF	12/2	--	--
	12/3	WF	12/3	--	--
	12/4	WF	12/4	--	--
	12/5	WF	12/5	--	--
	12/6	WF	12/6	--	--
	12/7	WF	12/7	--	--
	12/8	WF	12/8	--	--
	12/9	WF	12/9	--	--
	12/10	WF	12/10	--	--
	12/11	WF	12/11	--	--
	12/12	WF	12/12	--	--
	12/13	WF	12/13	--	--
	12/14	WF	12/14	--	--
	12/15	WF	12/15	--	--
	12/16	WF	12/16	--	--
	12/17	WF	12/17	--	--
	12/18	WF	12/18	--	--
	12/19	WF	12/19	--	--
	12/20	WF	12/20	--	--
	12/21	WF	12/21	--	--
	12/22	WF	12/22	--	--
	12/23	WF	12/23	--	--
	12/24	WF	12/24	--	--
	12/25	WF	12/25	--	--
	12/26	WF	12/26	--	--
	12/27	WF	12/27	--	--
	12/28	WF	12/28	--	--
	12/29	WF	12/29	--	--
	12/30	WF	12/30	--	--
	12/31	WF	12/31	--	--
JANUARY	1/1	WF	1/1	--	--
	1/2	WF	1/2	--	--
	1/3	WF	1/3	--	--
	1/4	WF	1/4	--	--
	1/5	WF	1/5	--	--
	1/6	WF	1/6	--	--
	1/7	WF	1/7	--	--
	1/8	WF	1/8	--	--
	1/9	WF	1/9	--	--
	1/10	WF	1/10	--	--
	1/11	WF	1/11	--	--
	1/12	WF	1/12	--	--
	1/13	WF	1/13	--	--
	1/14	WF	1/14	--	--
	1/15	WF	1/15	--	--
	1/16	WF	1/16	--	--
	1/17	WF	1/17	--	--
	1/18	WF	1/18	--	--
	1/19	WF	1/19	--	--
	1/20	WF	1/20	--	--
	1/21	WF	1/21	--	--
	1/22	WF	1/22	--	--
	1/23	WF	1/23	--	--
	1/24	WF	1/24	--	--
	1/25	WF	1/25	--	--
	1/26	WF	1/26	--	--
	1/27	WF	1/27	--	--
	1/28	WF	1/28	--	--
	1/29	WF	1/29	--	--
	1/30	WF	1/30	--	--
	1/31	WF	1/31	--	--

Land Application Area Irrigation Plan to Manage BOD Loading - NET Nitrogen Loading		
Field:	1	2
Note:	Scenario 1 - 100% Corn-Wheat Rotation	
Acres:	38.0	28.0
Effluent Irrig:	Net Nitrogen Applied (pounds/acre)	
12/1	--	--
12/2	--	--
12/3	--	--
12/4	--	--
12/5	--	--
12/6	--	--
12/7	--	--
12/8	--	--
12/9	--	--
12/10	--	--
12/11	--	--
12/12	--	--
12/13	--	--
12/14	--	--
12/15	--	--
12/16	--	--
12/17	--	--
12/18	--	--
12/19	--	--
12/20	--	--
12/21	--	--
12/22	--	--
12/23	--	--
12/24	--	--
12/25	--	--
12/26	--	--
12/27	--	--
12/28	--	--
12/29	--	--
12/30	--	--
12/31	--	--
1/1	--	--
1/2	--	--
1/3	--	--
1/4	--	--
1/5	--	--
1/6	--	--
1/7	--	--
1/8	--	--
1/9	--	--
1/10	--	--
1/11	--	--
1/12	--	--
1/13	--	--
1/14	--	--
1/15	--	--
1/16	--	--
1/17	--	--
1/18	--	--
1/19	--	--
1/20	--	--
1/21	--	--
1/22	--	--
1/23	--	--
1/24	--	--
1/25	--	--
1/26	--	--
1/27	--	--
1/28	--	--
1/29	--	--
1/30	--	--
1/31	--	--

Appendix H3. Nitrogen Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - GROSS Nitrogen Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Gross Nitrogen Applied (pounds/acre)	
FEBRUARY	2/1	WF	2/1	--	--
	2/2	WF	2/2	--	--
	2/3	WF	2/3	--	--
	2/4	WF	2/4	--	--
	2/5	WF	2/5	--	--
	2/6	WF	2/6	--	--
	2/7	WF	2/7	--	--
	2/8	WF	2/8	--	--
	2/9	WF	2/9	--	--
	2/10	WF	2/10	--	--
	2/11	WF	2/11	--	--
	2/12	WF	2/12	--	--
	2/13	WF	2/13	--	--
	2/14	WF	2/14	--	--
	2/15	WF	2/15	--	--
	2/16	WF	2/16	--	--
	2/17	WF	2/17	--	--
	2/18	WF	2/18	--	--
	2/19	WF	2/19	--	--
	2/20	WF	2/20	--	--
	2/21	WF	2/21	--	--
	2/22	WF	2/22	--	--
	2/23	WF	2/23	--	--
	2/24	WF	2/24	--	--
	2/25	WF	2/25	--	--
	2/26	WF	2/26	--	--
	2/27	WF	2/27	--	--
	2/28	WF	2/28	--	--
MARCH	3/1	WF	3/1	4	--
	3/2	WF	3/2	4	--
	3/3	WF	3/3	4	--
	3/4	WF	3/4	4	--
	3/5	WF	3/5	4	--
	3/6	WF	3/6	4	--
	3/7	WF	3/7	4	--
	3/8	WF	3/8	4	--
	3/9	WF	3/9	--	5
	3/10	WF	3/10	--	5
	3/11	WF	3/11	--	5
	3/12	WF	3/12	--	5
	3/13	WF	3/13	--	5
	3/14	WF	3/14	--	5
	3/15	WF	3/15	4	--
	3/16	WF	3/16	4	--
	3/17	WF	3/17	4	--
	3/18	WF	3/18	4	--
	3/19	WF	3/19	4	--
	3/20	WF	3/20	4	--
	3/21	WF	3/21	4	--
	3/22	WF	3/22	4	--
	3/23	WF	3/23	--	6
	3/24	WF	3/24	--	6
	3/25	WF	3/25	--	6
	3/26	WF	3/26	--	6
	3/27	WF	3/27	--	6
	3/28	WF	3/28	--	6
	3/29	WF	3/29	4	--
	3/30	WF	3/30	4	--
	3/31	WF	3/31	4	--

Land Application Area Irrigation Plan to Manage BOD Loading - NET Nitrogen Loading		
Field:	1	2
Note:	Scenario 1 - 100% Corn-Wheat Rotation	
Acres:	38.0	28.0
Effluent Irrig:	Net Nitrogen Applied (pounds/acre)	
2/1	--	--
2/2	--	--
2/3	--	--
2/4	--	--
2/5	--	--
2/6	--	--
2/7	--	--
2/8	--	--
2/9	--	--
2/10	--	--
2/11	--	--
2/12	--	--
2/13	--	--
2/14	--	--
2/15	--	--
2/16	--	--
2/17	--	--
2/18	--	--
2/19	--	--
2/20	--	--
2/21	--	--
2/22	--	--
2/23	--	--
2/24	--	--
2/25	--	--
2/26	--	--
2/27	--	--
2/28	--	--
3/1	4	--
3/2	4	--
3/3	4	--
3/4	4	--
3/5	4	--
3/6	4	--
3/7	4	--
3/8	4	--
3/9	--	5
3/10	--	5
3/11	--	5
3/12	--	5
3/13	--	5
3/14	--	5
3/15	4	--
3/16	4	--
3/17	4	--
3/18	4	--
3/19	4	--
3/20	4	--
3/21	4	--
3/22	4	--
3/23	--	5
3/24	--	5
3/25	--	5
3/26	--	5
3/27	--	5
3/28	--	5
3/29	4	--
3/30	4	--
3/31	4	--

Appendix H3. Nitrogen Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - GROSS Nitrogen Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Gross Nitrogen Applied (pounds/acre)	
APRIL	4/1	WF	4/1	8	--
	4/2	WF	4/2	8	--
	4/3	WF	4/3	8	--
	4/4	WF	4/4	8	--
	4/5	WF	4/5	8	--
	4/6	WF	4/6	--	11
	4/7	WF	4/7	--	11
	4/8	WF	4/8	--	11
	4/9	WF	4/9	--	11
	4/10	WF	4/10	--	11
	4/11	WF	4/11	8	--
	4/12	WF	4/12	8	--
	4/13	WF	4/13	8	--
	4/14	WF	4/14	8	--
	4/15	WF	4/15	8	--
	4/16	WF	4/16	10	--
	4/17	WF	4/17	10	--
	4/18	WF	4/18	10	--
	4/19	WF	4/19	10	--
	4/20	WF	4/20	10	--
	4/21	WF	4/21	10	--
	4/22	WF	4/22	--	--
	4/23	WF	4/23	--	--
	4/24	WF	4/24	--	--
	4/25	WF	4/25	--	--
	4/26	WF	4/26	--	--
	4/27	WF	4/27	--	--
	4/28	WF	4/28	--	--
	4/29	WF	4/29	--	--
	4/30	WF	4/30	--	--
MAY	5/1	Fallow	5/1	--	--
	5/2	Fallow	5/2	--	--
	5/3	Fallow	5/3	--	--
	5/4	Fallow	5/4	--	--
	5/5	Fallow	5/5	--	--
	5/6	Fallow	5/6	--	--
	5/7	Fallow	5/7	--	46
	5/8	Fallow	5/8	--	46
	5/9	Fallow	5/9	--	46
	5/10	Fallow	5/10	--	--
	5/11	Fallow	5/11	--	--
	5/12	Fallow	5/12	--	--
	5/13	Fallow	5/13	--	--
	5/14	Fallow	5/14	--	--
	5/15	Fallow	5/15	--	--
	5/16	Corn	5/16	--	--
	5/17	Corn	5/17	--	--
	5/18	Corn	5/18	--	--
	5/19	Corn	5/19	--	--
	5/20	Corn	5/20	2	--
	5/21	Corn	5/21	2	--
	5/22	Corn	5/22	2	--
	5/23	Corn	5/23	2	--
	5/24	Corn	5/24	2	--
	5/25	Corn	5/25	2	--
	5/26	Corn	5/26	2	--
	5/27	Corn	5/27	2	--
	5/28	Corn	5/28	--	3
	5/29	Corn	5/29	--	3
	5/30	Corn	5/30	--	3
	5/31	Corn	5/31	--	3

Land Application Area Irrigation Plan to Manage BOD Loading - NET Nitrogen Loading		
Field:	1	2
Note:	Scenario 1 - 100% Corn-Wheat Rotation	
Acres:	38.0	28.0
Effluent Irrig:	Net Nitrogen Applied (pounds/acre)	
4/1	8	--
4/2	8	--
4/3	8	--
4/4	8	--
4/5	8	--
4/6	--	10
4/7	--	10
4/8	--	10
4/9	--	10
4/10	--	10
4/11	8	--
4/12	8	--
4/13	8	--
4/14	8	--
4/15	8	--
4/16	10	--
4/17	9	--
4/18	9	--
4/19	9	--
4/20	9	--
4/21	9	--
4/22	--	--
4/23	--	--
4/24	--	--
4/25	--	--
4/26	--	--
4/27	--	--
4/28	--	--
4/29	--	--
4/30	--	--
5/1	--	--
5/2	--	--
5/3	--	--
5/4	--	--
5/5	--	--
5/6	--	--
5/7	--	43
5/8	--	43
5/9	--	43
5/10	--	--
5/11	--	--
5/12	--	--
5/13	--	--
5/14	--	--
5/15	--	--
5/16	--	--
5/17	--	--
5/18	--	--
5/19	--	--
5/20	2	--
5/21	2	--
5/22	2	--
5/23	2	--
5/24	2	--
5/25	2	--
5/26	2	--
5/27	2	--
5/28	--	2
5/29	--	2
5/30	--	2
5/31	--	2

Appendix H3. Nitrogen Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - GROSS Nitrogen Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Gross Nitrogen Applied (pounds/acre)	
JUNE	6/1	Corn	6/1	2	--
	6/2	Corn	6/2	2	--
	6/3	Corn	6/3	--	--
	6/4	Corn	6/4	--	--
	6/5	Corn	6/5	2	--
	6/6	Corn	6/6	2	--
	6/7	Corn	6/7	2	--
	6/8	Corn	6/8	2	--
	6/9	Corn	6/9	2	--
	6/10	Corn	6/10	2	--
	6/11	Corn	6/11	--	--
	6/12	Corn	6/12	--	--
	6/13	Corn	6/13	--	--
	6/14	Corn	6/14	--	--
	6/15	Corn	6/15	--	3
	6/16	Corn	6/16	--	3
	6/17	Corn	6/17	--	3
	6/18	Corn	6/18	--	3
	6/19	Corn	6/19	--	3
	6/20	Corn	6/20	--	3
	6/21	Corn	6/21	2	--
	6/22	Corn	6/22	2	--
	6/23	Corn	6/23	2	--
	6/24	Corn	6/24	2	--
	6/25	Corn	6/25	2	--
	6/26	Corn	6/26	2	--
	6/27	Corn	6/27	2	--
	6/28	Corn	6/28	2	--
	6/29	Corn	6/29	--	3
	6/30	Corn	6/30	--	3
JULY	7/1	Corn	7/1	--	--
	7/2	Corn	7/2	--	--
	7/3	Corn	7/3	--	5
	7/4	Corn	7/4	--	5
	7/5	Corn	7/5	--	5
	7/6	Corn	7/6	3	--
	7/7	Corn	7/7	3	--
	7/8	Corn	7/8	3	--
	7/9	Corn	7/9	3	--
	7/10	Corn	7/10	3	--
	7/11	Corn	7/11	3	--
	7/12	Corn	7/12	3	--
	7/13	Corn	7/13	3	--
	7/14	Corn	7/14	3	--
	7/15	Corn	7/15	--	5
	7/16	Corn	7/16	--	5
	7/17	Corn	7/17	--	5
	7/18	Corn	7/18	--	5
	7/19	Corn	7/19	--	5
	7/20	Corn	7/20	3	--
	7/21	Corn	7/21	3	--
	7/22	Corn	7/22	3	--
	7/23	Corn	7/23	3	--
	7/24	Corn	7/24	3	--
	7/25	Corn	7/25	3	--
	7/26	Corn	7/26	3	--
	7/27	Corn	7/27	3	--
	7/28	Corn	7/28	3	--
	7/29	Corn	7/29	--	5
	7/30	Corn	7/30	--	5
	7/31	Corn	7/31	--	5

