FINAL INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

FOR THE

SCANNELL PROPERTIES INDUSTRIAL PROJECT

SEPTEMBER 9, 2021

Prepared for:

City of Lathrop
390 Town Centre Drive
Lathrop, CA 95330
(209) 941-7200

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 580-9818

D e N o v o P l a n n i n g G r o u p

A Land Use Planning, Design, and Environmental Firm

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Proposed Scannell Properties Industrial Project

Lead Agency:
City of Lathrop
390 Town Centre Drive
Lathrop, CA 95330
(209) 941-7200

Project Title: Scannell Properties Project

Project Location: The proposed Scannell Properties Industrial Project (the Project) is a proposed industrial development located on approximately 18.2 acres in the City of Lathrop. The Project would include 191,160± square feet (SF) of industrial warehouse uses, with adequate parking, loading areas, and a stormwater retention/infiltration basin.

The Project site is located near the easterly boundary of the City of Lathrop, south of Lathrop Road (APN: 198-040-14). The site is currently vacant land and is bordered by existing Service Commercial development to the west, existing General Industrial development to the east and south, and existing Limited Industrial uses to the north. The project site is generally flat, with an elevation range for the entire project site of approximately 16 to 23 feet above sea level.

Project Description: The proposed Project would develop the 18.2-acre vacant Project site with three industrial warehouse buildings. Figure 3 provides the Project site plan. As shown in Figure 3, the first industrial warehouse building (Building 1) would be located in the northern portion of the Project site and have a building footprint of approximately 70,200 SF on a 6.54 acre site. Building 2 would be located in the southwest portion of the Project site and have a building footprint of approximately 78,400 SF on a 5.58 acre site . Building 3 would be located in the southeast portion of the Project site and have a building footprint of approximately 42,560 SF on a 3.50 acre site. The total building square footage for all buildings would be 191,160 SF. Approximately 10% (approximately 19,116 SF) of the building square footage would be dedicated to office uses, while the remainder of the building square footage (approximately 172,004 SF) would be dedicated to warehouse uses.

Findings:

In accordance with the California Environmental Quality Act, the City of Lathrop has prepared an Initial Study to determine whether the proposed project may have a significant adverse effect on the environment. The Initial Study and Proposed Mitigated Negative Declaration reflect the independent judgment of City of Lathrop staff. On the basis of the Initial Study, the City of Lathrop hereby finds:

> *Although the proposed project could have a significant adverse effect on the environment, there will not be a significant adverse effect in this case because the project has incorporated specific provisions to reduce impacts to a less than significant level and/or the mitigation measures described herein have been added to the project. A Mitigated Negative Declaration has thus been prepared.*

The Initial Study, which provides the basis and reasons for this determination, is attached and/or referenced herein and is hereby made a part of this document.

_____ _____

Signature Date

Proposed Mitigation Measures:

The following Mitigation Measures are extracted from the Initial Study. These measures are designed to avoid or minimize potentially significant impacts, and thereby reduce them to an insignificant level. A Mitigation Monitoring and Reporting Program (MMRP) is an integral part of project implementation to ensure that mitigation is properly implemented by the City and the implementing agencies. The MMRP will describe actions required to implement the appropriate mitigation for each CEQA category including identifying the responsible agency, program timing, and program monitoring requirements. Based on the analysis and conclusions of the Initial Study, the impacts of proposed project would be mitigated to less-than-significant levels with the implementation of the mitigation measures presented below.

BIOLOGICAL RESOURCES

Mitigation Measure BIO-1: Prior to commencement of any grading activities, the Project applicant shall seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through implementation of incidental take and minimization Measures (ITMMs) and payment of fees for conversion of lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. Obtaining coverage for a project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a), California Fish and Game Code Section 2081, and the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species.

Mitigation Measure BIO-2: Prior to the commencement of grading activities or other ground disturbing activities on the Project site, the Project applicant shall arrange for a qualified biologist to conduct a preconstruction survey for nesting raptors in accordance with SJMSCP requirements. If no nests are detected, then construction activities may commence. If occupied nests are discovered, then the Project applicant shall coordinate with SJCOG regarding the appropriate buffer needed to avoid the particular bird species. If burrowing owl is discovered during the non-breeding season (September 1 through January 31) they should be evicted from the Project site by passive relocation as described in the California Department of Fish and Game's Staff Report on Burrowing Owls (Oct., 1995). Implementation of this mitigation shall occur prior to grading or site clearing activities. SJCOG shall be responsible for monitoring and a qualified biologist shall conduct surveys and relocate owls as required.

CULTURAL RESOURCES

Mitigation Measure CUL-1: If cultural resources (i.e., prehistoric sites, historic sites, isolated artifacts/features, and paleontological sites) are discovered during construction, work shall be halted immediately within 50 meters (165 feet) of the discovery, the City of Lathrop shall be notified, and a qualified archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology (or a qualified paleontologist in the event paleontological resources are found) shall be retained to determine the significance of the discovery. The City of Lathrop shall consider recommendations presented by the professional for any unanticipated discoveries and shall carry out the measures deemed feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. Specific measures are developed based on the significance of the find.

Mitigation Measure CUL-2: If any human remains are found during grading and construction activities, all work shall be halted immediately within 50 meters (165 feet) of the discovery and the County Coroner must be notified, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the coroner shall notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed. Additionally, if the Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the applicant's expense.

GEOLOGY AND SOILS

Mitigation Measure GEO-1: Prior to issuance of building permits, the project applicant shall submit a design-level geotechnical study and building plans to the City of Lathrop for review and approval. The building plans shall demonstrate that they incorporate all applicable recommendations of the design-level geotechnical study and comply with all applicable requirements of the most recent version of the California Building Standards Code. A licensed professional engineer shall prepare the plans, including those that pertain to soil engineering, structural foundations, pipeline excavation, and installation. The approved plans shall be incorporated into the proposed project. All onsite soil engineering activities shall be conducted under the supervision of a licensed Geotechnical Engineer or Certified Engineering Geologist.

Mitigation Measure GEO-2: The Project applicant shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB in accordance with the NPDES General Construction Permit requirements. The SWPPP shall be designed to control pollutant discharges utilizing Best Management Practices (BMPs) and technology to reduce erosion and sediments. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater runoff from the Project site. Measures shall include temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) that will be employed to control erosion from disturbed areas. Final selection of BMPs will be subject to approval by the City of Lathrop and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB.

HAZARDS AND HAZARDOUS MATERIALS

Mitigation Measure HAZ-1: Prior to the issuance of grading or building permits, the Project Applicant shall destroy the permanently inactive wells located within the Project site, in accordance with standards developed by the Department of Water Resources pursuant to Section 13800 of the Water Code and adopted by the State Water Resources Control Board or local agencies in accordance with Section 13801 of the Water Code.

HYDROLOGY AND WATER QUALITY

Mitigation Measure HYDRO-1: Prior to the issuance of a building or grading permit, the Project applicant shall submit a drainage plan to the City of Lathrop for review and approval. The plan shall include an engineered storm drainage plan that demonstrates attainment of pre-project runoff requirements and describe the volume reduction measures and treatment controls used to reach attainment consistent with the Lathrop Storm Drainage Master Plan.

Mitigation Measure HYDRO-2: The Project applicant shall implement the following nonstructural BMPs that focus on preventing pollutants from entering stormwater:

- Pollution Prevention/Good Housekeeping
    - Prior to clearing, grading, and disturbances to the ground such as stockpiling, or excavation in each phase of the project, the Project applicant shall develop a spill response and prevention plan as a component of (1) SWPPPs prepared for construction activities, (2) SWPPPs for facilities subject to the NPDES Stormwater Permit, and (3) spill prevention control and countermeasure plans for qualifying facilities. The spill response and prevention plan shall be implemented during all construction activities.
- Operation and Maintenance (O&M) of Treatment Controls
    - Prior to clearing, grading, and disturbances to the ground such as stockpiling, or excavation in each phase of the project, the Project applicant shall develop an Operation and Maintenance (O&M) Plan for the storm drainage facilities to ensure long-term performance. The O&M plan shall incorporate the manufacturers' recommended maintenance procedures and include (1) provisions for debris removal, (2) guidance for addressing public health or safety issues, and (3) methods and criteria for assessing the efficacy of the storm drainage system. An annual report shall be submitted to the City certifying that maintenance of the facilities was conducted according to the O&M plan.

NOISE

Mitigation Measure NOI-1: During project construction activities, the applicant shall require its construction contractors to adhere to the following noise attenuation requirements:

- Construction activities shall be limited to the hours between 7 a.m. to 8 p.m. daily. The City of Lathrop Director of Public Works shall have the discretion to permit construction activities to occur outside of allowable hours if compelling circumstances warrant such an exception (e.g., weather conditions necessary to pour concrete).
- All construction equipment shall use noise-reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer. If no noise-reduction features were installed by the manufacturer, then the contractor shall require that at least a muffler be installed on the equipment.
- Construction staging and heavy equipment maintenance activities shall be performed on the northernmost part of the Project site (along Atherton Road) to create the greatest separation from the nearest residence, unless safety or technical factors take precedence (e.g., an equipment breakdown). Alternatively, staging and maintenance could be performed on adjacent vacant parcels so long as the separation to the nearest residence is greater than what could be achieved on the Project site.

PUBLIC SERVICES

Mitigation Measure PSU-1: Prior to issuance of building permits for any project uses, the Project applicant shall provide the City of Lathrop with all applicable fire protection development fees in accordance with the latest adopted fee schedule.

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INITIAL STUDY CHECKLIST

PROJECT TITLE

Scannell Properties Industrial Project

LEAD AGENCY NAME AND ADDRESS

City of Lathrop
390 Town Centre Drive
Lathrop, CA 95330
(209) 941-7200

CONTACT PERSON AND PHONE NUMBER

Scannell Properties
3648 Mt. Diablo Blvd., Suite B115
Lafayette, CA 94549
phstarn@gmail.com

PROJECT LOCATION AND SETTING

The proposed Scannell Properties Industrial Project (the Project) is a proposed industrial development located on approximately 18.2 acres in the City of Lathrop. The Project would include 191,160± square feet (SF) of industrial warehouse uses, with adequate parking, loading areas, and a stormwater retention/infiltration basin.

The Project site is located near the easterly boundary of the City of Lathrop, south of Lathrop Road (APN: 198-040-14). The site is currently vacant land and is bordered by existing Service Commercial development to the west, existing General Industrial development to the east and south, and existing Limited Industrial uses to the north. The project site is generally flat, with an elevation range for the entire project site of approximately 16 to 23 feet above sea level. See Figures 1 and 2 for the regional location and the project vicinity. The site plan is shown in Figure 3.

PROJECT DESCRIPTION

The proposed Project would develop the 18.2-acre vacant Project site with three industrial warehouse buildings. Figure 3 provides the Project site plan. As shown in Figure 3, the first industrial warehouse building (Building 1) would be located in the northern portion of the Project site and have a building footprint of approximately 70,200 SF on a 6.54 acre site. Building 2 would be located in the southwest portion of the Project site and have a building footprint of approximately 78,400 SF on a 5.58 acre site . Building 3 would be located in the southeast portion of the Project site and have a building footprint of approximately 42,560 SF on a 3.50 acre site. The total building square footage for all buildings would be 191,160 SF. Approximately 10% (approximately 19,116 SF) of the building square footage would be dedicated to office uses, while the remainder of the building square footage (approximately 172,004 SF) would be dedicated to warehouse uses.

Automobile parking would be available surrounding each of the Project buildings. Parking for trucks/trailers would be available in the center portion of the Project site. The Project site would contain approximately 236 standard automobile parking spaces, 14 “accessible” automobile

parking spaces (i.e. a total of 250 automobile parking spaces), and an additional 101 truck/trailer parking spaces. These number of parking spaces more than exceed the requirements for parking as established by Chapter 17.76 of the City Municipal Code.

The project anticipates about 5 employees per 10,000 SF of building, working between the hours of operation of 7am-9pm. Pick up and deliveries are scheduled to occur between 8am-5pm Monday-Saturday.

The Project site would have two access points, as follows:

- Access Point #1 (Lathrop Road): the access point is located at the northwest corner of the Project site connecting to Lathrop Road. With the access point being on the west side of the property it maximizes the spacing between the other existing driveways and intersections along Lathrop Road. The access point will allow right-in/right turn movements only since left turn movements are prohibited by the existing raised center median in Lathrop Road. Lathrop Road consists of two travel lanes plus a shoulder. Vehicles entering the Project site at this access point from Lathrop Road can utilize the right lane while other vehicles can continue through in the left lane consistent with how access works for the existing development to the west.

- Access Point #2 (D Street): the access point is located near the northeast corner of the Project site connecting to Street D. With the access point being at the south end of Street D it maximizes the distance from Lathrop Road therefore allowing the maximum amount of queuing possible if/when needed. The access point connects the Project to the existing D Street/Lathrop Road intersection which allows turn movements in all directions including an existing westbound turn pocket that vehicles entering the Project site may utilize.

All emergency vehicles arriving to and from the proposed Project would be able to enter via Lathrop Road and Access Point #2 (D Street). All accesses would be designed to City standards that accommodate turning requirements for fire trucks. These multiple entry/exit points provide flexibility for emergency vehicles to access or evacuate from multiple directions during an emergency. The access points would be designed for vehicle and pedestrian safety based on City standards taking into account the swept path of the vehicles, sidewalks with curb ramps, site distance, and any other relevant City standards.

Potable water and sanitary sewer connections to the Project site would occur via the nearby connection from the City of Lathrop water system. A new sewer pump station would be installed on-site with a forcemain that would connect to the City's existing forecemain at the intersection of Lathrop Avenue and McKinley Avenue. Stormwater drain pipes would discharge into the stormwater retention/infiltration basin would be located in the far southeastern portion of the Project site. The stormwater retention/infiltration basin has been designed according to the City of Lathrop's design and construction standards, and consistent the relevant multi-agency post-construction stormwater standards manual.

Landscaping will be provided throughout the subject property. Landscaped trees and bushes would be provided surrounding the Project site to provide screening of the Project site from the outside; shrubs would located along the trash enclosures as additional screening; ornamental grasses and trees would be provided within the parking lot to provide canopy and aesthetic improvements; and additional trees and ground cover would surround the stormwater retention/infiltration basin. Security fencing with gates would be provided at Project entrances

and exists. Additionally, the Project includes on-site surface improvements such as pavement and curbs.

Lathrop Road would serve as the primary access into the project at the northwest corner of the project site. Secondary access is proposed to connect to existing D Street located on the adjacent property to the east. Circulation within the site consists of vehicular access to all sides of each building, creating a contiguous looping street pattern. A road would be installed adjacent to the proposed stormwater basin to allow for access and maintenance as needed.

Overall, the Project proposes the following improvements:

- Truck and employee parking;
- 3 warehouse/office buildings with loading docks;
- 2.6± acres stormwater basin;
- Driveway/access improvements on Lathrop Road along the project boundary;
- Driveway/access improvements to connect to existing D Street;
- Onsite surface improvements (pavement, curbs, etc.);
- Onsite Utility Improvements;
    - Stormwater: the project proposes to construct an onsite stormwater retention/infiltration basin to meet stormwater quality and flood control requirements per the City standards.
    - Sanitary Sewer: the project proposes to construct an onsite sewer pump station with a forcemain that will extend offsite and connect to the existing sewer forcemain at the intersection of Lathrop Road and McKinley Avenue.
    - Water: the project proposes to construct an onsite water loop that will connect to the existing water pipes in Lathrop Road and the adjacent cul-de-sac, which will provide water supply for domestic use, landscaping, and fire protection.
    - Dry Utilities (electric, gas, cable, phone): extend dry utilities from existing facilities along Lathrop Road to each building as needed.

GENERAL PLAN AND ZONING DESIGNATIONS

The Lathrop General Plan designated the project site as Service Commercial (SC). The Project would require a General Plan Amendment (GPA) to replace the SC designation with the General Industrial (GI) land use designation. According to the Comprehensive General Plan for the City of Lathrop, General Industrial uses are intended to provide opportunities for large-scale industries requiring substantial acreage, with access to rail and freeway facilities.

The Lathrop Zoning Map identifies the project site in the Commercial Services (CS) zoning district. The Project would require a rezone to the General Industrial (IG) zoning designation. The purpose of the IG zoning designation is to provide for a full range of manufacturing, industrial processing, general service, and distribution uses.

The existing and proposed General Plan land uses are shown in Figure 4. The existing and proposed zoning designations are shown on Figure 5.

REQUESTED ENTITLEMENTS AND OTHER APPROVALS

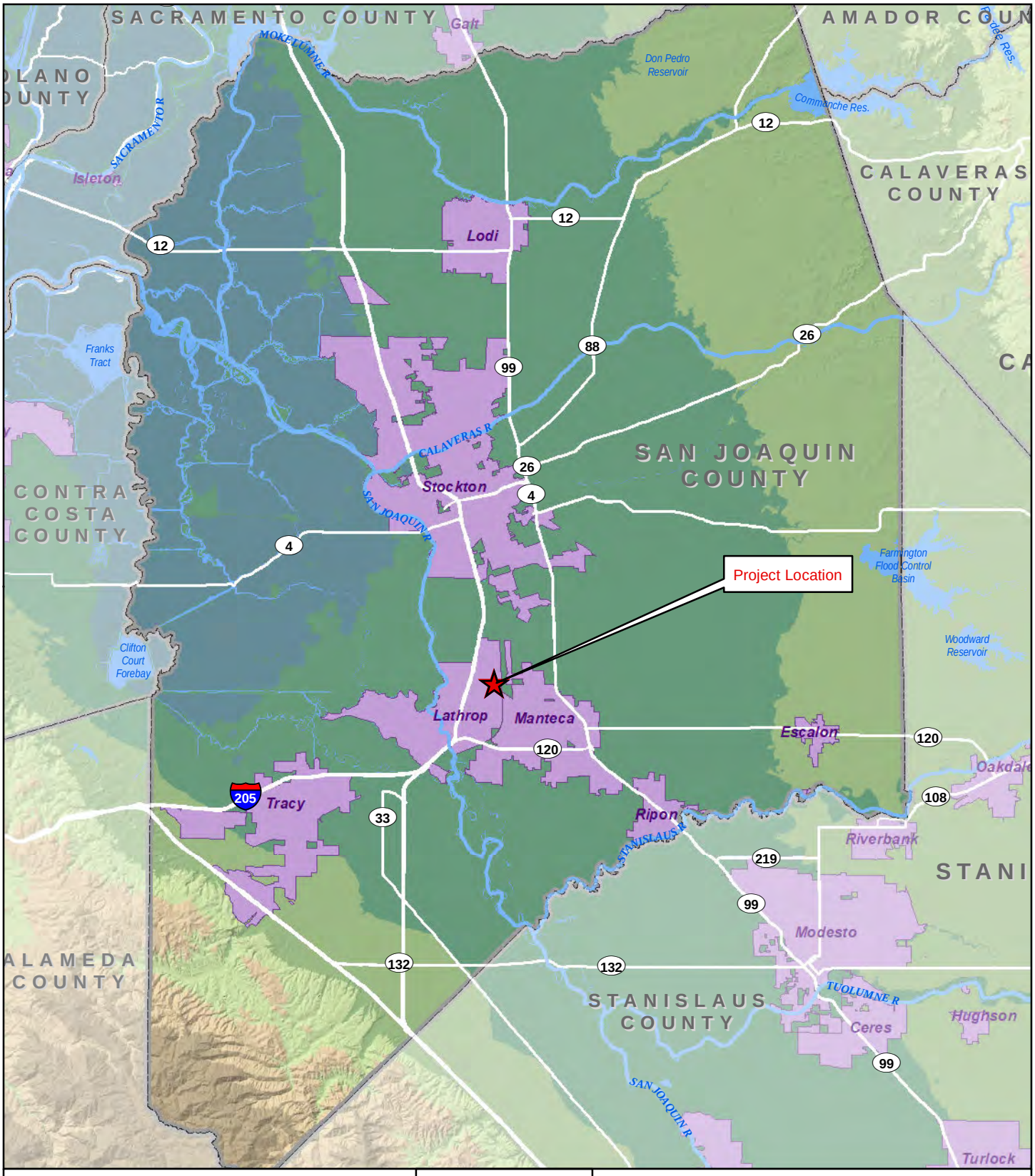
The City of Lathrop is the Lead Agency for the proposed project, pursuant to the State CEQA Guidelines, Section 15050.

This document will be used by the City of Lathrop to take the following actions:

- Adoption of the Mitigated Negative Declaration (MND);
- Adoption of the Mitigation Monitoring and Reporting Program;
- General Plan Amendment from Service Commercial (SC) to General Industrial (GI); and
- Rezone from Commercial Service (CS) to General Industrial (IG);
- Approval of the Vesting Tentative Parcel Map;
- City review and approval of the proposed Grading and Improvement Plans; and
- City review and approval via Site Plan Review (SPR).

The following agencies may be required to issue permits or approve certain aspects of the proposed project:

- Regional Water Quality Control Board (RWQCB) – Construction activities would be required to be covered under the National Pollution Discharge Elimination System (NPDES);
- RWQCB – The Storm Water Pollution Prevention Plan (SWPPP) would be required to be approved prior to construction activities pursuant to the Clean Water Act;
- San Joaquin Valley Air Pollution Control District (SJVAPCD) – Approval of construction-related air quality permits;
- San Joaquin Council of Governments (SJCOG) – Review of project application to determine consistency with the San Joaquin County Multi-Species Habitat, Conservation, and Open Space Plan (SJMSCP).



Legend

- Project Location
- Incorporated Area
- County Boundary

Sources: California State Geoportal. Map date: July 8, 2021.

N

0 2½ 5

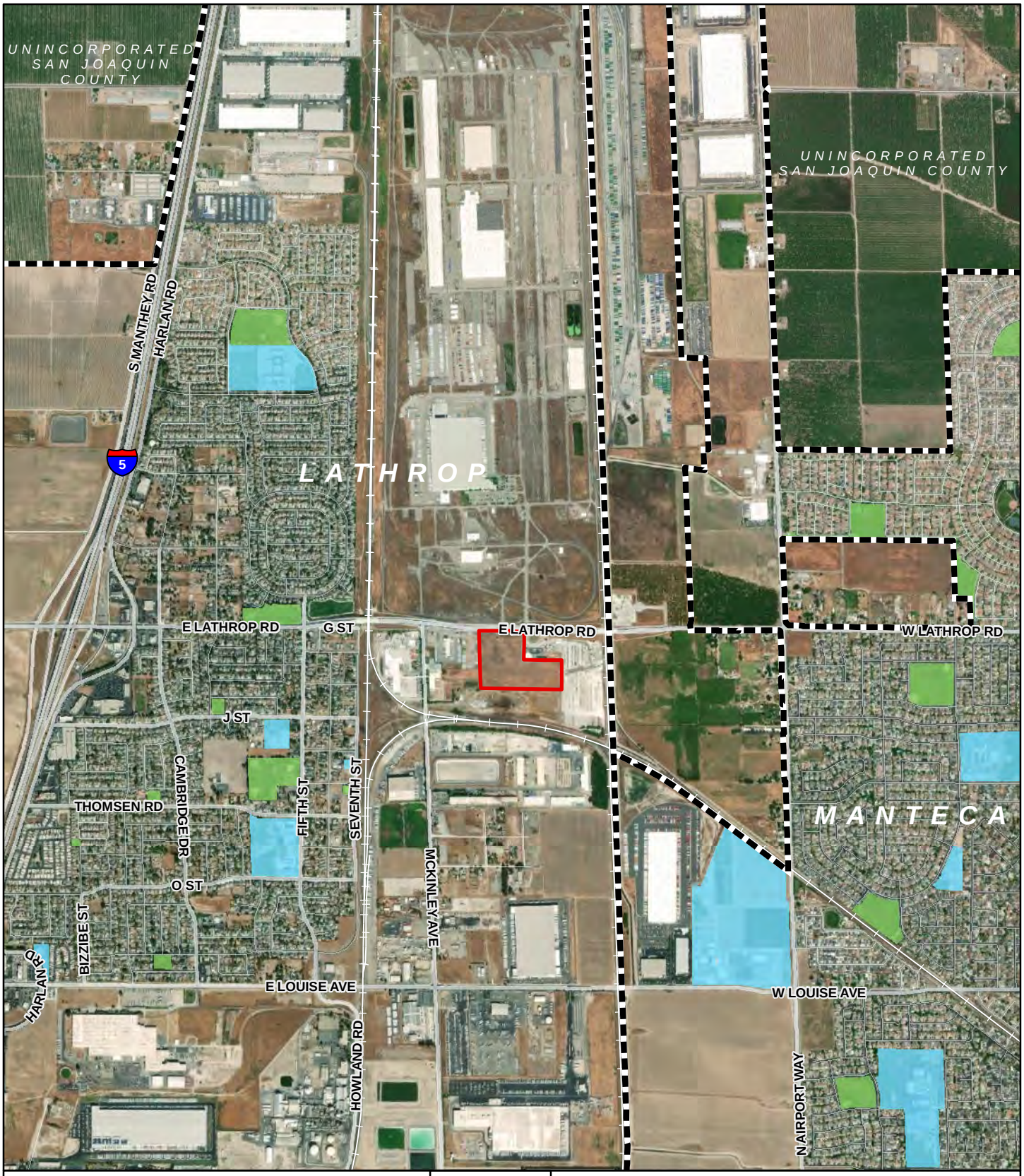
Miles

SCANNELL INDUSTRIAL

Figure 1. Regional Location Map

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Legend

- Project Boundary
- City Limits
- Parks
- Schools

Source: San Joaquin County GIS. Map date: July 8, 2021.

N

0 600 1,200

Feet

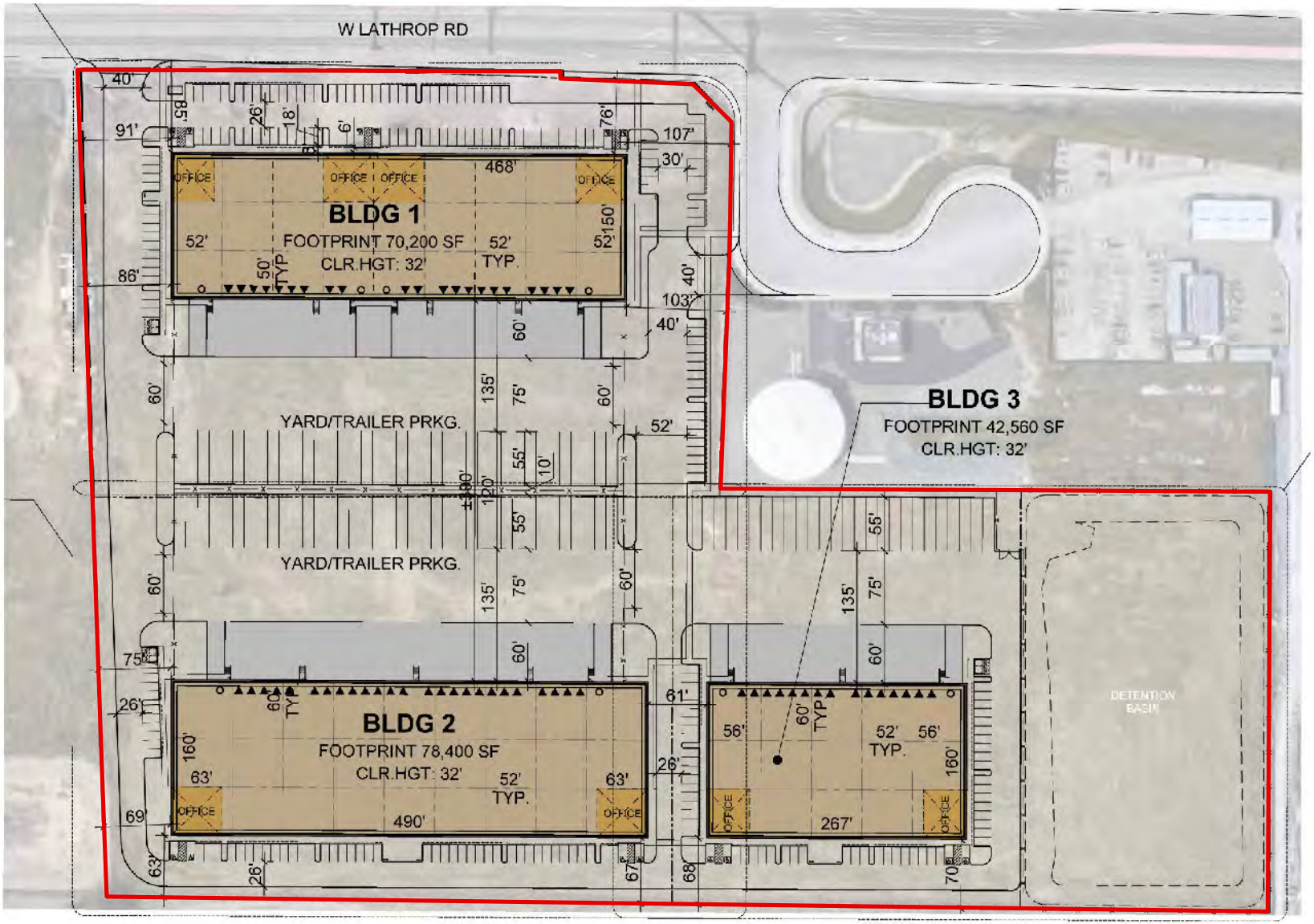
SCANNELL INDUSTRIAL

Figure 2. Project Location

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Legend

Project Boundary (APN 198-040-14)

Source: Ware Malcomb, (reduced print) 3/31/21; San Joaquin County GIS parcel database. Map date: July 8, 2021.

N

0 50 100

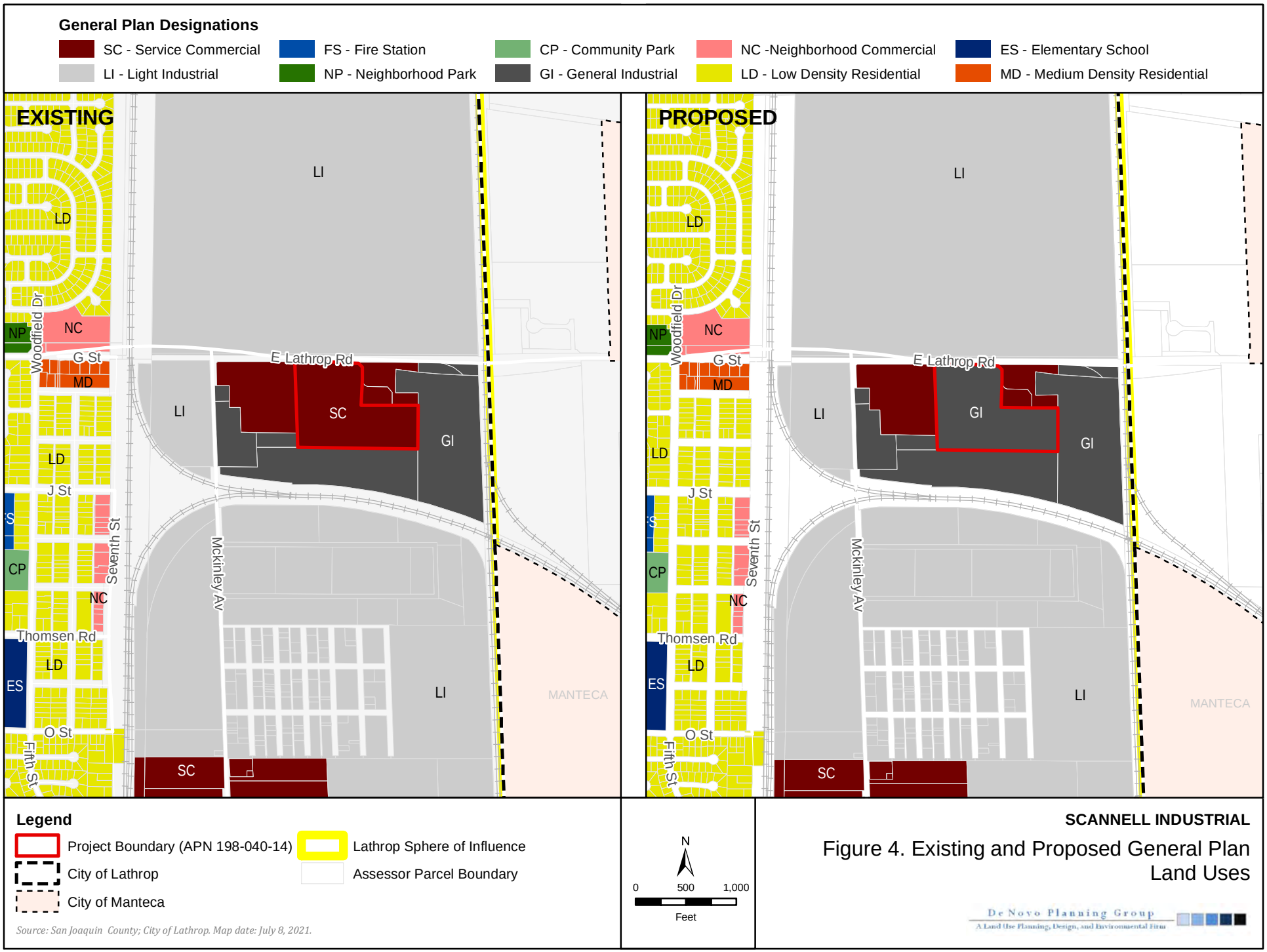
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SCANNELL INDUSTRIAL

Figure 3. Site Plan

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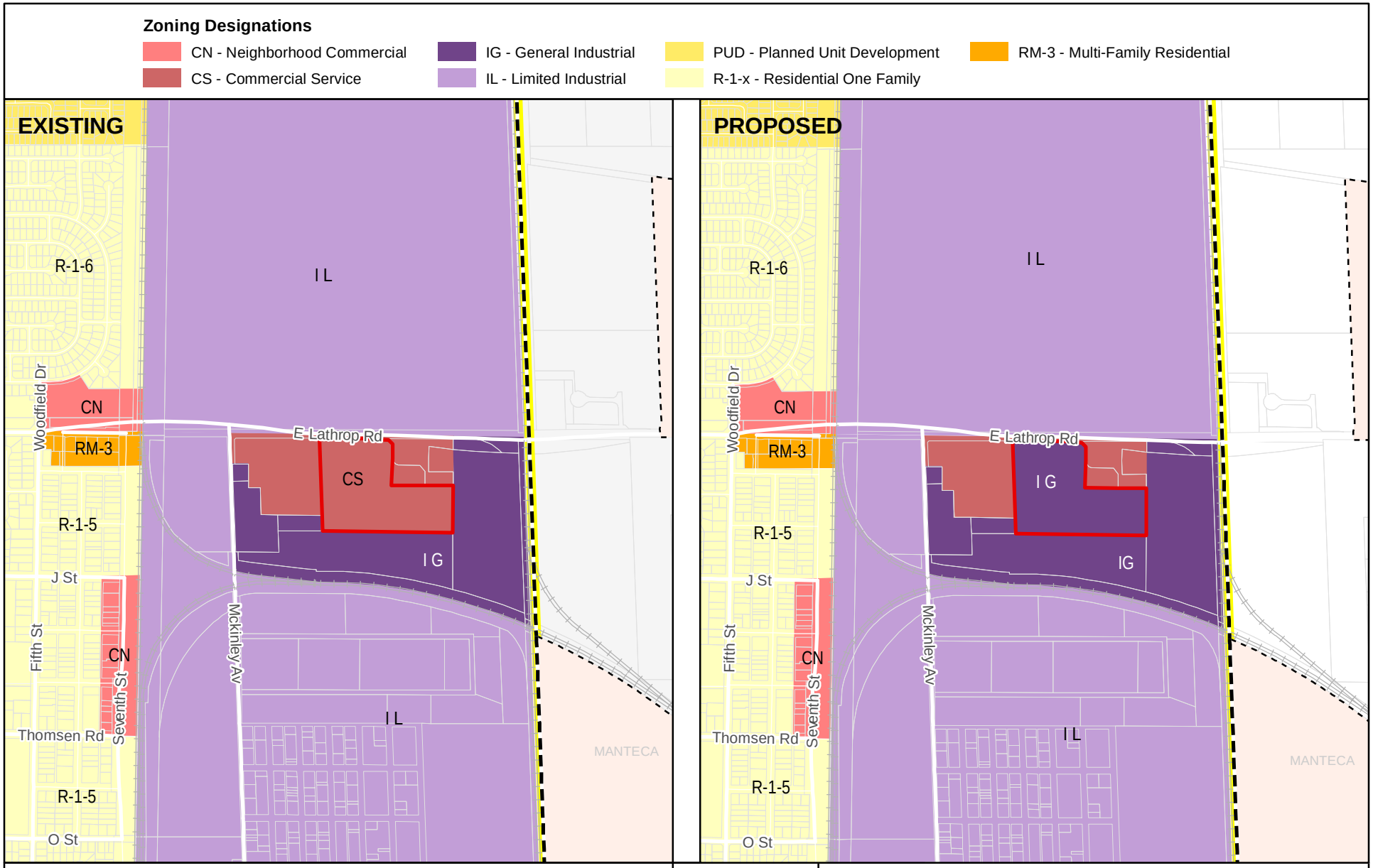


SCANNELL INDUSTRIAL

Figure 4. Existing and Proposed General Plan Land Uses

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Source: San Joaquin County; City of Lathrop. Map date: July 8, 2021.

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ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

None of the environmental factors listed below would have potentially significant impacts as a result of development of this project, as described on the following pages.

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

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.
X	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 by 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 Date

EVALUATION INSTRUCTIONS

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 Section XVII, "Earlier Analyses," 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 significant.

EVALUATION OF ENVIRONMENTAL IMPACTS

In each area of potential impact listed in this section, there are one or more questions which assess the degree of potential environmental effect. A response is provided to each question using one of the four impact evaluation criteria described below. A discussion of the response is also included.

- Potentially Significant Impact. This response is appropriate when there is substantial evidence that an effect is significant. If there are one or more "Potentially Significant Impact" entries, upon completion of the Initial Study, an EIR is required.
- Less than Significant With Mitigation Incorporated. This response applies when 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.
- Less than Significant Impact. A less than significant impact is one which is deemed to have little or no adverse effect on the environment. Mitigation measures are, therefore, not necessary, although they may be recommended to further reduce a minor impact.
- No Impact. These issues were either identified as having no impact on the environment, or they are not relevant to the project.

ENVIRONMENTAL CHECKLIST

This section of the Initial Study incorporates the most current Appendix "G" Environmental Checklist Form contained in the CEQA Guidelines. Impact questions and responses are included in both tabular and narrative formats for each of the 21 environmental topic areas.

I. AESTHETICS

Would the project:	***Potentially Significant Impact***	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
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?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

Responses to Checklist Questions

Responses a), c): A scenic vista is generally considered a view of an area that has remarkable scenery or a resource that is indigenous to the area. Scenic vistas that have been identified in the General Plan that could potentially be impacted by proposed development within the proposed annexation area include views of agricultural lands, views of the San Joaquin River to the west, and views of the Coast Ranges.

For analysis purposes, a scenic vista can be discussed in terms of a foreground, middleground, and background viewshed. The middleground and background viewshed is often referred to as the broad viewshed. Examples of scenic vistas can include mountain ranges, valleys, ridgelines, or water bodies from a focal point of the forefront of the broad viewshed, such as visually important trees, rocks, or historic buildings. An impact would generally occur if a project would change the view to the middle ground or background elements of the broad viewshed, or remove the visually important trees, rocks, or historic buildings in the foreground.

The project site itself does not provide any visual resources that would be considered a scenic vista because it primarily consists of former agricultural lands, which are relatively common in other areas of the city and are not unique to the surrounding visual setting. Further, onsite agricultural production activities have altered the natural landscape; therefore, the project site does not provide views of the indigenous natural landscape. Although the current land uses provide views of a landscape that is representative of the region, the proposed project does not

contain resources that are exemplary of the agricultural history of the area (such as historic structures or landmarks). Views of the project site are not unique in the region.

The project site is generally flat with unobstructed view of the surrounding agricultural lands, the Lathrop Intermodal Terminal, and residential and other developments. Neither the project site nor any of the surrounding land uses contains features typically associated with scenic vistas (e.g., ridgelines, peaks, overlooks). Therefore, little opportunity exists for project activities to obscure views of scenic vistas that may be located within the immediate area of the project site

More distant views of the Coast Ranges (including Mt. Diablo) and the Sierra Nevada Mountains would largely be unaffected by the development of the project site because of the distance and limited visibility of these features. Moreover, the proposed project would not impact any views of the San Joaquin River environment.

Upon build-out, the project would be of similar visual character to nearby and adjacent developments (such as existing light industrial and commercial uses nearby). For motorists travelling along nearby roadways, the project would blend into existing and future development and would not present unexpected or otherwise unpleasant aesthetic values within the general project vicinity. Furthermore, the proposed project would also be consistent with the applicable design standards and development standards. Therefore, implementation of the proposed project would have a ***less than significant*** impact relative to these topics.

Response b): The project site is not located within view of a state scenic highway. Only one highway section in San Joaquin County is listed as a Designated Scenic Highway by the Caltrans Scenic Highway Mapping System; the segment of Interstate 580 from Interstate 5 to State Route 205. The City of Lathrop is not visible from this roadway segment. Therefore, the proposed project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. Implementation of the proposed project would have ***no impact*** relative to this topic.

Response d): The project site does not contain existing sources of light and glare. However, nearby land uses include outdoor lighting. The Union Pacific Railroad Lathrop Intermodal Terminal, the Sharpe Army Depot, scattered rural residential development, and other nearby commercial and industrial developments also include outdoor lighting. Other nearby sources of light include the streetlights at the nearby intersections, as well as vehicles traveling along Lathrop Road.

The proposed project would include the installation of freestanding and building-mounted lighting associated with the light industrial uses. Such lighting would include lighting in parking lots, along pathways, and mounted on buildings for safety and security reasons. As such, the proposed project may create a substantial source of nighttime light, which may affect nighttime views in the surrounding area.

However, all street lighting would have to comply with the City of Lathrop lighting standards. The City of Lathrop Department of Public Works Design and Construction Standards identify general lighting standards and nuisance prevention.

In summary, existing standards establish a comprehensive and robust set of standards to ensure that proposed project uses do not introduce substantial sources of light and glare to the project vicinity. Therefore, implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

II. AGRICULTURE AND FORESTRY RESOURCES

Would the project:	***Potentially Significant Impact***	***Less Than Significant with Mitigation Incorporation***	***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?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1222(g)) or timberland (as defined in Public Resources Code section 4526)?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
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?				X

Responses to Checklist Questions

Response a): The project site includes land designated Vacant or Disturbed Land, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency (California Department of Conservation, 2018). Therefore, implementation of the Project would not convert any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, there is ***no impact*** relative to this issue.

Response b): The project site does not include any land associated with a Williamson Act contract. The proposed project does not conflict with existing zoning for agricultural use, or a Williamson Act contract. Therefore, implementation of the proposed project would have ***no impact*** relative to this issue.

Response c): The project site is not forest land (as defined in Public Resources Code section 1222(g)) or timberland (as defined in Public Resources Code section 4526). The proposed project would not conflict with existing zoning for, or cause rezoning of, forest land or timberland. Implementation of the proposed project would have ***no impact*** relative to this issue.

Response d): The project site is not forest land. The proposed project would not result in the loss of forest land or conversion of forest land to non-forest use. Implementation of the proposed project would have ***no impact*** relative to this issue.

Response e): The project site is vacant and undeveloped, and was previously used for agricultural purposes. The project site does not contain forest land, and there is no forest land in the vicinity of the project site. Additionally, the project does not contain any protected farmland. The proposed project does not involve any other changes in the existing environment not disclosed under the previous responses 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. Thus, the Project would have ***no impact*** relative to this issue.

III. AIR QUALITY

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
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?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

Existing Setting

The project site is located within the San Joaquin Valley Air Pollution Control District (SJVAPCD). This agency is responsible for monitoring air pollution levels and ensuring compliance with federal and state air quality regulations within the San Joaquin Valley Air Basin (SJVAB) and has jurisdiction over most air quality matters within its borders.

Responses to Checklist Questions

Responses a), b): Air quality emissions would be generated during operation and construction of the proposed project. Because of the region's non-attainment status for ozone, $PM_{2.5}$, and PM_{10}, if project-generated emissions of either of the ozone precursor pollutants (i.e., ROG and NOx), PM_{10}, or $PM_{2.5}$ would exceed the SJVAPCD's significance thresholds, then the proposed project uses would be considered to conflict with the attainment plans. Discussion of construction and operational-related air quality impacts is provided below.

Construction

PM_{10} emitted during construction can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors, making quantification difficult. Despite this variability in emissions, experience has shown that there are a number of feasible control measures that can be reasonably implemented to significantly reduce PM_{10} emissions from construction activities.

Construction would result in numerous activities that would generate dust. The fine, silty soils in the project area and often strong afternoon winds exacerbate the potential for dust, particularly in the summer months. Impacts would be localized and variable. Construction impacts would last for a period of approximately one year. The initial phase of project construction would involve grading and site preparation activities, followed by paving, building construction, and architectural coatings. Construction activities that could generate dust and vehicle emissions are primarily related to grading, soil excavation, and other ground-preparation activities.

Control measures are required and enforced by the SJVAPCD under Regulation VIII. The SJVAPCD considers construction-related emissions from all projects in this region to be mitigated to a less than significant level if SJVAPCD-recommended PM_{10} fugitive dust rules and equipment exhaust emissions controls are implemented. The proposed project would be required to comply with all

applicable measures from SJVAPCD Regulation Rule VIII. In addition, Table AIR-1 (below) provides the results of the construction-related emissions modeling results from CalEEMod.

Table AIR-1: Project Unmitigated Construction Criteria Pollutant Emissions (tons/year)

Emissions Type	*Proposed Project Emissions*	*SJVAPCD Threshold*	*Above Threshold in Proposed Project?*
ROG	1.42	10	N
NO_x	2.67	10	N
CO	2.61	100	N
PM_{10}	0.46	15	N
$PM_{2.5}$	0.25	15	N
SO_x	<0.1	27	N

Source: CalEEMod, v.2020.4.0

Operational

Operational-related criteria pollutant emissions would be generated primarily from passenger (employee) vehicle and heavy-duty truck travel generated by the proposed project, as well as electricity and other energy usage on-site. Table AIR-1, below, provides the unmitigated results of the operational-related emissions modeling results from CalEEMod.

Table AIR-2: Project Unmitigated Operational Criteria Pollutant Emissions (tons/year)

Emissions Type	*Proposed Project Emissions*	*SJVAPCD Threshold*	*Above Threshold in Proposed Project?*
ROG	1.07	10	N
NO_x	1.12	10	N
CO	1.89	100	N
PM_{10}	0.46	15	N
$PM_{2.5}$	0.13	15	N
SO_x	<0.1	27	N

Source: CalEEMod, v.2020.4.0

As shown above, the proposed project would not exceed the applicable SJVAPCD thresholds associated with operational emissions.

Therefore, the proposed project would have a ***less than significant*** impact related to the potential to conflict with or obstruct implementation of the applicable air quality plan, or to 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.

Response c): Sensitive receptors are those individuals within the population that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptors include children, the elderly, and those with pre-existing serious health problems affected by air quality, and sensitive receptor locations include schools, parks and playgrounds, day care center, nursing homes, hospitals, and residences. The closest sensitive receptors are the residential properties located approximately 0.34 miles to the west of the Project site. Based on these residential community's characteristics, the community contains sensitive receptors.

A toxic air contaminant (TAC) is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are

usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the state and federal governments have set ambient air quality standards.

Construction-Related Impacts on Sensitive Receptors: The construction phase of the project would be temporary and short-term, and the implementation of all State, Federal, and SJVAPCD requirements would greatly reduce pollution concentrations generated during construction activities. As shown in Table AIR-1, the project's construction-related criteria pollutant emissions would not exceed the applicable thresholds. Therefore, criteria pollutants from construction of the proposed project would be reduced and would be consistent with SJVAPCD guidance on this topic. Impacts to sensitive receptors during construction would be negligible and this is a ***less than significant*** impact.

Toxic Air Contaminant Impacts on Sensitive Receptors: The proposed project has the potential to impact nearby sensitive receptors during the proposed project's operational phase, due to the project's generation of trips by heavy-duty diesel trucks, which are an emitter of diesel particulate matter (DPM). In particular, DPM is emitted from on-site truck vehicle circulation and idling, and off-site mobile travel. Combined, these sources of DPM have the potential to generate substantial TACs on nearby sensitive receptors, including those located nearest to the project site. The SJVAPCD has established a screening calculator entitled the "Prioritization Calculator". An estimate of DPM emissions generated by the heavy-duty trucks associated with the proposed project was calculated for on-site mobile and idling emissions, in accordance with the California Office of Environmental Health Hazard Assessment (OEHHA) guidance, as recommended by the SJVAPCD. The estimate of DPM emissions were based on the data provided by Fehr & Peers in the Transportation Analysis for the project, and with diesel particulate matter mobile emission rates from CARB's EMFAC2017 database (for year 2022, 10 MPH, San Joaquin County; emission rates for DPM), and from standard heavy-duty truck idling emission rates from CARB.

The results of the screening analysis show that the cancer and non-cancer risks associated with the proposed project are below the SJVAPCD screening thresholds contained within their Prioritization Calculator. Specifically, the Prioritization Calculator estimates that the prioritization score associated with total cancer risk from proposed project DPM would be approximately 3.10, well below the SJVAPCD threshold of 10 that would require development of and air toxics Health Risk Assessment (HRA) that includes air dispersion modeling. Additionally, non-cancer (i.e. chronic and acute risks) associated with project DPM would also be well below the applicable thresholds for the Maximally Exposed Individual (i.e. greater than or equal to the Hazard Index level of 1). Therefore, the complex air dispersion modeling using software such as AERMOD is not required. See Appendix B for further detail.

Overall, as described and evaluated in Appendix B, the proposed project would not exceed the maximum risk values established by the SJVAPCD for TACs, as described above. Exposure levels for all receptor types would be below the applicable SJVAPCD significance thresholds. In addition, criteria pollutant emissions would be below the applicable SJVAPCD significance thresholds for criteria pollutants, as described under Impacts a) and b). Impacts to sensitive receptors due to exposure to substantial pollutant concentrations would be below the applicable thresholds and therefore would result in a ***less than significant*** impact.

CO Hotspots: Locations of vehicle congestion have the potential to create pockets of CO called hotspots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or

the eight-hour standard of 9.0 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds.

Although the SJVAPCD has not established a specific numerical screening threshold for CO impacts, the Bay Area Air Quality Management District (BAAQMD) has established that, under existing and future vehicle emissions rates, a project would need to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix (i.e., bridges and tunnels)—in order to generate a substantial CO impact. As described in Section XVII: Transportation, the proposed project would generate a maximum of approximately 69 AM peak hour trips and 63 PM peak hour trips, which would be significantly less than the volumes cited above (Fehr & Peers, 2020). The City of Lathrop, as the lead agency, has selected the BAAQMD's threshold for analyzing the significance of CO impacts. Thus, the proposed project would not have the potential to substantially increase CO hotspots at intersections in the vicinity of the project site, and impacts would be ***less than significant***.

Conclusion

The construction phase of the project would be temporary and short-term. The proposed project would not generate significant concentrations of air emissions during construction.

Maximum incremental residential cancer risk was evaluated over a 70-year period; maximum incremental workplace cancer risk was evaluated over a 40-year period. Chronic and acute cancer risks on the nearest sensitive receptors were also modeled. The modeling showed that the proposed project would not exceed the maximum risk values established by the SJVAPCD for TACs. All receptor types would be below the applicable SJVAPCD significance thresholds.

Under existing and future vehicle emissions rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix (i.e., bridges and tunnels)—in order to generate a substantial CO impact. The proposed project would generate much fewer than such peak hour trips, which would be significantly lower than the thresholds for causing a significant CO impact.

Implementation of the proposed project would not result in a significant increased exposure of sensitive receptors to localized concentrations of TACs, or create a CO hotspot. This project would have a ***less than significant*** impact relative to this topic.

Response d): The proposed project would not generate objectionable odors that would adversely affect substantial numbers of people. People in the immediate vicinity of construction activities may be subject to temporary odors typically associated with construction activities (diesel exhaust, hot asphalt, etc.). However, any odors generated by construction activities would be minor and would be short and temporary in duration.

Examples of facilities that are known producers of operational odors include: Wastewater Treatment Facilities, Chemical Manufacturing, Sanitary Landfill, Fiberglass Manufacturing, Transfer Station, Painting/Coating Operations (e.g. auto body shops), Composting Facility, Food Processing Facility, Petroleum Refinery, Feed Lot/Dairy, Asphalt Batch Plant, and Rendering Plant. The proposed project would not contain any of these land uses. If a project would locate

receptors and known odor sources in proximity to each other further analysis may be warranted; however, if a project would not locate receptors and known odor sources in proximity to each other, then further analysis is not warranted.

The project does not include any of the aforementioned uses. Additionally, construction activities would be temporary and minor. Lastly, other emissions are evaluated in responses a-c), as provided above. As such, implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

IV. BIOLOGICAL RESOURCES

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*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?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?			X	
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?			X	
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?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
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?			X	

Regional Setting

The City of Lathrop is located in the western portion of the Great Valley Geomorphic Province of California. The Great Valley Province is a broad structural trough bounded by the tilted block of the Sierra Nevada on the east and the complexly folded and faulted Coast Ranges on the west. The San Joaquin River is located just south and west of the City. This major river drains the Great Valley Province into the San Joaquin Delta to the north, ultimately discharging into the San Francisco Bay to the northwest.

The City of Lathrop is located within the San Joaquin Valley Bioregion, which is comprised of Kings County, most of Fresno, Kern, Merced, and Stanislaus counties, and portions of Madera, San Luis Obispo, and Tulare counties. The San Joaquin Valley Bioregion is the third most populous out of ten bioregions in the state, with an estimated 2 million people. The largest cities are Fresno, Bakersfield, Modesto, and Stockton. Interstate 5 and State Route 99 are the major north-south roads that run the entire length of the bioregion. Habitat in the bioregion includes vernal pools, valley sink scrub and saltbush, freshwater marsh, grasslands, arid plains, orchards, and oak savannah. Historically, millions of acres of wetlands flourished in the bioregion, but stream diversions for irrigation dried all but about five percent. Remnants of the wetland habitats are

protected in this bioregion in publicly owned parks, reserves, and wildlife areas. The bioregion is considered the state's top agricultural producing region with the abundance of fertile soil.

The region has a Mediterranean climate that is subject to cool, wet winters (often blanketed with fog) and hot, dry summers. The average annual precipitation is approximately 13.81 inches. Precipitation occurs as rain most of which falls between the months of November through April, peaking in January at 2.85 inches. The average temperatures range from December lows of 37.5 F to July highs of 94.3 F.

The project site is generally flat, with an elevation range for the entire project site of approximately 21 to 34 feet above sea level. There are no water bodies located within the project site. The project site has previously "disced" (discing is a soil preparation process that follows plowing, which breaks up clods and surface crusts, thereby improving soil granulation and surface uniformity).

Vegetation on the project site consists of primarily of disturbed ruderal, with a small amount of developed/disturbed vegetation. Agricultural and ruderal vegetation found on the project site provides habitat for both common and a few special-status wildlife populations. For example, some commonly observed wildlife species in the region include: California ground squirrel (*Spermophilus beecheyi*), California vole (*Microtus californicus*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus cyaneus),* American kestrel (*Falco sparverius*), white-tailed kite (*Elanus leucurus*), American killdeer (*Charadrius vociferus*), gopher snake (*Pituophis melanoleucus*), garter snake (*Thamnophis species*), and western fence lizard (*Sceloporus occidentalis*), as well as many native insect species. There are also several bat species in the region. Bats often feed on insects as they fly over agricultural and natural areas.

Locally common and abundant wildlife species are important components of the ecosystem. Due to habitat loss, many of these species must continually adapt to using agricultural, ruderal, and ornamental vegetation for cover, foraging, dispersal, and nesting.

Responses to Checklist Questions

Response a): The following discussion is based on a background search of special-status species that are documented in the California Natural Diversity Database (CNDDB) and the field survey conducted by Moore Biological Consultants in September 2020. The survey consisted of walking throughout the site making observations of habitat conditions and noting surrounding land uses, habitat types, and plant and wildlife species. The fieldwork included an assessment of potential jurisdictional Waters of the U.S. and wetlands as defined by the U.S. Army Corps of Engineers and a search for special-status species and suitable habitat for special-status species (e.g., blue elderberry shrubs, vernal pools). Trees in and near the site were assessed for the potential use by nesting raptors, especially Swainson's hawk (Buteo swainsoni). The grasslands on the site and adjacent areas visible from the site were evalulated for signs of burrowing owls (Athene cunicularia) or ground squirrel burrows with evidence of past occupancy.

Figure 6 shows the results of the CNDDB background search within a 1-mile radius of the project site, and Figure 7 shows the results of the CNDDB background search within a 9-quad area of the project site (i.e. approximately 630 square miles). The 9-quad background search was regional in scope and focused on the documented occurrences within 9-quad of the project site. Appendix C provides the Biological Resources Assessment.

Special Status Plant Species

The project site has been fallow for several years and is likely periodically mowed and/or disked; the Project site had not been recently disked or mowed prior to the field survey and was very weedy. The Project site is vegetated with highly disturbed ruderal grasses and weeds. Oats (Avena sp.), soft chess brome (Bromus hordeaceus), ripgut brome (B. diandrus), foxtail barley (Hordeum murinum), and perennial ryegrass (Lolium perenne) are the most common grasses in the Project site. Other grassland species such as yellow star-thistle (Centaurea solstitalis), black mustard (Brassica nigra), Italian thistle (Carduus pycnocephalus), Russian thistle (Salsola tragus), common sunflower (Helianthus annuus), prickly lettuce (Lactuca serriola), and filaree (Erodium spp.) are intermixed with the grasses. Overall, there are twenty-five special status plants that were observed at the Project site (Moore Biological Consultants, 2020).

There are no trees in the Project site. There are two notable oleander shrubs in the north part of the site and a few tree tobacco seedlings in the soil stockpile area. There is a large cottonwood tree just off-site near the southwest corner of the site and a row of small off-site redwood trees adjacent to the south edge of the site. There are a few small willows and cottonwood seedlings within a basin adjacent to the southwest corner of the site. There are a few other large trees scattered in parcels near the project site. No blue elderberry (Sambucus mexicana) shrubs were observed within or adjacent to the Project site.

Special Status Wildlife Species

The potential for intensive use of habitats within the project site by special-status wildlife species is generally low. Special-status wildlife species that have been recorded in greater project vicinity in the CNDDB (2020) include Swainson's hawk, burrowing owl, tricolored blackbird (Agelaius tricolor), loggerhead shrike (Lanius ludovicianus), song sparrow ("Modesto population") (Melospiza melodia), yellow-headed blackbird (Xanthocephalus xanthocephalus), riparian brush rabbit (Sylvilagus bachmani riparius), California tiger salamander (Ambystoma californiense), Central Valley steelhead (Oncorhynchus mykiss), longfin smelt (Spirinchus thaleichthys), valley elderberry longhorn beetle (Desmocerus californicus dimorphus) and western bumble bee (Bombus occidentalis). Although not included in the CNDDB within the search area, giant garter snake (Thamnophis gigas), California red-legged frog (Rana aurora draytonii), delta smelt (Hypomesus transpacificus), vernal pool fairy shrimp (Branchinecta lynchi), and vernal pool tadpole shrimp (Lepidurus packardi) were added because they are included in the USFWS IPaC Trust Resource Report.

Invertebrates: Based on habitat types present, only a few amphibian and reptile species are expected to use habitats in the site. Although none were observed, common species such as western fence lizard (Sceloporus occidentalis), Pacific chorus frog (Pseudacris regilla), gopher snake (Pituophis melanoleucus), common king snake (Lampropeltis getulus), and common garter snake (Thamnophis sirtalis) are expected to occur at the site.

Reptile and amphibian species: Based on habitat types present, only a few amphibian and reptile species are expected to use habitats in the site. Although none were observed, common species such as western fence lizard (Sceloporus occidentalis), Pacific chorus frog (Pseudacris regilla), gopher snake (Pituophis melanoleucus), common king snake (Lampropeltis getulus), and common garter snake (Thamnophis sirtalis) are expected to occur at the site.

Birds: A variety of bird species were observed in the site. Turkey vulture (Cathartes aura), American kestrel (Falco sparverius), American crow (Corvus brachyrhynchos), mourning dove

(Zenaida macroura), and killdeer (Charadrius vociferous) are representative bird species observed in and near the site. All of these are species commonly found in urban areas in the project vicinity.

There are a few large trees relatively close to the project site that are suitable for nesting raptors, including Swainson's hawks. The oleander shrubs in site and other smaller trees and shrubs in the project vicinity provide nesting opportunities for smaller songbirds. Given the presence of trees and shrubs near the site, it is likely one or more pairs of raptors and a variety of songbirds nest in and/or near the site during most years. It is possible that ground-nesting songbirds such as killdeer and red-winged blackbird (Agelaius phoeniceus) nest in the grassland habitats in the site.

Analysis: While the project site contains very limited nesting habitat, there are powerlines and trees located in the region that represent potentially suitable nesting habitat for a variety of special-status birds. Additionally, the disturbed land located on the project site represents potentially suitable nesting habitat for the ground-nesting birds where disturbance is less frequent. In general, most nesting occurs from late February and early March through late July and early August, depending on various environmental conditions. The CNDDB currently contains nesting records for Swainson's hawk and burrowing owl in the vicinity of the project site. In addition to the species described above, common raptors may nest in or adjacent to the project site.

Mammal: A variety of mammals are likely to occur on the project site. However, no mammals were observed in the site during the recent survey. Only a few California ground squirrel (Otospermophilus beecheyi) burrows were observed in the site and several pocket gopher burrows were also observed. Other common species such as raccoon (Procyon lotor), coyote (Canis latrans), black-tailed hare (Lepus californicus), striped skunk (Mephitis mephitis), and Virginia opossum (Didelphis virginiana) are expected to occur in the greater project vicinity and may occur in the site. A number of species of small rodents including mice (Mus musculus, Reithrodontomys megalotis, and Peromyscus maniculatus) and voles (Microtus californicus) also likely occur.

Conclusion

No special-status species were observed on the site and the Project is not expected to affect special status species or their habitats. Although the Project would not result in significant impacts to this topic, the Project would nevertheless seek coverage under the SJMSCP. Therefore, Mitigation Measure BIO-1 requires the Project applicant to seek coverage under the SJMSCP to mitigate for potential habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through implementation of incidental take and minimization Measures (ITMMs) and payment of fees for conversion of lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. Obtaining coverage for a project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a), California Fish and Game Code Section 2081, and the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species. Therefore, with implementation of the following mitigation measures, the proposed Project would have a ***less than significant*** impact relative to this topic.

Mitigation Measure(s)

Mitigation Measure BIO-1*: Prior to commencement of any grading activities, the Project applicant shall seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through implementation of incidental take and minimization Measures (ITMMs) and payment of fees for conversion of lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. Obtaining coverage for a project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a), California Fish and Game Code Section 2081, and the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species.*

Mitigation Measure BIO-2*: Prior to the commencement of grading activities or other ground disturbing activities on the Project site, the Project applicant shall arrange for a qualified biologist to conduct a preconstruction survey for nesting raptors in accordance with SJMSCP requirements. If no nests are detected, then construction activities may commence. If occupied nests are discovered, then the Project applicant shall coordinate with SJCOG regarding the appropriate buffer needed to avoid the particular bird species. If burrowing owl is discovered during the non-breeding season (September 1 through January 31) they should be evicted from the Project site by passive relocation as described in the California Department of Fish and Game's Staff Report on Burrowing Owls (Oct., 1995). Implementation of this mitigation shall occur prior to grading or site clearing activities. SJCOG shall be responsible for monitoring and a qualified biologist shall conduct surveys and relocate owls as required.*

Response b): There is no riparian habitat on the project site. Therefore, implementation of the proposed project would have a ***less than significant*** impact on riparian habitats or natural communities.

Response c): There are no protected wetlands or other features subject to the federal Clean Water Act or the State Porter Cologne Water Act. Therefore, the Project would not result in direct removal or fill, or hydrological interruption or other alteration of wetlands. Absent any wetlands or jurisdictional waters, implementation of the proposed project would have ***less than significant*** impact relative to this topic.

Response d): The CNDDB record search did not reveal any documented wildlife corridors or wildlife nursery sites on or adjacent to the project site. The field survey did not reveal any evidence of a wildlife corridor or nursery site. Special status fish species documented within the region include: Delta smelt (*Hypomesus transpacificus*), Hardhead (*Mylopharodon conocephalus*), Central Valley steelhead (*Oncorhynchus mykiss*), Central Valley fall- /late fall-run Chinook salmon (*Oncorhynchus tshawytscha*), and Longfin smelt (*Spirinchus thaleichthys*). The closest major natural movement corridor for native fish that are documented in the region is the San Joaquin River, located 2.2 miles to the west of the project site. The land uses within the project site would not have any direct disturbance to the San Joaquin River or its tributaries, and therefore, would not have any direct disturbance to the movement corridor or habitat. Implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

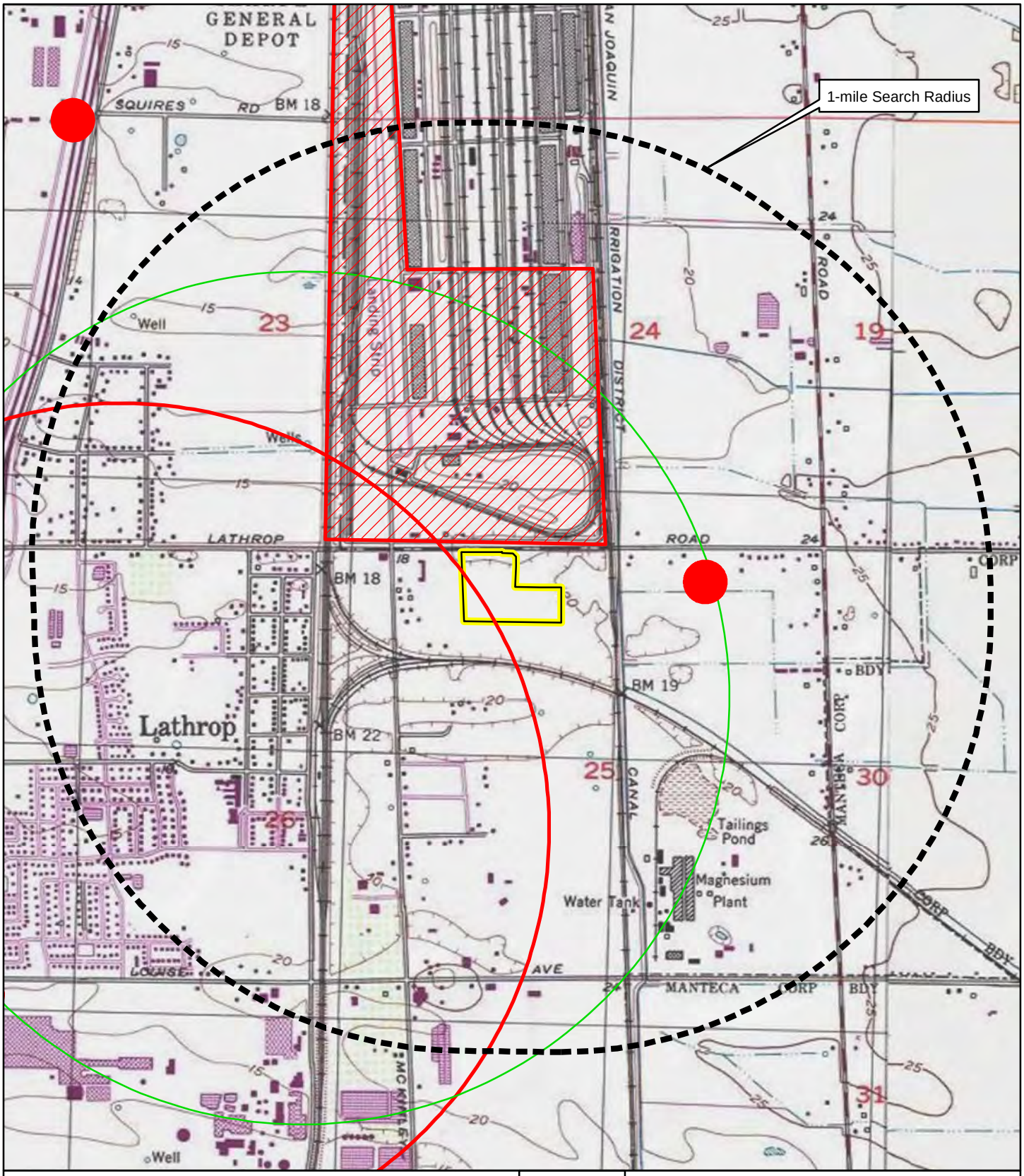
Response e): The proposed project is subject to the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). The SJMSCP is administered by a Joint Powers Authority consisting of members of the SJCOG, the California Department of Fish and Wildlife (CDFW), and the United States Fish and Wildlife Service (USFWS). According to the SJMSCP, adoption and implementation by local planning jurisdictions provides full compensation and mitigation for impacts to plants, fish and wildlife. Adoption and implementation of the SJMSCP

also secures compliance pursuant to the state and federal laws such as CEQA, the National Environmental Policy Act (NEPA), the Planning and Zoning Law, the State Subdivision Map Act, the Porter-Cologne Act and the Cortese-Knox Act in regard to species covered under the SJMSCP. Applicants pay mitigation fees on a per-acre basis. The entire County is mapped according to these categories so that landowners, project proponents and project reviewers are easily aware of the applicable SJMSCP fees for the proposed development. The appropriate fees are collected by the City and remitted to SJCOG for administration. SJCOG uses the funds to preserve open space land of comparable types throughout the County, often coordinating with other private or public land trusts to purchase conservation easements or buy land outright for preservation. The fees are automatically adjusted on an annual basis. The fees have been designed to sufficiently mitigation the impacts of projects on candidate, sensitive, and special status species. In addition, additional field surveying is required as part of the SJMSCP process prior to any construction activities.

The Project site was previously developed and is mapped as "Urban/Fee Exempt" in the HCP. Therefore, there are no "per-acre" HCP fees associated with re-development of this site.

Therefore, the proposed project does not conflict with the SJMSCP. The Project would have a ***less than significant*** impact relative to this topic.

Responses f): There are no tree located on the Project site. The Project is required to be consistent with all local policies and ordinances protecting biological resources. The Project would have a ***less than significant*** impact relative to this topic.



Legend

Project Boundary | Animal (80m) | Animal (circular)

Plant (circular) | Animal (non-specific)

N

0 500 1,000

Feet

Sources: ArcGIS Online USGS Topographic Map Service; CNDDB version 7/6/2021. Please Note: the occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not been surveyed and/or mapped. Lack of information in the CNDDB about a species or an area can never be used as proof that no special status species occur in an area. Map date: July 9, 2021.

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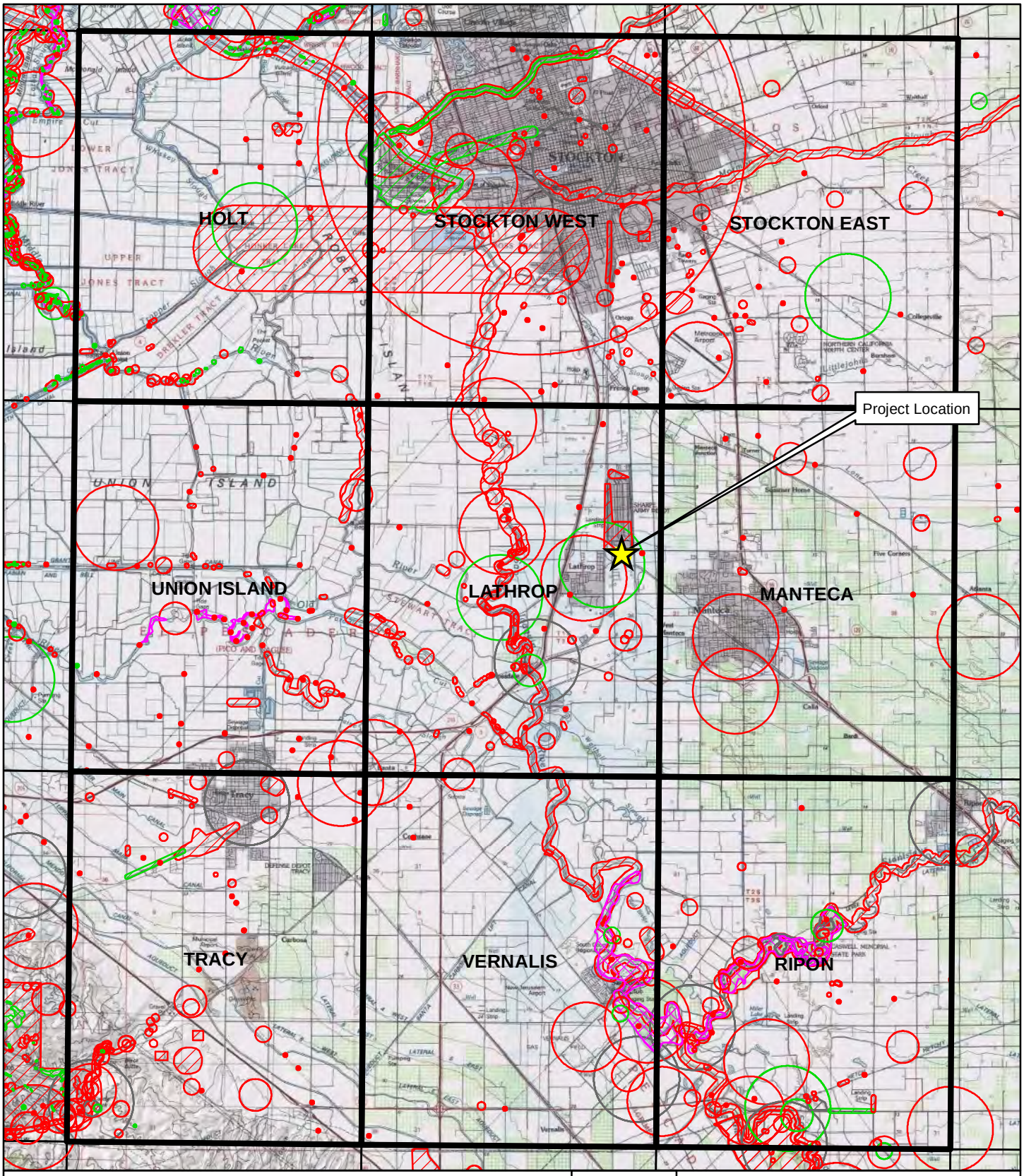
Figure 6. California Natural Diversity Database

1-mile Search

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Legend

- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)
- Terrestrial Comm. (specific)
- Terrestrial Comm. (circular)
- Multiple (non-specific)
- Multiple (circular)

Sources: ArcGIS Online USGS Topo Map Service; CNDDB version 7/6/2021. Please Note: the occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not been surveyed and/or mapped. Lack of information in the CNDDB about a species or an area can never be used as proof that no special status species occur in an area. Map date: July 9, 2021.