Land Application Area Irrigation Plan to Manage BOD Loading - NET Nitrogen Loading		
Field:	1	2
Note:	Scenario 1 - 100% Corn-Wheat Rotation	
Acres:	38.0	28.0
Effluent Irrig:	Net Nitrogen Applied (pounds/acre)	
6/1	2	--
6/2	2	--
6/3	--	--
6/4	--	--
6/5	2	--
6/6	2	--
6/7	2	--
6/8	2	--
6/9	2	--
6/10	2	--
6/11	--	--
6/12	--	--
6/13	--	--
6/14	--	--
6/15	--	2
6/16	--	2
6/17	--	2
6/18	--	2
6/19	--	2
6/20	--	2
6/21	2	--
6/22	2	--
6/23	2	--
6/24	2	--
6/25	2	--
6/26	2	--
6/27	2	--
6/28	2	--
6/29	--	2
6/30	--	2
7/1	--	--
7/2	--	--
7/3	--	4
7/4	--	4
7/5	--	4
7/6	3	--
7/7	3	--
7/8	3	--
7/9	3	--
7/10	3	--
7/11	3	--
7/12	3	--
7/13	3	--
7/14	3	--
7/15	--	4
7/16	--	4
7/17	--	4
7/18	--	4
7/19	--	4
7/20	3	--
7/21	3	--
7/22	3	--
7/23	3	--
7/24	3	--
7/25	3	--
7/26	3	--
7/27	3	--
7/28	3	--
7/29	--	4
7/30	--	4
7/31	--	4

Appendix H3. Nitrogen Loading Rates Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - GROSS Nitrogen Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Gross Nitrogen Applied (pounds/acre)	
AUGUST	8/1	Corn	8/1	--	4
	8/2	Corn	8/2	--	4
	8/3	Corn	8/3	3	--
	8/4	Corn	8/4	3	--
	8/5	Corn	8/5	3	--
	8/6	Corn	8/6	3	--
	8/7	Corn	8/7	3	--
	8/8	Corn	8/8	3	--
	8/9	Corn	8/9	3	--
	8/10	Corn	8/10	3	--
	8/11	Corn	8/11	3	--
	8/12	Corn	8/12	--	4
	8/13	Corn	8/13	--	4
	8/14	Corn	8/14	--	4
	8/15	Corn	8/15	--	4
	8/16	Corn	8/16	--	4
	8/17	Corn	8/17	3	--
	8/18	Corn	8/18	3	--
	8/19	Corn	8/19	3	--
	8/20	Corn	8/20	3	--
	8/21	Corn	8/21	3	--
	8/22	Corn	8/22	3	--
	8/23	Corn	8/23	3	--
	8/24	Corn	8/24	3	--
	8/25	Corn	8/25	3	--
	8/26	Corn	8/26	--	4
	8/27	Corn	8/27	--	4
	8/28	Corn	8/28	--	4
	8/29	Corn	8/29	--	4
	8/30	Corn	8/30	--	4
	8/31	Corn	8/31	3	--
SEPTEMBER	9/1	Corn	9/1	3	--
	9/2	Corn	9/2	3	--
	9/3	Corn	9/3	3	--
	9/4	Corn	9/4	3	--
	9/5	Corn	9/5	3	--
	9/6	Corn	9/6	3	--
	9/7	Corn	9/7	3	--
	9/8	Corn	9/8	3	--
	9/9	Corn	9/9	--	4
	9/10	Corn	9/10	--	4
	9/11	Corn	9/11	--	4
	9/12	Corn	9/12	--	4
	9/13	Corn	9/13	--	4
	9/14	Corn	9/14	3	--
	9/15	Corn	9/15	3	--
	9/16	Corn	9/16	3	--
	9/17	Corn	9/17	3	--
	9/18	Corn	9/18	3	--
	9/19	Corn	9/19	3	--
	9/20	Corn	9/20	3	--
	9/21	Corn	9/21	3	--
	9/22	Corn	9/22	3	--
	9/23	Corn	9/23	--	4
	9/24	Corn	9/24	--	4
	9/25	Corn	9/25	--	4
	9/26	Corn	9/26	--	4
	9/27	Corn	9/27	--	4
	9/28	Corn	9/28	3	--
	9/29	Corn	9/29	3	--
	9/30	Corn	9/30	3	--
Total Applied (A)				470	457
Total Removed (R)				623	623
A-R				-153	-166
A/R				0.75	0.73

Land Application Area Irrigation Plan to Manage BOD Loading - NET Nitrogen Loading		
Field:	1	2
Note:	Scenario 1 - 100% Corn-Wheat Rotation	
Acres:	38.0	28.0
Effluent Irrig:	Net Nitrogen Applied (pounds/acre)	
8/1	--	3
8/2	--	3
8/3	2	--
8/4	2	--
8/5	2	--
8/6	2	--
8/7	2	--
8/8	2	--
8/9	2	--
8/10	2	--
8/11	2	--
8/12	--	3
8/13	--	3
8/14	--	3
8/15	--	3
8/16	--	3
8/17	2	--
8/18	2	--
8/19	2	--
8/20	2	--
8/21	2	--
8/22	2	--
8/23	2	--
8/24	2	--
8/25	2	--
8/26	--	3
8/27	--	3
8/28	--	3
8/29	--	3
8/30	--	3
8/31	2	--
9/1	2	--
9/2	2	--
9/3	2	--
9/4	2	--
9/5	2	--
9/6	2	--
9/7	2	--
9/8	2	--
9/9	--	3
9/10	--	3
9/11	--	3
9/12	--	3
9/13	--	3
9/14	2	--
9/15	2	--
9/16	2	--
9/17	2	--
9/18	2	--
9/19	2	--
9/20	2	--
9/21	2	--
9/22	2	--
9/23	--	3
9/24	--	3
9/25	--	3
9/26	--	3
9/27	--	3
9/28	2	--
9/29	2	--
9/30	2	--
Total Applied (A)	444	432
Total Removed (R)	623	623
A-R	-179	-191
A/R	0.71	0.69

Appendix H3. Nitrogen L Appendix H4. Salt Loading Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - Salt (FDS) Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Salt (FDS) Applied (pounds/acre)	
OCTOBER	10/1	Corn	10/1	--	--
	10/2	Corn	10/2	--	--
	10/3	Corn	10/3	--	--
	10/4	Corn	10/4	--	--
	10/5	Corn	10/5	--	--
	10/6	Corn	10/6	--	--
	10/7	Corn	10/7	--	--
	10/8	Corn	10/8	--	--
	10/9	Corn	10/9	--	--
	10/10	Corn	10/10	--	--
	10/11	Corn	10/11	--	--
	10/12	Corn	10/12	--	--
	10/13	Corn	10/13	--	--
	10/14	Corn	10/14	--	--
	10/15	Corn	10/15	--	--
	10/16	Fallow	10/16	--	--
	10/17	Fallow	10/17	--	--
	10/18	Fallow	10/18	--	--
	10/19	Fallow	10/19	--	--
	10/20	Fallow	10/20	--	--
	10/21	Fallow	10/21	--	--
	10/22	Fallow	10/22	37	37
	10/23	Fallow	10/23	37	37
	10/24	Fallow	10/24	37	37
	10/25	Fallow	10/25	37	37
	10/26	Fallow	10/26	--	--
	10/27	Fallow	10/27	--	--
	10/28	Fallow	10/28	--	--
	10/29	Fallow	10/29	--	--
	10/30	Fallow	10/30	--	--
	10/31	Fallow	10/31	--	--
NOVEMBER	11/1	WF	11/1	--	--
	11/2	WF	11/2	--	--
	11/3	WF	11/3	--	--
	11/4	WF	11/4	--	--
	11/5	WF	11/5	32	--
	11/6	WF	11/6	32	--
	11/7	WF	11/7	32	--
	11/8	WF	11/8	32	--
	11/9	WF	11/9	32	--
	11/10	WF	11/10	32	--
	11/11	WF	11/11	32	--
	11/12	WF	11/12	32	--
	11/13	WF	11/13	--	43
	11/14	WF	11/14	--	43
	11/15	WF	11/15	--	43
	11/16	WF	11/16	--	43
	11/17	WF	11/17	--	43
	11/18	WF	11/18	--	--
	11/19	WF	11/19	--	--
	11/20	WF	11/20	--	--
	11/21	WF	11/21	--	--
	11/22	WF	11/22	--	--
	11/23	WF	11/23	--	--
	11/24	WF	11/24	--	--
	11/25	WF	11/25	--	--
	11/26	WF	11/26	--	--
	11/27	WF	11/27	--	--
	11/28	WF	11/28	--	--
	11/29	WF	11/29	--	--
	11/30	WF	11/30	--	--

Appendix H3. Nitrogen L‹ Appendix H4. Salt Loading Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - Salt (FDS) Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Salt (FDS) Applied (pounds/acre)	
DECEMBER	12/1	WF	12/1	--	--
	12/2	WF	12/2	--	--
	12/3	WF	12/3	--	--
	12/4	WF	12/4	--	--
	12/5	WF	12/5	--	--
	12/6	WF	12/6	--	--
	12/7	WF	12/7	--	--
	12/8	WF	12/8	--	--
	12/9	WF	12/9	--	--
	12/10	WF	12/10	--	--
	12/11	WF	12/11	--	--
	12/12	WF	12/12	--	--
	12/13	WF	12/13	--	--
	12/14	WF	12/14	--	--
	12/15	WF	12/15	--	--
	12/16	WF	12/16	--	--
	12/17	WF	12/17	--	--
	12/18	WF	12/18	--	--
	12/19	WF	12/19	--	--
	12/20	WF	12/20	--	--
	12/21	WF	12/21	--	--
	12/22	WF	12/22	--	--
	12/23	WF	12/23	--	--
	12/24	WF	12/24	--	--
	12/25	WF	12/25	--	--
	12/26	WF	12/26	--	--
	12/27	WF	12/27	--	--
	12/28	WF	12/28	--	--
	12/29	WF	12/29	--	--
	12/30	WF	12/30	--	--
	12/31	WF	12/31	--	--
JANUARY	1/1	WF	1/1	--	--
	1/2	WF	1/2	--	--
	1/3	WF	1/3	--	--
	1/4	WF	1/4	--	--
	1/5	WF	1/5	--	--
	1/6	WF	1/6	--	--
	1/7	WF	1/7	--	--
	1/8	WF	1/8	--	--
	1/9	WF	1/9	--	--
	1/10	WF	1/10	--	--
	1/11	WF	1/11	--	--
	1/12	WF	1/12	--	--
	1/13	WF	1/13	--	--
	1/14	WF	1/14	--	--
	1/15	WF	1/15	--	--
	1/16	WF	1/16	--	--
	1/17	WF	1/17	--	--
	1/18	WF	1/18	--	--
	1/19	WF	1/19	--	--
	1/20	WF	1/20	--	--
	1/21	WF	1/21	--	--
	1/22	WF	1/22	--	--
	1/23	WF	1/23	--	--
	1/24	WF	1/24	--	--
	1/25	WF	1/25	--	--
	1/26	WF	1/26	--	--
	1/27	WF	1/27	--	--
	1/28	WF	1/28	--	--
	1/29	WF	1/29	--	--
	1/30	WF	1/30	--	--
	1/31	WF	1/31	--	--