N

0 1 2

Miles

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Figure 7. California Natural Diversity Database

9-quad Search

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V. CULTURAL RESOURCES

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?		X		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		X		
c) Disturb any human remains, including those interred outside of formal cemeteries?		X		

Responses to Checklist Questions

Responses a), b):

There are no known historic or prehistoric period sites present on the Project site. Although no prehistoric sites have been identified within the Project site, there is a slight possibility that a prehistoric site may exist and be totally obscured by vegetation, fill, or other historic activities, leaving no surface evidence. Should artifacts or unusual amounts of stone, bone, or shell be uncovered during construction activities, work in that part of the Project site shall be halted, and an archeologist should be consulted for on-the-spot evaluation of the finding.

AB 52 Tribal Consultation is a requirement by which public agencies are required to consult with California Native American tribes that are traditionally and culturally affiliated with the geographic area of a proposed Project that is subject to CEQA, if the tribes request formal notification and subsequently consultation.

In order to participate in AB 52 tribal consultation, a tribe must specifically request, in writing, to be notified by lead agencies through formal notification of proposed Projects in the geographic area with which the tribe is traditionally and culturally affiliated. The City of Lathrop has sent letters to each of the tribes that had previously requested notification.

Additionally, SB 18 requires local governments to consult with tribes prior to making certain planning decisions and to provide notice to tribes at certain key points in the planning process. These consultation and notice requirements apply to adoption and amendment of both general plans (defined in Government Code §65300 et seq.) and specific plans (defined in Government Code §65450 et seq.).

The City of Lathrop mailed AB52 letters out on March 11, 2021 to Northern Valley Yokuts tribe, Buena Vista Rancheria and California Valley Miwok Tribe. The referral comment period ended on April 10, 2021 and the City did not receive any response/requests for consultation. In addition, the City mailed out SB18 letters on March 11, 2021 and March 17, 2021 to the Northern Valley Yokuts tribe (two contacts – Katherine Perez and Timothy Perez), Buena Vista Rancheria, California Valley Miwok, The Confederated Villages of Lisjan, and Tule River Indian Tribe. The 90-day consultation period ended on June 15, 2021.

Implementation of the following mitigation measure would require investigations and avoidance methods in the event that a previously undiscovered cultural resource is encountered during construction activities. With implementation of the following mitigation measure, development

of the proposed Project would have a ***less than significant*** impact on historical and archaeological resources.

Mitigation Measure(s)

Mitigation Measure CUL-1: *If cultural resources (i.e., prehistoric sites, historic sites, isolated artifacts/features, and paleontological sites) are discovered during construction, work shall be halted immediately within 50 meters (165 feet) of the discovery, the City of Lathrop shall be notified, and a qualified archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology (or a qualified paleontologist in the event paleontological resources are found) shall be retained to determine the significance of the discovery. The City of Lathrop shall consider recommendations presented by the professional for any unanticipated discoveries and shall carry out the measures deemed feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. Specific measures are developed based on the significance of the find.*

Response c): Indications are that humans have occupied the Central Valley for at least 10,000 years and it is not always possible to predict where human remains may occur outside of formal burials. Therefore, excavation and construction activities, regardless of depth, may yield human remains that may not be interred in marked, formal burials. Under CEQA, human remains are protected under the definition of archaeological materials as being "any evidence of human activity." Additionally, Public Resources Code Section 5097 has specific stop-work and notification procedures to follow in the event that human remains are inadvertently discovered during construction. Implementation of the following mitigation measure would reduce this potential impact to a ***less than significant*** level.

Mitigation Measure(s)

Mitigation Measure CUL-2: *If any human remains are found during grading and construction activities, all work shall be halted immediately within 50 meters (165 feet) of the discovery and the County Coroner must be notified, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the coroner shall notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed. Additionally, if the Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the applicant's expense.*

VI. ENERGY

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*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?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

Responses to Checklist Questions

Response a), b): Appendix G of the State CEQA Guidelines requires consideration of the potentially significant energy implications of a project. CEQA requires mitigation measures to reduce "wasteful, inefficient and unnecessary" energy usage (Public Resources Code Section 21100, subdivision [b][3]). According to Appendix G of the CEQA Guidelines, the means to achieve the goal of conserving energy include decreasing overall energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. In particular, the proposed project would be considered "wasteful, inefficient, and unnecessary" if it were to violate state and federal energy standards and/or result in significant adverse impacts related to project energy requirements, energy inefficiencies, energy intensiveness of materials, cause significant impacts on local and regional energy supplies or generate requirements for additional capacity, fail to comply with existing energy standards, otherwise result in significant adverse impacts on energy resources, or conflict or create an inconsistency with applicable plan, policy, or regulation.

The proposed Project includes the construction of the proposed project. The amount of energy used at the project site would directly correlate to the energy consumption (including fuel) used by vehicle trips generated during project construction, fuel used by off-road construction vehicles during construction, fuel used by vehicles during project operation, and electricity and other energy usage during project operation. The CalEEMod modeling results for the proposed project estimate annual operational electricity usage at approximately 869,778 kWh/year, and annual natural gas usage at 1,156,520 kBTU/year (see Appendix A for further detail).

It should be noted that, as provided in Appendix F of this IS/MND (the Traffic Impact Analysis), the proposed Project would generate 84.9 VMT per industrial employee, which is less than the existing baseline citywide VMT per industrial employee of 88.5. Additionally, in the Cumulative Year, citywide VMT per industrial employee is anticipated to decrease to 75.2, and the proposed project's VMT per employee is anticipated to decrease to 70.9. Because the proposed project would not exceed the existing baseline VMT per industrial employee under existing or cumulative year conditions, the proposed project-generated VMT would not result in a significant transportation impact.

Conclusion

The proposed project would be in compliance with all applicable federal, state, and local regulations regulating energy usage. For example, statewide measures, including those intended to improve the energy efficiency of the statewide passenger and heavy-duty truck vehicle fleet (e.g. the Pavley Bill and the Low Carbon Fuel Standard) are improving vehicle fuel economies, thereby conserving gasoline and diesel fuel. These energy savings would continue to accrue over time.

As a result, the proposed project would not result in any significant adverse impacts related to project energy requirements, energy use inefficiencies, and/or the energy intensiveness of materials by amount and fuel type for each stage of the project including construction, operations, maintenance, and/or removal. PG&E, the electricity and natural gas provider to the site, maintains sufficient capacity to serve the proposed project. In addition, PG&E is on its way to achieving the statewide requirement of 50% of total energy mix generated by eligible renewables by year 2030. As of 2018, PG&E generated approximately 38% of its energy from eligible renewables (PG&E, 2019). The proposed project would comply with all existing energy standards, including the statewide Title 24 Energy Efficiency Standards, and would not result in significant adverse impacts on energy resources. Therefore, the proposed project would not result in potentially significant environmental impacts due to inefficient, wasteful, or unnecessary use of energy resources during construction and operation, nor conflict with or construct with a State or local plan for renewable energy or energy efficiency. This is a ***less than significant*** impact.

VII. GEOLOGY AND SOILS

Would the project:	*Potentially Significant Impact*	*Less Than Significant 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:			X	
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 42.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?		X		
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?		X		
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?		X		
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?		X		
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

Responses to Checklist Questions

Responses a.i), a.ii), a.iv): Figure 8 shows the earthquake faults in the vicinity of the project site. As shown in the figure, the site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone, and known surface expression of active faults does not exist within the site. However, the site is located within a seismically active region. The U.S. Geological Survey identifies potential seismic sources within approximately 20 miles of the project site. Two of the closest known faults classified as active by the U.S. Geological Survey are an unnamed fault east of the City of Tracy, located approximately 8 miles to the west, and the San Joaquin fault, located approximately 16 miles to the southwest. The Midway fault is located approximately 20 miles to

the west. Other faults that could potentially affect the proposed project include the Corral Hollow-Carnegie fault, the Greenville fault, the Antioch fault, and the Los Positas fault.

Geologic Hazards

Potential seismic hazards resulting from a nearby moderate to major earthquake could generally be classified as primary and secondary. The primary seismic hazard is ground rupture, also called surface faulting. The common secondary seismic hazards include ground shaking and ground lurching.

Ground Rupture

Because the project site does not have known active faults crossing the site, and the site is not located within an Earthquake Fault Special Study Zone, ground rupture is unlikely at the subject property.

Ground Shaking

According to the California Geological Survey's Probabilistic Seismic Hazard Assessment Program, Lathrop is considered to be within an area that is predicted to have a 10 percent probability that a seismic event would produce horizontal ground shaking of 10 to 20 percent within a 50-year period. This level of ground shaking correlates to a Modified Mercalli intensity of V to VII, light to strong. As a result of these factors the California Geological Survey has defined the entire county as a seismic hazard zone. There will always be a potential for groundshaking caused by seismic activity anywhere in California, including the project site.

Landslides

The proposed project site is not susceptible to landslides because the area is essentially flat. This is a less than significant impact.

Conclusion

In order to minimize potential damage to the proposed site improvements, all construction in California is required to be designed in accordance with the latest seismic design standards of the California Building Standards Code. Design in accordance with these standards would reduce any potential impact to a less than significant level. Because all development in the project site must be designed in conformance with these State standards, any potential impact would be considered ***less than significant***.

Responses a.iii), c), d): Liquefaction normally occurs when sites underlain by saturated, loose to medium dense, granular soils are subjected to relatively high ground shaking. During an earthquake, ground shaking may cause certain types of soil deposits to lose shear strength, resulting in ground settlement, oscillation, loss of bearing capacity, landsliding, and the buoyant rise of buried structures. The majority of liquefaction hazards are associated with sandy soils, silty soils of low plasticity, and some gravelly soils. Cohesive soils are generally not considered to be susceptible to liquefaction. In general, liquefaction hazards are most severe within the upper 50 feet of the surface, except where slope faces or deep foundations are present.

Expansive soils are those that undergo volume changes as moisture content fluctuates; swelling substantially when wet or shrinking when dry. Soil expansion can damage structures by cracking foundations, causing settlement and distorting structural elements. Expansion is a typical

characteristic of clay-type soils. Expansive soils shrink and swell in volume during changes in moisture content, such as a result of seasonal rain events, and can cause damage to foundations, concrete slabs, roadway improvements, and pavement sections.

Soil expansion is dependent on many factors. The more clayey, critically expansive surface soil and fill materials will be subjected to volume changes during seasonal fluctuations in moisture content. Figure 9 shows the soils within the project site. There are no expansive (i.e. shrink-swell) soils within the project site. The soils encountered at the project site consist of Veritas fine sandy loam (within the northern portion of the project site), and Tinnin loamy course sand (within the southern portion of the project site).

Future development of the project could expose people or structures to adverse effects associated with liquefaction and/or soil expansion. Construction of the project would be required to comply with the City's General Plan policies related to geologic and seismic hazards. Therefore, Mitigation Measure GEO-1 would ensure that the project applicant will submit a design-level geotechnical study and buildings plans to the City of Lathrop for review and approval.

Therefore, with implementation of Mitigation Measure GEO-1, this potential impact would be ***less than significant***.

Mitigation Adopted by the City

Mitigation Measure GEO-1*: Prior to issuance of building permits, the project applicant shall submit a design-level geotechnical study and building plans to the City of Lathrop for review and approval. The building plans shall demonstrate that they incorporate all applicable recommendations of the design-level geotechnical study and comply with all applicable requirements of the most recent version of the California Building Standards Code. A licensed professional engineer shall prepare the plans, including those that pertain to soil engineering, structural foundations, pipeline excavation, and installation. The approved plans shall be incorporated into the proposed project. All onsite soil engineering activities shall be conducted under the supervision of a licensed Geotechnical Engineer or Certified Engineering Geologist.*

Response b): According to the Project site plans, development of the proposed Project would result in the creation of new impervious surface areas throughout the Project site. The development of the Project site would also cause ground disturbance of top soil. The ground disturbance would be limited to the areas proposed for grading and excavation, including the proposed internal roadways and drain infrastructure improvements. After grading and excavation, and prior to overlaying the disturbed ground surfaces with impervious surfaces and structures, the potential exists for wind and water erosion to occur, which could adversely affect downstream storm drainage facilities.

Without implementation of appropriate Best Management Practices (BMPs) related to prevention of soil erosion during construction, development of the proposed Project would result in a potentially significant impact with respect to soil erosion. Mitigation Measure GEO-2 requires the Project applicant to prepare and submit a Stormwater Pollution Prevention Plan identifying specific actions and BMPs to prevent stormwater pollution during construction activities. The SWPPP shall include, among other things, temporary erosion control measures to be employed for disturbed areas. Implementation of the following mitigation measure, therefore, would ensure the impact is ***less than significant***.

Mitigation Measure(s)

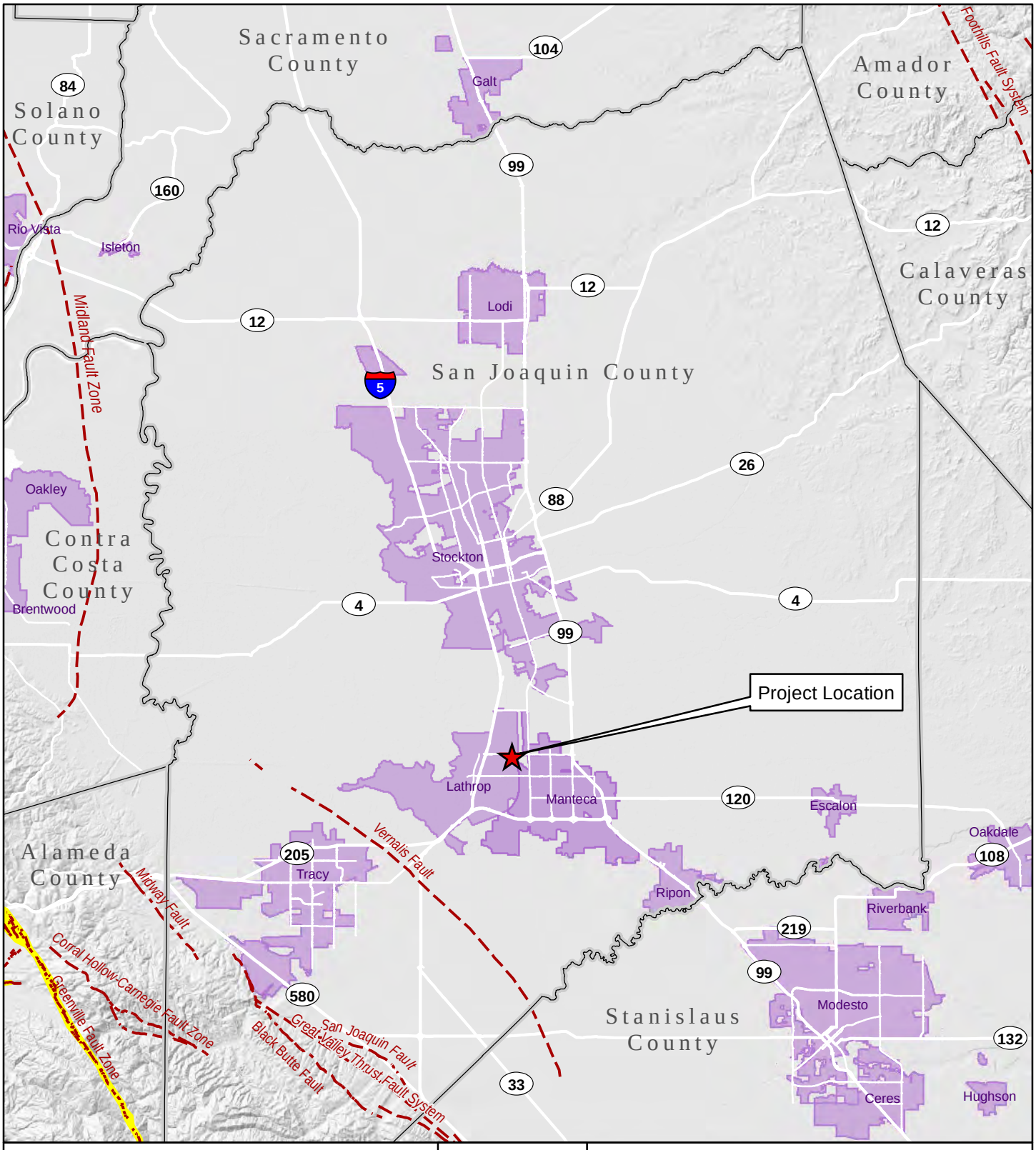
Mitigation Measure GEO-2*: The Project applicant shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB in accordance with the NPDES General Construction Permit requirements. The SWPPP shall be designed to control pollutant discharges utilizing Best Management Practices (BMPs) and technology to reduce erosion and sediments. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater runoff from the Project site. Measures shall include temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) that will be employed to control erosion from disturbed areas. Final selection of BMPs will be subject to approval by the City of Lathrop and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB.*

Response e): No septic systems will be used or developed as part of the proposed Project. Therefore, ***no impact*** would occur related to soils incapable of adequately supporting the use of septic tanks.

Response f): Known paleontological resources or sites are not located on the Project site. Additionally, unique geologic features are not located on the Project site. The Project site is currently undeveloped and surrounded by existing or future urban development. Additionally, in the event that plant or animal fossils are discovered during subsurface excavation activities, Mitigation Measure CUL-1 would all excavation within 50 feet of the fossil to cease until a paleontologist has determined the significance of the find and provided recommendations in accordance with Society of Vertebrate Paleontology standards. If the find is determined to be significant and the City determines that avoidance is not feasible, the paleontologist would design and implement a data recovery plan consistent with the Society of Vertebrate Paleontology standards, to be submitted to the City for review and approval. With implementation of Mitigation Measure CUL-1, impacts to paleontological resources or unique geologic features are not expected. This is a ***less than significant*** impact.

Mitigation Measure(s)

Implement Mitigation Measure CUL-1.



Legend

- Quaternary Fault
- Alquist Priolo Fault Zone
- Incorporated Area
- County Boundary

N

0 2½ 5
Miles

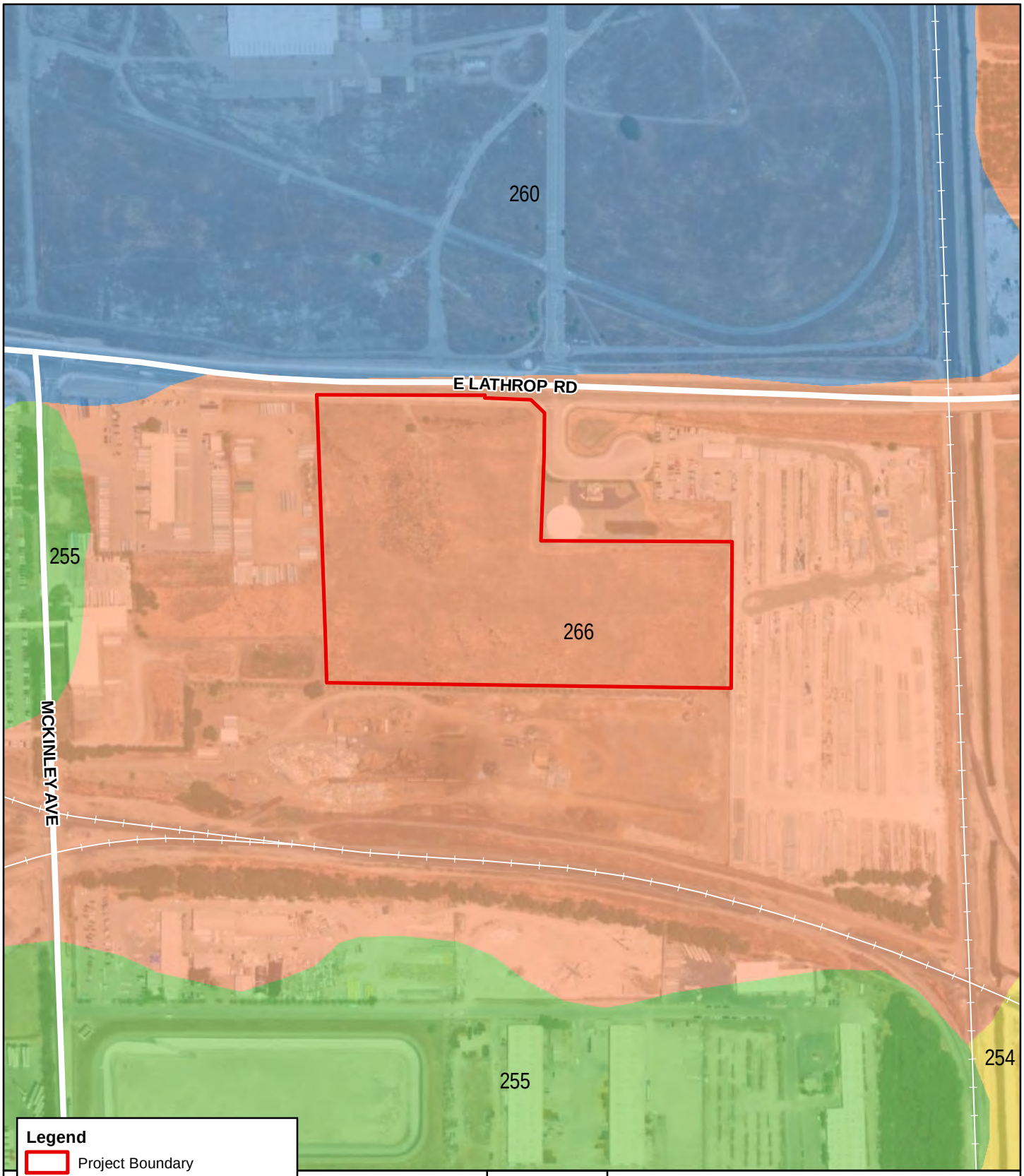
Source: San Joaquin County GIS; USGS; California State GeoPortal. Map date: July 8, 2021.

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Figure 8. Earthquake Fault Map

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Source: San Joaquin County GIS; NRCS Web Soil Survey. Map date: July 9, 2021.

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Figure 9. Soils Map

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VIII. GREENHOUSE GAS EMISSIONS

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?			X	

Existing Setting

Various gases in the Earth's atmosphere, classified as atmospheric greenhouse gases (GHGs), play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

Naturally occurring GHGs include water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also GHGs, but they are, for the most part, solely a product of industrial activities. Although the direct GHGs, including CO_2, CH_4, and N_2O, occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2011, concentrations of these three GHGs have increased globally by 40, 150, and 20 percent, respectively (IPCC, 2013).

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs).

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2018, accounting for 41% of total GHG emissions in the state. This category was followed by the industrial sector (24%), the electricity generation sector (including both in-state and out of-state sources) (15%) and the agriculture and forestry sector (8%) (California Energy Commission, 2016).

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California produced approximately 425 million gross metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2018 (California Energy Commission, 2021). Given that the U.S. EPA estimates that worldwide emissions from human activities totaled nearly 46 billion gross metric tons of carbon dioxide equivalents ($BMTCO_2e$) in 2010, California's incremental contribution to global GHGs is approximately 2% (U.S. EPA, 2014).

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Responses to Checklist Questions

Responses a), b): Existing science is inadequate to support quantification of impacts that project specific GHG emissions have on global climatic change. This is readily understood when one considers that global climatic change is the result of the sum total of GHG emissions, both man-made and natural that occurred in the past; that is occurring now; and will occur in the future. The effects of project specific GHG emissions are cumulative, and unless reduced or mitigated, their incremental contribution to global climatic change could be considered significant.

The SJVAPCD's *Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD, 2015) provides an approach to assessing a project's impacts on greenhouse gas emissions by evaluating the project's emissions to the "reduction targets" established in ARB's AB 32 Scoping Plan. For instance, the SJVACD's guidance recommends that projects should demonstrate 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, consistent with GHG emission reduction targets established in ARB's AB 32 Scoping Plan. 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*."

Subsequent to the SJVAPCD's approval of the *Final Draft Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015), the California Supreme Court issued an opinion that affects the conclusions that should/should not be drawn from a GHG emissions analysis that is based on consistency with the AB 32 Scoping Plan. More specifically, in *Center for Biological Diversity v. California Department of Fish and Wildlife*, the Court ruled that showing a "project-level reduction" that meets or exceeds the Scoping Plan's overall statewide GHG reduction goal is not necessarily sufficient to show that the project's GHG impacts will be adequately mitigated: "*the Scoping Plan nowhere related that statewide level of reduction effort to the percentage of reduction that would or should be required from individual projects*..." According to the Court, the lead agency cannot simply assume that the overall level of effort required to achieve the statewide goal for emissions reductions will suffice for a specific project.

Given this Court decision, reliance on a 29 percent GHG emissions reduction from projected BAU levels compared to the project's estimated 2020 levels as recommended in the SJVAPCD's guidance documents is not an appropriate basis for an impact conclusion in the MND. Given that the SJVAPCD staff has concluded that "*existing science is inadequate to support quantification of impacts that project specific GHG emissions have on global climatic change,*" this MND instead relies on an analysis of Project VMT, which is by the far the primary contributor to Project emissions.

As identified in Appendix F of this IS/MND (the Traffic Impact Analysis), the proposed project would generate less VMT per industrial employee when compared to the citywide baseline VMT per industrial employee under existing and cumulative year conditions. The proposed project would also result in an overall decrease in total VMT when compared to the total VMT with

inclusion of development consistent with the Commercial Service General Plan land use designation.

Project Greenhouse Gas Emissions

The proposed project would generate GHGs during the construction and operational phases of the proposed project. The primary source of construction-related GHGs from the proposed project would result from emissions of CO_2 associated with the construction of the proposed project, and employeevehicle trips. The proposed project would require limited grading, and would also include site preparation, building construction, architectural coating, and paving phases. Sources of GHGs during project operation would include CO_2 associated with operational vehicle trips and on-site energy usage (e.g. electricity). Other sources of GHG emissions would be minimal.

Table GHG-1 provides the estimated GHG emissions that would be generated during project construction and operation. As shown in Table GHG-1, the Project would generate approximately 992.3 MT CO_2e per year. A common threshold for industrial Project is 10,000 MT CO_2e per year.[1] As shown in Table GHG-1, the Project would not exceed this threshold.

Table GHG-1: Project Unmitigated Construction and Operational GHG Emissions (metric tons/year)

Year	*CO2e*
Construction	
2021	487.5
2022	163.4
Operation	
Annual	992.3

Source: CalEEMod, v.2020.4.0

Project Consistency with SJCOG's RTP/SCS

The proposed Project would not conflict with the implementation of regional transportation-related GHG targets outlined in San Joaquin Council of Governments' (SJCOG) 2018 Regional Transportation Plan and Sustainable Communities Strategy (2018 RTP/SCS). As previously described, the proposed project would generate less VMT per industrial employee when compared to the citywide baseline VMT per industrial employee under existing and cumulative year conditions. The proposed project would also result in an overall decrease in total VMT when compared to the total VMT due to development consistent with the existing General Plan land use designation. Therefore, the Project is consistent with SJCOG's RTP/SCS

Conclusion

Overall, the proposed project would be consistent with the SJCOG's RTP/SCS, and would reduce VMT compared with VMT generated by development assumed under the adopted General Plan. Therefore, the proposed project would not generate a significant cumulative impact to GHGs. In addition, the proposed project would not generate GHG emissions that would have a significant impact on the environment or conflict with any applicable plans, policies, or regulations. Therefore, impacts related to greenhouse gases are ***less than significant***.

[1] For example, the Bay Area Air Quality Management District (BAAQMD) maintains a threshold of 10,000 MT CO_2e per year for stationary source Projects.

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*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?			X	
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?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
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?		X		
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 in the project area?			X	
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	

Responses to Checklist Questions

Responses a), b): A Phase I Environmental Site Assessment (ESA) (see Appendix D) and a Limited Phase II Environmental Site Sampling Report (See Appendix E) were prepared for the proposed Project. The studies analyzed the soil and groundwater at the Project site. The results of these studies identified that the Project site does not present any significant hazardous environmental concerns, and no further assessment of the Project site for hazardous materials is warranted.

Construction Phase Impacts: Construction equipment and materials used during the Project's construction phase would likely require the use of petroleum-based products (oil, gasoline, diesel fuel), and a variety of chemicals including paints, cleaners, and solvents. The use of these materials at a construction site will pose a reasonable risk of release into the environment if not properly handled, stored, and transported. A release into the environment could pose significant impacts to the health and welfare of people and/or wildlife, and could result in contamination of water (groundwater or surface water), habitat, and countless important resources.

Like most agricultural and farming operations in the Central Valley, agricultural practices in the area have used agricultural chemicals including pesticides and herbicides as a standard practice. However, as described in the Phase I ESA and the Limited Phase II Environmental Site Sampling Report prepared for the Project site, the Project site's soil and groundwater do not present any significant hazardous environmental concerns.

Operational Phase Impacts: The operational phase of the proposed Project will occur after construction is completed. The Project would use some household products such as household cleaners, during the Project's operational phase. Hazardous material storage would not be allowed to be stored at the Project site. Diesel generators are also not anticipated for the Project site. The proposed Project would not routinely transport, use, or dispose of hazardous materials, or present a reasonably foreseeable release of hazardous materials, with the exception of common hazardous materials such as household cleaners, paint, motor oil, etc. The operational phase of the proposed Project does not pose a significant hazard to the public or the environment.

Conclusion: The Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, implementation of the proposed Project would result in a ***less than significant*** impact relative to this topic.

Response c): The Project site is not located within ¼ mile of an existing school. The closest school is Lathrop Elementary School, which is located approximately 0.62 miles or further southwest of the Project site. Therefore, implementation of the proposed Project would result in a ***less than significant*** impact relative to this topic.

Response d): A Phase I Environmental Site Assessment (ESA) (see Appendix D) was prepared for the proposed Project. The Phase I ESA identified that, in 1975, the Project site was developed with the Reiter Truck Company truck storage yard. The subject site appeared to consist of a large lot utilized for long haul truck and equipment storage, a northwestern portion of the subject site improved with several small building/shed structures and what appear to be two covered truck ports that may have been utilized for truck maintenance located on the central eastern portion of the subject site. By 1982, the covered truck ports were no longer shown. By 2005, no truck storage yard, or associated structures and/or storage equipment was shown on the subject site.

According to historical references reviewed the subject site was occupied by "Reiter Trucks" (1970s-early 2000s) and utilized as a long haul truck and equipment storage yard and also as a military surplus equipment sales operations during this time frame.

The following information was revealed within Cal-EPA DTSC files: On March 5, 1992, San Joaquin County Environmental Health and DTSC conducted a complaint inspection at Reiter Trucks, in Lathrop, CA. The complaint alleged the storage of hazardous waste. Mr. Reiter, owner of Reiter truck had purchased a lot of Defense Reutilization and Marketing Office (DRMO) equipment and other items which included barrels of some substances known as Impregnite. Impregnite is a chemical substances used to shield, by dusting on uniforms, against chemical liquid weapons. The powder contained high levels of zinc. The DTSC document also indicated the subject site was a "Military Surplus Equipment Sales Facility" After the inspection, DTSC, turn over the case to San Joaquin Environmental Health, San Joaquin County Environmental Health ordered the removal of the hazardous waste.

According to the complaint form, Errol Reiter asked the DRMS to take back 14,000 lbs of Impregnite, which he said he bought from them in 1975. Neither he nor DRMS have any records of this sale. The form also indicates the chemical is stored in fiber drums, three 2-cubic yard 3,000 lb containers, twenty 30-40 lb bags and one 3-cubic yard 4,000 lb container. According to photographs taken of the subject site as part of the report, the large metal bins were covered and stored directly on bare soil on the subject site.

According to the National Technical Reports Library, Impregnite is a paste prepared from Ester gum, Neats-foot oil, paraffin wax and solvent.

On March 5, 1992, samples of Impregnite were collected from the bins of Impregnite on the site and were found to be hazardous. After the samples were tested and found to be hazardous, San Joaquin County Environmental Health Department ordered Reiter Trucks to remove the hazardous waste to be disposed to a permitted disposal facility. On July 7, 1992, Reiter Trucks, removed the hazardous waste from their facility. A Hazardous waste manifest shows the removal and final disposal of the impregnite hazardous waste. The final facility the waste was disposed to was Chemical Waste Management in Kattleman City, CA.

No other information regarding the use of hazardous materials was uncovered during this time frame within the scope of work performed.

No other information was uncovered regarding the operations of Reiter Trucks besides being a military surplus equipment sales operations and appearing to be a truck storage yard. No information was uncovered regarding potential truck fueling operations, USTs on-site or truck maintenance on-site was uncovered during this time frame within the scope of work performed. However, DTSC records indicate large amounts of Impregnite were stored on-site from approximately 1975 to 1992 as part of military surplus sales operations. In addition, located along the northern dirt driveway entrance are mounds of soil. The origin of these mounds of soil is unknown.

The primary environmental concern with potential truck repair operations and military surplus equipment sales is the environmental risk of inadvertent discharges to the subsurface due to mishandling of hazardous materials (Impregnite, lubricating oils, antifreeze, solvents, etc.). Inadvertent discharges of hazardous materials to the bare soil are not always evident. In addition, the storage of hazardous materials bins directly on bare soil increase the potential of inadvertent discharges to the subsurface.

However, the Limited Phase II Environmental Site Assessment prepared for the Project site did not detect any significant hazardous environmental concerns for the Project site for soil or groundwater. Therefore, no further assessment of the Project site for significant hazardous environmental concerns is warranted.

Separately, The Phase I ESA that there are three abandoned in-place groundwater monitoring wells located within the Project site. At a minimum, permanently inactive wells shall be destroyed in accordance with standards developed by the Department of Water Resources pursuant to Section 13800 of the Water Code and adopted by the State Water Resources Control Board or local agencies in accordance with Section 13801 of the Water Code. Therefore, the Project is required to implement Mitigation Measure HAZ-1. With implementation of Mitigation Measure HAZ-1, implementation of the proposed Project would result in a ***less than significant*** impact relative to this environmental topic.

Mitigation Measure(s)

Mitigation Measure HAZ-1*: Prior to the issuance of grading or building permits, the Project Applicant shall destroy the permanently inactive wells located within the Project site, in accordance with standards developed by the Department of Water Resources pursuant to Section 13800 of the Water Code and adopted by the State Water Resources Control Board or local agencies in accordance with Section 13801 of the Water Code.*

Response e): The Federal Aviation Administration (FAA) establishes distances of ground clearance for take-off and landing safety based on such items as the type of aircraft using the airport. The Project site is not located within the vicinity of a private airstrip or public airport. The closest airport or airstrip is the Stockton Metropolitan Airport, located approximately 7 miles north of the Project site. Implementation of the proposed Project would have a ***less than significant*** impact with regards to this environmental issue.

Response f): The Office of Emergency Services (OES) maintains an Emergency Operations Plan (EOP) that serves as the official Emergency Plan for San Joaquin County. It includes planned operational functions and overall responsibilities of County Departments during an emergency situation. The Emergency Plan also contains a threat summary for San Joaquin County, which addresses the potential for natural, technological and human-caused disasters (County Code, Title 4-3007).

The County OES also prepared a Hazardous Materials Area Plan (§2720 H&S, 2008) that describes the hazardous materials response system developed to protect public health, prevent environmental damage and ensure proper use and disposal of hazardous materials. The plan establishes effective response capabilities to contain and control releases, establishes oversight of long-term cleanup and mitigation of residual releases, and integrates multi-jurisdiction and agency coordination. This plan is now implemented by the San Joaquin County Environmental Health Department.

The San Joaquin County Environmental Health Department maintains a Hazardous Materials Management Plan/ Hazardous Materials Business Plan (HMMP/HMBP). The HMMP/HMBP describes agency roles, strategies and processes for responding to emergencies involving hazardous materials. The Environmental Health Department maintains a Hazardous Materials Database and Risk and Flood Maps available to the public on its website.

In San Joaquin County, all major roads are available for evacuation, depending on the location and type of emergency that arises. The proposed Project does not include any actions that would impair or physically interfere with any of San Joaquin County's emergency plans or evacuation routes. Future uses on the Project site will have access to the County resources that establish protocols for safe use, handling and transport of hazardous materials. Construction activities are not expected to result in any unknown significant road closures, traffic detours, or congestion that could hinder the emergency vehicle access or evacuation in the event of an emergency. Implementation of the proposed Project would have a ***less than significant*** impact with regards to this environmental issue.

Response g): The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents), and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area to mass ratio and require less heat to reach the ignition point, while fuels

such as trees have a lower surface area to mass ratio and require more heat to reach the ignition point.

The City has areas with an abundance of flashy fuels (i.e., grassland) in the outlying residential parcels and open lands that, when combined with warm and dry summers with temperatures often exceeding 100 degrees Fahrenheit, create a situation that results in higher risk of wildland fires. Most wildland fires are human caused, so areas with easy human access to land with the appropriate fire parameters generally result in an increased risk of fire.

The Project site is not located on a steep slope, and the Project site is essentially flat. The Project site is also located in an urban area, with existing or future urban development located on all sides. The proposed Project will comply with city standards for fire hydrants and fire sprinklers, and access to and from the Project site is sufficient. Therefore, this is a ***less than significant*** impact and no mitigation is required.

X. HYDROLOGY AND WATER QUALITY

Would the project:	***Potentially Significant Impact***	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
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;		X		
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;		X		
(iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or		X		
(iv) Impede or redirect flood flows?		X		
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?		X		

Responses to Checklist Questions

Response a): Implementation of proposed Project would not violate any water quality or waste discharge requirements. Construction activities including grading could temporarily increase soil erosion rates during and shortly after project construction. Construction-related erosion could result in the loss of soil and could adversely affect water quality in nearby surface waters. The RWQCB requires a project specific SWPPP to be prepared for each project that disturbs an area one acre or larger. The SWPPP is required to include project specific best management measures that are designed to control drainage and erosion. Mitigation Measure GEO-2 would require the preparation of a SWPPP to ensure that the proposed Project prepares and implements a SWPPP throughout the construction phase of the proposed Project. Furthermore, the proposed Project includes a preliminary grading and drainage plan that has a specific drainage plan designed to control storm water runoff and erosion, both during and after construction. The SWPPP (Mitigation Measure GEO-2) and the project specific drainage plan would reduce the potential for the proposed Project to violate water quality standards during construction. Implementation of the proposed Project would result in a ***less than significant*** impact relative to this topic.

Response b): The proposed Project would connect to the City of Lathrop water system. The City's municipal water supply includes deliveries from the South San Joaquin Irrigation District's (SSJID) South County Water Supply Program (SCWSP), and local groundwater pumped from the City's wells.

The proposed Project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

According to the City's 2020 Urban Water Management Plan (UWMP), Commercial land uses are estimated to generate approximately 860 gallons of water day per acre. This is likely a highly conservative estimate, given the limited demand for water use that would occur at a self-storage facility such as the proposed Project. Nevertheless, utilizing this water demand factor, water usage would be estimated at 4,850 gallons of water per day (gpd) for the 5.64-acre Project site.

Project construction would add additional impervious surfaces to the Project site; however, various areas of the Project site would remain largely pervious, which would allow infiltration to underlying groundwater. For example, the Project applicant proposes to include a large stormwater basin at the southeast corner of the Project site. Furthermore, the proposed Project is not anticipated to significantly affect groundwater quality because sufficient stormwater infrastructure would be constructed as part of project to detain and filter stormwater runoff and prevent long-term water quality degradation. Therefore, project construction and operation would not substantially deplete or interfere with groundwater supply or quality. This impact would be ***less than significant***.

Responses c), e): When land is in a natural or undeveloped condition, precipitation will infiltrate/percolate the soils and mulch. Much of the rainwater that falls on natural or undeveloped land slowly infiltrates the soil and is stored either temporarily or permanently in underground layers of soil. When the soil becomes completely soaked or saturated with water or the rate of rainfall exceeds the infiltration capacity of the soil, the rainwater begins to flow on the surface of land to low lying areas, ditches, channels, streams, and rivers. Rainwater that flows off of a site is defined as storm water runoff. When a site is in a natural condition or is undeveloped, a larger percentage of rainwater infiltrates into the soil and a smaller percentage flows off the Project site as storm water runoff.

The infiltration and runoff process are altered when a site is developed with urban uses. Houses, buildings, roads, and parking lots introduce asphalt, concrete, and roofing materials to the landscape. These materials are relatively impervious, which means that they absorb less rainwater. As impervious surfaces are added to the ground conditions, the natural infiltration process is reduced. As a result, the volume and rate of storm water runoff increases. The increased volumes and rates of storm water runoff can result in flooding in some areas if adequate storm drainage facilities are not provided.

There are no rivers, streams, or water courses located on or immediately adjacent to the Project site. As such, there is no potential for the proposed Project to alter a water course, which could lead to on or offsite flooding. Drainage improvements associated with the Project site would be located on the Project site.

The proposed Project would require the installation of storm drainage infrastructure to ensure that storm waters properly drain from the Project site. The proposed utility plan includes an engineered network of storm drain lines. The storm drain line would drain into the City's existing storm drain system.

The City of Lathrop implements best management practices to the extent they are technologically achievable to prevent and reduce pollutants. Mitigation Measure HYDRO-1 will require that the storm drainage plan be designed to ensure that post-project runoff is equal to or less than pre-project runoff. The storm drainage plan will require the construction of new storm water drainage facilities on the Project site; however, the construction of these facilities would not substantially alter the existing drainage pattern of the area, or alter the course of a stream or river. Implementation of the proposed Project with the following mitigation measures would have a ***less-than-significant*** impact relative to this environmental topic.

Mitigation Measure(s)

Mitigation Measure HYDRO-1*: Prior to the issuance of a building or grading permit, the Project applicant shall submit a drainage plan to the City of Lathrop for review and approval. The plan shall include an engineered storm drainage plan that demonstrates attainment of pre-project runoff requirements and describe the volume reduction measures and treatment controls used to reach attainment consistent with the Lathrop Storm Drainage Master Plan.*

Mitigation Measure HYDRO-2*: The Project applicant shall implement the following nonstructural BMPs that focus on preventing pollutants from entering stormwater:*

- *Pollution Prevention/Good Housekeeping*
    - *Prior to clearing, grading, and disturbances to the ground such as stockpiling, or excavation in each phase of the project, the Project applicant shall develop a spill response and prevention plan as a component of (1) SWPPPs prepared for construction activities, (2) SWPPPs for facilities subject to the NPDES Stormwater Permit, and (3) spill prevention control and countermeasure plans for qualifying facilities. The spill response and prevention plan shall be implemented during all construction activities.*
- *Operation and Maintenance (O&M) of Treatment Controls*
    - *Prior to clearing, grading, and disturbances to the ground such as stockpiling, or excavation in each phase of the project, the Project applicant shall develop an Operation and Maintenance (O&M) Plan for the storm drainage facilities to ensure long-term performance. The O&M plan shall incorporate the manufacturers' recommended maintenance procedures and include (1) provisions for debris removal, (2) guidance for addressing public health or safety issues, and (3) methods and criteria for assessing the efficacy of the storm drainage system. An annual report shall be submitted to the City certifying that maintenance of the facilities was conducted according to the O&M plan.*

Response d): According to the FEMA FIRM maps, the Project is located in an area protected from the 100-year flood by levees, but is within the USACE 200-year floodplain. (see Figure 10 for the Flood Hazard Map). In 2007, the State of California passed a series of laws referred to as Senate Bill (SB) 5 directing the Department of Water Resources (DWR) to prepare flood maps for the Central Valley flood system and the State Plan of Flood Control, which includes a system of levees and flood control facilities located in the Central Valley. This legislation also set specific locations

within the area affected by the 200-year flood event as the urban level of flood protection (ULOP) for the Central Valley. However, with implementation of Mitigation Measure HAZ-1 (see *Section IX: Hazards and Hazardous Materials*), flooding would not risk a significant release of pollutants due to project inundation.

Separately, the entire Project site is located within a dam inundation area for the New Melones Dam and the San Luis Dam (see Figure 11 for the dam inundation areas located within and near to the Project site). Dam failure is generally a result of structural instability caused by improper design or construction, instability resulting from seismic shaking, or overtopping and erosion of the dam. Larger dams that are higher than 25 feet or with storage capacities over 50 acre-feet of water are regulated by the California Dam Safety Act, which is implemented by the California Department of Water Resources, Division of Safety of Dams (DSD). The DSD is responsible for inspecting and monitoring these dams. The Act also requires that dam owners submit to the California Office of Emergency Services inundation maps for dams that would cause significant loss of life or personal injury as a result of dam failure. The County Office of Emergency Services is responsible for developing and implementing a Dam Failure Plan that designates evacuation plans, the direction of floodwaters, and provides emergency information.

Regular inspection by DSD and maintenance by the dam owners ensure that the dams are kept in safe operating condition. As such, failure of these dams is considered to have an extremely low probability of occurring and is not considered to be a reasonably foreseeable event.

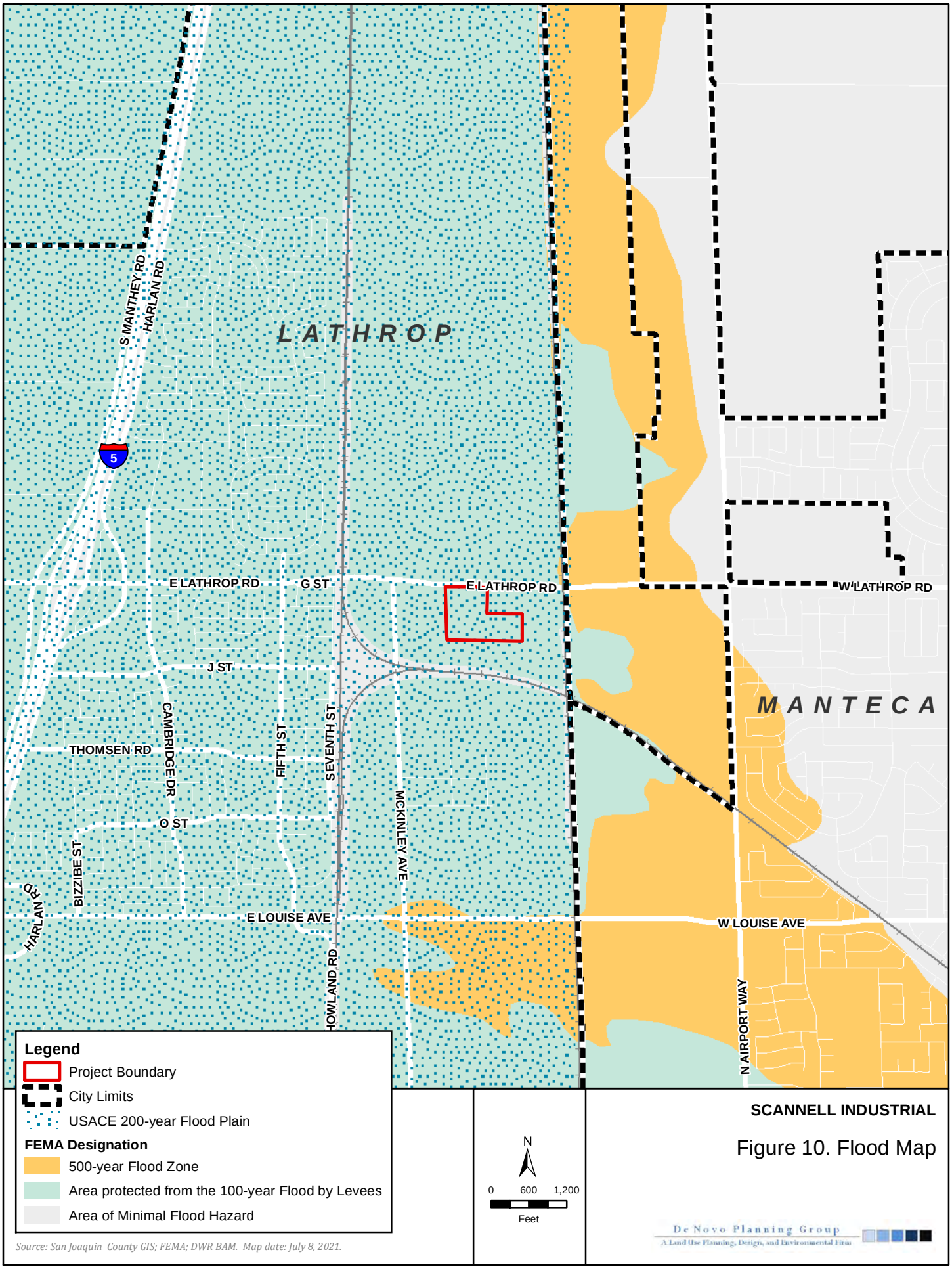
The proposed Project would not expose people or structures to a significant risk of loss, injury or death involving flooding as a result of the failure of a levee or dam.

The Project site is not anticipated to be inundated by a tsunami because it is located at an elevation of 23 to 28 feet above sea level and is approximately 60 miles away from the Pacific Ocean which is the closest ocean waterbody.

The Project site is not anticipated to be inundated by a seiche because it is not located in close proximity to a water body capable of creating a seiche.

Implementation of the proposed Project would have a ***less than significant*** impact relative to flood hazards, seiches, and tsunamis.

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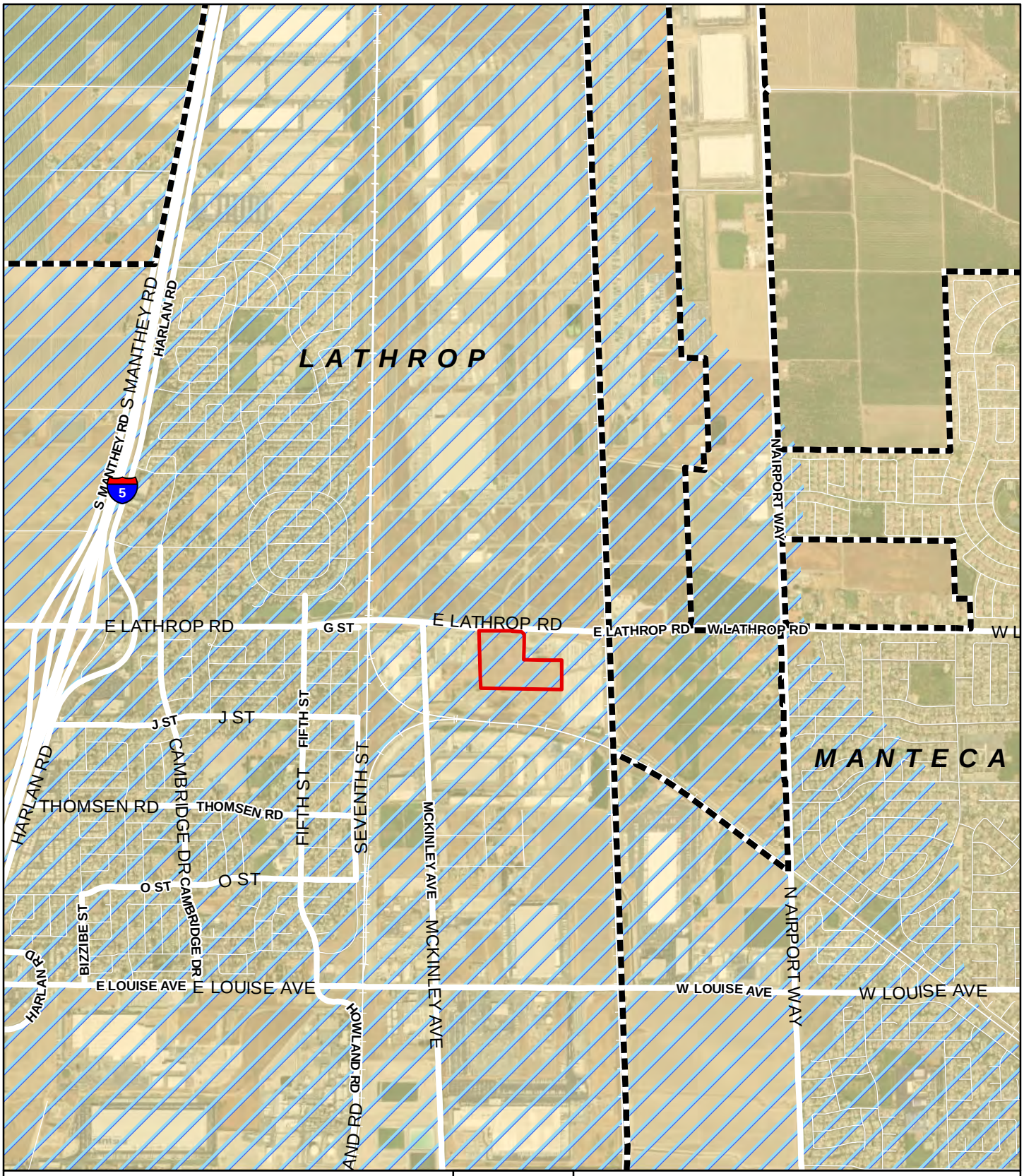
Source: San Joaquin County GIS; FEMA; DWR BAM. Map date: July 8, 2021.

SCANNELL INDUSTRIAL

Figure 10. Flood Map

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Legend

- Project Boundary
- City Limits
- New Melones Dam Inundation Area
- San Luis Dam Inundation Area

N

0 600 1,200

Feet

Source: San Joaquin County GIS; OES. Map date: July 9, 2021.

SCANNELL INDUSTRIAL

Figure 11. Dam Inundation Map

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XI. LAND USE AND PLANNING

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Physically divide an established community?			X	
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?			X	

Responses to Checklist Questions

Response a): The project site is located within the Lathrop City limits and is adjacent primarily to existing urban and agricultural uses. The proposed project would not physically divide an established community. Implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

Response b): The key planning documents that are directly related to, or that establish a framework within which the proposed project must be consistent, include:

- City of Lathrop General Plan; and
- City of Lathrop Zoning Ordinance.

The project site is designated Service Commercial (SC) by the Lathrop General Plan. The Project would require a General Plan Amendment (GPA) to amend the Project site to the General Industrial (GI) land use. According to the Comprehensive General Plan for the City of Lathrop, General Industrial uses are intended to provide opportunities for large-scale industries requiring substantial acreage, with access to rail and freeway facilities.

The project site is zoned Commercial Service (CS) for the City of Lathrop Zoning Map. The Project would require a rezone to the General Industrial (IG) zoning designation. The purpose of the IG zoning designation is to provide for a full range of manufacturing, industrial processing, general service, and distribution uses.

The proposed project is supportive to the utility demands for the proposed use. The GPA and rezone required as part of the proposed Project would not cause any environmental impacts beyond those impacts disclosed elsewhere within this IS/MND. In addition, the proposed Project would be required to comply with all goals, policies, or implementing actions contained within the General Plan (such as public safety and traffic circulation issues, as addressed in further detail in Section XVII. Transportation of this IS/MND). Therefore, impacts to land use compatibility would be ***less than significant***.

XII. MINERAL RESOURCES

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*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?			X	
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?			X	

Existing Setting

The California Geological Survey identifies areas that contain or that could contain significant mineral resources so as to provide context for local agency land use decisions and to protect availability of known mineral resources. Classifications ranging from Mineral Resource Zone (MRZ) -1 to MRZ-4 are based on knowledge of a resource's presence and the quality of the resource. No mineral extraction operations are known to exist in or adjacent to the project site. The project site is within MRZ-1, as delineated by the Mineral Resources and Mineral Hazards Mapping Program (MRMHMP) (California Department of Conservation, 2012). MRZ-1 is defined by the MRMHMP as being in areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.

Responses to Checklist Questions

Responses a), b): As noted above, the project site is located within MRZ-1. The proposed project activities would not result in substantial subsurface excavation and would not preclude future exploration for, and extraction of, mineral resources since the proposed use would be decommissioned in the long-term. Therefore, the project would not result in the loss of an available known mineral resources nor result in the loss of availability of locally-important mineral resource recovery sites delineated in a local general plan, specific plan, or other land use plan. Additionally, there are no oil and gas extraction wells within or near the property. Therefore, the impact is ***less than significant*** to this environmental topic.

XIII. NOISE

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*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?		X		
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	
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?				X

Fundamentals of Acoustics: Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large range of numbers. The decibel (dB) scale is used to facilitate graphical visualization of large ranges of numbers. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a graphically practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels and are expressed in units of dBA, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound power levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The Leq is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10-decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is similar to L_{dn}, but includes a +5 dBA penalty for evening noise. Typically, CNEL and L_{dn} values are within 0.5 dBA of each other and are often considered to be synonymous. Table NOISE-1 lists several examples of the noise levels associated with common situations.

Table NOISE-1: Typical Noise Levels

Common Outdoor Activities	*Noise Level (dBA)*	*Common Indoor Activities*
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office
Quiet Urban Nighttime	--40--	Theater, Large Conference Room
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. NOVEMBER 2009.

Effects of Noise on People: The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dBA per doubling of distance from the source, depending on environmental conditions (i.e., atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

Responses to Checklist Questions

Response a): The proposed Project has the potential to generate an increase in temporary ambient noise from project construction activities, and an increase in permanent ambient noise during project operation.

Construction Noise: The proposed Project could result in temporary or periodic increases in ambient noise levels in the project vicinity above levels existing conditions. Table NOISE-2, below, provides a list of the types of equipment which may be associated with construction activities and the associated noise levels.

Table NOISE-2: Construction Equipment Noise

Type of Equipment	*Predicted Noise Levels, L_{max} dB*				*Distances to Noise Contours, feet*	
	Noise Level at 50'	*Noise Level at 100'*	*Noise Level at 200'*	*Noise Level at 400'*	*70 dB L_{max} contour*	*65 dB L_{max} contour*
Backhoe	78	72	66	60	126	223
Compactor	83	77	71	65	223	397
Compressor (air)	78	72	66	60	126	223
Concrete Saw	90	84	78	72	500	889
Dozer	82	76	70	64	199	354
Dump Truck	76	70	64	58	100	177
Excavator	81	75	69	63	177	315
Generator	81	75	69	63	177	315
Jackhammer	89	83	77	71	446	792
Pneumatic Tools	85	79	73	67	281	500

SOURCE: ROADWAY CONSTRUCTION NOISE MODEL USER'S GUIDE. FEDERAL HIGHWAY ADMINISTRATION. FHWA-HEP-05-054. JANUARY 2006.

In order for noise impacts created by construction of the proposed Project to be considered potentially significant, the construction noise level would need to either increase noise levels by 10 dB or more where the without project noise level is less than the 60-dB Ldn residential standard, or increase noise levels by 5 dB or more where the without project noise level is greater than the 60-dB Ldn residential standard.

Activities involved in project construction would typically generate maximum noise levels ranging from 76 to 89 dB at a distance of 50 feet. Nevertheless, the proposed Project would be required to implement Mitigation Measure NOI-1, which requires the Project applicant to follow strict noise attenuation requirements. Specifically, Mitigation Measure NOI-1 requires the contractor to implement various sound control measures, including limitation of construction hours, and using noise attenuation devices on heavy equipment.

Ultimately, construction related noise is temporary and with implementation of Mitigation Measure NOI-1, impacts from construction noise are considered ***less than significant***.

Operational Noise: Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local planning criteria or ordinances, or substantially increase noise levels at noise-sensitive land uses.

The proposed Project would not directly generate increased noise beyond typical noise levels found at self-storage projects of the kind developed by the proposed Project. The proposed Project would generate noise from the generation of new passenger and truck vehicle trips.

However, in order for noise impacts created by roadway noise to be considered potentially significant, noise generated by the proposed Project would need to either increase noise levels by 10 dB or more, where the noise level without the proposed Project is less than the 60-dB Ldn residential standard, or increase noise levels by 5 dB or more where the noise level without the

proposed Project is greater than the 60-dB Ldn residential standard. Given the substantial distance from the Project site to the nearest sensitive receptors, this is not anticipated to occur.

Therefore, operation traffic noise associated with the proposed Project would result in a **less than significant** impact generated from project-related traffic noise.

Conclusion

The proposed Project is not anticipated to generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project site in excess of the applicable standards. Nevertheless, the proposed Project would be required to implement the following mitigation measures, which would provide for additional construction-related noise attenuation requirements. With implementation of Mitigation Measure NOI-1 and NOI-2, this is a ***less than significant*** impact.

Mitigation Measure(s)

Mitigation Measure NOI-1*: During project construction activities, the applicant shall require its construction contractors to adhere to the following noise attenuation requirements:*

- *Construction activities shall be limited to the hours between 7 a.m. to 8 p.m. daily. The City of Lathrop Director of Public Works shall have the discretion to permit construction activities to occur outside of allowable hours if compelling circumstances warrant such an exception (e.g., weather conditions necessary to pour concrete).*
- *All construction equipment shall use noise-reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer. If no noise-reduction features were installed by the manufacturer, then the contractor shall require that at least a muffler be installed on the equipment.*
- *Construction staging and heavy equipment maintenance activities shall be performed on the northernmost part of the Project site (along Atherton Road) to create the greatest separation from the nearest residence, unless safety or technical factors take precedence (e.g., an equipment breakdown). Alternatively, staging and maintenance could be performed on adjacent vacant parcels so long as the separation to the nearest residence is greater than what could be achieved on the Project site.*

Response b): Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

Human and structural response to different vibration levels is influenced by several factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table NOISE-3 indicates that the threshold for damage to structures

ranges from 0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v). One-half this minimum threshold or 0.1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

The primary vibration-generating activities associated with the proposed Project would occur during construction when activities such as grading, utilities placement, and roadway construction occur. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located adjacent to the Project site. However, there is an existing sound wall that surrounds the Project site along its western and southern boundary, thereby blocking a large amount of noise and vibration on the nearby residences that would occur during construction activities. Moreover, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table NOISE-4 shows the typical vibration levels produced by construction equipment.

Table NOISE-3: Effects of Vibration on People and Buildings

Peak Particle Velocity		***Human Reaction***	***Effect on Buildings***
mm/sec.	***in./sec.***		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.

SOURCE: CALTRANS. TRANSPORTATION RELATED EARTHBORN VIBRATIONS. TAV-02-01-R9601 FEBRUARY 20, 2002.

Table NOISE-4: Vibration Levels for Varying Construction Equipment

Type of Equipment	*Peak Particle Velocity @ 25 feet (inches/second)*	*Peak Particle Velocity @ 100 feet (inches/second)*
Large Bulldozer	0.089	0.011
Loaded Trucks	0.076	0.010
Small Bulldozer	0.003	0.000
Auger/drill Rigs	0.089	0.011
Jackhammer	0.035	0.004
Vibratory Hammer	0.070	0.009
Vibratory Compactor/roller	0.210	0.026

SOURCE: FEDERAL TRANSIT ADMINISTRATION, TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, MAY 2006

The Tables NOISE-3 and NOISE-4 data indicate that construction vibration levels anticipated for the proposed Project are less than the 0.25 in/sec p.p.v. threshold of damage to buildings but more than the 0.1 in/sec threshold of annoyance criteria at distances over 25 feet (specifically for vibratory compactors/rollers). However, there is an existing sound wall that surrounds the Project site along its western and southern boundary, thereby blocking a large amount of noise and vibration on the nearby residences that would occur during construction activities. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors.

Separately, operational levels of vibration are expected to be minimal, as the on-site operations and on- and off-site use of vehicles generated by the proposed Project are not known to be major sources of vibration. Any vibration generated by these sources on sensitive receptors would be far less than those generated by project construction activities nearby sensitive receptors during project construction. Therefore, operational vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors.

Therefore, implementation of the proposed Project would have a ***less than significant*** impact relative to this environmental topic.

Response c): The Project site is not located within the vicinity of 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. The closest airport or airstrip is the Stockton Metropolitan Airport, located approximately 7 miles north of the Project site. Because of distance, the Project site is not adversely impacted by aviation noise. The proposed Project would, therefore, not expose people residing or working in the vicinity of the Project site to excessive noise levels associated with such airport facilities. The Project site is not located within the vicinity of a private airstrip. Implementation of the proposed Project would have ***no impact*** relative to this topic.

XIV. POPULATION AND HOUSING

Would the project:	***Potentially Significant Impact***	***Less Than Significant with Mitigation Incorporation***	***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)?				X
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

Responses to Checklist Questions

Response a): The proposed Project is a warehouse project that is surrounded by light industrial, commercial, residential, and agricultural uses. The project would develop 191,160± square feet (SF) of industrial warehouse uses, with adequate parking, loading areas, and a stormwater retention/infiltration basin. The installation of new infrastructure would be limited to the internal project site. The sizing of the infrastructure would be specific to the size of the proposed project building and the number and type of vehicles that would travel to and from the project site. Implementation of the proposed project would not induce substantial population growth in an area, either directly or indirectly. Although the proposed project would create new jobs, which could create some population growth, it is anticipated that such new jobs would be for the existing labor force within Lathrop and the surrounding communities. Therefore, implementation of the proposed project would have ***no impact*** relative to this topic.

Response b): The project site is currently vacant and does not contain housing. The proposed project would not displace housing or people. Implementation of the proposed project would have ***no impact*** relative to this topic.

XV. PUBLIC SERVICES

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) 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:				
Fire protection?		X		
Police protection?			X	
Schools?			X	
Parks?			X	
Other public facilities?				X

Responses to Checklist Questions

Response a):

Fire Protection

The Project site is currently under the jurisdiction of the Lathrop-Manteca Fire Protection District. The Lathrop-Manteca Fire Protection District provides fire protection services for all lands within the City of Lathrop. The Fire Protection District receives about 1,000 calls per year. The Fire District responds, not only to fires of all types, but also medical emergencies, traffic accidents, and river rescues. The Fire District is an active member of the San Joaquin County Hazardous Materials Response Team. The Fire District is also part of the Urban Search and Rescue Team. The closest fire station to the Project site is the station located at 800 J. Street, in Lathrop.

Fire protection services would be required to serve the proposed project. The City of Lathrop General Plan Safety Policy 1 requires that "Ultimate expansion of the City's fire service is to include additional stations affording response within a maximum of 3-4 minutes to all parts of the urban area."

The City's Public Safety Element requires the expansion of fire service to meet identified response times. The City of Lathrop has a number of General Plan policies which assist in the establishment of fire protection. Safety Policy 1 establishes the fire response times and the potential need for additional fire stations. Safety Policy 2 establishes the fire flow standard. The proposed project will be required to meet this standard. This will include review of all plans by the respective fire districts.

Fire sprinklers are required by the California Fire Code and will be incorporated into the proposed project. Additionally, the project site includes a total ten fire hydrants to serve all three buildings as required by current city standards. For Parcel 1 (Building 1), two will be located along Lathrop Road and one in the rear of the property. For Parcel 2 (Building 2), two will be located along the northern portion of the property and one in the rear of the property. For Parcel 3 (Building 3), one will be located in the northern portion of the property and two will be located in the rear of the property.

Impact fees from new development are collected based upon projected impacts from each development. The adequacy of impact fees is reviewed on an annual basis to ensure that the fee is commensurate with the service. Payment of applicable impact fees by new development, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the proposed Project, would fund capital and labor costs associated with fire protection services. Payment of such fees is adequate to ensure that the proposed Project would not result in any CEQA impacts related to this topic, including the potential for the proposed Project to cause substantial adverse physical impact associated with the provision of new or physically alternated governmental services, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts. Therefore, with implementation of Mitigation Measure PSU-1, the impact of the proposed Project on the need for additional fire services facilities is ***less than significant***.

Mitigation Measure(s)

Mitigation Measure PSU-1*: Prior to issuance of building permits for any project uses, the Project applicant shall provide the City of Lathrop with all applicable fire protection development fees in accordance with the latest adopted fee schedule.*

Police Protection

Police protection services would be provided by the City of Lathrop Police Services (LPS), which contracts with the San Joaquin County Sheriff's Department for police protection services. LPS acts as a division of the Sheriff's Department, with those deputies assigned to the City only working in the City limits and receiving specialized training reflective of the needs of an incorporated city. LPS is currently located at 7000 Michael Canlis Boulevard French Camp, CA 95231 and will be transitioning to the new police station currently under construction located at 940 River Islands Parkway in the spring of 2020. Lathrop Police Services is staffed 24 hours a day in a series of 3 patrol shifts with a minimum of 2 patrol officers per shift. Minimum staffing levels are set at 6 officers per day. Lathrop Police Services has 26 sworn officers, including 1 captain serving as police chief, 1 lieutenant, 3 sergeants, 1 detective, 20 deputy sheriffs and 3 civilian staff. If needed, additional assistance can be summoned under a mutual aid agreement with surrounding cities and the County. Existing police staffing levels in the City are approximately 1.31 per 1,000 residents. The current city-wide priority 1 average response time is 4 minutes. Priority 1 calls are where a threat is posed to life or a crime of violence.

Existing police staffing levels in the City are approximately 1.31 per 1,000 residents; therefore, the current staffing level does not meet the City's adopted police LOS ratio. In order to meet the City's adopted level of service, approximately four additional sworn officers would need to be added. There would continue to be a deficit of 4 sworn officers regardless of the proposed project. This deficit is not a direct or indirect impact of the proposed project, nor does it result in a physical environmental impact. Rather, police protection service is evaluated and addressed annually on a city-wide level by the Lathrop City Council and Lathrop Police Department. The City Council adopts an annual budget allocating resources to police protection services, which effectively establishes the service ratio for that particular year. The annual budget is based on community needs and available resources as determined by the City Council and the Police Department.

The City plans to contract for additional officers to attain a 1.5 officer-per-1,000-residents ratio, as directed by the City Council. It is anticipated that a total of 30 sworn officers would meet this standard, requiring four additional officers to meet the current population estimate.

Impact fees from new development are collected based upon projected impacts from each applicable development. The adequacy of impact fees is reviewed on an annual basis to ensure that the fee is commensurate with the service. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the proposed Project, would fund capital and labor costs associated with police services. Payment of such fees is adequate to ensure that the proposed Project would not result in any CEQA impacts related to this topic, including the potential for the proposed Project to cause substantial adverse physical impact associated with the provision of new or physically alternated governmental services, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts.

Based on the current adequacy of existing response times and the ability of the Lathrop Police Department to serve the Project, it is anticipated that the existing police department facilities are sufficient to serve the proposed Project. Consequently, any impacts would be ***less than significant***.

Schools

The proposed Project does not include any residential units, and therefore would not directly increase the student population in the area.

The provisions of State law are considered full and complete mitigation for the purposes of analysis under CEQA for school construction needed to serve new development. In fact, State law expressly precludes the City from reaching a conclusion under CEQA that payment of the Leroy F. Greene School Facilities Act school impact fees would not completely mitigate new development impacts on school facilities. Consequently, the City of Lathrop is without the legal authority under CEQA to impose any fee, condition, or other exaction on the proposed Project for the funding of new school construction other than the fees allowed by the Leroy F. Greene School Facilities Act. Additionally, local agencies are prohibited from using the inadequacy of school facilities as a basis for denying or conditioning approvals. Because the proposed Project would pay fees as required by The Leroy F. Greene School Facilities Act, this impact would be ***less than significant***.

Parks

CEQA requires that the proposed Project is analyzed to determine whether any substantial adverse impacts would be associated with any new or physically altered governmental facilities that may be required to serve the proposed Project (in this case, for park and recreation facilities). The proposed Project directly increases the number of persons in the area as a result of an increase in employment potential. The proposed Project does not include any residential units.

The proposed Project does not include the construction of residential uses, does not directly increase the need for additional parks. Implementation of the proposed Project would have a **no impact** relative to this topic.

Other Public Facilities

The proposed Project would not result in a need for other public facilities that are not addressed above, or in Section XVIII, Utilities and Service Systems. Implementation of the proposed Project would have ***no impact*** relative to this issue.

XVI. RECREATION

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*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?			X	
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?				X

Responses to Checklist Questions

Responses a): The proposed project is a warehouse project that is surrounded by light industrial, commercial, residential, and agricultural uses. However, as identified under *Impact XV. Public Services*, the proposed project does not include the construction of residential uses, and therefore does not generate additional direct demand on park services. Thus, the potential impact would be reduced to a ***less than significant*** level.

Responses b): The proposed project does not include the construction of recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. Implementation of the proposed project would have ***no impact*** relative to this topic.

XVII. TRANSPORTATION

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*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?			X	
b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d) Result in inadequate emergency access?			X	

Background

The VMT Analysis (August 2021) and a Transportation Analysis (September 2021) was prepared by Fehr & Peers for the proposed Project. The following discussion relies on the information contained within these reports (see Appendix F).

Applicable Policies and Significance Criteria

Senate Bill 743

SB 743, which became effective statewide in July 2020, resulted in several statewide changes to the evaluation of transportation and traffic impacts under CEQA. It directed the California Office of Planning and Research (OPR) to amend the CEQA Guidelines to establish new metrics for determining the significance of transportation impacts of projects within transit priority areas (TPAs) and allowed OPR to extend use of the new metrics beyond TPAs. The California Natural Resources Agency certified and adopted the amended CEQA Guidelines in December 2018. In the amended CEQA Guidelines, OPR selected VMT as the preferred transportation impact metric. The amended CEQA Guidelines state that "generally, VMT is the most appropriate measure of transportation impacts".

SB 743 added section 21099 to the Public Resources Code, which states that automobile delay, as described by LOS or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment upon certification of the CEQA Guidelines by the Natural Resources Agency.

To aid in SB 743 implementation, in December 2018, OPR released its Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory). The Technical Advisory provides advice and recommendations to CEQA lead agencies on how to implement the SB 743 changes. This includes technical recommendations regarding the assessment of VMT, thresholds of significance, VMT mitigation measures, and screening thresholds for certain land use projects. Lead agencies may consider and use these recommendations at their discretion and with the provision of substantial evidence to support alternative approaches.

City of Lathrop Summary for SB 743 Implementation

On September 14, 2020, the City of Lathrop adopted thresholds of significance and screening criteria for the purpose of analyzing transportation impacts under CEQA related to vehicle miles traveled consistent with SB 743 and OPR's *Technical Advisory*. Attachment 2 (*Summary for SB 743 Implementation)* of the resolution summarizes metrics, screening criteria, methodology, thresholds of significance, and mitigation options, which were used to evaluate VMT for the proposed project.

Metrics and Thresholds

The *Summary for SB 743 Implementation* identifies two primary metrics for measuring VMT – project-generated VMT and project's effect on VMT. Project-generated VMT measures the amount of VMT generated by the project, while the project's effect on VMT compares all VMT on roadways within the model with and without the project to evaluate if the project would result in an overall increase in VMT model-wide.

For the proposed project, home-based work VMT per industrial employee is the efficiency metric used to evaluate project-generated VMT.

OPR's *Technical Advisory* and the City of Lathrop *Summary for SB 743 Implementation* do not specifically identify thresholds for industrial development projects. Therefore, this analysis assumes the proposed project would result in a significant impact if:

- The proposed project would generate home-based work VMT per industrial employee that is greater than the existing or cumulative citywide average home-based work VMT for industrial developments per industrial employee.

The above thresholds recognizes that industrial uses are typically preferred to be placed in locations that are less dense, which preserves land in more dense areas for high density residential and commercial/office uses. Industrial land uses are often land intensive; therefore, placing industrial land uses in less urban areas characterized by having higher VMT per employee allows land in efficient VMT areas to be more effectively utilized and can help achieve an overall reduction in VMT. Therefore, so long as the project does not exceed the citywide average home-based work VMT for industrial development per industrial employee, it can be concluded that the project is consistent with achieving an overall reduction in regional VMT.

Methodology

The *Summary for SB 743 Implementation* indicates potential impacts could be assessed based on both efficiency metrics and/or the project's effect on VMT. This analysis uses the efficiency metric previously described to determine if the project would result in a significant impact.