Appendix H3. Nitrogen L Appendix H4. Salt Loading Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - Salt (FDS) Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Salt (FDS) Applied (pounds/acre)	
FEBRUARY	2/1	WF	2/1	--	--
	2/2	WF	2/2	--	--
	2/3	WF	2/3	--	--
	2/4	WF	2/4	--	--
	2/5	WF	2/5	--	--
	2/6	WF	2/6	--	--
	2/7	WF	2/7	--	--
	2/8	WF	2/8	--	--
	2/9	WF	2/9	--	--
	2/10	WF	2/10	--	--
	2/11	WF	2/11	--	--
	2/12	WF	2/12	--	--
	2/13	WF	2/13	--	--
	2/14	WF	2/14	--	--
	2/15	WF	2/15	--	--
	2/16	WF	2/16	--	--
	2/17	WF	2/17	--	--
	2/18	WF	2/18	--	--
	2/19	WF	2/19	--	--
	2/20	WF	2/20	--	--
	2/21	WF	2/21	--	--
	2/22	WF	2/22	--	--
	2/23	WF	2/23	--	--
	2/24	WF	2/24	--	--
	2/25	WF	2/25	--	--
	2/26	WF	2/26	--	--
	2/27	WF	2/27	--	--
	2/28	WF	2/28	--	--
MARCH	3/1	WF	3/1	34	--
	3/2	WF	3/2	34	--
	3/3	WF	3/3	34	--
	3/4	WF	3/4	34	--
	3/5	WF	3/5	34	--
	3/6	WF	3/6	34	--
	3/7	WF	3/7	34	--
	3/8	WF	3/8	32	--
	3/9	WF	3/9	--	43
	3/10	WF	3/10	--	43
	3/11	WF	3/11	--	43
	3/12	WF	3/12	--	43
	3/13	WF	3/13	--	43
	3/14	WF	3/14	--	43
	3/15	WF	3/15	32	--
	3/16	WF	3/16	32	--
	3/17	WF	3/17	32	--
	3/18	WF	3/18	37	--
	3/19	WF	3/19	37	--
	3/20	WF	3/20	37	--
	3/21	WF	3/21	37	--
	3/22	WF	3/22	37	--
	3/23	WF	3/23	--	50
	3/24	WF	3/24	--	50
	3/25	WF	3/25	--	50
	3/26	WF	3/26	--	50
	3/27	WF	3/27	--	50
	3/28	WF	3/28	--	50
	3/29	WF	3/29	37	--
	3/30	WF	3/30	37	--
	3/31	WF	3/31	37	--

Appendix H3. Nitrogen Lo Appendix H4. Salt Loading Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - Salt (FDS) Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Salt (FDS) Applied (pounds/acre)	
APRIL	4/1	WF	4/1	69	--
	4/2	WF	4/2	69	--
	4/3	WF	4/3	69	--
	4/4	WF	4/4	69	--
	4/5	WF	4/5	69	--
	4/6	WF	4/6	--	93
	4/7	WF	4/7	--	93
	4/8	WF	4/8	--	93
	4/9	WF	4/9	--	93
	4/10	WF	4/10	--	93
	4/11	WF	4/11	69	--
	4/12	WF	4/12	69	--
	4/13	WF	4/13	69	--
	4/14	WF	4/14	69	--
	4/15	WF	4/15	69	--
	4/16	WF	4/16	88	--
	4/17	WF	4/17	85	--
	4/18	WF	4/18	85	--
	4/19	WF	4/19	85	--
	4/20	WF	4/20	85	--
	4/21	WF	4/21	83	--
	4/22	WF	4/22	--	--
	4/23	WF	4/23	--	--
	4/24	WF	4/24	--	--
	4/25	WF	4/25	--	--
	4/26	WF	4/26	--	--
	4/27	WF	4/27	--	--
	4/28	WF	4/28	--	--
	4/29	WF	4/29	--	--
	4/30	WF	4/30	--	--
MAY	5/1	Fallow	5/1	--	--
	5/2	Fallow	5/2	--	--
	5/3	Fallow	5/3	--	--
	5/4	Fallow	5/4	--	--
	5/5	Fallow	5/5	--	--
	5/6	Fallow	5/6	--	--
	5/7	Fallow	5/7	--	391
	5/8	Fallow	5/8	--	391
	5/9	Fallow	5/9	--	391
	5/10	Fallow	5/10	--	--
	5/11	Fallow	5/11	--	--
	5/12	Fallow	5/12	--	--
	5/13	Fallow	5/13	--	--
	5/14	Fallow	5/14	--	--
	5/15	Fallow	5/15	--	--
	5/16	Corn	5/16	--	--
	5/17	Corn	5/17	--	--
	5/18	Corn	5/18	--	--
	5/19	Corn	5/19	--	--
	5/20	Corn	5/20	16	--
	5/21	Corn	5/21	16	--
	5/22	Corn	5/22	16	--
	5/23	Corn	5/23	16	--
	5/24	Corn	5/24	16	--
	5/25	Corn	5/25	16	--
	5/26	Corn	5/26	16	--
	5/27	Corn	5/27	16	--
	5/28	Corn	5/28	--	22
	5/29	Corn	5/29	--	22
	5/30	Corn	5/30	--	22
	5/31	Corn	5/31	--	22

Appendix H3. Nitrogen Lo Appendix H4. Salt Loading Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - Salt (FDS) Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Salt (FDS) Applied (pounds/acre)	
JUNE	6/1	Corn	6/1	16	--
	6/2	Corn	6/2	16	--
	6/3	Corn	6/3	--	--
	6/4	Corn	6/4	--	--
	6/5	Corn	6/5	16	--
	6/6	Corn	6/6	16	--
	6/7	Corn	6/7	16	--
	6/8	Corn	6/8	16	--
	6/9	Corn	6/9	16	--
	6/10	Corn	6/10	16	--
	6/11	Corn	6/11	--	--
	6/12	Corn	6/12	--	--
	6/13	Corn	6/13	--	--
	6/14	Corn	6/14	--	--
	6/15	Corn	6/15	--	22
	6/16	Corn	6/16	--	22
	6/17	Corn	6/17	--	22
	6/18	Corn	6/18	--	22
	6/19	Corn	6/19	--	22
	6/20	Corn	6/20	--	22
	6/21	Corn	6/21	16	--
	6/22	Corn	6/22	16	--
	6/23	Corn	6/23	16	--
	6/24	Corn	6/24	16	--
	6/25	Corn	6/25	16	--
	6/26	Corn	6/26	16	--
	6/27	Corn	6/27	16	--
	6/28	Corn	6/28	16	--
	6/29	Corn	6/29	--	22
	6/30	Corn	6/30	--	22
JULY	7/1	Corn	7/1	--	--
	7/2	Corn	7/2	--	--
	7/3	Corn	7/3	--	39
	7/4	Corn	7/4	--	39
	7/5	Corn	7/5	--	39
	7/6	Corn	7/6	29	--
	7/7	Corn	7/7	29	--
	7/8	Corn	7/8	29	--
	7/9	Corn	7/9	29	--
	7/10	Corn	7/10	29	--
	7/11	Corn	7/11	29	--
	7/12	Corn	7/12	29	--
	7/13	Corn	7/13	29	--
	7/14	Corn	7/14	29	--
	7/15	Corn	7/15	--	39
	7/16	Corn	7/16	--	39
	7/17	Corn	7/17	--	39
	7/18	Corn	7/18	--	39
	7/19	Corn	7/19	--	39
	7/20	Corn	7/20	29	--
	7/21	Corn	7/21	29	--
	7/22	Corn	7/22	29	--
	7/23	Corn	7/23	29	--
	7/24	Corn	7/24	29	--
	7/25	Corn	7/25	29	--
	7/26	Corn	7/26	29	--
	7/27	Corn	7/27	29	--
	7/28	Corn	7/28	29	--
	7/29	Corn	7/29	--	39
	7/30	Corn	7/30	--	39
	7/31	Corn	7/31	--	39

Appendix H3. Nitrogen L‹ Appendix H4. Salt Loading Based on Irrigation Plan - Corn-Wheat Silage Rotation

MONTH	DAY	CROP	Land Application Area Irrigation Plan to Manage BOD Loading - Salt (FDS) Loading		
			Field:	1	2
			Note:	Scenario 1 - 100% Corn-Wheat Rotation	
			Acres:	38.0	28.0
			Effluent Irrig:	Salt (FDS) Applied (pounds/acre)	
AUGUST	8/1	Corn	8/1	--	30
	8/2	Corn	8/2	--	30
	8/3	Corn	8/3	22	--
	8/4	Corn	8/4	22	--
	8/5	Corn	8/5	22	--
	8/6	Corn	8/6	22	--
	8/7	Corn	8/7	22	--
	8/8	Corn	8/8	22	--
	8/9	Corn	8/9	22	--
	8/10	Corn	8/10	22	--
	8/11	Corn	8/11	22	--
	8/12	Corn	8/12	--	30
	8/13	Corn	8/13	--	30
	8/14	Corn	8/14	--	30
	8/15	Corn	8/15	--	30
	8/16	Corn	8/16	--	30
	8/17	Corn	8/17	22	--
	8/18	Corn	8/18	22	--
	8/19	Corn	8/19	22	--
	8/20	Corn	8/20	22	--
	8/21	Corn	8/21	22	--
	8/22	Corn	8/22	22	--
	8/23	Corn	8/23	22	--
	8/24	Corn	8/24	22	--
	8/25	Corn	8/25	22	--
	8/26	Corn	8/26	--	30
	8/27	Corn	8/27	--	30
	8/28	Corn	8/28	--	30
	8/29	Corn	8/29	--	30
	8/30	Corn	8/30	--	30
	8/31	Corn	8/31	22	--
SEPTEMBER	9/1	Corn	9/1	22	--
	9/2	Corn	9/2	22	--
	9/3	Corn	9/3	22	--
	9/4	Corn	9/4	22	--
	9/5	Corn	9/5	22	--
	9/6	Corn	9/6	22	--
	9/7	Corn	9/7	22	--
	9/8	Corn	9/8	22	--
	9/9	Corn	9/9	--	30
	9/10	Corn	9/10	--	30
	9/11	Corn	9/11	--	30
	9/12	Corn	9/12	--	30
	9/13	Corn	9/13	--	30
	9/14	Corn	9/14	22	--
	9/15	Corn	9/15	22	--
	9/16	Corn	9/16	22	--
	9/17	Corn	9/17	22	--
	9/18	Corn	9/18	22	--
	9/19	Corn	9/19	22	--
	9/20	Corn	9/20	22	--
	9/21	Corn	9/21	22	--
	9/22	Corn	9/22	22	--
	9/23	Corn	9/23	--	30
	9/24	Corn	9/24	--	30
	9/25	Corn	9/25	--	30
	9/26	Corn	9/26	--	30
	9/27	Corn	9/27	--	30
	9/28	Corn	9/28	22	--
	9/29	Corn	9/29	22	--
	9/30	Corn	9/30	22	--
Total Applied (A)				4,040	3,928
Total Removed (R)				2,200	2,200
A/R				1.8	1.79
A-R (non-nutrient Load)				1,840	1,728

Appendix I – Salinity Control and Minimization Plan

Treehouse California Almonds, LLC

Salt Control Program

May 2023

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Exhibit #1 – Chemical Usage Analysis

1. - Introduction

Treehouse is an almond processor. We size, clean, blanch, roast, slice, sliver, meal, dice, and butter almonds. These are packaged for wholesale markets in packages from 2,200 lbs. to 25 lbs. Most of our almond processes are physical, and no chemicals are added. Many are ambient temperature with a few that use steam, water, or dry heat. Cleaning occurs at various frequency depending on processing line type and style.

2 - Process Review

Sizing and Warehousing

Raw almonds are delivered from the huller and shellers in poly lined wooden 4x4 boxes. The first step of the almond process is a general cleaning and sizing process. Sizing is a dry process at ambient temperatures that is dry cleaned. This includes a scalping deck that is a punched metal plate that the almonds are conveyed via vibration tables. Then gravity removes much of the large Foreign Material (FM) types such as almond hulls and sticks with a table that pulls air from the top and pushes air through the bottom.

An additional gravity system is used to remove heavier and lighter FM types such as almond sized shell and dirt clods and rocks. The gravity tables use air pressure and air flow to create an environment for finer density separation thus the ability to separate heavier and lighter components. Electronic sorting removes several types of FM and SD that are not desirable.

Sizing occurs on stainless steel metal punch plates that start with smaller sizes of holes and increase to larger ones until all almonds are sized. From the sizer they are placed in poly lined wood bins for fumigation and storage in the warehouse. Almonds are kept in ambient storage warehouses, which are metal buildings that have fiberglass covered insulation in walls and ceiling. These are stored at ambient temperatures for conventionally grown almonds and Organic are stored in an offsite freezer until tempering and use.

Sizer Flow = *poly lined wood bins - scalping deck - gravity - electronic sorting - sizing - poly lined wood bin - warehouse*

Raw Presorting

Raw almonds go through addition FM cleaning prior to further processing. Presort is a dry ambient temperature process that is dry cleaned. Almonds in wooden poly lined boxes in warehouses are assembled as per desired traits for certain contracts. These specific almonds bins are physically assembled for further FM cleaning. Then they pass through an x-ray to detect metals, stones, glass, and any other dense FM. A color sorter is then used to remove differing colors of FM and other undesired almonds traits such as dark spots, insect damaged colors, shriveled almonds, and others. Sorted almonds are then returned to a poly lined bin and prepared for further processing.

Flow = *Warehouse - contract assembly, X-ray, color sorting, Poly lined bin - further processing*

Raw Processing & Packaging

Many customers purchase cleaned raw almonds that are unpasteurized from TCA. Raw processing and packaging are a dry ambient temperature process that is dry cleaned. These are also assembled as per desired almond traits for certain customer contracts. These specific bins are physically assembled out of warehouse bins.

They are then sorted through two laser/color sorters and an additional color sorter for FM and desired almonds traits. Then they pass over sort tables which are inspected by human persons or a QCFY electronic sorter. Almonds are passed through an x-ray inspection and packaged in a 50 lbs. box, poly lined bin or poly lined adjustable height tote. These are then fumigated and shipped.

***Flow** = Warehouse - contract assembly, Laser, and color sorting (3), QCFY or hand sorting, x-ray, packaging, fumigation, and shipping*

Blanching

Blanching is the key processing step for many of our products at TCA. This is a wet process that uses culinary steam to heat water for scalding almonds then a drying and sorting process. The line is wet cleaned. The blanching process is started with the presorting of the almonds for FM and any undesirable traits such as serious defects to include decay and insect damage. The almonds are then passed through a scalder (a hot water tube) that loosens the skin from the almond meat.