The City of Lathrop Travel Demand Model (TDM), which is a modified version of the San Joaquin Council of Governments TDM, was used to evaluate project-generated VMT as the model was recently updated to include detailed land use and transportation inputs in the Cities of Lathrop, Manteca, and Ripon. Consistent with guidance contained in the *Technical Advisory*, VMT reported by the model has been adjusted to account for trips (and VMT) that extend beyond the model boundaries (e.g., commute to the Bay Area). Both the Base Year (2020) and Cumulative Year (2040) versions of the model were used to evaluate project-generated VMT for the proposed project under existing and cumulative conditions.

First, the Base Year (2020) TDM was used to calculate the existing (baseline) citywide average home-based work VMT of 38.9 miles per industrial employee for industrial developments in the

City. The Base Year TDM was then updated to include the proposed industrial development project and used to estimate the proposed project's home-based work VMT per industrial employee.

Second, the Cumulative Year (2040) TDM was used to calculate the cumulative citywide average home-based work VMT of 39.0 miles per industrial employee for industrial developments in the City. The Cumulative Year TDM was then updated to include the proposed industrial development project and used to estimate the proposed project's home-based work VMT per industrial employee.

Additionally, because the proposed project includes a General Plan Amendment and Rezone from Service Commercial to Industrial, trip generation rates published in the *Trip Generation Manual 10th Edition Supplement (Institute of Transportation Engineers, 2020)* are used to discuss how the General Plan Amendment and Rezone may result in an overall increase or decrease in daily trips generated by the property, which can qualitatively be used to describe if the project could result in an increase or decrease in VMT due to the land use designation change.

Responses to Checklist Questions
Responses a-b):

Project -Generated VMT

To evaluate project-generated VMT, the proposed project was added to the Base Year (2020) and Cumulative Year (2040) TDMs to determine the proposed project's home-based work VMT per industrial employee. Table TR-1 displays the existing and cumulative citywide average home-based work VMT for industrial developments per industrial employee, and the proposed project's home-based work VMT per industrial employee under existing and cumulative conditions.

Table TR-1 – VMT Analysis - Project-Generated VMT

Scenario	Home-Based Work VMT per Industrial Employee
Existing – Citywide Average	38.9
Existing - Proposed Project	37.2
Cumulative – Citywide Average	39.0
Cumulative - Proposed Project	36.8

Notes: The City of Lathrop Base Year (2020) TDM was used to estimate Existing Citywide Average VMT and Existing Proposed Project VMT. The Cumulative Year (2040) TDM was used to estimate Cumulative Citywide Average VMT and Cumulative Proposed Project VMT.
Source: Fehr & Peers, 2021.

As displayed in Table TR-1, the proposed project is anticipated to generate 37.2 home-based work VMT per industrial employee under existing conditions and 36.8 under cumulative conditions, which is less than the citywide average home-based work VMT for industrial developments per industrial employee under existing and cumulative conditions.

Because the proposed project would not exceed the existing or cumulative citywide average home-based work VMT for industrial developments per industrial employee, the proposed project-generated VMT would not result in a significant transportation impact.

Project Trip Generation

Project trips were estimated by Fehr & Peers using trip rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual 10th Edition Supplement (2020)*. The 10th Edition Supplement provides trip rates for multiple industrial land uses. Because a specific tenant has not yet been identified, a blended trip rate based on the potential land uses was used to calculated daily, AM and PM peak hour trips. The following ITE land use categories are applicable to the proposed project and were used to develop the blended rate.

- Industrial Park (ITE 130) – An industrial park contains a number of industrial or related facilities and is characterized by a mix of manufacturing, service, and warehouse facilities with a wide variation in the proportion of each type of use from one location to another.
- Warehousing (ITE 150) – A warehouse is primarily devoted to the storage of materials, but it may also include office and maintenance areas.
- High-Cube Transload and Short-Term Storage Warehouse (ITE 154) – A high-cube warehouse is a building that typically has at least 200,000 gross square feet of floor area, has a ceiling height of 24 feet or more, and is used primarily for the storage and/or consolidation of manufactured goods prior to their distribution to retail locations or other warehouses. Transload facilities have a primary function of consolidation and distribution of pallet loads for manufacturers, wholesalers, or retailers. Short-term facilities are high-efficiency distribution facilities used for movement of large volumes of freight with only short-term storage of products.
- High-Cube Fulfillment Center Warehouse (ITE 155) – A high-cube fulfillment center is similar to a high-cube transload or short-term storage warehouse but is different in that it is typically used for a significant storage function and direct distribution of ecommerce product to end users. These facilities typically handle smaller packages and quantities than other types of high-cube warehouses.

In addition to total vehicle trips, the 10th Edition Supplement provides heavy vehicle trip rates. Similar to the total vehicle trip generation, a blended trip generation rate for heavy vehicles was used. Table TR-2 displays the trip generation for the Proposed Project.

Table TR-1 – VMT Analysis - Project-Generated VMT

Land Use	Quantity (ksf)	Trip Type	Daily	AM Peak			PM Peak		
				In	Out	Total	In	Out	Total
Industrial/Warehouse (ITE 130, 150, 154, 155)	191.2	Passenger Vehicle	320	27	5	32	10	26	36
		Heavy Vehicle	78	3	3	6	2	2	4
		Total	**398**	**30**	**8**	**38**	**12**	**28**	**40**

Source: Fehr & Peers, 2021

Trip Generation Comparison

Trip generation rates published in the *Trip Generation Manual 10th Edition Supplement* (Institute of Transportation Engineers, 2020) were used to calculate the daily trip generation of the existing Service Commercial and proposed General Industrial land use designations. It is important to note that warehousing is a permitted use under the Service Commercial designation. However, a specific tenant has not been identified for the proposed project and therefore, the developer is requesting the General Plan Amendment and Rezone to provide flexibility in the event a light industrial or manufacturing type tenant are interested in occupying one or more of the buildings.

Table TR-2 displays the daily trip generation rates per thousand square feet of space for various land uses that could be developed on the site under each General Plan land use designation.

Table TR-2 – Trip Generation Comparison

General Plan Land Use Designation	ITE Code	ITE Category	Daily Trip Rate per KSF
Service Commercial	820	Shopping Center	37.75
	934	Drive Through Restaurant	470.95
	943	Auto Parts and Service Center	16.28
	840	Auto Sales (New)	27.84
	710	Office	9.74
	150	Warehousing	1.74
General Industrial	110	General Light Industrial	4.96
	130	Industrial Park	3.37
	140	Manufacturing	3.93
	151	Mini Storage	1.51

Notes: Trip rates identified are published in *Trip Generation Manual 10th Edition Supplement* (Institute of Transportation Engineers, 2020).
Source: Fehr & Peers, 2021

As displayed in Table TR-2, uses permitted under the General Industrial land use designation typically generate fewer daily trips per thousand square feet of building space than uses permitted under the Service Commercial land use designation. Therefore, it can qualitatively be concluded that the General Plan Amendment and rezone required as part of the Project would result in fewer vehicle trips being generated by the property. Therefore, the proposed project would result in a ***less than significant*** impact relative to this topic.

Responses c), d): No site circulation or access issues have been identified that would cause a traffic safety problem/hazard or any unusual traffic congestion or delay. The volumes on the internal roadways and drive aisles would be relatively low such that no significant conflicts would be expected with through traffic on the nearby roadways, including along Lathrop Road.

According to the Project Applicant, the Project would include two vehicular access points for cars, trucks, and emergency vehicles, as follows:

- Access Point #1 (Lathrop Road): the access point is located at the northwest corner of the Project site connecting to Lathrop Road. With the access point being on the west side of

the property it maximizes the spacing between the other existing driveways and intersections along Lathrop Road. The access point will allow right-in/right turn movements only since left turn movements are prohibited by the existing raised center median in Lathrop Road. Lathrop Road consists of two travel lanes plus a shoulder. Vehicles entering the Project site at this access point from Lathrop Road can utilize the right lane while other vehicles can continue through in the left lane consistent with how access works for the existing development to the west.

- Access Point #2 (D Street): the access point is located near the northeast corner of the Project site connecting to Street D. With the access point being at the south end of Street D it maximizes the distance from Lathrop Road therefore allowing the maximum amount of queuing possible if/when needed. The access point connects the Project to the existing D Street/Lathrop Road intersection which allows turn movements in all directions including an existing westbound turn pocket that vehicles entering the Project site may utilize.

All emergency vehicles arriving to and from the proposed Project would be able to enter via Lathrop Road and Access Point #2 (D Street). All accesses would be designed to City standards that accommodate turning requirements for fire trucks. These multiple entry/exit points provide flexibility for emergency vehicles to access or evacuate from multiple directions during an emergency. The access points would be designed for vehicle and pedestrian safety based on City standards taking into account the swept path of the vehicles, sidewalks with curb ramps, site distance, and any other relevant City standards.

At the proposed Project entrances, there are no safety, capacity, or sight distance issues. The Project would not substantially increase hazards due to a geometric design or incompatible uses, or result in inadequate emergency access. Therefore, the proposed Project would have **a *less than significant*** impact related to this topic.

XVIII. TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) 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:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?		X		
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American tribe.		X		

Responses to Checklist Questions

Responses a), b): AB 52 Tribal Consultation is a requirement by which public agencies are required to consult with California Native American tribes that are traditionally and culturally affiliated with the geographic area of a proposed Project that is subject to CEQA, if the tribes request formal notification and subsequently consultation.

In order to participate in AB 52 tribal consultation, a tribe must specifically request, in writing, to be notified by lead agencies through formal notification of proposed Projects in the geographic area with which the tribe is traditionally and culturally affiliated. The City of Lathrop has sent letters to each of the tribes that had previously requested notification.

Additionally, SB 18 requires local governments to consult with tribes prior to making certain planning decisions and to provide notice to tribes at certain key points in the planning process. These consultation and notice requirements apply to adoption and amendment of both general plans (defined in Government Code §65300 et seq.) and specific plans (defined in Government Code §65450 et seq.).

The City of Lathrop mailed AB52 letters out on March 11, 2021 to Northern Valley Yokuts tribe, Buena Vista Rancheria and California Valley Miwok Tribe. The referral comment period ended on April 10, 2021 and the City did not receive any response/requests for consultation. In addition, the City mailed out SB18 letters on March 11, 2021 and March 17, 2021 to the Northern Valley Yokuts tribe (two contacts – Katherine Perez and Timothy Perez), Buena Vista Rancheria, California Valley Miwok, The Confederated Villages of Lisjan, and Tule River Indian Tribe. The 90-day consultation period ended on June 15, 2021.

No Tribal Cultural Resources (TCRs) have been documented in the Project site. Nevertheless, the Project site is located in a region where significant cultural resources have been recorded and there remains a potential that undocumented archaeological resources that may meet the TCR definition could be unearthed or otherwise discovered during ground-disturbing and

construction activities. Examples of significant archaeological discoveries that may meet the TCR definition would include villages and cemeteries. Due to the possible presence of undocumented TCRs within the Project site, construction-related impacts on tribal cultural resources would be potentially significant. With implementation of the following mitigation measure, the proposed Project would have a ***less than significant*** impact related to tribal cultural resources.

Mitigation Measures

Implement Mitigation Measures CUL-1, and CUL-2

XIX. UTILITIES AND SERVICE SYSTEMS

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Require or result in the relocation or construction of new or expanded water, wastewater or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
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 projects projected demand in addition to the providers existing commitments?			X	
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?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

Responses to Checklist Questions

Responses a)-c):

Water

It is anticipated that water supply for the proposed Project would be local groundwater and treated surface water from SSJID's SCWSP. Water distribution will be by an underground distribution system to be installed as per the City of Lathrop standards and specifications. The applicant for the proposed Project will provide their proportionate share of required funding to the City for the acquisition and delivery of treated potable water supplies to the proposed Project site through connection fees.

The City of Lathrop currently provides domestic water to its customers via a network of wells and transmission lines which draw groundwater and distribute throughout the City. The proposed project would be served by the City's existing water treatment facilities and would not require the construction of new water treatment facilities or expansion of existing water treatment facilities for potable water. The proposed project would require the construction of new potable water conveyance lines. Water service for the proposed annexation area would be connected to the existing water main on Lathrop Road.

The City's 2020 Urban Water Management Plan (UWMP) indicates that there are adequate water supplies to support existing demand in the City in addition to the proposed Project under average daily and maximum daily demand conditions. The proposed Project would not result in insufficient water supplies available to serve it from existing entitlements and resources. Therefore, a ***less than significant*** impact would occur related to water supply and water infrastructure.

Wastewater

Wastewater from the City is currently treated at the City's Lathrop Consolidated Treatment Facility (LCTF), and the Manteca-Lathrop Wastewater Quality Control Facility (WQCF). The City owns the LCTF, and 14.7 percent of the WQCF by contract. The City's Wastewater Collection Master Plan and Wastewater Treatment and Disposal Master Plan (prepared in 2000 and updated in 2004) and the 2006 Lathrop 5-year Plan are the primary documents that outline the City's long term strategy for meeting future discharge and capacity requirements for a planning horizon that extends to build-out.

Since the proposed project is located east of Interstate 5 and north of Louise Avenue in the City of Lathrop, wastewater generated by the proposed project would be conveyed to the Manteca-Lathrop WQCF. On October 8, 2009, the RWQCB adopted Waste Discharge Requirements Order No. R5-2009-0095 NPDES NO. CA0081558, prescribing waste discharge requirements for the City of Manteca Wastewater Quality Control Facility (WQCF) and allowing expansion of the plant up to 17.5 mgd.

The WQCF is a Publicly-Owned Domestic Wastewater Treatment Works. The Waste Discharge Requirements (WDRs) Order No. R5-2009-0095 NPDES NO. CA0081558 includes: Discharge Prohibitions, Effluent Limitations and Discharge Specifications, Receiving Water Limitations, Provisions, Compliance Determination, and Monitoring Requirements. This Order was approved on October 8, 2009.

The Manteca-Lathrop WQCF is currently in compliance with the WDR requirements of Order No. R5-2009-0095 NPDES NO. CA0081558. The Manteca-Lathrop WQCF wastewater treatment system options covered under this Order include: the collection system, basin/disposal fields, discharge to the San Joaquin River, and recycling conveyance and irrigation system. Wastewater generated by the proposed project would be treated by the Manteca-Lathrop WQCF consistent with the requirements of Order No. R5-2009-0095 NPDES NO. CA0081558 and the proposed project would not exceed the wastewater discharge requirements in this Order. The proposed project is anticipated to have a ***less than significant*** impact relative to this topic. The allocation of wastewater service capacity is discussed in the following impact topic.

The City's available capacity would ensure that there would not be a determination by the wastewater treatment and/or collection provider that there is inadequate capacity to serve the proposed Project's projected demand in addition to the provider's existing commitments. Additionally, any planned expansion to the WQCF with a subsequent allocation of capacity to the proposed Project would ensure that there would not be a determination by the wastewater treatment and/or collection provider that there is inadequate capacity to serve the proposed Project's projected demand in addition to the provider's existing commitments.

Because the Project applicant would pay City Capital Facility Fees (CFF) to develop the Project site, and adequate long-term wastewater treatment capacity is available to serve full build-out of the proposed Project, a ***less than significant*** impact would occur related to requiring or resulting

in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Responses d), e): Solid waste generated in the City is disposed at the Forward Landfill and Foothill Sanitary Landfills. Permitted maximum disposal at the Forward Landfill is 8,669 tons per day. The total permitted capacity of the landfill is 51.04 million cubic yards, which is expected to accommodate an operational life until January 1, 2020. The remaining capacity is 23.7 million cubic yards.

Permitted maximum disposal at Foothill Sanitary Landfill is 1,500 tons per day. The total permitted capacity of the landfill is 138 million cubic yards, which is expected to accommodate an operational life until December 31, 2082. The remaining capacity is 125 million cubic yards at this landfill.

The addition of the volume of solid waste associated with the proposed Project to the landfill would not exceed the landfills' remaining capacity.

The proposed project is a warehouse project. Based on CalRecycle waste generation estimates[2], the proposed project is estimated to generate 3.12 pounds of solid waste per 100 square feet per day. The proposed Project would develop approximately 191,160 square feet of warehouse uses. Therefore, the total solid waste that would be generated by the project is estimated to be 5,964 pounds per day, or 3.0 tons per day. The proposed project would be required to comply with applicable state and local requirements including those pertaining to solid waste, construction waste diversion, and recycling.

As described above, Foothill Sanitary Landfill is expected to have an operational life until December 31, 2082, and Forward Landfill is expected to have an operational life until January 1, 2020. The addition of the volume of solid waste associated with the proposed project, approximately 6.2 tons per day, would not exceed the landfills' remaining capacity. Existing landfills have permitted capacity to handle this additional waste. The proposed Project would not interfere with regulations related to solid waste, or generate waste in excess of the capacity of local infrastructure. The proposed Project would have a ***less than significant*** impact relative to this topic.

[2] See: http://www.calrecycle.ca.gov/wastechar/wastegenrates/Service.htm

XX. WILDFIRE

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?			X	
d) 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?			X	
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?			X	
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?			X	

Existing Setting

There are no State Responsibility Areas (SRAs) within the vicinity of the Lathrop Planning Area. In addition, there are no areas within the City of Lathrop that are categorized as a "Very High" Fire Hazard Severity Zone (FHSZ) by CalFire or a local agency. Although this CEQA topic only applies to areas within a SRA or Very High FHSZ, out of an abundance of caution, these checklist questions are analyzed below.

Responses to Checklist Questions

Response a): The project site will connect to the existing Lathrop Road. The proposed circulation improvements would allow for sufficient emergency access. The project site would provide adequate emergency vehicular access via driveway connections with adjoining roadways and an internal circulation network. All driveways and internal roadways would be designed to accommodate large emergency vehicles such as fire engines. These improvements would contribute to effective emergency response and evacuation, and they would promote efficient circulation in the project vicinity. Furthermore, the proposed project does not propose any permanent road closures, lane reductions, or other adverse circulation conditions that may adversely affect emergency response or evacuation in the project vicinity. Therefore, impacts from project implementation would be considered ***less than significant*** relative to this topic.

Response b): The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents) and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area to mass ratio and require less heat to reach the ignition point. San Joaquin County has areas with an abundance of flashy fuels (i.e. grassland) in the foothill areas of the eastern and western portion of the County. The project site is located in an area that is

predominately agricultural and urban, which is not considered at a significant risk of wildfire. Therefore, impacts from project implementation would be considered ***less than significant*** relative to this topic.

Response c): The proposed project would develop a warehouse project. The development of the proposed project exacerbate fire risks, nor would there be installation or maintenance of any other infrastructure associated with the project that would significantly exacerbate fire risk or result in temporary or ongoing impacts to the environment. Therefore, impacts from project implementation would be considered ***less than significant*** relative to this topic.

Response d): Landslides include rockfalls, deep slope failure, and shallow slope failure. Factors such as the geological conditions, drainage, slope, vegetation, and others directly affect the potential for landslides. One of the most common causes of landslides is construction activity that is associated with road building (i.e. cut and fill). The project site is relatively flat; therefore, the potential for a landslide, as a result of runoff, post-fire slope instability, or drainage changes, in the project site is essentially non-existent.

Therefore, impacts from proposed project implementation would be considered ***less than significant*** relative to this topic.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*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 or eliminate important examples of the major periods of California history or prehistory?			X	
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)?			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

Responses to Checklist Questions

Response a): This Initial Study includes an analysis of the project impacts associated with aesthetics, agricultural and forest resources, air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation and traffic, and utilities and service systems. The analysis covers a broad spectrum of topics relative to the potential for the proposed project to have environmental impacts. This includes the potential for the proposed project 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, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory. It was found that the proposed project would have either no impact, a less than significant impact, or a less than significant impact with the implementation of mitigation measures. For the reasons presented throughout this Initial Study, the proposed project would not 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, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory. With the implementation of mitigation measures presented in this Initial Study, the proposed project would have a ***less than significant*** impact relative to this topic.

Response b): In evaluating the cumulative effects of the project, Section 21100(e) of the *CEQA Guidelines* states that "previously approved land use documents including, but not limited to, general plans, specific plans, and local coastal plans, may be used in cumulative impact analysis."

The 2018 RTP/SCS analyzed the region's transportation system, future growth projections, and potential funding sources in order in order to develop a long-term framework for transportation improvements and maintenance. The RTP includes policies and regulations set forth to ensure development within the SJCOG regional area is within planned and forecast socioeconomic projections. As part of the RTP, SJCOG developed an SCS, which was required by Senate Bill 375, the Sustainable Communities Act of 2008. The SCS is intended to combine land use and transportation planning with the overall goal of reducing greenhouse gas emissions generated by vehicle travel.

As described in Section XVII. Transportation, under all conditions (including cumulative plus project conditions), the proposed project would not result in any impacts to the surrounding transportation network.

Although the potential exists for the proposed project to result in population growth through employment opportunities, the project is not expected to exceed growth projections or generate any increase in population that otherwise would not have been planned for in the City or by SCAG.

As discussed in Section III. Air Quality, construction and operation of the project would not generate criteria pollutants in excess of the SJVAPCD emissions thresholds. Therefore, the project would not contribute significantly to cumulative impacts for any air quality pollutants for which the region is in non-attainment. As for cumulative impacts to regional air quality, the discussion in Section III. Air Quality indicates the proposed project would not jeopardize the region's attainment of air quality standards. The SJVAPCD uses project-level significance thresholds to determine whether a project's emissions are cumulatively considerable. Because the project's emissions do not exceed the SJVAPCD's regional significance thresholds, as detailed in Section III. Air Quality, the SJVAPCD does not consider the project to contribute significantly to a cumulative air quality impact.

As detailed in Section XIII. Noise, for the cumulative conditions, a less than significant offsite noise impact from Master Plan-related vehicle traffic noise would occur along the study area roadways.

Finally, as detailed throughout Section XIX., Utilities and Service Systems, sufficient utility facilities and resources are available to serve the project in addition to existing entitlements.

Conclusion

This Initial Study includes an analysis of the project impacts associated with aesthetics, agricultural and forest resources, air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation/traffic, and utilities and service systems. The analysis covers a broad spectrum of topics relative to the potential for the proposed project to have environmental impacts. It was found that the proposed project would have either no impact, a less than significant impact, or a less than significant impact with the implementation of mitigation measures. These mitigation measures would also function to reduce the project's contribution to cumulative impacts.

The project would increase the population and use of public services and systems; however, it was found that there is adequate capacity to accommodate the project.

The proposed project has no impact or a less than significant impact with respect to all environmental issues. Therefore, a ***less than significant*** cumulative impact would occur, and mitigation is not required.

Responses c): The construction phase could affect surrounding neighbors through increased air emissions, noise, and traffic; however, the construction effects are temporary and are not substantial. The operational phase could also affect surrounding neighbors through increased air emissions, noise, and traffic; however, mitigation measures have been incorporated into the proposed project that would reduce the impacts to a less than significant level. The proposed project would not cause substantial adverse effects on human beings. Implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

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APPENDIX A: CALEEMOD RESULTS

Lathrop Scannell - San Joaquin County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Lathrop Scannell

San Joaquin County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	191.16	1000sqft	18.20	191,160.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2023
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land uses as provided by the Applicant.

Construction Phase -

Grading - Site is relatively flat.

Vehicle Trips - Trips provided by traffic study (Fehr & Peers)

Fleet Mix - Fleet mix adjusted to reflect vehicle fleet mix from Traffic Impact Analysis.

Energy Use -

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.02	0.20
tblFleetMix	LDA	0.53	0.43
tblFleetMix	LDT1	0.05	0.04

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblFleetMix	LDT2	0.17	0.14
tblFleetMix	LHD1	0.03	0.02
tblFleetMix	LHD2	6.3850e-003	5.2208e-003
tblFleetMix	MCY	0.02	0.02
tblFleetMix	MDV	0.16	0.13
tblFleetMix	MH	3.7070e-003	3.0311e-003
tblFleetMix	MHD	0.01	0.01
tblFleetMix	OBUS	4.7900e-004	3.9166e-004
tblFleetMix	SBUS	1.1350e-003	9.2805e-004
tblFleetMix	UBUS	3.2900e-004	2.6901e-004
tblLandUse	LotAcreage	4.39	18.20
tblVehicleTrips	ST_TR	1.74	2.08
tblVehicleTrips	SU_TR	1.74	2.08
tblVehicleTrips	WD_TR	1.74	2.08

2.0 Emissions Summary

Lathrop Scannell - San Joaquin County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.6913	38.8919	29.5423	0.0635	19.8049	1.6357	21.4182	10.1417	1.5049	11.6259	0.0000	6,151.3617	6,151.3617	1.9492	0.1222	6,201.4645
2023	133.1446	15.9579	18.4936	0.0385	0.8673	0.7117	1.5789	0.2348	0.6697	0.9045	0.0000	3,759.3771	3,759.3771	0.7174	0.1166	3,809.8416
Maximum	**133.1446**	**38.8919**	**29.5423**	**0.0635**	**19.8049**	**1.6357**	**21.4182**	**10.1417**	**1.5049**	**11.6259**	**0.0000**	**6,151.3617**	**6,151.3617**	**1.9492**	**0.1222**	**6,201.4645**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.6913	38.8919	29.5423	0.0635	19.8049	1.6357	21.4182	10.1417	1.5049	11.6259	0.0000	6,151.3617	6,151.3617	1.9492	0.1222	6,201.4645
2023	133.1446	15.9579	18.4936	0.0385	0.8673	0.7117	1.5789	0.2348	0.6697	0.9045	0.0000	3,759.3771	3,759.3771	0.7174	0.1166	3,809.8416
Maximum	**133.1446**	**38.8919**	**29.5423**	**0.0635**	**19.8049**	**1.6357**	**21.4182**	**10.1417**	**1.5049**	**11.6259**	**0.0000**	**6,151.3617**	**6,151.3617**	**1.9492**	**0.1222**	**6,201.4645**

Lathrop Scannell - San Joaquin County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Lathrop Scannell - San Joaquin County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.8209	1.8000e-004	0.0195	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0418	0.0418	1.1000e-004		0.0446
Energy	0.0342	0.3106	0.2609	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.7697	372.7697	7.1400e-003	6.8300e-003	374.9849
Mobile	0.9791	6.0661	10.5503	0.0377	2.5158	0.0508	2.5666	0.6748	0.0483	0.7231		3,940.6660	3,940.6660	0.1324	0.4145	4,067.4963
Total	**5.8342**	**6.3769**	**10.8308**	**0.0396**	**2.5158**	**0.0745**	**2.5903**	**0.6748**	**0.0720**	**0.7468**		**4,313.4775**	**4,313.4775**	**0.1397**	**0.4213**	**4,442.5257**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.8209	1.8000e-004	0.0195	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0418	0.0418	1.1000e-004		0.0446
Energy	0.0342	0.3106	0.2609	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.7697	372.7697	7.1400e-003	6.8300e-003	374.9849
Mobile	0.9791	6.0661	10.5503	0.0377	2.5158	0.0508	2.5666	0.6748	0.0483	0.7231		3,940.6660	3,940.6660	0.1324	0.4145	4,067.4963
Total	**5.8342**	**6.3769**	**10.8308**	**0.0396**	**2.5158**	**0.0745**	**2.5903**	**0.6748**	**0.0720**	**0.7468**		**4,313.4775**	**4,313.4775**	**0.1397**	**0.4213**	**4,442.5257**

Lathrop Scannell - San Joaquin County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2022	1/14/2022	5	10	
2	Grading	Grading	1/15/2022	2/25/2022	5	30	
3	Building Construction	Building Construction	2/26/2022	4/21/2023	5	300	
4	Paving	Paving	4/22/2023	5/19/2023	5	20	
5	Architectural Coating	Architectural Coating	5/20/2023	6/16/2023	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 90

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 286,740; Non-Residential Outdoor: 95,580; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	80.00	31.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**19.6570**	**1.6126**	**21.2696**	**10.1025**	**1.4836**	**11.5860**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0598	0.0436	0.4507	1.2400e-003	0.1479	7.5000e-004	0.1486	0.0392	6.9000e-004	0.0399		125.9560	125.9560	4.5300e-003	4.1400e-003	127.3038
Total	**0.0598**	**0.0436**	**0.4507**	**1.2400e-003**	**0.1479**	**7.5000e-004**	**0.1486**	**0.0392**	**6.9000e-004**	**0.0399**		**125.9560**	**125.9560**	**4.5300e-003**	**4.1400e-003**	**127.3038**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**19.6570**	**1.6126**	**21.2696**	**10.1025**	**1.4836**	**11.5860**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0598	0.0436	0.4507	1.2400e-003	0.1479	7.5000e-004	0.1486	0.0392	6.9000e-004	0.0399		125.9560	125.9560	4.5300e-003	4.1400e-003	127.3038
Total	**0.0598**	**0.0436**	**0.4507**	**1.2400e-003**	**0.1479**	**7.5000e-004**	**0.1486**	**0.0392**	**6.9000e-004**	**0.0399**		**125.9560**	**125.9560**	**4.5300e-003**	**4.1400e-003**	**127.3038**

Lathrop Scannell - San Joaquin County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**9.2036**	**1.6349**	**10.8385**	**3.6538**	**1.5041**	**5.1579**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0665	0.0485	0.5008	1.3800e-003	0.1643	8.4000e-004	0.1651	0.0436	7.7000e-004	0.0444		139.9512	139.9512	5.0300e-003	4.6000e-003	141.4487
Total	**0.0665**	**0.0485**	**0.5008**	**1.3800e-003**	**0.1643**	**8.4000e-004**	**0.1651**	**0.0436**	**7.7000e-004**	**0.0444**		**139.9512**	**139.9512**	**5.0300e-003**	**4.6000e-003**	**141.4487**

Lathrop Scannell - San Joaquin County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**9.2036**	**1.6349**	**10.8385**	**3.6538**	**1.5041**	**5.1579**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0665	0.0485	0.5008	1.3800e-003	0.1643	8.4000e-004	0.1651	0.0436	7.7000e-004	0.0444		139.9512	139.9512	5.0300e-003	4.6000e-003	141.4487
Total	**0.0665**	**0.0485**	**0.5008**	**1.3800e-003**	**0.1643**	**8.4000e-004**	**0.1651**	**0.0436**	**7.7000e-004**	**0.0444**		**139.9512**	**139.9512**	**5.0300e-003**	**4.6000e-003**	**141.4487**

Lathrop Scannell - San Joaquin County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0647	1.7447	0.4805	6.4700e-003	0.2101	0.0188	0.2289	0.0605	0.0180	0.0785		684.4399	684.4399	4.8200e-003	0.1038	715.4807
Worker	0.2658	0.1938	2.0032	5.5000e-003	0.6572	3.3400e-003	0.6605	0.1743	3.0800e-003	0.1774		559.8046	559.8046	0.0201	0.0184	565.7946
Total	**0.3305**	**1.9385**	**2.4838**	**0.0120**	**0.8673**	**0.0221**	**0.8894**	**0.2348**	**0.0211**	**0.2559**		**1,244.2445**	**1,244.2445**	**0.0249**	**0.1222**	**1,281.2753**

Lathrop Scannell - San Joaquin County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0647	1.7447	0.4805	6.4700e-003	0.2101	0.0188	0.2289	0.0605	0.0180	0.0785		684.4399	684.4399	4.8200e-003	0.1038	715.4807
Worker	0.2658	0.1938	2.0032	5.5000e-003	0.6572	3.3400e-003	0.6605	0.1743	3.0800e-003	0.1774		559.8046	559.8046	0.0201	0.0184	565.7946
Total	**0.3305**	**1.9385**	**2.4838**	**0.0120**	**0.8673**	**0.0221**	**0.8894**	**0.2348**	**0.0211**	**0.2559**		**1,244.2445**	**1,244.2445**	**0.0249**	**0.1222**	**1,281.2753**

Lathrop Scannell - San Joaquin County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0318	1.4040	0.4112	6.2300e-003	0.2101	8.7800e-003	0.2189	0.0605	8.4000e-003	0.0689		659.1112	659.1112	3.1900e-003	0.0997	688.8949
Worker	0.2446	0.1691	1.8384	5.3300e-003	0.6572	3.1500e-003	0.6603	0.1743	2.9000e-003	0.1772		545.0560	545.0560	0.0180	0.0169	550.5406
Total	**0.2764**	**1.5730**	**2.2496**	**0.0116**	**0.8673**	**0.0119**	**0.8792**	**0.2348**	**0.0113**	**0.2461**		**1,204.1672**	**1,204.1672**	**0.0212**	**0.1166**	**1,239.4356**

Lathrop Scannell - San Joaquin County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0318	1.4040	0.4112	6.2300e-003	0.2101	8.7800e-003	0.2189	0.0605	8.4000e-003	0.0689		659.1112	659.1112	3.1900e-003	0.0997	688.8949
Worker	0.2446	0.1691	1.8384	5.3300e-003	0.6572	3.1500e-003	0.6603	0.1743	2.9000e-003	0.1772		545.0560	545.0560	0.0180	0.0169	550.5406
Total	**0.2764**	**1.5730**	**2.2496**	**0.0116**	**0.8673**	**0.0119**	**0.8792**	**0.2348**	**0.0113**	**0.2461**		**1,204.1672**	**1,204.1672**	**0.0212**	**0.1166**	**1,239.4356**

Lathrop Scannell - San Joaquin County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0317	0.3447	1.0000e-003	0.1232	5.9000e-004	0.1238	0.0327	5.4000e-004	0.0332		102.1980	102.1980	3.3800e-003	3.1700e-003	103.2264
Total	**0.0459**	**0.0317**	**0.3447**	**1.0000e-003**	**0.1232**	**5.9000e-004**	**0.1238**	**0.0327**	**5.4000e-004**	**0.0332**		**102.1980**	**102.1980**	**3.3800e-003**	**3.1700e-003**	**103.2264**

Lathrop Scannell - San Joaquin County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0317	0.3447	1.0000e-003	0.1232	5.9000e-004	0.1238	0.0327	5.4000e-004	0.0332		102.1980	102.1980	3.3800e-003	3.1700e-003	103.2264
Total	**0.0459**	**0.0317**	**0.3447**	**1.0000e-003**	**0.1232**	**5.9000e-004**	**0.1238**	**0.0327**	**5.4000e-004**	**0.0332**		**102.1980**	**102.1980**	**3.3800e-003**	**3.1700e-003**	**103.2264**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	132.9040					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**133.0957**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0489	0.0338	0.3677	1.0700e-003	0.1314	6.3000e-004	0.1321	0.0349	5.8000e-004	0.0354		109.0112	109.0112	3.6100e-003	3.3800e-003	110.1081
Total	**0.0489**	**0.0338**	**0.3677**	**1.0700e-003**	**0.1314**	**6.3000e-004**	**0.1321**	**0.0349**	**5.8000e-004**	**0.0354**		**109.0112**	**109.0112**	**3.6100e-003**	**3.3800e-003**	**110.1081**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	132.9040					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**133.0957**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0489	0.0338	0.3677	1.0700e-003	0.1314	6.3000e-004	0.1321	0.0349	5.8000e-004	0.0354		109.0112	109.0112	3.6100e-003	3.3800e-003	110.1081
Total	**0.0489**	**0.0338**	**0.3677**	**1.0700e-003**	**0.1314**	**6.3000e-004**	**0.1321**	**0.0349**	**5.8000e-004**	**0.0354**		**109.0112**	**109.0112**	**3.6100e-003**	**3.3800e-003**	**110.1081**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9791	6.0661	10.5503	0.0377	2.5158	0.0508	2.5666	0.6748	0.0483	0.7231		3,940.6660	3,940.6660	0.1324	0.4145	4,067.4963
Unmitigated	0.9791	6.0661	10.5503	0.0377	2.5158	0.0508	2.5666	0.6748	0.0483	0.7231		3,940.6660	3,940.6660	0.1324	0.4145	4,067.4963

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	398.00	398.00	398.00	1,161,966	1,161,966
Total	398.00	398.00	398.00	1,161,966	1,161,966

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.434724	0.042733	0.137900	0.127142	0.022269	0.005221	0.010108	0.195980	0.000392	0.000269	0.019303	0.000928	0.003031

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0342	0.3106	0.2609	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.7697	372.7697	7.1400e-003	6.8300e-003	374.9849
NaturalGas Unmitigated	0.0342	0.3106	0.2609	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.7697	372.7697	7.1400e-003	6.8300e-003	374.9849

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	3168.54	0.0342	0.3106	0.2609	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.7697	372.7697	7.1400e-003	6.8300e-003	374.9849
Total		**0.0342**	**0.3106**	**0.2609**	**1.8600e-003**		**0.0236**	**0.0236**		**0.0236**	**0.0236**		**372.7697**	**372.7697**	**7.1400e-003**	**6.8300e-003**	**374.9849**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	3.16854	0.0342	0.3106	0.2609	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.7697	372.7697	7.1400e-003	6.8300e-003	374.9849
Total		**0.0342**	**0.3106**	**0.2609**	**1.8600e-003**		**0.0236**	**0.0236**		**0.0236**	**0.0236**		**372.7697**	**372.7697**	**7.1400e-003**	**6.8300e-003**	**374.9849**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.8209	1.8000e-004	0.0195	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0418	0.0418	1.1000e-004		0.0446
Unmitigated	4.8209	1.8000e-004	0.0195	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0418	0.0418	1.1000e-004		0.0446

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7282					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.0908					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8100e-003	1.8000e-004	0.0195	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0418	0.0418	1.1000e-004		0.0446
Total	**4.8209**	**1.8000e-004**	**0.0195**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0418**	**0.0418**	**1.1000e-004**		**0.0446**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7282					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.0908					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8100e-003	1.8000e-004	0.0195	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0418	0.0418	1.1000e-004		0.0446
Total	**4.8209**	**1.8000e-004**	**0.0195**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0418**	**0.0418**	**1.1000e-004**		**0.0446**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Lathrop Scannell - San Joaquin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Lathrop Scannell

San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	191.16	1000sqft	18.20	191,160.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2023
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land uses as provided by the Applicant.

Construction Phase -

Grading - Site is relatively flat.