The Blancher roller then removes skin from almonds. The wet almonds are then passed through a forced air dryer and forced air cooler for drying and cooling. Electronic sorting then will remove most of the remaining FM, darker almonds, and almonds with skin tips. Certain orders will require a hand sorting step with occurs after electronic sorting then finally sifting for broken almonds and boxing in poly lined bins or stainless-steel bins.

***Flow** = raw presorting, scalding, blanching, drying, cooling, electronic sorting, sifting, boxing*

Roasting

Raw almonds are roasted as a pre-processing step and as a final step with certain customers. Raw presorted almonds are fed into the roaster for roasting. Dry heat from natural gas burners generates the heat required for forced air roasting. Cooled almonds are then boxed for further processing or final packaging.

***Flow** = raw presorted almonds, roasting, boxing*

Slicing

Blanched and natural whole almonds are cut as per customers specifications for various uses. Almonds are prepared by cleaning for FM, blanching or pasteurization (natural or almonds with skin) are conditioned then physically cut with knives. Cut almonds are then dried and cooled with a forced air dryer and separate cooler. Fines are separated with a slotted hole vibratory screen and used for alternative inputs. An x-ray verifies that no dense FM is in the cut almonds. Almonds are then packaged bulk (poly lined bin or poly line adjustable tote) for shipping or further processing. They may also be packaged in a 25 lbs. cases for final shipment.

***Flow** = blanched or natural raw presorted almonds, plasticizer (preparation step), cutting (slicing or slivering), drying, cooling, sifting, x-ray, packaging*

Mealing and Flour

Blanched or natural whole or by-product almonds are used in the mealing of almond flour. These inputs are fed into a series of dicers that reduce almond size then finally into a series of crunching rollers. Once almonds are reduced, they pass through a sifter then they are packaged and shipped.

Flow *= blanched or natural whole or byproduct almonds, dicing, mealing, sifting, packaging, shipping*

Dicing

Blanched and natural whole almonds are diced as per customers specifications for various uses. Almonds are prepared by cleaning for FM, blanching or pasteurization (natural or almonds with skin) are conditioned then physically cut with cylindrical knives. Cut almonds are then sifted and then packaged for further processing or for final shipment.

Flow *= Blanched or natural almonds, dicing, sifting, packaging*

Buttering

Blanched and natural whole almonds and byproduct almonds are prepared for little FM and proper moisture levels. Almonds are fed into primary and secondary mills that grind and further grind almonds into a smooth butter. The butter is then cooled in a series of chilled water votators, screened, and packaged. Shipment occurs after micro and physical trait clearance.

Flow *= Blanched or natural or byproduct almonds, milling, cooling, packaging, and shipping*

Pasteurization

Blanched and natural whole almonds are sold as per customers specifications for various uses. Pasteurized almonds are prepared by cleaning for FM in the pre-cleaning or hand sort lines. Almonds are then fed into the preheated and pasteurizing section of the process. Dry heat is used to raise the almond temperature, then a steam saturation step does the pasteurization in a separate section of the machine. After pasteurization they are dried with hot forced air and cooled with chilled forced air. Finally, they are discharged from the line and packaged for shipment of further processing.

***Flow** = Natural almonds, cleaning and sorting, pre-heating, pasteurization, drying/roasting, cooling & packaging*

3 - Salinity Background

Potable Water Salinity

TCA has not tested our well water's salinity levels. We have found from our tests in the wastewater over the past several years the following data. We have not seen an increase of salinity in our wastewater in the past 3 years, but a stabilized and small trending downward as we have tried to use less chemicals and with use of the RO system that does not dump the salt brine back into the wastewater. TCA uses two wells for our water that are at a similar depth and within 50 ft. From the south and east side of our building.

Treehouse Wastewater Results				
Chloride Content in Wastewater				
Sample Date	Result	RL	Units	Dil.
7-Mar-23	68	2	mg/L	2
13-Dec-22	60	1	mg/L	1
3-Nov-22	54	5	mg/L	5
25-Oct-22	60	2	mg/L	2
13-Sep-22	84	1	mg/L	1
12-Oct-21	69	1	mg/L	1
14-Sep-21	73	5	mg/L	5
4-Aug-21	86	1	mg/L	1
22-Jun-21	74	1	mg/L	1
18-May-21	70	5	mg/L	5
13-Apr-21	83	1	mg/L	1
9-Mar-21	88	1	mg/L	1
13-Jan-21	86	5	mg/L	5

Chemical Usage

Chemicals are not used in common production at TCA as an ingredient. We do have lubricants that are vegetable oil based but do not commonly leak or are added by intention to products or cleaning. Sanitation chemicals that are used do have an alkaline PH and thus may be classified as salt. These cleaners will be covered in the next section.

Salt additions from sanitation chemicals to our water have been calculated in appendix A by B&L Neeley who provides our chemical testing and has a deep understanding of their effect on wastewater. Their analysis shows an increase of 44 ppm salt with the sanitation chemicals. The salinity of the wastewater is similar or lower to most metro areas near and around us in the San Juaquin valley. The salinity of this water is sufficiently low to be used in irrigation on salt tolerant crops.

4 – Sanitation Management & Control Measures

Sizing and Warehousing

This is a dry clean area thus no chemicals would be added to the wastewater system. We do clean with alcohol quaternary ammonia used to wet towel in dry cleaning and as a sanitizer. We will remove and wash buckets from elevators on an annual basis. Solv 30 mixture is used for this and these waste discharge will be added to general wastewater.

Raw Presorting

This is a dry clean area thus no chemicals would be added to the wastewater system on a weekly basis. We do cleaning by blowing off debris and dust then collecting them. Wet wiping off machinery and cable-vey tubes with alcohol quaternary ammonia is used to wet towel in dry cleaning and as the sanitizer agent. We will remove and wash buckets from elevators on a quarterly basis. Solv 30 mixture is used, and these waste discharge will be added to general wastewater.

Raw Processing & Packaging

This is a dry clean area thus no chemicals would be added to the wastewater system on a weekly basis. We do cleaning by blowing off debris and dust then collecting them. Wet wiping off machinery and elevators structures with alcohol quaternary ammonia used to wet towel in dry cleaning and as sanitizer. We will remove and wash buckets from elevators on a quarterly basis. Solv 30 mixture is used for this and these waste discharge will be added to general wastewater.

Blanching

Wet cleaning is done in the blanching line every week of production. Several strengths of degreasers are used for varies areas of the sanitation process. This process starts out as almond debris being removed from processing equipment via compressed air or vacuum and then collected and discarded. A water rinse pressurized and non-pressurized is used to dislodge other almond debris, this is flushed down drain and most organics separated via a screening prior to discharge into ponds.

Scalder is cleaned with concentrated degreaser that is added to machinery in hot water and allowed to mix with agitation of machinery. Dryer and cooler flaps are cleaned every quarter in a concentrated degreaser – these flaps are removed and soaked in concentrated chemical in hot water and allowed to sit for up to 12 hours. They are then rinsed with hot pressurized water and replaced in the machine. Other dryers, coolers, screens, and conveyance uses a lighter degreaser that is applied via a foam application and rinsed off via pressurized water. All parts of processing equipment are then allowed to air dry, and an alcohol-based sanitizer is applied prior to startup of the production line.

Roasting

Wet cleaning in the roaster line occurs every two weeks of production. Several strengths of degreasers are used for varies areas of the sanitation process. This process starts our as almond debris is removed from processing equipment via compressed air or vacuum and then collected and discarded. A water rinse, pressurized and non-pressurized, is used to dislodge other almond debris, this is flushed down drain and most organics separated via a screening prior to discharge into ponds.

The roaster belt is cleaned with concentrated degreaser that is added to machinery and allowed 15-20 minutes of action prior to agitation and rinsing with hot pressurized water. Other external parts of roaster and conveyance use a lighter degreaser that is applied via a foam application and rinsed off via pressurized water. All parts of processing equipment are then allowed to air dry, and an alcohol-based sanitizer is applied prior to startup of the production line.

Slicing

Wet cleaning in the cutting line occurs every week of production. Several strengths of degreasers are used for varies areas of the sanitation process. This process starts out as almond debris being removed from processing equipment via compressed air or vacuum and then collected and discarded.

A water rinse, pressurized and non-pressurized, is used to dislodge other almond debris, this is flushed down drain and most organics separated via a screening prior to discharge into ponds. Cooler flaps are cleaned every quarter in a concentrated degreaser – these flaps are removed and soaked in concentrated chemical in hot water and allowed to sit for up to 12 hours.

They are then rinsed with hot pressurized water and replaced in the machine. Other parts of the dryer, cooler, screens and conveyance use a lighter degreaser that is applied via a foam application and rinsed off via pressurized water. All parts of processing equipment are then allowed to air dry, and an alcohol-based sanitizer is applied prior to start-up of the production line.

Mealing and Flour

This is a dry clean area thus no chemicals would be added to the wastewater system on a weekly basis. We do cleaning by blowing off debris and dust then collecting them. Wet wiping of machinery and elevators structures with alcohol quaternary ammonia used to wet towel in dry cleaning and as sanitizer. We will remove and wash buckets from elevators on a quarterly basis. Solv 30 mixture is used for this and these waste discharge will be added to general wastewater.

Dicing

Wet cleaning in the cutting line occurs every two weeks of production. This process starts our as almond debris is removed from processing equipment via compressed air or vacuum and then collected and discarded. A water rinse, pressurized and non-pressurized, is used to dislodge other almond debris, this is flushed down drain and most organics separated via a screening prior to discharge into ponds. All parts of the dicer, screens and conveyance use a lighter degreaser that is applied via a foam application and rinsed off via pressurized water. All parts of processing equipment are then allowed to air dry, and an alcohol-based sanitizer is applied prior to start-up of the production line.

Buttering

Wet cleaning of the butter line occurs every two weeks of production. Several strengths of degreasers are used for varies areas of the sanitation process. This process starts our as almond debris is removed from processing equipment via compressed air or vacuum and opening and dumping butter from pipes and filters then clean butter is collected and reworked and loose almond debris is discarded or used as oil stock. A water rinse, pressurized and non-pressurized, is used to dislodge other almond debris, this is flushed down drain and most organics separated via a screening prior to discharge into ponds. All pipes are cleaned with a CIP system that flows a hot water rinse, a hot chemical degreaser, and a hot water rinse. Other parts of the dumpers, conveyance and packaging use a lighter degreaser that is applied via a foam application and rinsed off via pressurized water. All parts of processing equipment are then allowed to air dry, and an alcohol-based sanitizer is applied to open machinery prior to start-up of the production line.

Pasteurizer

Wet cleaning the pasteurizer roaster line every two weeks of production. Several strengths of degreasers are used for varies areas of the sanitation process. This process starts out as almond debris being removed from processing equipment via compressed air or vacuum and then collected and discarded. A water rinse, pressurized and non-pressurized, is used to dislodge other almond debris, this is flushed down drain and most organics separated via a screening prior to discharge into ponds. The convenance belt is cleaned with concentrated degreaser that is added to machinery for 15-20 minutes prior to agitation and rinsing with hot pressurized water. Other external parts of pasteurizer and conveyance use a lighter degreaser that is applied via a foam application and rinsed off via pressurized water. All parts of processing equipment are then allowed to air dry, and an alcohol-based sanitizer is applied prior to startup of the production line.

5. Chemical Conservation, Reuse, & Recovery

Chemical Reuse

Chemicals used in the CIP system of the butter are used and stored in a separate tank for several cleanings. Concentrations are monitored and chemicals are only added as needed to meet desired concentrations in the cleaning cycles. Other cleaning chemicals are used once and discarded into the wastewater. We are evaluating ways to use concentrated soapy water multiple times, but the cleaning water and degreaser soaps have not been in a uniform system thus making the multiple use challenging at the time of writing of this document.

Chemical Replacement

In the past 8-10 years Treehouse has evaluated multiple chemical types and companies. We have continually returned to similar chemistries and concentrations that do work well in the sanitation and removal or the almond oils in our products. TCA does not intend to change or use different chemicals as current ones have been found to work best.

Boiler Chemicals

Boiler chemicals are used in the scavenging and removal of oxygen in the boiler water to reduce the oxidation and buildup of minerals on the tubes of the boiler for energy efficient transfer of heat. These are small in concentration and do not add a significant addition to the overall wastewater. These chemicals are monitored several times per week by Treehouse personnel as well as a boiler water technician once each week. Together we balance the use of these chemicals in our water system and boiler.

6 - Recommended Future Actions

Management Considerations

TCA made a significant change from the salt softened water to Reverse Osmosis (RO) water for the boiler and water injection into the scalder line. This one change has significantly reduced the salt in our water from the removal of the re-brining process of the salt system to the carbon filters of the RO system. We are currently adding a duplicate and redundant RO system for consistent reliability of the RO water.

Actions

TCA understands our ongoing actions will affect the salt concentrations in the water of the area and soil for the upcoming decades. For this, and our ongoing commitment to sustainability, we will continue the use of RO water in our boiler processes. We will also continue to use our wastewater and captured runoff in the irrigation of crops that will be used for livestock feed in the area as mitigation of the chemical we need to use in our cleaning and sanitation processes.

Limitations

TCA is limited to the knowledge we currently possess on the processes of cleaning our water use. We are aware based on the test results that we are not adding to the overall salts levels to the area and environment. Treehouse will continue to use our water wisely for the ag production as noted.