Vehicle Trips - Trips provided by traffic study (Fehr & Peers)

Fleet Mix - Fleet mix adjusted to reflect vehicle fleet mix from Traffic Impact Analysis.

Energy Use -

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.02	0.20
tblFleetMix	LDA	0.53	0.43
tblFleetMix	LDT1	0.05	0.04

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblFleetMix	LDT2	0.17	0.14
tblFleetMix	LHD1	0.03	0.02
tblFleetMix	LHD2	6.3850e-003	5.2208e-003
tblFleetMix	MCY	0.02	0.02
tblFleetMix	MDV	0.16	0.13
tblFleetMix	MH	3.7070e-003	3.0311e-003
tblFleetMix	MHD	0.01	0.01
tblFleetMix	OBUS	4.7900e-004	3.9166e-004
tblFleetMix	SBUS	1.1350e-003	9.2805e-004
tblFleetMix	UBUS	3.2900e-004	2.6901e-004
tblLandUse	LotAcreage	4.39	18.20
tblVehicleTrips	ST_TR	1.74	2.08
tblVehicleTrips	SU_TR	1.74	2.08
tblVehicleTrips	WD_TR	1.74	2.08

2.0 Emissions Summary

Lathrop Scannell - San Joaquin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.6959	38.8835	29.6009	0.0636	19.8049	1.6357	21.4182	10.1417	1.5049	11.6259	0.0000	6,166.3497	6,166.3497	1.9487	0.1198	6,216.2719
2023	133.1478	15.8377	18.6838	0.0391	0.8673	0.7116	1.5789	0.2348	0.6697	0.9045	0.0000	3,816.2895	3,816.2895	0.7170	0.1143	3,866.0157
Maximum	**133.1478**	**38.8835**	**29.6009**	**0.0636**	**19.8049**	**1.6357**	**21.4182**	**10.1417**	**1.5049**	**11.6259**	**0.0000**	**6,166.3497**	**6,166.3497**	**1.9487**	**0.1198**	**6,216.2719**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.6959	38.8835	29.6009	0.0636	19.8049	1.6357	21.4182	10.1417	1.5049	11.6259	0.0000	6,166.3497	6,166.3497	1.9487	0.1198	6,216.2719
2023	133.1478	15.8377	18.6838	0.0391	0.8673	0.7116	1.5789	0.2348	0.6697	0.9045	0.0000	3,816.2895	3,816.2895	0.7170	0.1143	3,866.0157
Maximum	**133.1478**	**38.8835**	**29.6009**	**0.0636**	**19.8049**	**1.6357**	**21.4182**	**10.1417**	**1.5049**	**11.6259**	**0.0000**	**6,166.3497**	**6,166.3497**	**1.9487**	**0.1198**	**6,216.2719**

Lathrop Scannell - San Joaquin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.8209	1.8000e-004	0.0195	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0418	0.0418	1.1000e-004		0.0446
Energy	0.0342	0.3106	0.2609	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.7697	372.7697	7.1400e-003	6.8300e-003	374.9849
Mobile	1.1587	5.5793	10.4968	0.0392	2.5158	0.0507	2.5665	0.6748	0.0482	0.7230		4,092.6112	4,092.6112	0.1194	0.4057	4,216.4808
Total	**6.0138**	**5.8902**	**10.7772**	**0.0411**	**2.5158**	**0.0744**	**2.5901**	**0.6748**	**0.0718**	**0.7467**		**4,465.4227**	**4,465.4227**	**0.1267**	**0.4125**	**4,591.5102**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.8209	1.8000e-004	0.0195	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0418	0.0418	1.1000e-004		0.0446
Energy	0.0342	0.3106	0.2609	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.7697	372.7697	7.1400e-003	6.8300e-003	374.9849
Mobile	1.1587	5.5793	10.4968	0.0392	2.5158	0.0507	2.5665	0.6748	0.0482	0.7230		4,092.6112	4,092.6112	0.1194	0.4057	4,216.4808
Total	**6.0138**	**5.8902**	**10.7772**	**0.0411**	**2.5158**	**0.0744**	**2.5901**	**0.6748**	**0.0718**	**0.7467**		**4,465.4227**	**4,465.4227**	**0.1267**	**0.4125**	**4,591.5102**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2022	1/14/2022	5	10	
2	Grading	Grading	1/15/2022	2/25/2022	5	30	
3	Building Construction	Building Construction	2/26/2022	4/21/2023	5	300	
4	Paving	Paving	4/22/2023	5/19/2023	5	20	
5	Architectural Coating	Architectural Coating	5/20/2023	6/16/2023	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 90

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 286,740; Non-Residential Outdoor: 95,580; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	80.00	31.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**19.6570**	**1.6126**	**21.2696**	**10.1025**	**1.4836**	**11.5860**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0640	0.0360	0.5035	1.3700e-003	0.1479	7.5000e-004	0.1486	0.0392	6.9000e-004	0.0399		139.4453	139.4453	4.0000e-003	3.6400e-003	140.6304
Total	**0.0640**	**0.0360**	**0.5035**	**1.3700e-003**	**0.1479**	**7.5000e-004**	**0.1486**	**0.0392**	**6.9000e-004**	**0.0399**		**139.4453**	**139.4453**	**4.0000e-003**	**3.6400e-003**	**140.6304**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**19.6570**	**1.6126**	**21.2696**	**10.1025**	**1.4836**	**11.5860**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0640	0.0360	0.5035	1.3700e-003	0.1479	7.5000e-004	0.1486	0.0392	6.9000e-004	0.0399		139.4453	139.4453	4.0000e-003	3.6400e-003	140.6304
Total	**0.0640**	**0.0360**	**0.5035**	**1.3700e-003**	**0.1479**	**7.5000e-004**	**0.1486**	**0.0392**	**6.9000e-004**	**0.0399**		**139.4453**	**139.4453**	**4.0000e-003**	**3.6400e-003**	**140.6304**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**9.2036**	**1.6349**	**10.8385**	**3.6538**	**1.5041**	**5.1579**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0711	0.0400	0.5594	1.5200e-003	0.1643	8.4000e-004	0.1651	0.0436	7.7000e-004	0.0444		154.9392	154.9392	4.4500e-003	4.0500e-003	156.2561
Total	**0.0711**	**0.0400**	**0.5594**	**1.5200e-003**	**0.1643**	**8.4000e-004**	**0.1651**	**0.0436**	**7.7000e-004**	**0.0444**		**154.9392**	**154.9392**	**4.4500e-003**	**4.0500e-003**	**156.2561**

Lathrop Scannell - San Joaquin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**9.2036**	**1.6349**	**10.8385**	**3.6538**	**1.5041**	**5.1579**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0711	0.0400	0.5594	1.5200e-003	0.1643	8.4000e-004	0.1651	0.0436	7.7000e-004	0.0444		154.9392	154.9392	4.4500e-003	4.0500e-003	156.2561
Total	**0.0711**	**0.0400**	**0.5594**	**1.5200e-003**	**0.1643**	**8.4000e-004**	**0.1651**	**0.0436**	**7.7000e-004**	**0.0444**		**154.9392**	**154.9392**	**4.4500e-003**	**4.0500e-003**	**156.2561**

Lathrop Scannell - San Joaquin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0663	1.6367	0.4640	6.4600e-003	0.2101	0.0187	0.2288	0.0605	0.0179	0.0784		683.8445	683.8445	4.9000e-003	0.1036	714.8361
Worker	0.2842	0.1600	2.2376	6.0900e-003	0.6572	3.3400e-003	0.6605	0.1743	3.0800e-003	0.1774		619.7567	619.7567	0.0178	0.0162	625.0242
Total	**0.3505**	**1.7967**	**2.7016**	**0.0126**	**0.8673**	**0.0221**	**0.8893**	**0.2348**	**0.0210**	**0.2558**		**1,303.6012**	**1,303.6012**	**0.0227**	**0.1198**	**1,339.8603**

Lathrop Scannell - San Joaquin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0663	1.6367	0.4640	6.4600e-003	0.2101	0.0187	0.2288	0.0605	0.0179	0.0784		683.8445	683.8445	4.9000e-003	0.1036	714.8361
Worker	0.2842	0.1600	2.2376	6.0900e-003	0.6572	3.3400e-003	0.6605	0.1743	3.0800e-003	0.1774		619.7567	619.7567	0.0178	0.0162	625.0242
Total	**0.3505**	**1.7967**	**2.7016**	**0.0126**	**0.8673**	**0.0221**	**0.8893**	**0.2348**	**0.0210**	**0.2558**		**1,303.6012**	**1,303.6012**	**0.0227**	**0.1198**	**1,339.8603**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0338	1.3132	0.3977	6.2200e-003	0.2101	8.7600e-003	0.2188	0.0605	8.3800e-003	0.0689		657.8587	657.8587	3.2800e-003	0.0994	687.5651
Worker	0.2606	0.1396	2.0421	5.8900e-003	0.6572	3.1500e-003	0.6603	0.1743	2.9000e-003	0.1772		603.2208	603.2208	0.0159	0.0149	608.0446
Total	**0.2944**	**1.4528**	**2.4398**	**0.0121**	**0.8673**	**0.0119**	**0.8792**	**0.2348**	**0.0113**	**0.2461**		**1,261.0796**	**1,261.0796**	**0.0191**	**0.1143**	**1,295.6096**

Lathrop Scannell - San Joaquin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0338	1.3132	0.3977	6.2200e-003	0.2101	8.7600e-003	0.2188	0.0605	8.3800e-003	0.0689		657.8587	657.8587	3.2800e-003	0.0994	687.5651
Worker	0.2606	0.1396	2.0421	5.8900e-003	0.6572	3.1500e-003	0.6603	0.1743	2.9000e-003	0.1772		603.2208	603.2208	0.0159	0.0149	608.0446
Total	**0.2944**	**1.4528**	**2.4398**	**0.0121**	**0.8673**	**0.0119**	**0.8792**	**0.2348**	**0.0113**	**0.2461**		**1,261.0796**	**1,261.0796**	**0.0191**	**0.1143**	**1,295.6096**

Lathrop Scannell - San Joaquin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0489	0.0262	0.3829	1.1100e-003	0.1232	5.9000e-004	0.1238	0.0327	5.4000e-004	0.0332		113.1039	113.1039	2.9700e-003	2.7900e-003	114.0084
Total	**0.0489**	**0.0262**	**0.3829**	**1.1100e-003**	**0.1232**	**5.9000e-004**	**0.1238**	**0.0327**	**5.4000e-004**	**0.0332**		**113.1039**	**113.1039**	**2.9700e-003**	**2.7900e-003**	**114.0084**

Lathrop Scannell - San Joaquin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0489	0.0262	0.3829	1.1100e-003	0.1232	5.9000e-004	0.1238	0.0327	5.4000e-004	0.0332		113.1039	113.1039	2.9700e-003	2.7900e-003	114.0084
Total	**0.0489**	**0.0262**	**0.3829**	**1.1100e-003**	**0.1232**	**5.9000e-004**	**0.1238**	**0.0327**	**5.4000e-004**	**0.0332**		**113.1039**	**113.1039**	**2.9700e-003**	**2.7900e-003**	**114.0084**

Lathrop Scannell - San Joaquin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	132.9040					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**133.0957**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0521	0.0279	0.4084	1.1800e-003	0.1314	6.3000e-004	0.1321	0.0349	5.8000e-004	0.0354		120.6442	120.6442	3.1700e-003	2.9700e-003	121.6089
Total	**0.0521**	**0.0279**	**0.4084**	**1.1800e-003**	**0.1314**	**6.3000e-004**	**0.1321**	**0.0349**	**5.8000e-004**	**0.0354**		**120.6442**	**120.6442**	**3.1700e-003**	**2.9700e-003**	**121.6089**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	132.9040					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**133.0957**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0521	0.0279	0.4084	1.1800e-003	0.1314	6.3000e-004	0.1321	0.0349	5.8000e-004	0.0354		120.6442	120.6442	3.1700e-003	2.9700e-003	121.6089
Total	**0.0521**	**0.0279**	**0.4084**	**1.1800e-003**	**0.1314**	**6.3000e-004**	**0.1321**	**0.0349**	**5.8000e-004**	**0.0354**		**120.6442**	**120.6442**	**3.1700e-003**	**2.9700e-003**	**121.6089**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1587	5.5793	10.4968	0.0392	2.5158	0.0507	2.5665	0.6748	0.0482	0.7230		4,092.6112	4,092.6112	0.1194	0.4057	4,216.4808
Unmitigated	1.1587	5.5793	10.4968	0.0392	2.5158	0.0507	2.5665	0.6748	0.0482	0.7230		4,092.6112	4,092.6112	0.1194	0.4057	4,216.4808

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	398.00	398.00	398.00	1,161,966	1,161,966
Total	398.00	398.00	398.00	1,161,966	1,161,966

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.434724	0.042733	0.137900	0.127142	0.022269	0.005221	0.010108	0.195980	0.000392	0.000269	0.019303	0.000928	0.003031

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0342	0.3106	0.2609	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.7697	372.7697	7.1400e-003	6.8300e-003	374.9849
NaturalGas Unmitigated	0.0342	0.3106	0.2609	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.7697	372.7697	7.1400e-003	6.8300e-003	374.9849

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	3168.54	0.0342	0.3106	0.2609	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.7697	372.7697	7.1400e-003	6.8300e-003	374.9849
Total		**0.0342**	**0.3106**	**0.2609**	**1.8600e-003**		**0.0236**	**0.0236**		**0.0236**	**0.0236**		**372.7697**	**372.7697**	**7.1400e-003**	**6.8300e-003**	**374.9849**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	3.16854	0.0342	0.3106	0.2609	1.8600e-003		0.0236	0.0236		0.0236	0.0236		372.7697	372.7697	7.1400e-003	6.8300e-003	374.9849
Total		**0.0342**	**0.3106**	**0.2609**	**1.8600e-003**		**0.0236**	**0.0236**		**0.0236**	**0.0236**		**372.7697**	**372.7697**	**7.1400e-003**	**6.8300e-003**	**374.9849**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.8209	1.8000e-004	0.0195	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0418	0.0418	1.1000e-004		0.0446
Unmitigated	4.8209	1.8000e-004	0.0195	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0418	0.0418	1.1000e-004		0.0446

Lathrop Scannell - San Joaquin County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7282					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.0908					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8100e-003	1.8000e-004	0.0195	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0418	0.0418	1.1000e-004		0.0446
Total	**4.8209**	**1.8000e-004**	**0.0195**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0418**	**0.0418**	**1.1000e-004**		**0.0446**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7282					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.0908					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.8100e-003	1.8000e-004	0.0195	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0418	0.0418	1.1000e-004		0.0446
Total	**4.8209**	**1.8000e-004**	**0.0195**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0418**	**0.0418**	**1.1000e-004**		**0.0446**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Lathrop Scannell - San Joaquin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Lathrop Scannell

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	191.16	1000sqft	18.20	191,160.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2023
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land uses as provided by the Applicant.

Construction Phase -

Grading - Site is relatively flat.

Vehicle Trips - Trips provided by traffic study (Fehr & Peers)

Fleet Mix - Fleet mix adjusted to reflect vehicle fleet mix from Traffic Impact Analysis.

Energy Use -

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.02	0.20
tblFleetMix	LDA	0.53	0.43
tblFleetMix	LDT1	0.05	0.04

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblFleetMix	LDT2	0.17	0.14
tblFleetMix	LHD1	0.03	0.02
tblFleetMix	LHD2	6.3850e-003	5.2208e-003
tblFleetMix	MCY	0.02	0.02
tblFleetMix	MDV	0.16	0.13
tblFleetMix	MH	3.7070e-003	3.0311e-003
tblFleetMix	MHD	0.01	0.01
tblFleetMix	OBUS	4.7900e-004	3.9166e-004
tblFleetMix	SBUS	1.1350e-003	9.2805e-004
tblFleetMix	UBUS	3.2900e-004	2.6901e-004
tblLandUse	LotAcreage	4.39	18.20
tblVehicleTrips	ST_TR	1.74	2.08
tblVehicleTrips	SU_TR	1.74	2.08
tblVehicleTrips	WD_TR	1.74	2.08

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2942	2.6741	2.6149	5.4400e-003	0.3321	0.1240	0.4561	0.1313	0.1160	0.2473	0.0000	481.5084	481.5084	0.0954	0.0122	487.5120
2023	1.4157	0.7520	0.9099	1.8200e-003	0.0362	0.0343	0.0704	9.8000e-003	0.0322	0.0420	0.0000	161.4379	161.4379	0.0295	4.2400e-003	163.4390
Maximum	**1.4157**	**2.6741**	**2.6149**	**5.4400e-003**	**0.3321**	**0.1240**	**0.4561**	**0.1313**	**0.1160**	**0.2473**	**0.0000**	**481.5084**	**481.5084**	**0.0954**	**0.0122**	**487.5120**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2942	2.6741	2.6148	5.4400e-003	0.3321	0.1240	0.4561	0.1313	0.1160	0.2473	0.0000	481.5080	481.5080	0.0954	0.0122	487.5116
2023	1.4157	0.7520	0.9099	1.8200e-003	0.0362	0.0343	0.0704	9.8000e-003	0.0322	0.0420	0.0000	161.4378	161.4378	0.0295	4.2400e-003	163.4389
Maximum	**1.4157**	**2.6741**	**2.6148**	**5.4400e-003**	**0.3321**	**0.1240**	**0.4561**	**0.1313**	**0.1160**	**0.2473**	**0.0000**	**481.5080**	**481.5080**	**0.0954**	**0.0122**	**487.5116**

Lathrop Scannell - San Joaquin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2022**	**3-31-2022**	1.0584	1.0584
2	**4-1-2022**	**6-30-2022**	0.6327	0.6327
3	**7-1-2022**	**9-30-2022**	0.6397	0.6397
4	**10-1-2022**	**12-31-2022**	0.6437	0.6437
5	**1-1-2023**	**3-31-2023**	0.5724	0.5724
6	**4-1-2023**	**6-30-2023**	1.5906	1.5906
		Highest	1.5906	1.5906

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8796	2.0000e-005	1.7600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4200e-003	3.4200e-003	1.0000e-005	0.0000	3.6400e-003
Energy	6.2400e-003	0.0567	0.0476	3.4000e-004		4.3100e-003	4.3100e-003		4.3100e-003	4.3100e-003	0.0000	142.1914	142.1914	0.0142	2.7100e-003	143.3539
Mobile	0.1834	1.0671	1.8385	6.9200e-003	0.4445	9.2200e-003	0.4537	0.1195	8.7600e-003	0.1283	0.0000	655.3962	655.3962	0.0207	0.0676	676.0669
Waste						0.0000	0.0000		0.0000	0.0000	36.4755	0.0000	36.4755	2.1556	0.0000	90.3664
Water						0.0000	0.0000		0.0000	0.0000	14.0245	22.1314	36.1559	1.4440	0.0345	82.5214
Total	**1.0692**	**1.1238**	**1.8879**	**7.2600e-003**	**0.4445**	**0.0135**	**0.4580**	**0.1195**	**0.0131**	**0.1326**	**50.4999**	**819.7224**	**870.2223**	**3.6346**	**0.1048**	**992.3122**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8796	2.0000e-005	1.7600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4200e-003	3.4200e-003	1.0000e-005	0.0000	3.6400e-003
Energy	6.2400e-003	0.0567	0.0476	3.4000e-004		4.3100e-003	4.3100e-003		4.3100e-003	4.3100e-003	0.0000	142.1914	142.1914	0.0142	2.7100e-003	143.3539
Mobile	0.1834	1.0671	1.8385	6.9200e-003	0.4445	9.2200e-003	0.4537	0.1195	8.7600e-003	0.1283	0.0000	655.3962	655.3962	0.0207	0.0676	676.0669
Waste						0.0000	0.0000		0.0000	0.0000	36.4755	0.0000	36.4755	2.1556	0.0000	90.3664
Water						0.0000	0.0000		0.0000	0.0000	14.0245	22.1314	36.1559	1.4440	0.0345	82.5214
Total	**1.0692**	**1.1238**	**1.8879**	**7.2600e-003**	**0.4445**	**0.0135**	**0.4580**	**0.1195**	**0.0131**	**0.1326**	**50.4999**	**819.7224**	**870.2223**	**3.6346**	**0.1048**	**992.3122**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2022	1/14/2022	5	10	
2	Grading	Grading	1/15/2022	2/25/2022	5	30	
3	Building Construction	Building Construction	2/26/2022	4/21/2023	5	300	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	4/22/2023	5/19/2023	5	20	
5	Architectural Coating	Architectural Coating	5/20/2023	6/16/2023	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 90

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 286,740; Non-Residential Outdoor: 95,580; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	80.00	31.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**0.0159**	**0.1654**	**0.0985**	**1.9000e-004**	**0.0983**	**8.0600e-003**	**0.1064**	**0.0505**	**7.4200e-003**	**0.0579**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	2.0000e-004	2.2400e-003	1.0000e-005	7.2000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5859	0.5859	2.0000e-005	2.0000e-005	0.5916
Total	**2.8000e-004**	**2.0000e-004**	**2.2400e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5859**	**0.5859**	**2.0000e-005**	**2.0000e-005**	**0.5916**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**0.0159**	**0.1654**	**0.0985**	**1.9000e-004**	**0.0983**	**8.0600e-003**	**0.1064**	**0.0505**	**7.4200e-003**	**0.0579**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	2.0000e-004	2.2400e-003	1.0000e-005	7.2000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5859	0.5859	2.0000e-005	2.0000e-005	0.5916
Total	**2.8000e-004**	**2.0000e-004**	**2.2400e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5859**	**0.5859**	**2.0000e-005**	**2.0000e-005**	**0.5916**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1381	0.0000	0.1381	0.0548	0.0000	0.0548	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0544	0.5827	0.4356	9.3000e-004		0.0245	0.0245		0.0226	0.0226	0.0000	81.8019	81.8019	0.0265	0.0000	82.4633
Total	**0.0544**	**0.5827**	**0.4356**	**9.3000e-004**	**0.1381**	**0.0245**	**0.1626**	**0.0548**	**0.0226**	**0.0774**	**0.0000**	**81.8019**	**81.8019**	**0.0265**	**0.0000**	**82.4633**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.5000e-004	6.6000e-004	7.4700e-003	2.0000e-005	2.3900e-003	1.0000e-005	2.4000e-003	6.4000e-004	1.0000e-005	6.5000e-004	0.0000	1.9529	1.9529	6.0000e-005	6.0000e-005	1.9720
Total	**9.5000e-004**	**6.6000e-004**	**7.4700e-003**	**2.0000e-005**	**2.3900e-003**	**1.0000e-005**	**2.4000e-003**	**6.4000e-004**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**1.9529**	**1.9529**	**6.0000e-005**	**6.0000e-005**	**1.9720**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1381	0.0000	0.1381	0.0548	0.0000	0.0548	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0544	0.5827	0.4356	9.3000e-004		0.0245	0.0245		0.0226	0.0226	0.0000	81.8018	81.8018	0.0265	0.0000	82.4632
Total	**0.0544**	**0.5827**	**0.4356**	**9.3000e-004**	**0.1381**	**0.0245**	**0.1626**	**0.0548**	**0.0226**	**0.0774**	**0.0000**	**81.8018**	**81.8018**	**0.0265**	**0.0000**	**82.4632**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.5000e-004	6.6000e-004	7.4700e-003	2.0000e-005	2.3900e-003	1.0000e-005	2.4000e-003	6.4000e-004	1.0000e-005	6.5000e-004	0.0000	1.9529	1.9529	6.0000e-005	6.0000e-005	1.9720
Total	**9.5000e-004**	**6.6000e-004**	**7.4700e-003**	**2.0000e-005**	**2.3900e-003**	**1.0000e-005**	**2.4000e-003**	**6.4000e-004**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**1.9529**	**1.9529**	**6.0000e-005**	**6.0000e-005**	**1.9720**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1877	1.7177	1.8000	2.9600e-003		0.0890	0.0890		0.0837	0.0837	0.0000	254.8978	254.8978	0.0611	0.0000	256.4244
Total	**0.1877**	**1.7177**	**1.8000**	**2.9600e-003**		**0.0890**	**0.0890**		**0.0837**	**0.0837**	**0.0000**	**254.8978**	**254.8978**	**0.0611**	**0.0000**	**256.4244**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.1900e-003	0.1880	0.0518	7.1000e-004	0.0225	2.0600e-003	0.0246	6.5100e-003	1.9700e-003	8.4900e-003	0.0000	68.2659	68.2659	4.9000e-004	0.0104	71.3611
Worker	0.0278	0.0194	0.2192	6.2000e-004	0.0701	3.7000e-004	0.0705	0.0186	3.4000e-004	0.0190	0.0000	57.2844	57.2844	1.8700e-003	1.7200e-003	57.8448
Total	**0.0350**	**0.2074**	**0.2711**	**1.3300e-003**	**0.0926**	**2.4300e-003**	**0.0951**	**0.0252**	**2.3100e-003**	**0.0275**	**0.0000**	**125.5503**	**125.5503**	**2.3600e-003**	**0.0121**	**129.2058**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1877	1.7177	1.8000	2.9600e-003		0.0890	0.0890		0.0837	0.0837	0.0000	254.8975	254.8975	0.0611	0.0000	256.4241
Total	**0.1877**	**1.7177**	**1.8000**	**2.9600e-003**		**0.0890**	**0.0890**		**0.0837**	**0.0837**	**0.0000**	**254.8975**	**254.8975**	**0.0611**	**0.0000**	**256.4241**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.1900e-003	0.1880	0.0518	7.1000e-004	0.0225	2.0600e-003	0.0246	6.5100e-003	1.9700e-003	8.4900e-003	0.0000	68.2659	68.2659	4.9000e-004	0.0104	71.3611
Worker	0.0278	0.0194	0.2192	6.2000e-004	0.0701	3.7000e-004	0.0705	0.0186	3.4000e-004	0.0190	0.0000	57.2844	57.2844	1.8700e-003	1.7200e-003	57.8448
Total	**0.0350**	**0.2074**	**0.2711**	**1.3300e-003**	**0.0926**	**2.4300e-003**	**0.0951**	**0.0252**	**2.3100e-003**	**0.0275**	**0.0000**	**125.5503**	**125.5503**	**2.3600e-003**	**0.0121**	**129.2058**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0629	0.5754	0.6498	1.0800e-003		0.0280	0.0280		0.0263	0.0263	0.0000	92.7219	92.7219	0.0221	0.0000	93.2733
Total	**0.0629**	**0.5754**	**0.6498**	**1.0800e-003**		**0.0280**	**0.0280**		**0.0263**	**0.0263**	**0.0000**	**92.7219**	**92.7219**	**0.0221**	**0.0000**	**93.2733**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3100e-003	0.0549	0.0161	2.5000e-004	8.1900e-003	3.5000e-004	8.5500e-003	2.3700e-003	3.4000e-004	2.7000e-003	0.0000	23.8910	23.8910	1.2000e-004	3.6100e-003	24.9703
Worker	9.3000e-003	6.1500e-003	0.0730	2.2000e-004	0.0255	1.3000e-004	0.0256	6.7800e-003	1.2000e-004	6.8900e-003	0.0000	20.2802	20.2802	6.1000e-004	5.7000e-004	20.4668
Total	**0.0106**	**0.0610**	**0.0891**	**4.7000e-004**	**0.0337**	**4.8000e-004**	**0.0342**	**9.1500e-003**	**4.6000e-004**	**9.5900e-003**	**0.0000**	**44.1713**	**44.1713**	**7.3000e-004**	**4.1800e-003**	**45.4371**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0629	0.5754	0.6498	1.0800e-003		0.0280	0.0280		0.0263	0.0263	0.0000	92.7218	92.7218	0.0221	0.0000	93.2732
Total	**0.0629**	**0.5754**	**0.6498**	**1.0800e-003**		**0.0280**	**0.0280**		**0.0263**	**0.0263**	**0.0000**	**92.7218**	**92.7218**	**0.0221**	**0.0000**	**93.2732**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3100e-003	0.0549	0.0161	2.5000e-004	8.1900e-003	3.5000e-004	8.5500e-003	2.3700e-003	3.4000e-004	2.7000e-003	0.0000	23.8910	23.8910	1.2000e-004	3.6100e-003	24.9703
Worker	9.3000e-003	6.1500e-003	0.0730	2.2000e-004	0.0255	1.3000e-004	0.0256	6.7800e-003	1.2000e-004	6.8900e-003	0.0000	20.2802	20.2802	6.1000e-004	5.7000e-004	20.4668
Total	**0.0106**	**0.0610**	**0.0891**	**4.7000e-004**	**0.0337**	**4.8000e-004**	**0.0342**	**9.1500e-003**	**4.6000e-004**	**9.5900e-003**	**0.0000**	**44.1713**	**44.1713**	**7.3000e-004**	**4.1800e-003**	**45.4371**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0269	20.0269	6.4800e-003	0.0000	20.1888
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0103**	**0.1019**	**0.1458**	**2.3000e-004**		**5.1000e-003**	**5.1000e-003**		**4.6900e-003**	**4.6900e-003**	**0.0000**	**20.0269**	**20.0269**	**6.4800e-003**	**0.0000**	**20.1888**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	2.9000e-004	3.4200e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9506	0.9506	3.0000e-005	3.0000e-005	0.9594
Total	**4.4000e-004**	**2.9000e-004**	**3.4200e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9506**	**0.9506**	**3.0000e-005**	**3.0000e-005**	**0.9594**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0268	20.0268	6.4800e-003	0.0000	20.1888
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0103**	**0.1019**	**0.1458**	**2.3000e-004**		**5.1000e-003**	**5.1000e-003**		**4.6900e-003**	**4.6900e-003**	**0.0000**	**20.0268**	**20.0268**	**6.4800e-003**	**0.0000**	**20.1888**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	2.9000e-004	3.4200e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9506	0.9506	3.0000e-005	3.0000e-005	0.9594
Total	**4.4000e-004**	**2.9000e-004**	**3.4200e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9506**	**0.9506**	**3.0000e-005**	**3.0000e-005**	**0.9594**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.3290					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**1.3310**	**0.0130**	**0.0181**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.1000e-004	3.6500e-003	1.0000e-005	1.2700e-003	1.0000e-005	1.2800e-003	3.4000e-004	1.0000e-005	3.4000e-004	0.0000	1.0140	1.0140	3.0000e-005	3.0000e-005	1.0233
Total	**4.6000e-004**	**3.1000e-004**	**3.6500e-003**	**1.0000e-005**	**1.2700e-003**	**1.0000e-005**	**1.2800e-003**	**3.4000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0140**	**1.0140**	**3.0000e-005**	**3.0000e-005**	**1.0233**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.3290					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**1.3310**	**0.0130**	**0.0181**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.1000e-004	3.6500e-003	1.0000e-005	1.2700e-003	1.0000e-005	1.2800e-003	3.4000e-004	1.0000e-005	3.4000e-004	0.0000	1.0140	1.0140	3.0000e-005	3.0000e-005	1.0233
Total	**4.6000e-004**	**3.1000e-004**	**3.6500e-003**	**1.0000e-005**	**1.2700e-003**	**1.0000e-005**	**1.2800e-003**	**3.4000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0140**	**1.0140**	**3.0000e-005**	**3.0000e-005**	**1.0233**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1834	1.0671	1.8385	6.9200e-003	0.4445	9.2200e-003	0.4537	0.1195	8.7600e-003	0.1283	0.0000	655.3962	655.3962	0.0207	0.0676	676.0669
Unmitigated	0.1834	1.0671	1.8385	6.9200e-003	0.4445	9.2200e-003	0.4537	0.1195	8.7600e-003	0.1283	0.0000	655.3962	655.3962	0.0207	0.0676	676.0669

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	398.00	398.00	398.00	1,161,966	1,161,966
Total	398.00	398.00	398.00	1,161,966	1,161,966

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.434724	0.042733	0.137900	0.127142	0.022269	0.005221	0.010108	0.195980	0.000392	0.000269	0.019303	0.000928	0.003031

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	80.4751	80.4751	0.0130	1.5800e-003	81.2709
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	80.4751	80.4751	0.0130	1.5800e-003	81.2709
NaturalGas Mitigated	6.2400e-003	0.0567	0.0476	3.4000e-004		4.3100e-003	4.3100e-003		4.3100e-003	4.3100e-003	0.0000	61.7162	61.7162	1.1800e-003	1.1300e-003	62.0830
NaturalGas Unmitigated	6.2400e-003	0.0567	0.0476	3.4000e-004		4.3100e-003	4.3100e-003		4.3100e-003	4.3100e-003	0.0000	61.7162	61.7162	1.1800e-003	1.1300e-003	62.0830

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	1.15652e+006	6.2400e-003	0.0567	0.0476	3.4000e-004		4.3100e-003	4.3100e-003		4.3100e-003	4.3100e-003	0.0000	61.7162	61.7162	1.1800e-003	1.1300e-003	62.0830
Total		**6.2400e-003**	**0.0567**	**0.0476**	**3.4000e-004**		**4.3100e-003**	**4.3100e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**61.7162**	**61.7162**	**1.1800e-003**	**1.1300e-003**	**62.0830**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	1.15652e+006	6.2400e-003	0.0567	0.0476	3.4000e-004		4.3100e-003	4.3100e-003		4.3100e-003	4.3100e-003	0.0000	61.7162	61.7162	1.1800e-003	1.1300e-003	62.0830
Total		**6.2400e-003**	**0.0567**	**0.0476**	**3.4000e-004**		**4.3100e-003**	**4.3100e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**61.7162**	**61.7162**	**1.1800e-003**	**1.1300e-003**	**62.0830**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	869778	80.4751	0.0130	1.5800e-003	81.2709
Total		**80.4751**	**0.0130**	**1.5800e-003**	**81.2709**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	869778	80.4751	0.0130	1.5800e-003	81.2709
Total		**80.4751**	**0.0130**	**1.5800e-003**	**81.2709**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8796	2.0000e-005	1.7600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4200e-003	3.4200e-003	1.0000e-005	0.0000	3.6400e-003
Unmitigated	0.8796	2.0000e-005	1.7600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4200e-003	3.4200e-003	1.0000e-005	0.0000	3.6400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1329					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4200e-003	3.4200e-003	1.0000e-005	0.0000	3.6400e-003
Total	**0.8796**	**2.0000e-005**	**1.7600e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.4200e-003**	**3.4200e-003**	**1.0000e-005**	**0.0000**	**3.6400e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1329					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4200e-003	3.4200e-003	1.0000e-005	0.0000	3.6400e-003
Total	**0.8796**	**2.0000e-005**	**1.7600e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.4200e-003**	**3.4200e-003**	**1.0000e-005**	**0.0000**	**3.6400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	36.1559	1.4440	0.0345	82.5214
Unmitigated	36.1559	1.4440	0.0345	82.5214

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	44.2058 / 0	36.1559	1.4440	0.0345	82.5214
Total		**36.1559**	**1.4440**	**0.0345**	**82.5214**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	44.2058 / 0	36.1559	1.4440	0.0345	82.5214
Total		**36.1559**	**1.4440**	**0.0345**	**82.5214**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	36.4755	2.1556	0.0000	90.3664
Unmitigated	36.4755	2.1556	0.0000	90.3664

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	179.69	36.4755	2.1556	0.0000	90.3664
Total		**36.4755**	**2.1556**	**0.0000**	**90.3664**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	179.69	36.4755	2.1556	0.0000	90.3664
Total		**36.4755**	**2.1556**	**0.0000**	**90.3664**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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APPENDIX B: AIR TOXICS SCREENING ASSESSMENT

EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: SAN JOAQUIN
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW. Note 'day' in the unit is operation day.

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	VMT	**PM10_RUNEX**
SAN JOAQUIN	2022	T7 tractor	Aggregated	10	DSL	3354.587	**0.052040548**

Mobile Truck Emissions

On-site Pickup, Loading, and Return for Storage

pounds per gram: 0.002205

hours per day: 24

Line Source Volume #1:

Assumptions:	Factor:		Source:
1. Total travel distance per truck trip (one-day):	0.3	miles	As measured by Google Maps
2. # of trucks trips per day:	103	trucks	Fehr & Peers
3. PM10 Mobile Emissions Factor:	**0.052040548**	g/mile	EMFAC2017
(San Joaquin County, 10 MPH, Year 2022, T7 Tractor)			

Therefore:

Total daily PM10 mobile emissions generated by the project along this line volume source:

1.608052928	**g/day-24 vehicles**
0.003545146	lbs/day-24 vehicles
1.293978161	**lbs/year-24 vehicles**

Max Hr Emissions

24.00 Peak hour truck trips (assumes all trips occur in the same hour, for a highly conservative estimate)

0.374691944	**g/hr-24 vehicles**
0.000826053	**lbs/hr-24 vehicles**

Truck Idling Emission Rates

Idling Emission Rates taken from tables 3.2-41 and 42, of the EMFAC2014 Volume III - Technical Documentation Guidebook:
http://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol3-technical-documentation-052015.pdf

pounds per gram: 0.00220462

Idling Emissions:

Table 3.2-40: Revised HHD Diesel Truck Low Idle Emission Rates (after 2009)	PM10	**0.001**	g/hr-truck	
Table 3.2-41: High Idle Emissions Rates for Summer (2009 and later)	PM10	**0.003**	g/hr-truck	Note: the following calculation uses an average of the summer and
Table 3.2-42: High Idle Emissions Rates for Winter (2009 and later)	PM10	**0.004**	g/hr-truck	winter high idle emissions rates for the emission factor calcs.
		0.000291667	g/5 minutes-truck	Note: Trucks are equiped with 5-min auto shutoff.
		0.000291667	g/day-truck	
		24	hours in day	
		103	# of trucks	Source: Fehr & Peers
		2	Assumes two periods of idling for five minutes per truck per day.	
Therefore:		0.060083333	g/day-all trucks	
		21.93041667	g/year-all trucks	
		0.048348235	lbs/year-all trucks	

Name **Prioritization Calculator**

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.
Author or updater	Matthew Cegielski — *Last Update* November 2, 2020
Facility:	
ID#:	
Project #:	
Unit and Process#	

Operating Hours hr/yr	8,760.00				
Receptor Proximity and Proximity Factors	**Cancer Score**	**Chronic Score**	**Acute Score**	**Max Score**	Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.
0< R<100 1.000	3.10E+00	4.60E-03	0.00E+00	3.10E+00	
100≤R<250 0.250	7.75E-01	1.15E-03	0.00E+00	7.75E-01	
250≤R<500 0.040	1.24E-01	1.84E-04	0.00E+00	1.24E-01	
500≤R<1000 0.011	3.41E-02	5.06E-05	0.00E+00	3.41E-02	
1000≤R<1500 0.003	9.30E-03	1.38E-05	0.00E+00	9.30E-03	
1500≤R<2000 0.002	6.20E-03	9.19E-06	0.00E+00	6.20E-03	
2000<R 0.001	3.10E-03	4.60E-06	0.00E+00	3.10E-03	

Use the substance dropdown list in the CAS# Finder to locate CAS# of substances.