Exhibit #1 – Chemical Usage Analysis

Water Technologies — Cleaning Compounds | **B & L NEELEY, INC.** | Hawksley Laboratories — Process Solutions

151 W 5th Street • Ripon, California 95366 • 24 Hour No. • 209-823-3571 • www.blneeley.com
Water Treatment &Testing • Consultation • C.I.P. & High Pressure Cleaning Systems • 10,000 PSI Tube Cleaning • Service & Parts for Equipment
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Summary of Sodium Discharge by Chemical - B&L Neeley Chemicals

Treehouse Almonds

Chemical	2022			
	Chemicals Purchased (gal or lb)	Gallons Contributing to Sodium	Sodium Weight (lb)	PPM of Salinity to Water Discharge (PPM)
Chlor 12.5 (sodium hypochlorite)	1,196	46	462	2.98
Chlorinated Foamer #5B (sodium hypochlorite)	1,540	9	89	0.57
Cleaner Solv #30 (sodium hydroxide)	1,760	61	750	4.83
Cleaner L-145 (sodium hydroxide)	1,595	447	5,514	35.52
				--
				--
				--
				--
				--
				--
				--
				--
Total PPM of Salinity to Water Discharge (sodium):	43.9			

Notes: PPM Calculations Assume the Following:

Gallons of water discharged per day:	62,000
Total days in operation:	300

PROVOST&PRITCHARD
CONSULTING GROUP

400 E Main St, Ste 300 • Visalia, CA 93291 • (559) 636-1166
www.provostandpritchard.com

MEMORANDUM

To:	GMA Engineering
From:	Steven Bommelje
Subject:	WWTF Description for Tulare County Permit for Treehouse Almonds
Date:	March 20, 2024

Here is a description of the wastewater treatment area for Treehouse for the county use permit.

Wastewater will flow via pipeline from the Treehouse plant to the treatment area. This water will flow over a screen separator. The final separated solids will be collected and mixed with what is separated and collected at the plant. The solids will be hauled off and used for animal feed. The water will then gravity flow into the first of two anaerobic ponds.

The two anaerobic ponds (88' x 88' x 19') will be operated in series and continuously mixed. Water will then gravity flow into an aeration pond (280' x 87' x 13') where it will be aerated by submerged diffusers pressurized by blowers adjacent to the pond. Water from the aeration pond will be pumped into a clarifier.

The clarifier (24' diameter x 12') will settle the remaining solid particles, returning them to both the anaerobic and aerobic ponds. The clarified water will gravity flow into the storage pond (466' x 280' x 27') for use in crop irrigation. A floating pump in the storage pond will deliver treated water to the irrigation system of the fields.

A Report of Waste Discharge (RWD) was submitted June 5, 2023, to the Regional Water Quality Control Board (RWQCB) outlining the treatment process, pond design, and nutrient management of the crop irrigations. The RWQCB approved the HDPE double liner pond design on July 21, 2023, allowing for the construction of the ponds. The issuance of a Waste Discharge Requirements (WDR) Order is awaiting the completion of the Tulare County Use permit.

A grading permit for pond construction was obtained from Tulare County on January 11, 2024. Excavation for the ponds began in March 2024. Completion of the construction for the treatment area is anticipated in June of 2024.

ATTACHMENT "E"

OPERATIONAL STATEMENT

GMA
GERALD MELE & ASSOCIATES, INC.
7337 N. FIRST ST., SUITE 110 FRESNO, CA. 93720 (559)435-1411 FAX (559)435-1169
CONSULTING ENGINEERS AND ARCHITECTS
GERALD A. MELE, PE, SE
MARTIN R. INESS, PE, SE
ROBERT A. SANDERS, ARCHITECT
BRAD S. EDWARDS, PE, SE
JACOB G. KENNINGTON, PE
LUIS A. GOMEZ, PE

County of Tulare
Planning Department
5961 South Mooney Boulevard
Visalia, CA 93277

Treehouse California Almond, L.L.C. – Proposed boiler building
Operational Statement

To whom it may concern,

The project will be located on the parcel with the APN of 318-290-006, 318-290-005, which have a current zoning designation of AE-40 – Agricultural Exclusive – 40 Acre, and 319-060-019, 319-060-022, and 319-060-037, which have a current zoning designation of AE-20 – Agricultural Exclusive – 20 Acre. The company currently operates its existing facilities on said parcels. The company has the current address of 6914 Earlimart, CA. 93219.

The company sells a full range of roasted and manufactured almonds, including blanched whole, sliced, and diced almonds, almond meal, almond butter and natural whole almonds. The almonds are hulled and shelled in the Treehouse Almonds plant near Delano in Kern County. This shelled raw product is then trucked to the Earlimart site for processing.

The project will consist of several phases as follows:

Phase 1 - The construction of a 644 sq. ft. metal building addition, a 4,966 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. As additions to an existing to an existing warehouse. It will include the relocation of an existing 750 sq. ft. scale house. It will also include the construction of a water treatment facility.

Phase 2 – The construction of a 5,176 sq. ft. canopy, and (2) 5,013 sq. ft. fumigation room buildings with (2) 902 sq. ft. canopies for a total of 5,915 sq. ft. ea. and a 1,275 sq. ft. fumigation room with a 230 sq. ft. canopy for a total of 1,505 sq. ft. as additions to an existing warehouse.

Phase 3 – The renovation to an existing building from a warehouse to a two story office. It will also include the construction of a 162,000 sq. ft. warehouse.

Phase 4 – Construction of a 4,783 sq. ft. solar panel canopy, a 7,259 sq. ft. solar panel canopy, and an 8,208 sq. ft. solar panel canopy.

Phase 5 – Construction of a 7,040 sq. ft. warehouse addition, a 2,873 sq. ft. warehouse addition, and 578 sq. ft. trucker's welfare addition.

Phase 6 – Construction of a 1,600 sq. ft. caretaker's residence.

The company currently operates two 10-hour shifts, four to five days a week, depending on the season. The company has 87 employees who work the day shift and 49 employees who work the night shift. The company anticipates the possible addition of 8 more employees with the above additions.

The company currently has approximately two to three customers who visit the site every week with no change anticipated as a result of the proposed additions.

The company currently receives approximately 5-20 delivery trucks a day during the peak harvest season which is from August through November. From December through July they receive approximately 8-15 trucks a day. There will be no increase

The Company uses much of the normal equipment that would be found in an almond processing plant such as blanchers, slicers, dicers, a sliver machine, roasters, a sizer, an El Bascan electronic sorter, a blending station, a 300hp boiler that is permitted every year, forklifts, a tractor, and conveyors.

No goods will be sold on-site.

Currently there is no caretaker living on-site. Once the previously approved Phase 7 caretaker residence is constructed, the company will be adding an on-site caretaker.

A combination of a 7' high chain link fence, video cameras, 24-hour security on the weekends, and on-site outdoor lighting are used to secure the property.

Respectfully submitted,

Sean Odom
Gerald Mele & Associates, Inc.

TULARE COUNTY RESOURCE MANAGEMENT AGENCY
PLANNING APPLICATION
GENERAL INFORMATION / COVER SHEET

LAND USE ENTITLEMENT (DISCRETIONARY)

TYPE OF APPLICATION:

- ☐ Development Agreement
- ☐ Final Site Plan
- ☐ General Plan Initiation
- ☐ General Plan Amendment
- ☐ Planned Development
- ☐ Planned Unit Development
- ☐ Review/Interpretation Request
- ☐ Revisions to a Parcel/Sub Map
- ☐ Special Use Permit (PC)
- ☐ Specific Plan
- ☐ Tentative Parcel Map
- ☐ Tentative Subdivision Map
- ☐ Variance- Flood
- ☐ Variance-Building/Road Setback
- ☐ Variance- Zoning
- ☐ Zone Change Initiation
- ☐ Zone Change
- ☐ Other ______

Applicant: Tree House California Almonds, LLC
Mailing Address 6914 Road 160
City/Town Earlimart State CA Zip 93219
Phone ______ Cell (559) 757-5020
E-Mail ______
Signature ______

Property Owner: ______
Mailing Address ______
City/Town ______ State ______ Zip ______
Phone ______ Cell ______
E-Mail ______
Signature ______

Other Persons to be Notified: (Specify: Other Owner(s), Agent, Lender, Architect, Engineer, Surveyor)

Name/Title GMA Engineering - Sean Odland
Mailing Address 337 N. First Street, Suite 110
City/Town Fresno State CA Zip 93720
Phone 559-435-1411 Fax ______
E-Mail Sean@gmaengineering.com

Name/Title Ryan Rhoads
Mailing Address ______
City/Town ______ State ______ Zip ______
Phone ______ Fax ______
E-Mail ______

Project Information: Ryan@gmaengineering.com
Site Address(es): 6914 Road 160. City/Town: Earlimart
Assessor's Parcel No(s): 319-060-019, 022, 037, 318-290-005, 006.

$5,807.00 — CEQ 23-005

THIS SPACE FOR PERMIT CENTER STAFF USE ONLY

Project Number: PSP 23-064 **Supervisor District:** 5 **Economic Development:** ______
Current Zoning: AE-20 **General Plan Land Use:** ______ **UAB/UDB/HDB/MSC:** Yes ☐ No ☐
Project Description Almond facility Expansion
Agricultural Preserve *(if applicable)* – Preserve No. ______ **Contract No.** ______
Filing Fee(s): $6,088.00 **Total Amount Paid:** ______ **Payment Type:** ______
Date Received: 08/18/2023 **Existing Entitlements/References:** CEQ 23005
Application Received/Reviewed by: Neha.

PERMIT CENTER HOURS: MONDAY – THURSDAY 9:00 A.M. TO 4:30 P.M. FRIDAY 9 A.M. -11 A.M.

TULARE COUNTY RESOURCE MANAGEMENT AGENCY
****5961 S. Mooney Blvd. Visalia, CA 93277 ** PHONE: 559-624-7000 ****

DISCRETIONARY LAND USE ENTITLEMENT APPLICATION

REQUIREMENTS, FEES AND INSTRUCTIONS *(Please use dark blue or black ink)*
The application form must be filled out completely and in every respect with all questions answered and all required attachments before the County can officially accept the application for processing. In the course of accepting and processing the application, Permit Center staff or the project planner may ask the applicant to clarify, correct or otherwise supplement the required information. The application may be filed with the Resource Management Agency Permit Center, at 5961 S. Mooney Blvd. Visalia, CA 93277. Phone No. (559) 624-7000. **IMPORTANT NOTICE: Fees are required at time of application submittal and are subject to change. Please verify the most up to date fees with Permit Center staff. The applicant is responsible for the payment of all fees associated with this application, including the initial fee/deposit and additional fees charged for processing. In addition, the applicant may be required to submit to the County additional deposits.**

Please see application fee information on Page 3 for specific and detailed fee information.

In addition to this application, please provide the following:

1. One (1) copy of the Development / Site Plan (showing entire parcel and location of the project)
2. Operational Statement: Please attach a detailed operational statement.
3. A signed Indemnification Agreement
4. "Will Serve" Letter from the appropriate off-site Community Water or Sewage Disposal provider.
5. Supplemental Information: Parcel Map Applications may require applications for exceptions and/or a waiver of the final map (if appliable). Certain applications pertaining to projects involving the raising of animals (dairies or other animals), Surface Mining or other more intense uses may require additional information and forms which can be obtained by contacting the Permit Center staff.

SUMMARY OF REQUIREMENTS FOR A LAND USE ENTITLEMENT APPLICATION

	Applicant	Staff
1. Completed Application	☐	☐
2. Owner's Affidavit *(signed by property owner)*	☐	☐
3. Filing Fee	☐	☐
4. Development/Site Plan (1 copy) (additional copies may be required)	☐	☐
5. Indemnification and Cost Recovery Agreement *(separate attachment)*	☐	☐
6. Supplemental Information (Review of "Identified Hazardous Waste Sites")	☐	☐
7. Applicant's Request for Notification of Proposed Land Use Action	☐	☐
8. Operational Statement *(if required by County)*	☐	☐
9. "Will Serve" letter from the appropriate off-site Community water and/or sewage disposal provider.	☐	☐
10. Water availability information for all existing and/or proposed on-site domestic wells. (Note: If a domestic well on one parcel is going to supply water to another parcel, a ten foot wide well and pipeline repair and maintenance easement in favor of that parcel shall be shown on the parcel (tentative/final) map and incorporated into the legal description prepared for the division of land.)	☐	☐
11. Request for Unused Fees Form *(Signed by the Applicant)*	☐	☐

LAND USE ENTITLEMENT APPLICATION FEES

Project Type Development	***Fee Due at Application Submittal***
Agreement	$1,303 deposit (then $115/hourly charged)
Final Site Plan	$3,415 deposit (then $115/hourly charged)
General Plan Initiation	$5,321 deposit (then $115/hourly charged)
General Plan Amendment	$10,321 deposit (then $115/hourly charged)
Planned Development	$8,304 deposit (then $115/hourly charged)
Planned Unit Development	$8,203 deposit (then $115/hourly charged)
Review/Interpretation Request	$300 deposit (then $115/hourly charged)
Revisons to a Parcel/Sub Map	$1,312 (for a Minor Revision) 1/2 of fee for Tent Map not less than $1,354 (Major Revision)
Special Use Permit (PC)	$3,005 deposit (then $115/hourly charged) for CEQA Exempt projects, temporary uses, mobile home/additional housing $5,750 deposit (then $115/hourly charged) for New Special Use Permits and Amendments $5,528 deposit (then $115/hourly charged) for Expansions of Non-Conforming Uses *Note that Large Day Cares, Kennels, and Hazardous Waste Facilties have special fee amounts. Please contact Permit Center staff for any fee questions. Additional $150 fee in SRA Areas
Specific Plan	$5,321 deposit (then $115/hourly charged)
Tentative Parcel Map	$2,507 flat fee (for 1-4 lots) - Additional: $168 for Waiver request, $249 for exceptions to maps/lot lines, $113 in SRA Areas; $3,568 plus $65 per lot (for more than 4 lots) (then $115/hourly charged)
Tentative Subdivision Map	Deposit Varies based on number of lots (then $115/hourly charged)
Variance - Flood	$3,313 deposit (then $115/hourly charged)
Variance - Building/Road Setback	$1,801 flat fee
Variance - Zoning	$3,490 deposit (then $115/hourly charged)
Zone Change Initiation	$3,333 deposit (then $115/hourly charged) Note: Zone Initiation fee is deducted from Zone Change Fee
Zone Change	$6,451 deposit (then $115/hourly charged)

Additional Fees Due Prior to Hearing or Project Completion

CEQA (Environmental) Fees for 2021	Varies: Exempt: $58, ND or MND: $2,480.25, EIR: $3,445.25
Recording Fee Deposit	$150 (Including SB2 - Building Homes and Jobs Act Fee)
Compliance Monitoring Fee	$130

Tax Clearance Fees for Parcel Maps/Lot Line Adjustments

Assessor Fee Per Map for Tax Estimates	$63
Assessor Fee Per Map for Waived Maps	$336
Tax Collector Fee	$131 per Original APN

PLEASE FILL OUT THE FOLLOWING INFORMATION COMPLETELY.

1. Type of Project:

   ☐ Residential ☐ Commercial ☐ Industrial ☐ Agricultural

2. Present use of the project site (existing conditions, improvements, and/or development)?
   Almond facility

3. What is the project/proposed use of site? And when will the use begin? *(Please state exactly and in detail what the intended reason to be done on, or with, the property).*
   Addition to existing facility to enable to allow the Company to diversify product packing in the future and use additional property for water treatment

4. Is the project proposing to create new lots? No.
   If yes, how many? __________

5. Is this project to resolve a violation? No

6. Liquid waste disposal *(please check appropriate box)*: ☐ Existing ☐ Proposed
   ☐ Septic Tank-Leach Lines: Size of tank __________ gallons & length of lines __________ ft.
   ☐ Seepage Pit - Size __________
   ☐ Community System – Name: __________
   ☐ Aerobic tank - Size of tank __________

7. Water supply *(please check appropriate box)*: ☐ Existing ☐ Proposed
   ☐ Domestic Well – Size of pump __________ Gallons per minute __________
   ☐ Irrigation Well: __________
   ☐ Irrigation District – Name: __________
   ☐ Private Water Company – Name: __________
   ☐ Community System – Name: __________

   Note: A "Will Serve" letter must be provided from any off-site community water and/or sewage disposal provider and must be submitted as part of this application. In addition, water availability information for all existing and/or proposed on-site domestic wells must also be submitted with this application.

8. Source of energy *(please check appropriate box)*:
   ☐ Electricity – Company name: __________ ☐ Natural Gas – Company name: __________
   ☐ Propane: Size of tank __________ Provider __________

9. Date property was acquired: __________

10. Date use began on site: __________

o. Show the location of all existing and proposed septic tank-leach line systems, community sewage systems and potable water sources in accordance with the Tulare County Environmental Health Services Standards. (Note: proposed septic tank-leach line systems must be a minimum of 100 ft. from any on- or off-site wells.)
p. Indicate the location, length, width, and surface type of all existing and/or proposed easements including those for access and public utilities and private vehicular access easements.
a. The attached "Indemnification Agreement" must be signed by the property owner and submitted with the completed application.

SUMMARY OF REQUIREMENTS FOR A SPECIAL USE PERMIT APPLICATION

	Applicant	Staff
1. Completed Application	☒	☐
2. Owner's Affidavit *(signed by Property Owner)*	☒	☐
3. Filing Fee.	☒	☐
4. Site Plan (minimum of 1 copy) (Note: additional copies may be required)	☒	☐
5. "Will Serve" letter from the appropriate off-site Community water and/or sewage disposal provider (if applicable).	☐	☐
6. Water availability information for all existing and/or proposed on-site domestic wells (if applicable). See op. statement for further information.	☒	☐
7. Supplemental Information – Review of "Identified Hazardous Waste Sites" List	☒	☐
8. Applicant's Request for Notification of Proposed Land Use Action	☒	☐
9. Indemnification and Cost Recovery Agreement (separate attachment)	☒	☐
10. Request for Unused Fees Form (Signed by Applicant)	☒	☐

PLEASE FILL OUT THE FOLLOWING INFORMATION COMPLETELY.

1. Proposed use of site? *(Please state exactly and in detail what is intended to be done on, or with, the property).*
The project is an addition to the existing Almond facility to enable to allow the company to diversify product packaging in the future and use additional property for water treatment. See op. statement for further information.

2. Parcel or Lot Size(s) *(in acres or sq. ft. as appropriate)*: 319-060-19 - 4.68 Acres, 318-290-05 - 39.32 Acres, 318-290-06-38.55 Acres, 319-060-37 - 40.71 Acres, 319-060-22 - 15.81 Acres

3. How much area of the total parcel or lot is being developed or utilized for the proposed use? Main Facility - 51.90 Acres Water Treatment area - 7.87 Acres

4. Present use of the project site? Existing almond storage/ packing facility including several structures. See site plan.

5. If residential structure(s) on site, please provide the relationship of persons to the applicant in each dwelling unit. n/a

6. Employees: Indicate the total number of employees and include the number of shifts and number of employees per shift. day shift - 87 employees, night shift - 49 employees

7. Hours/Days of Operation *(if seasonal, include months of operation)*: 20 hours a day, 4-5 days a week

8. Type of equipment and/or machines to be utilized *(if applicable)*: Existing Equipment See Site Plan

9. If the proposed use is for a second residence, indicate the type *(conventional, mobile home, duplex, triplex)* and the size of the unit. n/a

10. Are alcoholic beverages proposed to be served on site? Yes ☐ No ■
Type of alcoholic beverages to be served ______

ENVIRONMENTAL SETTING

11. Describe the project site, prior to the proposed use, including all above and below ground developed improvements *(residences, outbuildings, barns, sheds, covers, shop buildings, septic tank-leach line*

systems, domestic/agricultural wells, fuel storage tanks, etc.), including the size of each.
Existing almond packing facility See Site Plan

12. Describe the slopes (percentage and direction) and general terrain of the subject site: Flat

13. Trees: identify the type and size of any large trees on site. Several trees on the southwest corner of parcel, possibly almond trees

14. Water courses: identify the type and location of any on-site or nearby water courses *(rivers, canals, ditches, streams, creeks, etc.).* several ponding basins - see site plan.

15. Describe the character and land use of the surrounding properties (orchards, vineyards, row crops, pasture, open space, water courses, railroads, roads, rural residential, subdivisions, commercial, schools, churches, vacant, city or county boundary):

DIRECTION	CHARACTER/LAND USE
North	ag land
South	ag land
East	ag land
West	ag land

16 Liquid waste disposal *(please check appropriate box)*: ■ Existing ☐ Proposed

- ☐ Septic Tank-Leach Lines: Size of tank ________ gallons & length of lines ________ ft.
- ■ Seepage Pit - Size there are multiple on the site. See site plan.
- ☐ Community System – Name: ________
- ☐ Aerobic tank - Size of tank ________

17. Water supply *(please check appropriate box)*: ■ Existing ☐ Proposed

- ■ Domestic Well – Size of pump 60 h.p. Gallons per minute 600 gal
- ☐ Irrigation Well: ________
- ☐ Irrigation District – Name: ________
- ☐ Private Water Company – Name: ________
- ☐ Community System – Name: ________

Note: A "Will Serve" letter must be provided from any off-site community water and/or sewage disposal provider and must be submitted as part of this application. In addition, water availability information for all existing and/or proposed on-site domestic wells must also be submitted with this application.

18. Source of energy *(please check appropriate box)*:

- ■ Electricity – Company name: S. Cal. Edison
- ■ Natural Gas – Company name: The Gas Co.
- ■ Propane: Size of tank (2) 1,000 gal. Provider Jack Riggs Propane

19. Will the project require the development of public service *facilities (roads, sewer lines, water lines, etc.)?* If so, describe the required development:
Yes - See Site Plan

11. Parcel or Lot Size(s) *(in acres or sq. ft. as appropriate)*: ____________________

12. How much area of the total parcel or lot is being developed or utilized for the proposed use (acreage, square footage and percentage)?

____

13. Will the development of the project be in phases? If yes, please describe each phase and estimated time frames. Yes ☐ No ☐

____

14. List and describe any other related permits and/or other public approvals required for this project, including those required by city, regional, state and federal agencies.

____

15. Parking: Specify the number of on-site parking spaces, including the location, size, and type of surfacing.

____

Specify number of loading space(s) and loading dock(s) ____________________

16. Number of trips generated per day by each type listed below *(2 trips = 1 arrival and 1 departure)*:

Residents	________	Customers	________
Employees (including self)	________	Shipping	________
Deliveries	________	Other	________

Residential Projects Only:

17. Please indicate the type of residential development *(conventional, mobile home, duplex, tri-plex).*

____

18. How many structures/buildings are being proposed? ____________________

19. How many units will there be? ____________________

____

20. Please provide the relationship of persons to the applicant in each dwelling unit.

____

****For Residential Projects and Tentative Parcel Map/Subdivision Map Projects please skip the next section and proceed to Page 9 to complete the Environmental Setting Questions and additional required forms.**

Commercial, Industrial and Agricultural Projects Only:

21. Employees: Indicate the total number of employees and include the number of shifts and number of employees per shift.

____

22. Days and Hours of Operation *(if seasonal, include months of operation)*:

____

23. Please fill out the table below regarding your proposed project. Note: For proposed expansions please provide a copy of the existing use permit or approved site plan. Please describe additional information about the expansion on a separate sheet.

Description of Existing Use and New or Proposed Expansion		
	Existing	**New or Proposed Expansion**
Type of Use		
Number of Employees		
Type of Development		
Size of Development (sq. ft.)		
Area of Development (sq. ft./acres)		
Operating Hours & Days		
Annual Production (tons, gallons, etc.)		
Daily Trips (arrivals & departures) of : Employees Customers Deliveries Shipments		
Equipment		
Vehicles, by type		
Water usage (# of gallons per year)		
Wastewater (# of gallons per year)		

24. Are alcoholic beverages proposed to be served on site? ☐ Yes ☐ No
If Yes, please explain and state who will hold the license from the State Department of Alcohol Beverage Control. ______________________________

25. Waste materials: Indicate types of all waste materials and the existing or proposed method for disposal.

____

26. Waste/Storm water: Indicate plans for reclamation for waste/stormwater *(if applicable)*:

____

Required permit or waiver from Regional Water Quality Control Board? Y / N (If yes, attach report.)
If processing water is used for irrigating, specify # of acres, location (APNs) and property owner(s)

____

27. Access to major roads, railroads or waterways. ______________________________

____

28. Drive approach(es) – Describe existing or proposed.______________________________

29. Signage – Describe existing and proposed signage for the proposed use.____________________

____

30. Landscaping – Describe existing and proposed landscaping on the site.____________________

____

31. If the proposed use is for commercial development, indicate the type *(neighborhood, general, service, urban, rural, agricultural)*, proposed use, and square footage of retail and/or wholesale sales area and/or storage area.

____

32. If the proposed use is for institutional, indicate the type *(hospital, daycare, clinics, or similar use),* the major function, estimated occupancy and the community benefits to be derived from the project.

____

33. If the proposed use includes manufacturing or processing, indicate the type of product, method of storage, process for distribution or selling, and whether the operation is for retail or wholesale.

____

____

Equipment used____________________________ Where operated ____________________

Distance from nearest off-site residence ______

Current production (# gallons or tons/yr) _____ Proposed production(# gallons or tons/yr) ________

34. If the proposed use includes storage or warehousing, indicate the type of materials to be stored on site and the size and description of the storage area, including existing and proposed fencing and screening.

____

Are any portable toilets stored on site? Yes / No If so, how many? __________

Where are portable toilets emptied and cleaned out? ______________By whom? ______________

Are any of the stored materials hazardous? Yes / No

Any explosive materials? Yes / No Volatile materials? Yes / No Poisons? Yes / No

If so, please describe storage arrangements (containment, inside structure, signage, etc.)

____

Does applicant have a Hazardous Materials Business Plan on file with the County Environmental Health Services Division? ______________________

Does applicant have current State and local permits for transporting hazardous materials? Yes / No

Describe ____

35. Type of equipment and/or machines to be utilized, including horsepower. Specify - powered by propane, gasoline, diesel or electricity *(if applicable)*:______________________________

____ Fork Lifts ____________

36. Type and number of vehicles to be utilized *(if applicable)*:

Pickups ____________ Tractors ____________

2-ton trucks __________ ARB compliant? Yes / No

18-wheelers __________ ARB compliant? Yes / No

Trailers ____________ Other ________________________________

Specific Types of Projects (Applicable only to Cell Tower, Solar Projects, Confined Animal Operations and Assemblage of People applications):

37. If the proposed use is for a telecommunications/cell tower, indicate the type, height, size of lease area and the number of receivers proposed.