Substance	CAS# Finder
Diesel engine exhaust, particulate matter (Diesel PM)	9901

0 Enter the unit's CAS# of the substances emitted and their amounts. Prioritzation score for each substance generated below. Totals on last row.

Substance	**CAS#**	**Annual Emissions (lbs/yr)**	**Maximum Hourly (lbs/hr)**	**Average Hourly (lbs/hr)**	**Cancer**	**Chronic**	**Acute**
Diesel engine exhaust, particulate matter (Diesel PM)	**9901**	1.34234	0.000521498	1.53E-04	3.10E+00	4.60E-03	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Totals	**3.10E+00**	**4.60E-03**	**0.00E+00**

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APPENDIX C: BIOLOGICAL RESOURCES ASSESSMENT

MOORE BIOLOGICAL CONSULTANTS

October 6, 2020

Scannell Properties
Attn: Paul Starn
3468 Mt. Diablo Blvd., Ste. B115
Lafayette, CA 94549

Subject: "1520 LATHROP ROAD", LATHROP, SAN JOAQUIN COUNTY, CALIFORNIA: BIOLOGICAL ASSESSMENT

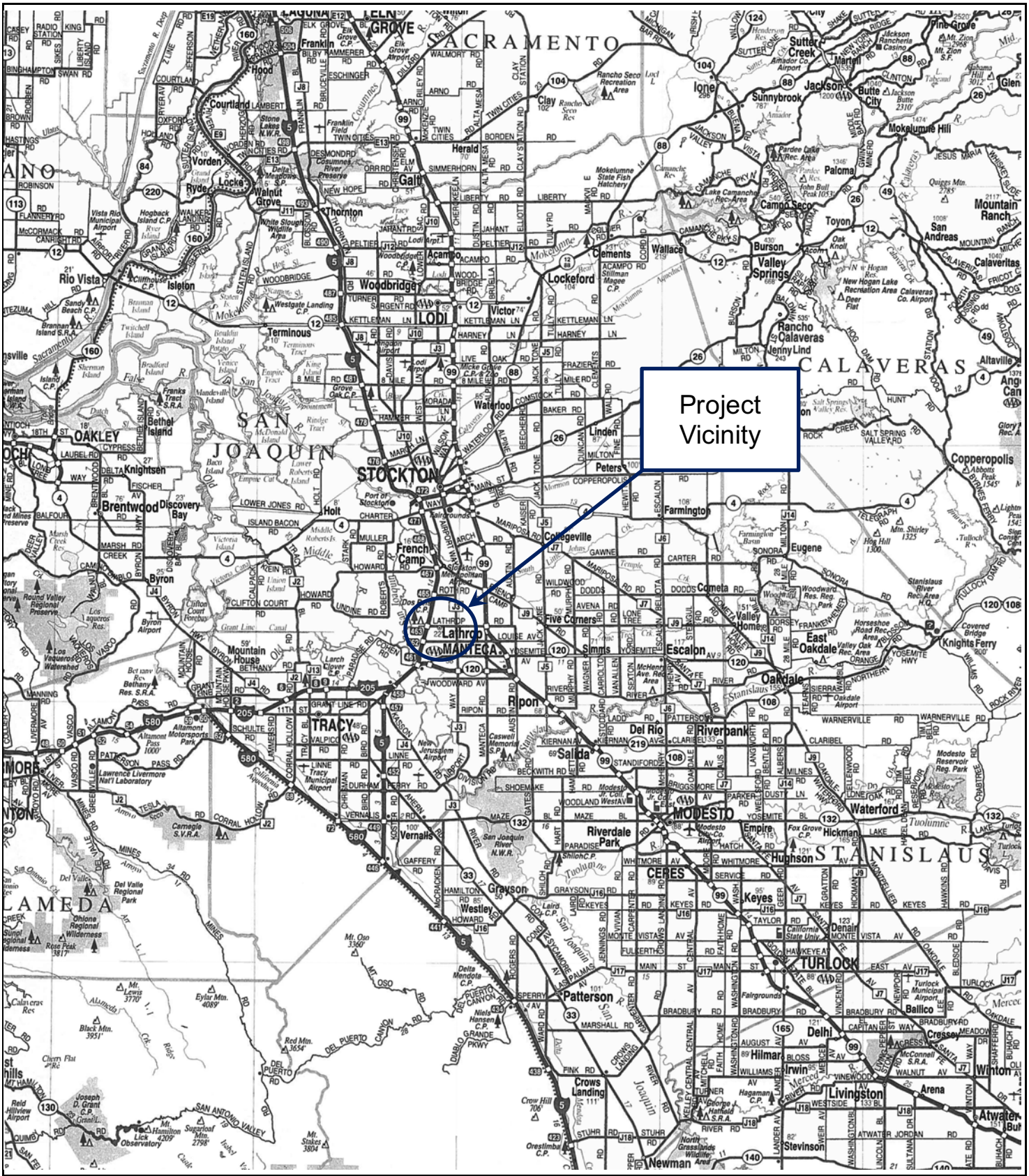
Dear Paul:

Thank you for asking Moore Biological Consultants to assist with the "1520 Lathrop Road" site in Lathrop, San Joaquin County, California (Figures 1 and 2). The purpose of this assessment is to describe existing biological resources in the project site, identify potentially significant impacts to biological resources from industrial development, and provide recommendations for how to reduce those impacts to a less-than-significant level. The work involved reviewing databases, aerial photographs, and documents, and conducting a field survey to document vegetation communities, potentially jurisdictional Waters of the U.S. and/or wetlands, and potentially suitable habitat for or presence of special-status species. This report details the methodology and results of our investigation.

Methods

Prior to the field survey, we conducted a search of California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB, 2020). The CNDDB search was conducted on the USGS 7.5-minute Lathrop and Manteca topographic quadrangles, encompassing approximately 120+/- square miles surrounding the site (Attachment A). The United States Fish and Wildlife Service (USFWS*)* IPaC Trust Resource Report of Federally Threatened and

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e-mail: moorebio@softcom.net

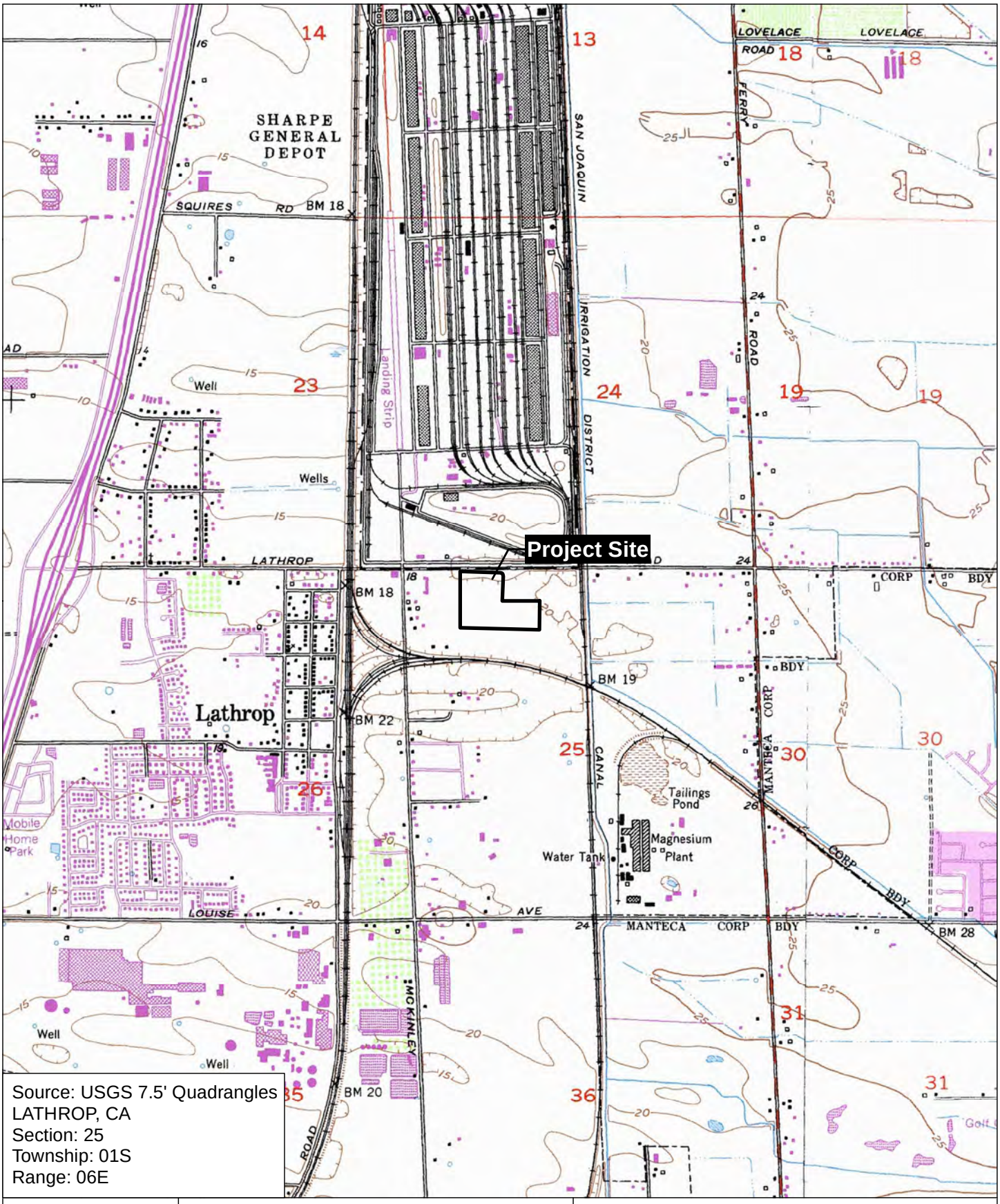


Source: California State Automobile Association

Moore Biological Consultants

FIGURE 1

PROJECT VICINITY



Source: USGS 7.5' Quadrangles
LATHROP, CA
Section: 25
Township: 01S
Range: 06E

Figure 2

Moore Biological Consultants

0 1,000 2,000
Feet

N
W E
S

Map Date: 09/11/2020

USGS

1520 Lathrop Road

City of Lathrop, San Joaquin County, CA

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Endangered species that may occur in or be affected by projects in the project vicinity was also reviewed (Attachment A). This information was used to identify special-status wildlife and plant species that have been previously documented in the vicinity or have the potential to occur based on suitable habitat and geographical distribution. Additionally, the CNDDB depicts the locations of sensitive habitats. The USFWS on-line-maps of designated critical habitat in the area were also downloaded.

A field survey was conducted on September 11, 2020. The survey consisted of walking throughout the site making observations of habitat conditions and noting surrounding land uses, habitat types, and plant and wildlife species. The fieldwork included an assessment of potentially jurisdictional Waters of the U.S. and wetlands as defined by the U.S. Army Corps of Engineers (ACOE, 1987; 2008) and a search for special-status species and suitable habitat for special-status species (e.g., blue elderberry shrubs, vernal pools). Trees in and near the site were assessed for the potential use by nesting raptors, especially Swainson's hawk (*Buteo swainsoni*). The grasslands in the site and adjacent areas visible from the site were searched for burrowing owls (*Athene cunicularia*) or ground squirrel burrows with evidence of past occupancy.

Results

GENERAL SETTING: The project site is in east Lathrop, in San Joaquin, County California (Figure 1). The site is in Section 25 within Township 1 South and Range 6 East of the USGS 7.5-minute Lathrop topographic quadrangle (Figure 2). The site is essentially flat and is at elevations of approximately 20 feet above mean sea level. The site consists of a grassland field that is shaped generally like an "L" (Figure 3 and photographs in Attachment B).

Surrounding land uses in this part of San Joaquin County are primarily commercial and industrial with residential communities nearby. The site is a



Figure 3

Moore Biological Consultants

0 200 400
Feet

N
W E
S

Map Date: 09/11/2020
Aerial Image: Google Earth (08/2018)

AERIAL

1520 Lathrop Road

City of Lathrop, San Joaquin County, CA

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leveled grassland field that has been fallow for over a decade. In recent years, soil has been stockpiled in mounds in the north part of the site. The site appears to have been formerly used as an equipment storage yard in the early 2000's. Lathrop Road borders the north edge of the site and a UPS Freight facility borders the west edge of the site. A recycling center borders the south edge of the site and a fabrication shop borders a portion of the east edge. There is a water storage facility situated just northeast of the site (Figure 3).

VEGETATION: The project site has been fallow for several years and is likely periodically mowed and/or disked; the site had not been recently disked or mowed prior to the field survey and was very weedy. The site is vegetated with highly disturbed ruderal grasses and weeds. Oats (*Avena* sp.), soft chess brome (*Bromus hordeaceus*), ripgut brome (*B. diandrus*), foxtail barley (*Hordeum murinum*), and perennial ryegrass (*Lolium perenne*) are the most common grasses in the project site. Other grassland species such as yellow star-thistle (*Centaurea solstitalis*), black mustard (*Brassica nigra*), Italian thistle (*Carduus pycnocephalus*), Russian thistle (*Salsola tragus*), common sunflower (*Helianthus annuus*), prickly lettuce (*Lactuca serriola*), and filaree (*Erodium* spp.) are intermixed with the grasses. Table 1 is a list of plant species observed in the site.

There are no trees in the site. There are two notable oleander shrubs in the north part of the site and a few tree tobacco seedlings in the soil stockpile area. There is a large cottonwood tree just off-site near the southwest corner of the site and a row of small off-site redwood trees adjacent to the south edge of the site. There are a few small willows and cottonwood seedlings within a basin adjacent to the southwest corner of the site. There are a few other large trees scattered in parcels near the project site.

No blue elderberry (*Sambucus mexicana*) shrubs were observed within or adjacent to the project site.

TABLE 1

PLANT SPECIES OBSERVED IN THE SITE

Amsinckia menziesii	rancher's fireweed
Avena sp.	wild oat
Brassica nigra	black mustard
Bromus diandrus	ripgut brome
Bromus hordeaceus	soft chess brome
Carduus pycnocephalus	Italian thistle
Centaurea solstitialis	yellow star-thistle
Cerastium glomeratum	mouseear chickweed
Convolulus arvensis	morning glory
Datura innoxia	datura
Epilobium brachycarpum	annual fireweed
Eremocarpus setigerus	turkey mullein
Erigeron canadensis	Canadian horseweed
Erodium botrys	filaree
Helianthus annuus	common sunflower
Heliotropium curassavicum	seaside heliotrope
Heterotheca grandiflora	telegraph weed
Hordeum murinum	foxtail barley
Lactuca serriola	prickly lettuce
Lolium perenne	perennial ryegrass
Raphanus sativus	wild radish
Rumex crispus	curly dock
Salsola tragus	Russian thistle
Trifolium hirtum	rose clover
Vicia americana	American vetch

WILDLIFE: A variety of bird species were observed in the site. Turkey vulture (*Cathartes aura*), American kestrel (*Falco sparverius*), American crow (*Corvus brachyrhynchos*), mourning dove (*Zenaida macroura*), and killdeer (*Charadrius vociferous*) are representative bird species observed in and near the site (Table 2). All of these are species commonly found in urban areas in the project vicinity.

TABLE 2

WILDLIFE SPECIES OBSERVED IN THE SITE

Birds	
Great blue heron	*Ardea herodias*
Turkey vulture	*Cathartes aura*
Red-tailed hawk	*Buteo jamaicensis*
American kestrel	*Falco sparverius*
Killdeer	*Charadrius vociferus*
Rock dove	*Columba livia*
Mourning dove	*Zenaida macroura*
California scrub jay	*Aphelocoma californica*
American crow	*Corvus brachyrhynchos*
Northern mockingbird	*Mimus polyglottos*
Loggerhead shrike	*Lanius ludovicianus*
European starling	*Sturnus vulgaris*
Brewer's blackbird	*Euphagus cyanocephalus*

There are a few large trees relatively close to the project site that are suitable for nesting raptors, including Swainson's hawks. The oleander shrubs in site and other smaller trees and shrubs in the project vicinity provide nesting opportunities for smaller songbirds. Given the presence of trees and shrubs near the site, it is likely one or more pairs of raptors and a variety of songbirds nest in and/or near the site during most years. It is possible that ground-nesting songbirds such as killdeer and red-winged blackbird (*Agelaius phoeniceus*) nest in the grassland habitats in the site.

A variety of mammals are likely to occur in the project site. However, no mammals were observed in the site during the recent survey. Only a few California ground squirrel (*Otospermophilus beecheyi*) burrows were observed in

the site and several pocket gopher burrows were also observed. Other common species such as raccoon (*Procyon lotor*), coyote (*Canis latrans*), black-tailed hare (*Lepus californicus*), striped skunk (*Mephitis mephitis*), and Virginia opossum (*Didelphis virginiana*) are expected to occur in the greater project vicinity and may occur in the site. A number of species of small rodents including mice (*Mus musculus, Reithrodontomys megalotis,* and *Peromyscus maniculatus*) and voles (*Microtus californicus*) also likely occur.

Based on habitat types present, only a few amphibian and reptile species are expected to use habitats in the site. Although none were observed, common species such as western fence lizard (*Sceloporus occidentalis*), Pacific chorus frog (*Pseudacris regilla*), gopher snake (*Pituophis melanoleucus*), common king snake (*Lampropeltis getulus*), and common garter snake (*Thamnophis sirtalis*) are expected to occur at the site.

WATERS OF THE U.S. AND WETLANDS: Waters of the U.S., including wetlands, are broadly defined under 33 Code of Federal Regulations (CFR) 328 to include navigable waterways, their tributaries, and adjacent wetlands. State and federal agencies regulate these habitats and Section 404 of the Clean Water Act requires that a permit be secured prior to the discharge of dredged or fill materials into any waters of the U.S., including wetlands. ACOE, CDFW, and the California Regional Water Quality Control Board (RWQCB) have jurisdiction over modifications to riverbanks, lakes, stream channels and other wetland features.

“Waters of the U.S.”, as defined in 33 CFR 328.4, encompasses Territorial Seas, Tidal Waters, and Non-Tidal Waters; Non-Tidal Waters includes interstate and intrastate rivers and streams, as well as their tributaries. The limit of federal jurisdiction of Non-Tidal Waters of the U.S. extends to the “ordinary high water mark”. The ordinary high water mark is established by physical characteristics such as a natural water line impressed on the bank, presence of shelves, destruction of terrestrial vegetation, or the presence of litter and debris.

Jurisdictional wetlands are vegetated areas that meet specific vegetation, soil, and hydrologic criteria defined by the ACOE *Wetlands Delineation Manual* and Regional Supplement (ACOE, 1987; 2008). Jurisdictional wetlands are usually adjacent to or hydrologically associated with Waters of the U.S. Isolated wetlands are outside federal jurisdiction, but may still be regulated by state agencies including CDFW and RWQCB.

Jurisdictional wetlands and Waters of the U.S. include, but are not limited to, perennial and intermittent creeks and drainages, lakes, seeps, and springs; emergent marshes; riparian wetlands; and seasonal wetlands. Wetlands and Waters of the U.S. provide critical habitat components, such as nest sites and a reliable source of water, for a wide variety of wildlife species.

The project site consists of an open grassland field vegetated with upland grasses and weeds. No potentially jurisdictional Waters of the U.S. or wetlands of any type were observed within the project site. There are no aquatic resources depicted in the site in the National Wetland Inventory (NWI) map (Attachment C).

SPECIAL-STATUS SPECIES: Special-status species are plants and animals that are legally protected under the state and/or federal Endangered Species Act or other regulations. The Federal Endangered Species Act (FESA) of 1973 declares that all federal departments and agencies shall utilize their authority to conserve endangered and threatened plant and animal species. The California Endangered Species Act (CESA) of 1984 parallels the policies of FESA and pertains to native California species. Both FESA and CESA prohibit unauthorized “take” (i.e., killing) of listed species, with take broadly defined in both acts to include activities such as harassment, pursuit and possession.

Special-status wildlife species also includes species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations,

nesting or denning locations, communal roosts, and other essential habitat. The federal Migratory Bird Treaty Act and Fish and Game Code of California protect special-status bird species year-round, as well as their eggs and nests during the nesting season. Fish and Game Code of California also provides protection for mammals and fish.

Special-status plants are those which are designated rare, threatened, or endangered and candidate species for listing by the USFWS. Special-status plants also include species considered rare or endangered under the conditions of Section 15380 of the California Environmental Quality Act Guidelines, such as those plant species identified on Lists 1A, 1B and 2 in the Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2020). Finally, special-status plants may include other species that are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those included on CNPS List 3.

Table 3 provides a summary of the listing status and habitat requirements of special-status plant and wildlife species that have been documented in the greater project vicinity or for which there is potentially suitable habitat in the project area. This table also includes an assessment of the likelihood of occurrence of each of these species in the site. The evaluation of the potential for occurrence of each species is based on the distribution of regional occurrences (if any), habitat suitability, and field observations.

SPECIAL-STATUS PLANTS: Species of special-status plants identified in the CNDDB (2020) search include slough thistle (*Cirsium crassicaule*), and wright's trichocornis (*Trichocoronis wrightii var. wrightii*) (Table 3 and Attachment A). Although not within the CNDDB (2020) search area, large-flowered fiddleneck (*Amsinckia grandiflora*) is in the USFWS IPaC Trust Resource Report (Attachment A).

TABLE 3

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status[1]	State Status[1]	CNPS List[2]	Habitat	Potential for Occurrence in the Project Site
PLANTS						
Large-flowered fiddleneck	*Amsinckia grandiflora*	E	E	1B	Cismontane woodland, valley and foothill grassland.	Unlikely: the grasslands in the site are highly disturbed and do not provide suitable habitat for large-flowered fiddleneck. There are no occurrences of this species in the CNDDB (2020) search area.
Slough thistle	*Cirsium crassicaule*	None	None	1B	Chenopod scrub, marshes and swamps, and riparian scrub.	Unlikely: there is no suitable habitat for slough thistle in the site. The nearest occurrence of slough thistle in the CNDDB (2020) search area is approximately 3 miles southwest of the site.
Delta button celery	*Eryngium racemosum*	None	E	1B	Seasonally inundated (usually floodplain) riparian scrub with a clay substrate.	Unlikely: there is no suitable habitat for this species in the site. The nearest occurrence of delta button celery in the CNDDB (2020) search area is approximately 9.5 miles southeast of the site.
Wright's trichocoronis	*Trichocoronis wrightii var. wrightii*	None	None	2	Marshes and swamps, riparian forest, meadows and seeps and vernal pools.	Unlikely: there is no suitable habitat for Wright's trichocoronis in the site. The nearest occurrence of this species in the CNDDB (2020) search area is approximately 3.5 miles southwest of the site.
WILDLIFE						
Birds						
Burrowing owl	*Athene cunicularia*	None	SC	N/A	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation.	Unlikely: there were very few ground squirrel burrows observed in the site and no ground squirrels or burrowing owls were observed during the field survey. The ruderal grasslands in the site are highly disturbed and provide low quality foraging habitat for burrowing owl. The nearest occurrence of burrowing owls in the CNDDB (2020) search area is in the open field just north of the site, across from Lathrop Road.

TABLE 3

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status[1]	State Status[1]	CNPS List[2]	Habitat	Potential for Occurrence in the Project Site
Swainson's hawk	*Buteo swainsoni*	None	T	N/A	Breeds in stands of tall trees in open areas; foraging habitats include grasslands, annual cropland, and alfalfa fields supporting rodents.	Low: the ruderal grassland in the site provides moderately suitable foraging habitat for Swainson's hawk. While there are no trees in the site, there is a large tree just southwest of the site that is suitable for nesting Swainson's hawks. A remnant raptor stick nest was observed in this tree. The nearest occurrences of Swainson's hawk in the CNDDB (2020) search area are a few records approximately 1.5 miles from the project site.
Tricolored blackbird	*Agelaius tricolor*	None	T	N/A	Requires open water and protected nesting substrate, usually cattails and riparian scrub with surrounding foraging habitat	Unlikely: the ruderal grasslands in the site provide low quality foraging habitat for tricolored blackbird. Although there is no suitable aquatic habitat in the site, there are a few basins near the site that may provide suitable nesting habitat for tricolored blackbird. These basins were dry during the recent survey, but contain emergent wetland vegetation. The nearest occurrence of tricolored blackbird in the CNDDB (2020) search area is approximately 2 miles south of the site.
Loggerhead shrike	*Lanius ludovicianus*	None	SC	N/A	Annual grasslands and agricultural areas; nests in trees and shrubs.	Unlikely: the ruderal grasslands in the site provide low quality foraging habitat for loggerhead kite. The two oleander shrubs in the site may provide suitable nesting habitat and a loggerhead shrike was observed perching in a small tree tobacco seedling in the site. The nearest occurrence of this species in the CNDDB (2020) search area is approximately 2 miles southwest of the site.
Song sparrow ("Modesto" population)	*Melospiza melodia*	None	SC	N/A	Resident of brackish water marshes surrounding Suisun Bay. Inhabits cattails, tules, and tangles bordering sloughs.	Unlikely: the site does not provide suitable habitat for this species. The nearest occurrence of Modesto song sparrow in the CNDDB (2020) search area is approximately 3 miles northwest of the site.

TABLE 3

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status[1]	State Status[1]	CNPS List[2]	Habitat	Potential for Occurrence in the Project Site
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	None	SC	N/A	Brackish and fresh water marshes; usually nests in expansive patches of cattails or tules.	Unlikely: the ruderal grasslands in the site provide low quality foraging habitat for yellow-headed blackbird. Although there is no suitable aquatic habitat in the site, there are a few basins near the site that may provide suitable nesting habitat for yellow-headed blackbird. These basins were dry during the recent survey, but contain emergent wetland vegetation. The nearest occurrence of this species in the CNDDB (2020) search area is mapped non-specifically around Lathrop, and includes the southwest part of the site.
Mammals						
Riparian brush rabbit	*Sylvilagus bachmani riparius*	E	E	N/A	Riparian thickets in Stanislaus and southern San Joaquin Counties.	Unlikely: the site does not provide suitable habitat for riparian brush rabbit. The CNDDB (2020) contains a few occurrences of this species in the San Joaquin River corridor approximately 3 miles southwest of the site.
Reptiles & Amphibians						
Giant garter snake	*Thamnophis gigas*	T	T	N/A	Freshwater marsh and low gradient streams; drainage canals and irrigation ditches, primarily for dispersal or migration.	Unlikely: the project site does not provide suitable habitat for giant garter snake. There are no recorded occurrences of this species in the CNDDB (2020) search area.
California tiger salamander	*Ambystoma californiense*	T	T	N/A	Seasonal water bodies without fish (i.e., vernal pools and stock ponds) and grassland/ woodland habitats with summer refugia (i.e., burrows).	Unlikely: there is no suitable habitat within or near the site for California tiger salamander. The nearest occurrence of this species in the CNDDB (2020) search area is approximately 3 miles southwest of the site. The site is not within designated critical habitat for California tiger salamander (USFWS, 2005a).

TABLE 3

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status[1]	State Status[1]	CNPS List[2]	Habitat	Potential for Occurrence in the Project Site
California red-legged frog	*Rana aurora draytonii*	T	SC	N/A	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	Unlikely: there is no suitable aquatic habitat for California red-legged frog in or near the project site. California red-legged frog is also presumed extinct on the floor of the Central Valley of California. There are no recorded occurrences of this species in the CNDDB (2020) search area. The site is not within designated critical habitat for California red-legged frog (USFWS, 2006).
Fish						
Delta smelt	*Hypomesus transpacificus*	T	T	N/A	Shallow lower delta waterways with submersed aquatic plants and other suitable refugia.	None: there is no aquatic habitat in the site to support delta smelt. There are no recorded occurrences of this species in the CNDDB (2020) search area. The site is within designated critical habitat for delta smelt (USFWS, 1994).
Central Valley steelhead	*Oncorhynchus mykiss*	T	None	N/A	Riffle and pool complexes with adequate spawning substrates within Central Valley drainages.	None: there is no aquatic habitat in the site. The nearest occurrence of this species in the CNDDB (2020) search area is approximately 2.5 miles west of the site in the San Joaquin River. The San Joaquin River is designated critical habitat for Central Valley steelhead (NOAA, 2005).
Longfin smelt	*Spirinchus thaleichthys*	None	SC	N/A	Brackish estuarine habitats.	None: there is no aquatic habitat in the site to support longfin smelt. The nearest occurrence of longfin smelt in the CNDDB (2020) in the San Joaquin River approximately 2.5 miles west of the site.
Invertebrates						
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	T	None	N/A	Elderberry shrubs, usually in Central Valley riparian habitats.	Unlikely: no blue elderberry shrubs were observed in the project site. The nearest occurrence of this species in the CNDDB (2020) is approximately 6.5 miles northwest of the site. The site is not in designated critical habitat for this species (USFWS 1980).

TABLE 3

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status[1]	State Status[1]	CNPS List[2]	Habitat	Potential for Occurrence in the Project Site
Western bumble bee	*Bombus occidentalis*	None	CE	N/A	Meadows and grasslands with abundant floral resources, usually high elevation	Unlikely: the site does not provide suitable habitat for western bumble bee. The nearest occurrence of this species in the CNDDB (2020) search area is approximately 3 miles southwest of the site.
Vernal pool fairy shrimp	*Branchinecta lynchi*	T	None	N/A	Vernal pools	Unlikely: there are no vernal pools in the site. There are no occurrences of vernal pool fairy shrimp recorded in the CNDDB (2020) in the search area. The site is not within designated critical habitat for vernal pool fairy shrimp (USFWS, 2005b).
Vernal pool tadpole shrimp	*Lepidurus packardi*	E	None	N/A	Vernal pools	Unlikely: there are no vernal pools in the site. There are no occurrences of vernal pool tadpole shrimp recorded in the CNDDB (2020) within the search area. The site is not in designated critical habitat for vernal pool tadpole shrimp (USFWS, 2005b).

1 T= Threatened; E = Endangered; CE = Candidate for Endangered Status; SC=State of California Species of Special Concern.

2 CNPS List 1B includes species that are rare, threatened, or endangered in California and elsewhere; List 2 includes plants that are rare, threatened or endangered in California but are more common elsewhere.

Special-status plants generally occur in relatively undisturbed areas in vegetation communities such as vernal pools, marshes and swamps, seasonal wetlands, riparian scrub, chenopod scrub, and areas with unusual soils. None of these vegetation communities occur in the site. The ruderal grasslands in the site are highly disturbed and do not provide suitable habitat for any of the plants in Table 3 or any other special-status plants. Due to lack of suitable habitat, no other special-status plant species are expected to occur in the site.

SPECIAL-STATUS WILDLIFE: The potential for intensive use of habitats within the project site by special-status wildlife species is generally low. Special-status wildlife species that have been recorded in greater project vicinity in the CNDDB (2020) include Swainson's hawk, burrowing owl, tricolored blackbird (*Agelaius tricolor*), loggerhead shrike (*Lanius ludovicianus*), song sparrow ("Modesto population") (*Melospiza melodia*), yellow-headed blackbird (*Xanthocephalus xanthocephalus*), riparian brush rabbit (*Sylvilagus bachmani riparius*), California tiger salamander (*Ambystoma californiense*), Central Valley steelhead (*Oncorhynchus mykiss*), longfin smelt (*Spirinchus thaleichthys*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) and western bumble bee (*Bombus occidentalis*). Although not included in the CNDDB within the search area, giant garter snake (*Thamnophis gigas*), California red-legged frog (*Rana aurora draytonii*), delta smelt (*Hypomesus transpacificus*), vernal pool fairy shrimp (*Branchinecta lynchi*), and vernal pool tadpole shrimp (*Lepidurus packardi*) were added to Table 3 because they are included in the USFWS IPaC Trust Resource Report (Attachment A).

The project site and surrounding areas may have provided habitat for the special-status wildlife species listed in Table 3 at some time in the past. However, agriculture and development have substantially modified natural habitats within the greater project vicinity. Of the wildlife species identified in the CNDDB, Swainson's hawk, burrowing owl, and loggerhead shrike are the only species with potential to occur in the project site on more than a transitory or very occasional basis. These birds are discussed further below because they could

be disturbed by noise if they nested in or near the project site during construction.

SWAINSON'S HAWK: The Swainson's hawk is a migratory hawk listed by the State of California as a Threatened species. The Migratory Bird Treaty Act and Fish and Game Code of California protect Swainson's hawks year-round, as well as their nests during the nesting season (March 1 through September 15). Swainson's hawk are found in the Central Valley primarily during their breeding season, a population is known to winter in the San Joaquin Valley.

Swainson's hawks prefer nesting sites that provide sweeping views of nearby foraging grounds consisting of grasslands, irrigated pasture, hay, and wheat crops. Most Swainson's hawks are migratory, wintering in Mexico and breeding in California and elsewhere in the western United States. This raptor generally arrives in the Central Valley in mid-March, and begins courtship and nest construction immediately upon arrival at the breeding sites. The young fledge in early July, and most Swainson's hawks leave their breeding territories by late August.

The CNDDB (2020) contains several records of nesting Swainson's hawk in the greater project vicinity. There are a few records of nesting Swainson's hawks within two miles of the project site. There are a few suitable nest trees near the project site and annual cropland and grasslands in the region provide suitable foraging habitat for this species; Swainson's hawks may also forage in the grasslands in the project site. The field survey was conducted outside of the nesting season for this species, but a remnant raptor stick nest was observed in the large cottonwood adjacent to the southwest corner of the site. A red-tailed hawk was observed perched in this tree during the recent survey, but Swainson's hawks could potentially utilize this nest during some years.

The project will participate in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (HCP) (SJCOG, 2000). Standard Incidental

Take Minimization Measures (ITMMs) under the HCP outline protective measures for Swainson's hawk. As there is potential Swainson's hawk nesting habitat (i.e., large trees) adjacent to the site, it is anticipated SJCOG will issue ITMMs for Swainson's hawks. In the event that construction commences during the nesting season (i.e., if construction starts between March 1 and August 31) and Swainson's hawks are nesting in or adjacent to the site, a construction setback from the nest tree would be required until nesting is complete. The setback is calculated as twice the diameter of the dripline of the nest tree as measured from under the nest, and is usually less than 100 feet. In the event that a Swainson's hawk nests in an off-site tree within the required setback, the area in the setback would be unavailable for construction until the Swainson's hawk nesting season is over.

BURROWING OWL: The Migratory Bird Treaty Act and Fish and Game Code of California protect burrowing owls year-round, as well as their nests during the nesting season (February 1 through August 31). Burrowing owls are a year-long resident in a variety of grasslands as well as scrub lands that have a low density of trees and shrubs with low growing vegetation; burrowing owls that nest in the Central Valley may winter elsewhere.

The primary habitat requirement of the burrowing owl is small mammal burrows for nesting. The owl usually nests in abandoned ground squirrel burrows, although they have been known to dig their own burrows in softer soils. In urban areas, burrowing owls often utilize artificial burrows including pipes, culverts, and piles of concrete pieces. This semi-colonial owl breeds from March through August, and is most active while hunting during dawn and dusk. There are several records of this species in the CNDDB (2020) search area and the nearest record is in the grassland field just north of the site, across from Lathrop Road.

The intensity of development surrounding the site reduces the likelihood of burrowing owls using the site for nesting. No burrowing owls were observed in the project site during the recent survey and very few ground squirrel burrows

were observed in the site. This species is known to occur in the area and if burrow habitat becomes available in the future, this species may utilize habitats in the site for nesting.

Standard ITMMs under the HCP outline protective measures for burrowing owl. As there is potential burrowing owl habitat (i.e., burrows) in the site, it is anticipated SJCOG will issue ITMMs for burrowing owl. If construction is scheduled to commence outside the nesting season (i.e., if construction starts between September 1 and January 31) and burrowing owls are present on-site, they can be passively relocated. In the event that construction commences during the nesting season and burrowing owls are present on-site, a 250-foot construction setback from the natal burrow would be required until nesting is complete.

LOGGERHEAD SHRIKE: Loggerhead shrike is a State of California Species of Concern, but is not a listed species at the state or federal level. The Migratory Bird Treaty Act and Fish and Game Code protect loggerhead shrike year-round, as well as their nests during nesting season; nesting for this species peaks from January to July. Loggerhead shrike can be found variable habitats such as agricultural fields, riparian areas, and pastures. Loggerhead shrike breeds mainly in open areas with scattered shrubs and trees dominated.

The large oleander shrubs in the site and shrubs and trees adjacent to the site may be used for nesting by loggerhead shrike and the grasslands in the site provide suitable foraging habitat for this species. The nearest occurrence of Loggerhead shrike in the CNDDB (2020) search area is approximately 2 miles southwest of the site. A loggerhead shrike was observed perched in a tree tobacco seedling in the project site during the recent survey. This shrike appeared to be foraging in the site.