____

Distance from nearest residence ____________ Distance from public road ______________

NOTE: Please provide map of cell tower locations within 10 mile radius.

38. If the proposed use is for a solar facility, describe whether power will be generated -

For use on the site ☐ or back to the grid ☐

Panel type____________________________ Square footage or acreage ______________

Ground mounted ☐ Roof-mounted ☐ Amount of power to be generated______________

39. If the proposed use is for an animal operation, specify the types of animals and their maximum number.

____

____

Note: Dairies and Other Concentrated Animal Raising Operations require special application forms.

40. If the proposed use will include facilities for an assemblage of people (in a church, auditorium, or other structure, or in an open area), inside/outside (tent, canopy or building), indicate the seating capacity, including whether it is fixed or loose seating, and the number of tables with seating.

____

Proposed days (weekends or weekdays?) _________ Proposed # of events/year ________

Proposed Number of Commercial Events: ______________________________

Expected # of attendees ________________________ Employees (including self): __________

Distance to lot lines ______________________ Distance to nearest off-site residence ________

Proposed entertainment ________________________ Amplification type _________________

Hours of events - Setup _____________ Event(s) _______________ Cleanup _______________

# of parking spaces _____ On-site parking area size ____________ Surface _______________

Off-site parking arrangements, if any:______________________________

Fencing - Type ________________________ Location ______________________________

Proposed # of security guards (*Need 1 for each 100 attendees if no alcohol served or 2 for each 100 if alcohol is served*): ______________________________

Will alcohol be served? Yes☐ No☐

If yes, who holds the ABC license? ______________________________

Restroom arrangements: ☐ Portable Toilets (Need 1:50 people) ☐ Restrooms (1:100 people)
Number Provided ______________________________
Number of hand wash sinks _________________(*If portable toilets, need 1 hot water dispenser for every 15 food handlers*).

Food Provider or Caterer: ______________________________

ENVIRONMENTAL SETTING

41. Describe the project site, prior to the proposed use, including all above and below ground developed improvements *(residences, outbuildings, barns, sheds, covers, shop buildings, septic tank-leach line systems, domestic/agricultural wells, fuel storage tanks, etc.),* including the size of each.

____

____

42. Please describe and indicate the slopes and general terrain of the subject site (fairly level, on bluff, hillside with outcroppings, etc.): _______________________________

43. Trees: Please identify the type and size of any large trees on site.

____

44. Water bodies/courses: Identify the type and location of any on-site or nearby water bodies/courses *(rivers, canals, ditches, streams, creeks, ponds etc.).*

____

45. Describe the character and land use of the surrounding properties (orchards, vineyards, row crops, pasture, open space, water courses, railroads, roads, rural residential, subdivisions, commercial, schools, churches, vacant, city or county boundary):

DIRECTION	CHARACTER/LAND USE
North	
South	
East	
West	

46. Fire Suppression:

Number of Hydrants on site _______ Hydrant(s) off site ____ Distance ________

Storage tank on site for fire suppression (requires Fire Department connection) Size _______

47. Will the project require the development of public service *facilities (roads, sewer lines, water lines, etc.)?* If so, describe the required development:

____

48. Provide any additional information that may be helpful in evaluating this request. *(Use the back of this form or attach separate sheet, if needed.)*

____

____

SUPPLEMENTAL INFORMATION FOR
APPLICATION OF ANY DEVELOPMENT PROJECT

HAZARDOUS WASTE AND SUBSTANCES STATEMENT:
Per California Government Code Section 65962.5(f), before the County accepts as complete an application for any development project, the applicant or owner shall consult the State's lists of hazardous waste facilities, shall submit a signed statement to the County indicating whether the project is located on a site that is included on any of the lists. The "Identified Hazardous Waste Sites" list may be viewed on the web at http://www.envirostor.dtsc.ca.gov/public or reviewed at the Resource Management Agency Permit Center, 5961 South Mooney Blvd., Visalia, California.

Before any application can be accepted as complete by the Tulare County Resource Management Agency, the owner of the subject property, or the owner's authorized agent, must complete this form.

STATEMENT:

I have reviewed the "Identified Hazardous Waste Sites" list (which may be viewed on the web at http://www.envirostor.dtsc.ca.gov/public) dated ____________________, 20____, and state that:

> "The site(s) of the project subject to this application ___ is / ___ is not on the "Identified Hazardous Waste Sites" list."

(If the site is on any of hazardous waste facilities lists, the applicant shall inform the County of which list, the date of the list, the regulatory identification number of the site on the list and corrective measures that will be taken to remove the site from the State list.)

CERTIFICATION:

I hereby certify that the information furnished herein presents to the best of my knowledge and belief, true and correct facts, statements, and information, and that I am the owner, or the authorized agent of the owner, of the subject property.

Signed: ____________________________________ Dated: ____________________

OWNER'S AFFIDAVIT
(Must be signed by property owner)

STATE OF CALIFORNIA)
SS.
COUNTY OF TULARE)

I, (We,) the undersigned, say:

I (We) own property involved in this application and I (we) have completed this application and other documents and maps required hereby to the best of my (our) ability and the statements and information above referred to are, in all respects, true and correct to the best of my (our) knowledge and belief.

I (We) declare under penalty of perjury that the foregoing is true and correct.

Executed on 4 MAY, 2023, at EARLIMART CA

Name: BRIAN J. BALL Signature: [signature]

Address: 6914 ROAD 160 EARLIMART State: CA Zip: 93219

Optional – additional property owner

Name: ______ Signature: ______

Address: ______ State: ______ Zip: ______

If there is an agent, title company, or prospective buyer who desires notification of the Director's action on this application, please enter name here.

Name: GMA Engineering, Gerald Mele, Rob Sanders and Sean Odom, Reps.

Relationship: Agent

Address: 7337 North First Street, Suite #110

State: CA Zip: 93720

Telephone: 559-392-9819

FAX No.: ______

In the case of applications which are subject to the authority of the Zoning Administrator, (see list of projects), the Zoning Ordinance provides that the applicant has the right to request that the Planning Commission hear the application rather than the Zoning Administrator. Please sign below if you wish to have your application heard by the Planning Commission. Note: An additional fee is required for the Planning Commission process.

Signed: ______ Date: ______

APPLICANT(S) REQUEST FOR NOTIFICATION OF PROPOSED LAND USE ACTION

NOTICE:

Under Section 65945(a) of the California Government Code, at the time of filing an application for a development permit, the applicant may make a written request to receive notice from the County of a proposal to adopt or amend any of the following plans or ordinances which may affect the proposed development permit:

1. A General Plan
2. A Specific Plan
3. A Zoning Ordinance
4. An Ordinance affecting building permits or grading permits

The applicant shall specify, in written request, the types of proposed actions for which notice is requested. Prior to taking any of those actions, the County is required to give notice to any applicant who has requested notice of the type of action proposed and whose develop0ment project is pending before the County if the County determines that the proposal is reasonably related to the applicant's request for the development permit. Notice shall be given only for those types of actions which the applicant specifies in the request for notification.

REQUEST:

☐ I hereby request under Section 65945(a) for the following types of actions (see above). Circle those that apply:

1 2 3 4

☐ I hereby waive notice under Section 65945(a).

I understand that any rights to notice under Section 65945(a) will lapse at the time that final action is taken on my development project.

Signed: ______________________________ Dated: ________________

(applicant or authorized agent)

Permit No.: ______________________________

The County of Tulare

"INDEMNIFICATION AND COST RECOVERY AGREEMENT"

must accompany this application

Please download or print out the form from the
County Web Site
(located with the list of land use applications).

The Indemnification and Cost Recovery Agreement must be filled in and signed by the applicant and must be submitted as part of any land use application requiring discretionary review by the County.

This Agreement must be signed by the Applicant

Please sign the Agreement in blue ink (preferred) and submit the original, signed document with the appropriate land use application.

WITHDRAWAL OF APPLICATION

Should you, at any time during the processing of your application, wish to withdraw your application and request a refund of fees paid, you may do so by forwarding a letter to the Resource Management Agency making that request. Please state clearly that you no longer wish to proceed with your land use project *(state the project number),* and that you are requesting a withdrawal of your project and a refund of any fees that have not been expended for the processing of your application.

Please date and sign the letter and include a mailing address where you would like any refund of fees (if applicable) to be mailed. Forward the request to the attention of the project planner.

REQUEST FOR REFUND OF FEES

Resource Management Agency
5961 S. Mooney Blvd.
Visalia, CA 93277

Project Number: ______________________

Please refund any unused fees associated with this application to the designated name and address below.

TREE HOUSE CALIFORNIA ALMONDS, LLC
(please print name)

P.O. BOX 12150
(Street Address,Suite/Apt. No.)

EARLIMART CA 93219
(City, State, Zip)

[signature]
Signature

18 May 2023
Date

SUPPLEMENTAL INFORMATION FOR
APPLICATION OF ANY DEVELOPMENT PROJECT

HAZARDOUS WASTE AND SUBSTANCES STATEMENT:

Per California Government Code Section 65962.5(f), before the County accepts as complete an application for any development project, the applicant or owner shall consult the State's lists of hazardous waste facilities, shall submit a signed statement to the County indicating whether the project is located on a site that is included on any of the lists. The "Identified Hazardous Waste Sites" list may be viewed on the web at http://www.envirostor.dtsc.ca.gov/public or reviewed at the Resource Management Agency Permit Center, 5961 South Mooney Blvd., Visalia, California.

Before any application can be accepted as complete by the Tulare County Resource Management Agency, the owner of the subject property, or the owner's authorized agent, must complete this form.

STATEMENT:

I have reviewed the "Identified Hazardous Waste Sites" list (which may be viewed on the web at http://www.envirostor.dtsc.ca.gov/public) dated current website, 2023, and state that:

> "The site(s) of the project subject to this application ___ is / X is not on the "Identified Hazardous Waste Sites" list."

(If the site is on any of hazardous waste facilities lists, the applicant shall inform the County of which list, the date of the list, the regulatory identification number of the site on the list and corrective measures that will be taken to remove the site from the State list.)

CERTIFICATION:

I hereby certify that the information furnished herein presents to the best of my knowledge and belief, true and correct facts, statements, and information, and that I am the owner, or the authorized agent of the owner, of the subject property.

Signed: Ryan Rhoads   Dated: 05/18/23

OWNER'S AFFIDAVIT
(Must be signed by a property owner)

STATE OF CALIFORNIA)
SS.
COUNTY OF TULARE)

I, (We,) the undersigned, say:

I (We) own property involved in this application and I (we) have completed this application and other documents and maps required hereby to the best of my (our) ability and the statements and information above referred to are, in all respects, true and correct to the best of my (our) knowledge and belief.

I (We) declare under penalty of perjury that the foregoing is true and correct.

Executed on ______________, 20 23, at ____________________

Name: Brian Ball Signature: ____________________

Address: 6914 Road 160 Earlimart State: CA Zip: 93219

Optional – additional property owner

Name: ____________________ Signature: ____________________

Address: ____________________ State: ______ Zip: ______

If there is an agent, title company, or prospective buyer who desires notification of the Director's action on this application, please enter name here.

Name: ____________________

Relationship: ____________________

Address: ____________________

State: ________ Zip: ________

Telephone: ____________________

FAX No.: ____________________

APPLICANTS' REQUEST FOR NOTIFICATION OF PROPOSED LAND USE ACTION

NOTICE:

Under Section 65945(a) of the California Government Code, at the time of filing an application for a development permit, the applicant may make a written request to receive notice from the County of a proposal to adopt or amend any of the following plans or ordinances which may affect the proposed development permit:

1. A General Plan

2. A Specific Plan

3. A Zoning Ordinance

4. An Ordinance affecting building permits or grading permits

The applicant shall specify, in written request, the types of proposed actions for which notice is requested. Prior to taking any of those actions, the County is required to give notice to any applicant who has requested notice of the type of action proposed and whose develop0ment project is pending before the County if the County determines that the proposal is reasonably related to the applicant's request for the development permit. Notice shall be given only for those types of actions which the applicant specifies in the request for notification.

REQUEST:

☐ I hereby request under Section 65945(a) for the following types of actions (see above). Circle those that apply:

1 2 3 4

☐ I hereby waive notice under Section 65945(a).

I understand that any rights to notice under Section 65945(a) will lapse at the time that final action is taken on my development project.

Signed: ______________________________ Dated: ________________
(applicant or authorized agent)

Permit No.: ____________________________

The County of Tulare
"INDEMNIFICATION AND COST RECOVERY AGREEMENT"
(must accompany this application)

Please download or print out the form from the
County Web Site
(located with the list of land use applications).

The Indemnification and Cost Recovery Agreement must be filled in and signed by the applicant and must be submitted as part of any land use application requiring discretionary review by the County.

This Agreement must be signed by the Applicant

Please sign the Agreement in blue ink (preferred) and submit the <u>original, signed document</u> with the appropriate land use application.

WITHDRAWAL OF APPLICATION

Should you, at any time during the processing of your application, wish to withdraw your application and request a refund of fees paid, you may do so by forwarding a letter to the Resource Management Agency making that request. Please state clearly that you no longer wish to proceed with your land use project *(state the project number)*, and that you are requesting a withdrawal of your project and a refund of any fees that have not been expended for the processing of your application.

Please date and sign the letter and include a mailing address where you would like any refund of fees (if applicable) to be mailed. Forward the request to the attention of the project planner.

REQUEST FOR REFUND OF FEES

Resource Management Agency
5961 S. Mooney Blvd.
Visalia, CA 93277

Project Number: ______________________

Please refund any unused fees associated with this application to the designated name and address below.

____
(please print name)

____
(Street Address, Suite/Apt. No.)

____
(City, State, Zip)

______________________________________ ____________
Signature Date

ATTACHMENT "F"

MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MONITORING AND REPORTING PROGRAM

This Draft Mitigation Monitoring and Reporting Program (MMRP) has been prepared in compliance with State law and based upon the findings of the Draft Mitigated Negative Declaration (MND) for Tulare 40 Generation Facility Project.

The CEQA Public Resources Code Section 21081.6 requires the Lead Agency decision making body is going to approve a project and certify the MND that it also adopts a reporting or monitoring program for those measures recommended to mitigate or avoid significant/adverse effects of the environment identified in the MND. The law states that the reporting or monitoring program shall be designed to ensure compliance during project implementation. The MMRP is to contain the following elements:

- **Action and Procedure.** The mitigation measures are recorded with the action and procedure necessary to ensure compliance. In some instances, one action may be used to verify implementation of several mitigation measures.

- **Compliance and Verification.** A procedure for compliance and verification has been outlined for each action necessary. This procedure designates who will take action, what action will be taken and when and by whom compliance will be monitored and reported and to whom it will be report. As necessary the reporting should indicate any follow-up actions that might be necessary if the reporting notes the impact has not been mitigated.

- **Flexibility.** The program has been designed to be flexible. As monitoring progresses, changes to compliance procedures may be necessary based upon the recommendations by those responsible for the MMRP. As changes are made, new monitoring compliance procedures and records will be developed and incorporated into the program.

The following presents the Mitigation Measures identified for the proposed Project in this MND. Each Mitigation Measure is identified by the impact number. For example, 4-1 would be the first Mitigation Measure identified in the Biological analysis of the MND.

The first column of the MMRP Table identifies the Mitigation Measure. The second column, "Timing/Frequency," identifies the time the Mitigation Measure should be initiated and identifies the frequency of the monitoring that should take place to assure the mitigation is being or has been implemented to achieve the desired outcome or performance standard. The third column, "Action Indicating Compliance," identifies the requirements of compliance with the Mitigation Measure. The fourth column, "Monitoring Agency," names the party ultimately responsible for ensuring that the Mitigation Measure is implemented. The fifth column, "Person/Agency Conducting Monitoring/Reporting" names the party/agency/entity responsible for verification that the Mitigation Measure has been implemented. The last three columns will be used by the County of Tulare to ensure that individual Mitigation Measures have been complied with and monitored.

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
AIR QUALITY							
3-1. Interagency Coordination: If a nuisance odor complaint is received from the processing facility or the WWTF, the applicant shall immediately contact (within 3 business days) Tulare County RMA staff to report the complaint. The applicant shall coordinate with the Air District and/or the Water Boards to remedy the source of the complaint. The applicant shall notify Tulare County of any actions taken pursuant to Air District or Water Boards recommendations for remedy.	As issue arises	As needed if complaint made.	County of Tulare, Air District, and RWQCB	Applicant			
BIOLOGICAL RESOURCES							
4-1. Pre-construction Survey – Special Status Plant Species: A qualified biologist/botanist will conduct pre-construction surveys for special status plant species in accordance with the California Department of Fish and Wildlife (CDFW) Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (2009). This protocol includes identification of reference populations to facilitate the likelihood of field investigation occurring during the appropriate floristic period. Surveys should be timed to coincide with flowering. • If special status plant species are not identified during pre-construction surveys, no further action is required. • If special status plant species are detected	Once within 30 days of construction, unless pre-construction survey results in new recommendation for further study and mitigation. Then mitigation should occur as recommended following coordination with Tulare County RMA.	Field Survey and Report submitted to Tulare County RMA prior to construction.	County of Tulare	Qualified Biologist			

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
during preconstruction surveys, plant population shall be avoided with the establishment of a minimum 50-foot no disturbance buffer from the outer edge of the plant population. If buffers cannot be maintained, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be contacted immediately to identify the appropriate minimization actions to be taken as appropriate for the species identified and to determine permitting needs. nimization actions to be taken as appropriate for the species identified and to determine permitting needs.							
4-2. Pre-construction Survey – San Joaquin Kit Fox and Nesting Raptors/Migratory Birds: A qualified biologist will conduct pre-construction surveys during the appropriate periods for special status animal species in accordance with the CDFW guidance and recommendations identified below (see measures 4-4 and 4-9). In the absence of protocol-level surveys being performed, additional surveys may be necessary. If special status animal species are not identified during pre-construction surveys, no further action is required. If special status animal species are detected during pre-construction surveys, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be contacted immediately to	Prior to start of construction, unless pre-construction survey results in recommendation for further study and mitigation, mitigation should occur as recommended following coordination with CDFW and Tulare County RMA.	Field Survey and Report submitted to Tulare County RMA prior to construction.	County of Tulare	Qualified Biologist			

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
identify the appropriate avoidance and minimization actions to be taken as applicable for the species identified and to determine incidental take permitting needs.							
4-3: Employee Education Program: Prior to the start of construction, the applicant shall retain a qualified biologist/botanist to conduct a tailgate meeting to train all construction staff that will be involved with the project on the special status species that occur, or may occur, on the project site. This training will include a description of the species and its habitat needs; a report of the occurrence of the species in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; a list of the measures being taken to reduce impacts to the species during project construction and implementation.	Prior to construction-related activities if special status species are detected.	Meeting conducted by Qualified Biologist working with USFS and/or CDFW; meeting sign-in sheet submitted to Tulare County RMA.	County of Tulare	County of Tulare, Qualified Biologist			
4-4: Pre-construction Survey: If project activities must occur during the nesting season (February 1-August 31), the project proponent and/or their contractor is responsible for ensuring that implementation does not violate the Migratory Bird Treaty Act or relevant Fish and Game Code. A qualified biologist shall conduct pre-construction surveys for active bird nests within 10 days of the onset of these activities. Nest surveys will include all accessible areas on the project site and within 250 feet of the site for tricolored blackbird, loggerhead	Prior to construction-related activities.	As needed if special status species are detected.	County of Tulare	Qualified biologist			

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
shrike and other migratory birds, and within 500 feet for all nesting raptors and migratory birds; with the exception of Swainson's hawk. The Swainson's hawk survey will utilize the Swainson's Hawk Technical Advisory Committee *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (2000) methodology and will extend to ½-mile outside of work area boundaries. Inaccessible areas will be scanned with binoculars or spotting scope, as appropriate. If no nesting pairs are found within the survey area, no further mitigation is required.							
4-5: Avoidance: In order to avoid impacts to nesting birds, construction will occur, where possible, outside the nesting season (between September 1st and January 31st).	Prior to start of construction.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable.	County of Tulare Planning Department	Field survey by a qualified Biologist			
4-6: Buffers: If active nests are found within the survey areas a qualified biologist will establish appropriate no-disturbance buffers based on species tolerance of human disturbance (for example, for tricolored blackbird, no less than 60 feet), baseline levels of disturbance, and barriers that may separate the nest from construction disturbance. These buffers will remain in place until the breeding season has ended or until the qualified biologist has	Prior to and during construction-related activities. On-going.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable.	County of Tulare Planning Department	Qualified biologist			

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.							
4-7: Compensatory Mitigation: If Swainson's hawks are determined to be nesting within ½ mile of alfalfa fields, wheat fields, or other high-quality foraging habitat on an individual project site, as determined by nesting surveys conducted during the nesting season immediately prior to the start of construction (Mitigation Measure 3.3.1a), loss of foraging habitat will be compensated through the purchase of credits from an approved mitigation bank, the preservation of on-site habitats, or the acquisition and preservation of off-site habitats. Habitat suitable for the Swainson's hawk will be preserved at a ratio of one acre of habitat preserved for each acre of habitat permanently disturbed by project construction within ½ mile of the nest. The preservation lands will be protected in perpetuity by conservation easement.							
4-8: Mortality Reporting: The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be contacted immediately by phone and in writing within three days in the event of accidental death or injury of a special status bird species during project-related activities. Notification must include the date, time, location of the incident or of the finding of	During construction.	As needed during construction.	County of Tulare	Determination by qualified biologist			

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
a dead or injured animal, and any other pertinent information.							
4-9: Pre-construction Survey: A qualified biologist shall conduct a pre-construction survey to determine if suitable habitat for blunt-nosed leopard exists on the project site within 30 days of the onset of project-related construction activities. If suitable habitat is identified, the qualified biologist shall conduct further surveys utilizing the CDFW *Approved Survey Methodology for the Blunt-Nosed Leopard Lizard* (2019) methodology. If no blunt-nosed leopard lizards are identified within the survey area, no further mitigation is required.	Prior to construction-related activities.	As needed if special status species are detected.	County of Tulare	Qualified biologist			
4-10: Avoidance and Minimization: Construction activities shall be carried out in a manner that minimizes disturbance to blunt-nosed leopard lizard. If a blunt-nosed leopard lizard is detected during pre-construction surveys, prior to the onset of project-related construction activities the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be contacted to determine the best course of action and if required, to initiate the take authorization/permit process.	Prior to start of construction-related activities and during.	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable.	County of Tulare Planning Department and/or CDFW	Qualified biologist			
4-11: Mortality Reporting: The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be contacted immediately by phone and in writing within three days in the event of accidental death or injury of a blunt-nosed leopard lizard during project-related	During construction.	As needed during construction.	County of Tulare	Determination by qualified biologist			

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.							
CULTURAL RESOURCES							
5-1. Discovery: If historical, archaeological or paleontological resources are discovered during site excavation, the County shall require that grading and construction work on the Preferred/Proposed Project site be immediately suspended until the significance of the features can be determined by a qualified archaeologist or paleontologist. In this event, the specialists shall provide recommendations for measures necessary to protect any site determined to contain or constitute an historical resource, a unique archaeological resource, or a unique paleontological resource or to undertake data recover, excavation analysis, and curation of archaeological or paleontological materials. County staff shall consider such recommendations and implement them where they are feasible in light of Project design as previously approved by the County.	Daily or as needed throughout the construction period if historical, archaeological or paleontological resources are discovered.	Field Evaluation Report submitted to Tulare County RMA if resources are discovered. The report shall include results of field evaluation and recommend further actions to be taken to mitigate for unique resources or human remains found, consistent with all applicable laws including CEQA.	County of Tulare	County of Tulare, Qualified Archaeologist or Paleontologist			
5-2- Avoidance, Preservation, and Treatment: The property owner shall avoid and minimize impacts to paleontological resources. If a potentially significant paleontological resource is encountered during ground disturbing activities, all construction within a 100-foot radius of the find shall immediately cease until	Daily or as needed throughout the construction period if paleontological resources are discovered.	Field Evaluation Report submitted to Tulare County RMA if resources are discovered.	County of Tulare	County of Tulare, Qualified Paleontologist			

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
a qualified paleontologist determines whether the resources require further study. The project proponent shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. The paleontologist shall notify the Tulare County Resource Management Agency and the project proponent of the procedures that must be followed before construction is allowed to resume at the location of the find. If the find is determined to be significant and the Tulare County Resource Management Agency determines avoidance is not feasible, the paleontologist shall design and implement a data recovery plan consistent with applicable standards. The plan shall be submitted to the Tulare County Resource Management Agency for review and approval. Upon approval, the plan shall be incorporated into the project.							
5-3. Compliance with Health and Safety Code. Consistent with Section 7050.5 of the California Health and Safety Code and (CEQA Guidelines) Section 15064.5, if human remains of Native American origin are discovered during project construction, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Public Resources Code Sec. 5097). In the event of the accidental [that is, unanticipated] discovery or recognition of any	Daily or as needed throughout the construction period if human remains are discovered.	Field Evaluation Report and Data Recovery Plan submitted to Tulare County RMA if human remains are discovered.	County of Tulare	County of Tulare, Qualified Archaeologist			

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
human remains in any location other than a dedicated cemetery, the following steps should be taken: 1. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until: a. The Tulare County Coroner/Sheriff must be contacted to determine that no investigation of the cause of death is required; and b. If the coroner determines the remains to be Native American: i. The coroner/sheriff shall contact the Native American Heritage Commission within 24 hours. ii. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. iii. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in Public Resources Code section 5097.98, or 2. Where the following conditions occur, the							

Mitigation Monitoring and Reporting Program							
Mitigation Measure	**Timing / Frequency**	**Action Indicating Compliance**	**Monitoring Agency**	**Person Responsible for Monitoring / Reporting**	**Verification of Compliance**		
					Initials	**Date**	**Remarks**
landowner or his/her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance. a. The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission. b. The descendant fails to make a recommendation; or c. The landowner or his authorized representative rejects the recommendation of the descendent.							
GEOLOGY/SOILS (PALEONTOLOGICAL RESOURCES)							
See Mitigation Measures 5-1 through 5-3.							
TRIBAL CULTURAL RESOURCES							
18-1: **Employee Education Program:** Prior to the start of construction the applicant will coordinate with the Santa Rosa Rancheria Tachi Yokut Tribe to provide a tailgate meeting to train all construction staff that will be involved with the project regarding Tribal Cultural Resources.	Prior to initiation of construction.	Issuance of grading/building permit.	County of Tulare Planning Department	County of Tulare Resource Management Agency			
Also See Mitigation Measures 5-1 through 5-3.							