Standard ITMMs under the HCP outline protective measures for loggerhead shrike. As there is potential loggerhead shrike nesting habitat in and adjacent to

the site (i.e., shrubs and trees), it is anticipated SJCOG will issue ITMMs for loggerhead shrike. In the event that construction commences during the nesting season and loggerhead shrikes are present on-site, a 100-foot construction setback from the nesting area shall be established and maintained during the nesting season until the young have fledged.

OTHER SPECIAL-STATUS SPECIES: The site does not provide suitable aquatic habitat for any type of fish, giant garter snake, California tiger salamander, or California red-legged frog. There is no emergent wetland habitat in the site for nesting tricolored blackbird, yellow-headed blackbird, or song sparrow. The site lacks riparian habitat vegetation to support riparian brush rabbit. There are no blue elderberry shrubs in the site, precluding the potential occurrence of valley elderberry longhorn beetle. There are no vernal pools or seasonal wetlands in the site for vernal pool branchiopods (i.e., fairy and tadpole shrimp). Finally, the site does not provide suitable habitat for western bumble bee.

CRITICAL HABITAT: The site is not within designated critical habitat for delta smelt (USFWS, 2004), California red-legged frog (USFWS, 2006), California tiger salamander (USFWS, 2005a), federally listed vernal pool shrimp or plants (USFWS, 2005b), delta smelt (USFWS, 1994), valley elderberry longhorn beetle (USFWS, 1980), or Central Valley steelhead (NOAA, 2005) (Attachment D).

SAN JOAQUIN COUNTY MULTI-SPECIES HABITAT CONSERVATION AND OPEN SPACE PLAN (HCP): The project will participate in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (HCP) (SJCOG, 2000). The HCP involves the payment of fees and implementation of ITMMs to avoid impacts on nesting birds and other special-status species. The site was previously developed and is mapped as “Urban/Fee Exempt” in the HCP (Attachment E). There will be no “per-acre” HCP fees associated with re-development of this site.

Conclusions and Recommendations

- The site consists of a grassland field that has been fallow for several years. On-site habitats are biologically unremarkable.

- No potentially jurisdictional Waters of the U.S. or wetlands were observed in or adjacent to the site.

- No sensitive natural communities were observed in the site.

- Due to a lack of suitable habitat, it is unlikely that special-status plants occur in the site.

- With the exception of Swainson's hawk, burrowing owl, and loggerhead shrike, no special-status wildlife species are expected to occur in or near the site on more than a very occasional or transitory basis.

- The site does not provide suitable habitat for riparian brush rabbit. There is no suitable habitat to support giant garter snake, California tiger salamander or California red-legged frog, and will have no effect on these special-status amphibians and reptiles. As there are no blue elderberry shrubs in the site, the project will have no effect on valley elderberry longhorn beetle. Due to a lack of vernal pools or seasonal wetlands in the site, the project will have no effect on vernal pool fairy shrimp or vernal pool tadpole shrimp. As the project will not involve work in rivers or streams and will not change regional drainage patterns, it will have no effect on special-status fish.

- The project site is not within areas that are designated as critical habitat for federally listed species.

- The project is expected to participate in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (HCP) (SJCOG, 2000).

The site was previously developed and is mapped as "Urban/Fee Exempt" in the HCP (Attachment E). There will be no "per-acre" HCP fees associated with re-development of this site.

- The HCP involves the payment of fees and implementation of Incidental Take Minimization Measures to avoid impacts on nesting birds and other special-status species. Based on habitats present, it is anticipated SJCOG will issue ITMMs for Swainson's hawk, burrowing owl, and loggerhead shrike. The applicant will be required to implement the ITMMs, including setbacks from active nests, if any, until the young fledge.

- Trees, shrubs, and grasslands in and near the site could be used by birds protected by the MBTA and/or Fish and Game Code of California. If construction commences during the general avian nesting season (March 1 through July 31), a pre-construction survey for nesting birds is recommended. If active nests are found, work in the vicinity of the nest(s) should be delayed until the young fledge.

Thank you, again, for asking Moore Biological Consultants to assist with the project. Please call me at (209) 745-1159 with any questions.

Sincerely,



Diane S. Moore, M.S.
Principal Biologist

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Attachment A

CNDDB Summary Report and Exhibits

& USFWS IPaC Trust Resource Report

Selected Elements by Scientific Name

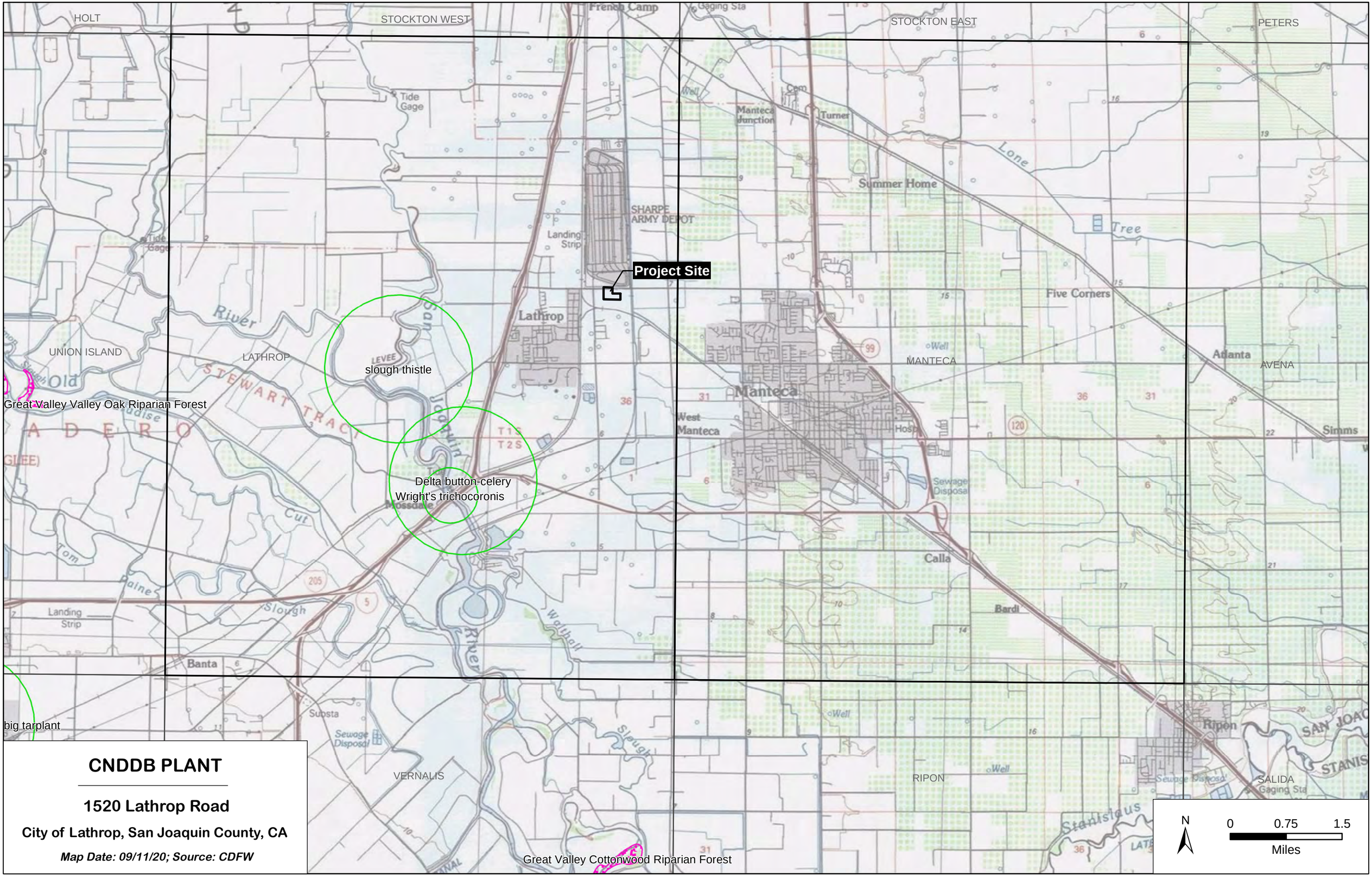
California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Lathrop (3712173) OR Manteca (3712172))

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	G2G3	S1S2	SSC
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Bombus occidentalis western bumble bee	IIHYM24250	None	Candidate Endangered	G2G3	S1	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Cirsium crassicaule slough thistle	PDAST2E0U0	None	None	G1	S1	1B.1
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
Eryngium racemosum Delta button-celery	PDAPI0Z0S0	None	Endangered	G1	S1	1B.1
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Lytta moesta moestan blister beetle	IICOL4C020	None	None	G2	S2	
Melospiza melodia song sparrow ("Modesto" population)	ABPBXA3010	None	None	G5	S3?	SSC
Oncorhynchus mykiss irideus pop. 11 steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
Spirinchus thaleichthys longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	
Sylvilagus bachmani riparius riparian brush rabbit	AMAEB01021	Endangered	Endangered	G5T1	S1	
Trichocoronis wrightii var. wrightii Wright's trichocoronis	PDAST9F031	None	None	G4T3	S1	2B.1
Xanthocephalus xanthocephalus yellow-headed blackbird	ABPBXB3010	None	None	G5	S3	SSC

Record Count: 16

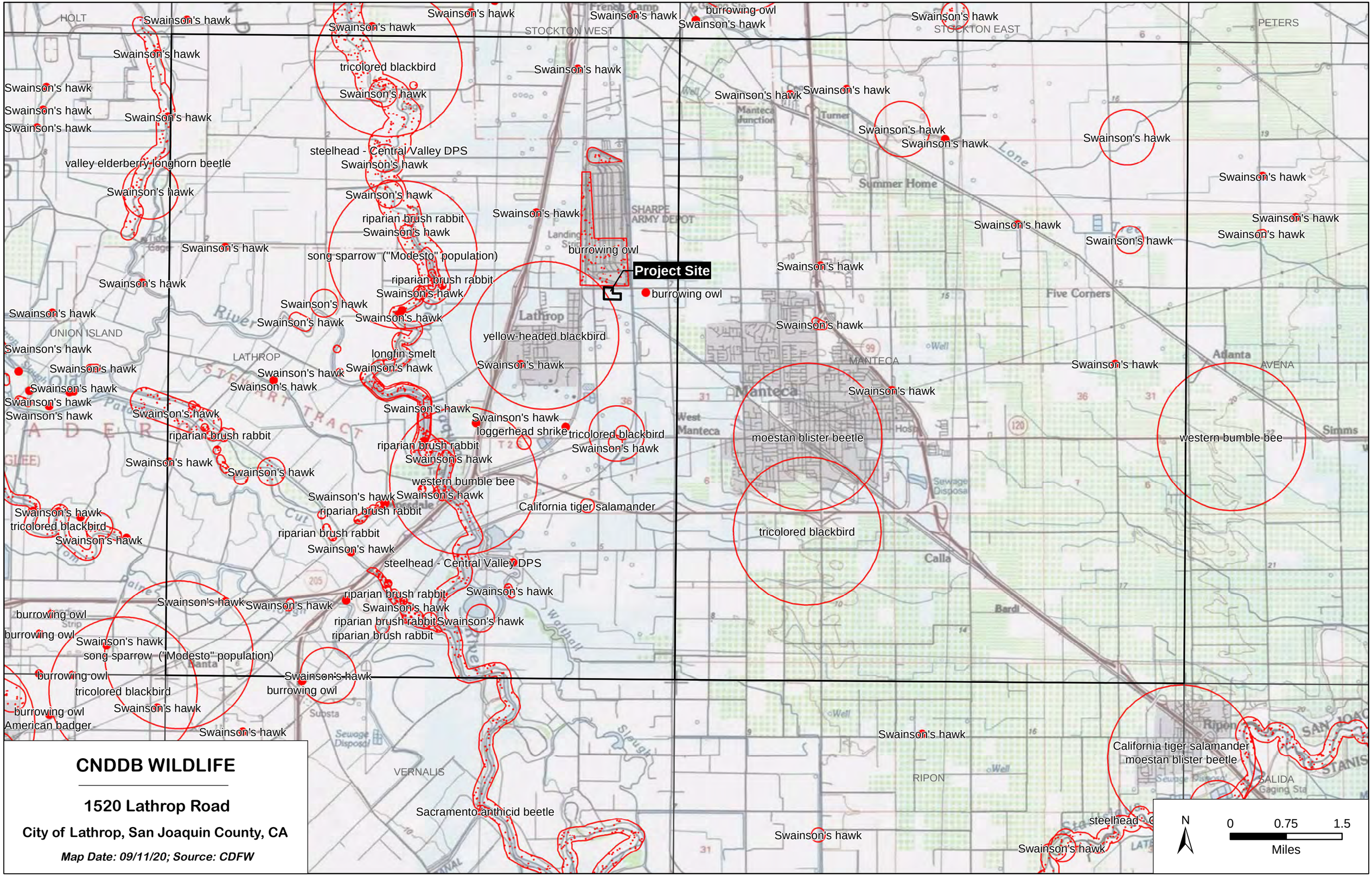


CNDDB PLANT

1520 Lathrop Road

City of Lathrop, San Joaquin County, CA

Map Date: 09/11/20; Source: CDFW



CNDDB WILDLIFE

1520 Lathrop Road

City of Lathrop, San Joaquin County, CA

Map Date: 09/11/20; Source: CDFW

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

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Location

San Joaquin County, California



Local offices

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

San Francisco Bay-Delta Fish And Wildlife

(916) 930-5603
(916) 930-5654

650 Capitol Mall
Suite 8-300
Sacramento, CA 95814

http://kim_squires@fws.gov

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Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS

Riparian Brush Rabbit Sylvilagus bachmani riparius — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6189

Reptiles

NAME	STATUS
Giant Garter Snake Thamnophis gigas	Threatened
No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii	Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	
California Tiger Salamander Ambystoma californiense	Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2076	

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus	Threatened
There is **final** critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/321	

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus	Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7850	

Crustaceans

NAME	STATUS

NOT FOR CONSULTATION

Vernal Pool Fairy Shrimp Branchinecta lynchi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp Lepidurus packardi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Large-flowered Fiddleneck Amsinckia grandiflora There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5558	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
Delta Smelt Hypomesus transpacificus https://ecos.fws.gov/ecp/species/321#crithab	Final

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Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php

- Measures for avoiding and minimizing impacts to birds
  http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds
  http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

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NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Burrowing Owl Athene cunicularia This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31
Common Yellowthroat Geothlypis trichas sinuosa This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31

Costa's Hummingbird Calypte costae This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9470	Breeds Jan 15 to Jun 10
Nuttall's Woodpecker Picoides nuttallii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse Baeolophus inornatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Song Sparrow Melospiza melodia This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Feb 20 to Sep 5
Spotted Towhee Pipilo maculatus clementae This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/4243	Breeds Apr 15 to Jul 20
Yellow-billed Magpie Pica nuttalli This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9726	Breeds Apr 1 to Jul 31

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Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that

week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

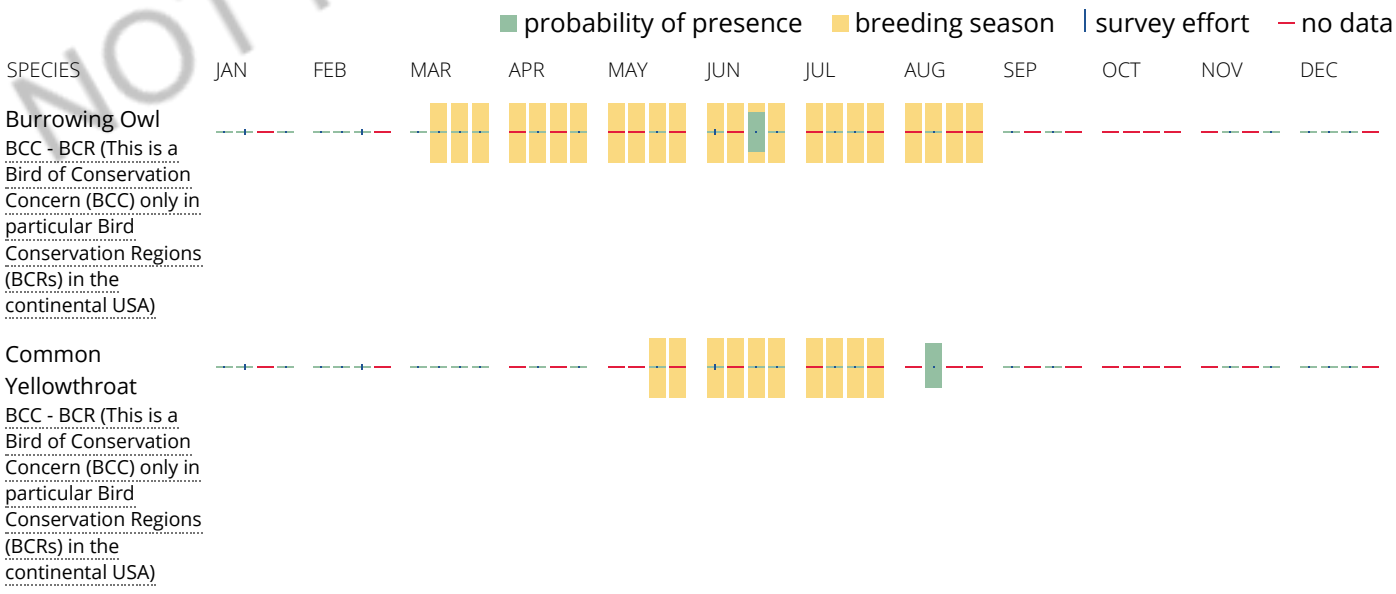
Breeding Season (▬)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

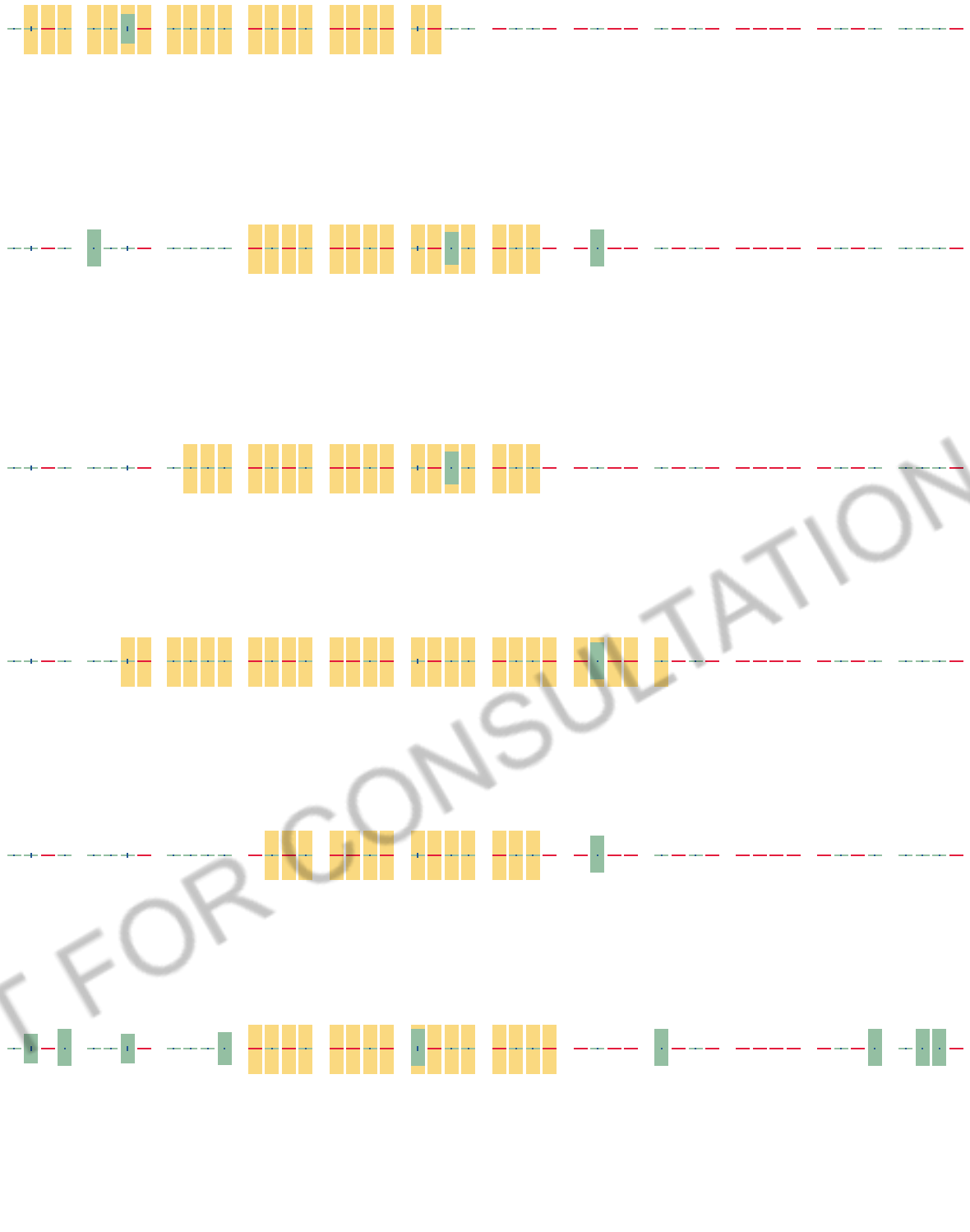
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



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Costa's Hummingbird
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Nuttall's Woodpecker
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Oak Titmouse
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Song Sparrow
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Spotted Towhee
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Yellow-billed Magpie
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review.

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Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

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Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

NOT FOR CONSULTATION

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Attachment B

Photographs



Ruderal grassland in the central part of the site, looking north from the south edge of the site; 09/11/20.



Ruderal grassland in the east part of the site, looking west from the east edge of the site; 09/11/20.



South edge of the site, looking east from the southwest corner of the site; 09/11/20. The row of young redwood trees are just off-site.



East edge of the site, looking north from the southeast corner of the site; 09/11/20.



West edge of the site, looking south from the northwest corner of the site; 09/11/20. There is a freight storage yard adjacent to the west edge of the site.



East edge of the site, looking north along the fenceline adjacent to a water storage facility; 09/11/20. The water storage facility is situated just northeast of the project site.



North edge of the site, looking east along Lathrop Road from the northwest corner of the site; 09/11/20.



Soil and gravel stockpiles (circled) in the north part of the site, looking northeast; 09/11/20. This area appears to be used for excess soil and rock disposal.



Off-site basin adjacent to the west edge of the site, looking west from the southwest corner of the site; 09/11/20. This basin was dry and contained upland grasses and weeds.



Remnant raptor stick nest in a tree just off-site, looking southwest from the southwest corner of the site. A red-tailed hawk was observed perched in this tree during the field survey.

Attachment C

National Wetland Inventory Map

U.S. Fish and Wildlife Service

National Wetlands Inventory

1520 Lathrop Road



October 6, 2020

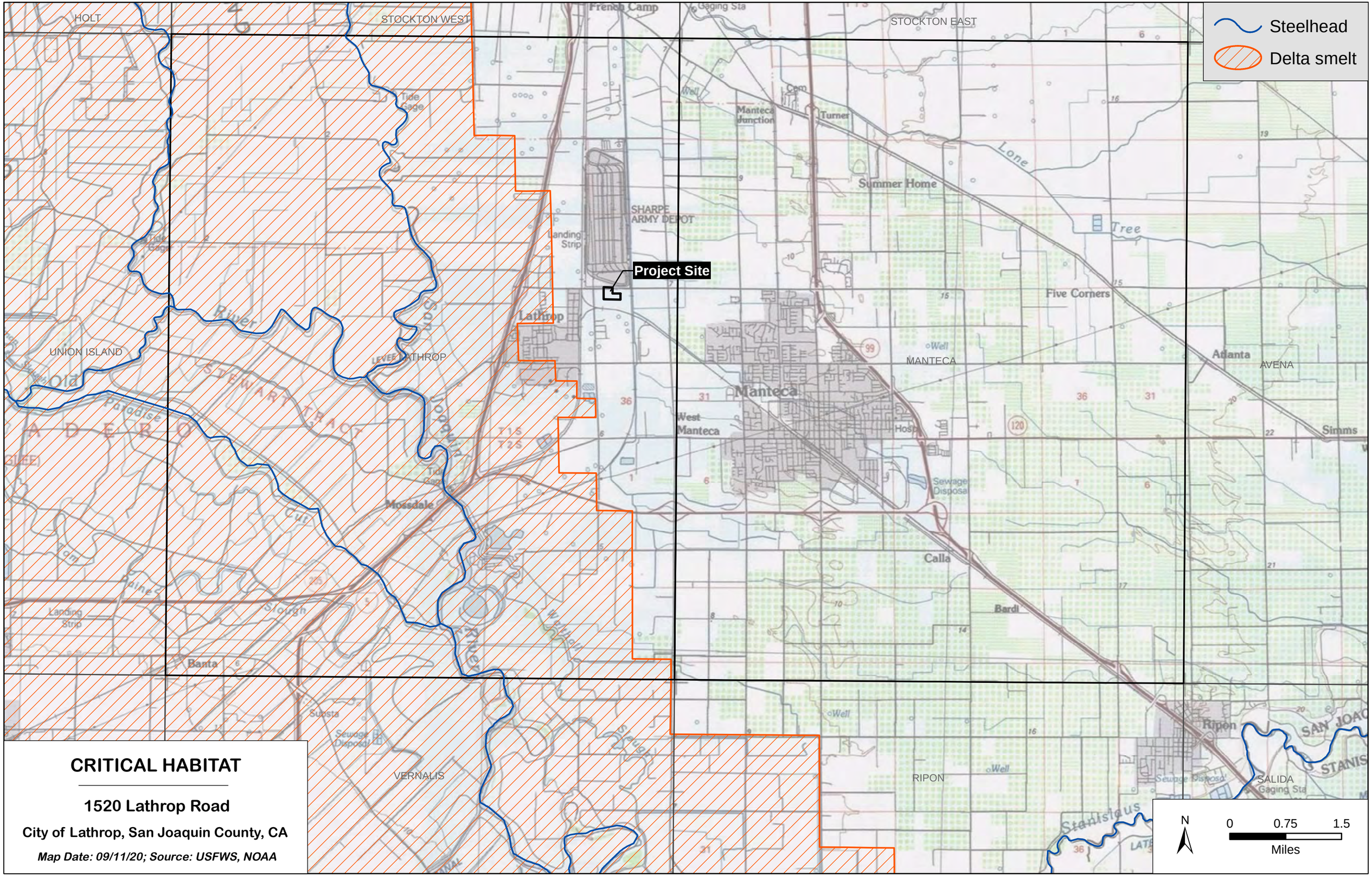
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Attachment D

Designated Critical Habitat



CRITICAL HABITAT

1520 Lathrop Road

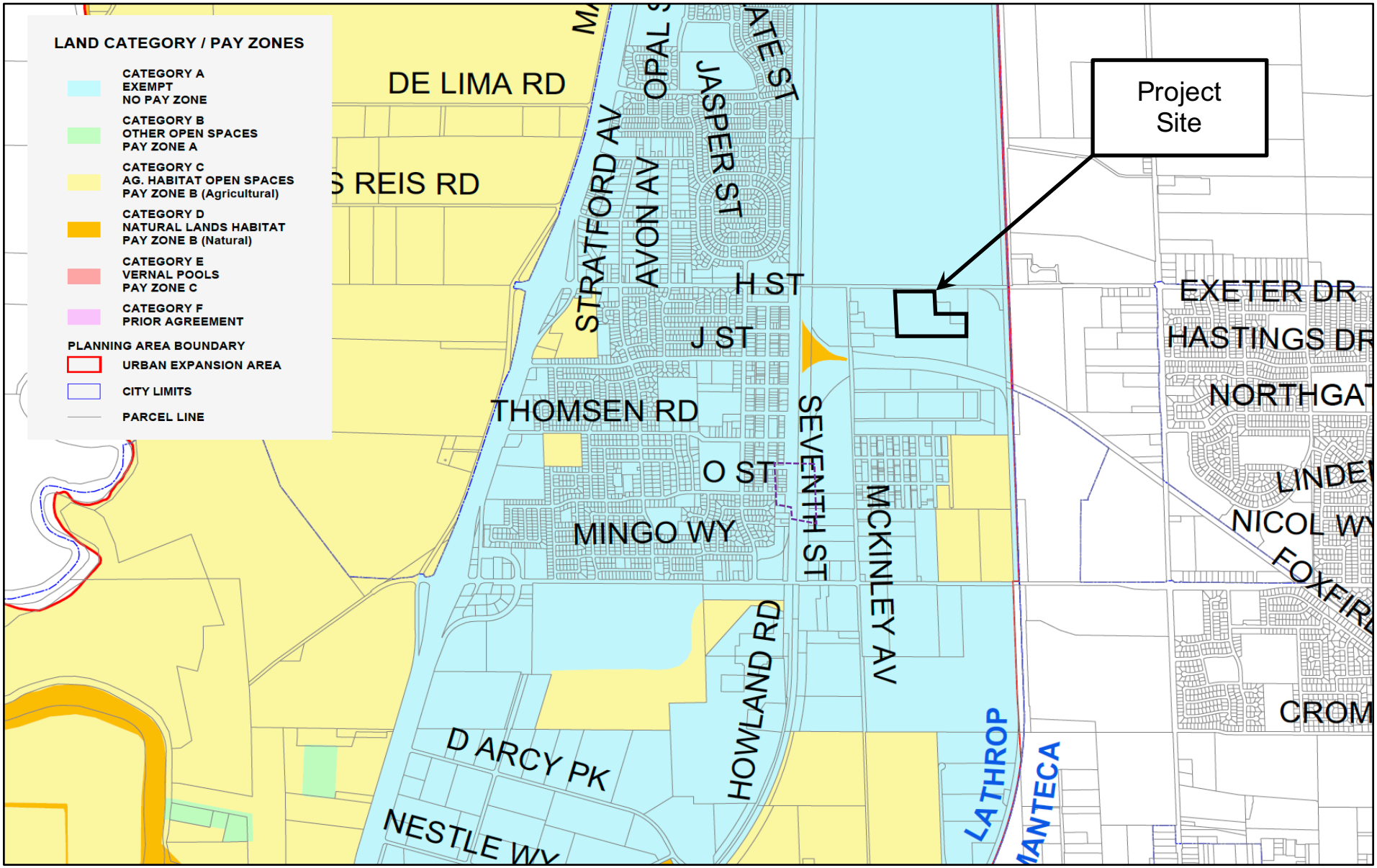
City of Lathrop, San Joaquin County, CA

Map Date: 09/11/20; Source: USFWS, NOAA

Attachment E

San Joaquin County Multi-Species Habitat Conservation And Open Space Plan:

Lathrop Area Compensation Map & 2020 Fee Schedule



Source (Basemap): SJCOG, 2000

N
W E
S

Moore Biological Consultants

SAN JOAQUIN COUNTY HCP
LAND CATEGORY / PAY ZONE MAP

Breakdown Land In Lieu per acre:
Category A = $8,144
Category B+C = $4,678.22

SJCOG, Inc.

555 East Weber Avenue ● Stockton, CA 95202 ● (209) 235-0600 ● FAX (209) 235-0438

San Joaquin County Multi-Species Habitat Conservation & Open Space Plan (SJMSCP)

Doug Kuehne
CHAIR

Jesus Andrade
VICE CHAIR

Andrew T. Chesley
PRESIDENT

Member Agencies
CITIES OF
ESCALON,
LATHROP,
LODI,
MANTECA,
RIPON,
STOCKTON,
TRACY,
AND
THE COUNTY OF
SAN JOAQUIN

2020 Updated Habitat Fees*

Habitat Type	Fee Per Acre
Multi-Purpose Open Space	$6,412
Natural	$12,822
Agriculture	$12,822
Vernal Pool - uplands	$52,833
Vernal Pool - wetted	$100,788

* Effective January 1, 2020 – December 31, 2020

2020 Endowment Fees with In-lieu Land**

Type of Preserve	*Enhancement Cost/acre*	*Land Management Cost/acre*	TOTAL PER ACRE ENDOWMENT
Agricultural Habitat Lands	$3,831.00	$847.22	**$4,678.22**
Natural Lands	$3,831.00	$847.22	**$4,678.22**
Vernal Pool Habitat			
Vernal Pool Grasslands	$15,274.00	$2,580.93	**$17,854.93**
Vernal Pool Wetted	$63,915.00	$2,533.80	**$66,448.80**

** Effective January 1, 2020 – December 31, 2020 in lieu of fees to be used as the endowment for the dedicated land preserves (Category B + C) based on impacted acres.

VELB Mitigation

A special fee category shall apply when removal of the Valley Elderberry Long-horned Beatle (VELB) habitat of elderberry shrubs occurs. The fee shall be paid to SJCOG, Inc. or a VELB mitigation bank approved by the Permitting Agencies. The current fee, as established in the VELB Conservation Fund Account managed by the Center for Natural Lands Management, and approved by the USFWS, is $1,800 per VELB Unit (one unit= one stem over 1" in diameter at ground level which is removed). Fees shall be established by the JPA during preconstruction surveys (i.e., counts of stems to be removed with and without exit holes shall be completed during preconstruction surveys) and shall be paid to the JPA prior to ground disturbance or stem removal, whichever comes first.

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APPENDIX D: PHASE I ENVIRONMENTAL SITE ASSESSMENT (ESA)

PHASE I
ENVIRONMENTAL
SITE ASSESSMENT

1520 East Lathrop Road (APN 180-040-140)
Lathrop
California

FOR

Scannell Properties
8801 River Cross Boulevard, Suite 300
Indianapolis, IN 46420

basics
ENVIRONMENTAL

October 15, 2020
20-ENV5814

655 12TH STREET, #126 • OAKLAND, CA • 94607 • TEL / FAX 510-834-9099 / 9098

basics
ENVIRONMENTAL

October 15, 2020
20-ENV5814

Scannell Properties
8801 River Cross Boulevard, Suite 300
Indianapolis, IN 46420

Attention: Mr. Paul Starn

Subject: Phase I Environmental Site Assessment Report
1520 East Lathrop Road (APN 180-040-140)
Lathrop, California 95330

Dear Mr. Starn:

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13/AAI of 1520 East Lathrop Road (APN 180-040-140) in Lathrop, California, the property. Any exceptions to, or deletions from, this practice are described in Section 1 of this report. This assessment **has** revealed obvious evidence of a recognized environmental condition in connection with the property that warrants further investigation and/or documentation at this time.

Should you have any questions regarding this report, please contact the undersigned.

Sincerely,

Basics Environmental, Inc.



Zachary Gotler
Project Coordinator

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APPENDIX D: Historical USGS Topographic Maps
APPENDIX E: Reiter Trucks DTSC Documents
APPENDIX F: 1520 East Lathrop Road SJCDEH Documents
APPENDIX G: 1520 East Lathrop Road LMFD Fire Incident Report
APPENDIX H: Kleinfelder 2004 Groundwater Monitoring Well Installation, Sampling and Analysis Report
APPENDIX I: ENGEO 2005 Groundwater Quality Collection Results Report
APPENDIX J: Statement of Qualifications

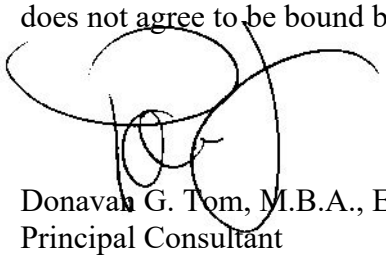
PROFESSIONAL CERTIFICATION

PHASE I ENVIRONMENTAL SITE ASSESSMENT
1520 East Lathrop Road (APN 180-040-140)
Lathrop, California
For
Scannell Properties
20-ENV5814
October 15, 2020

I declare that, to the best of my professional knowledge and belief, 1 meet the definition of "Environmental Professional" as defined by the Environmental Protection Agency's Final Rule (40 CFR 312.21). I have the specific qualifications based on education, training and experience to assess a property of the nature, history and setting. In performing Phase I Environmental Site Assessments, I develop and perform the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

The findings, interpretations of data, recommendations, specifications or professional opinions are presented within the limits prescribed by available information at the time the report was prepared, in accordance with generally accepted professional environmental practice and within the requirements by the Client. There is no other warranty, either expressed or implied. The data and findings of this report are based on the readily available data and information obtained from numerous public and private agencies regarding the subject site and its immediate vicinity. Additional search (at greater cost) may or may not disclose information which may significantly modify the findings of this report. We accept no liability on completeness or accuracy of the information presented and or provided to us, or any conclusions and decisions which may be made by the Client or others regarding the subject site.

This report was prepared solely for the benefit of Basic's Client. Basics consents to the release of this report to third parties involved in the transaction for which the report was prepared, including without limitation, lenders, title companies, public institutions, attorneys, and other consultants. However, any use of or reliance upon this report shall be solely at the risk of such party and without legal recourse against Basics, or its subcontractors, affiliates, or their respective employees, officers, or directors, regardless of whether the action in which recovery of damage is sought is based upon contract, tort (including the sole, concurrent or other negligence and strict liability of Basics), statute or otherwise. This report shall not be used or relied upon by a party that does not agree to be bound by the above statements.



Donavan G. Tom, M.B.A., E.P., R.E.P.A.
Principal Consultant

1.0 INTRODUCTION

1.1 Purpose of Investigation

Basics Environmental, Inc. (Basics) has performed this Phase I Environmental Site Assessment (ESA) for Scannell Properties pursuant to our signed agreement on September 23, 2020. The "subject site" is at 1520 East Lathrop Road (APN 180-040-140), Lathrop, California (APN 180-040-140). The purpose of this ESA is to:

- Observe site conditions at the property in accordance with the protocols set forth by the *American Society for Testing and Materials (ASTM) Standard E1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* and *U.S. Environmental Protection Agency's All Appropriate Inquiry (AAI) Final Rule 40 CFR Part 312*, except where modified by the proposal;

- Identify to the extent feasible recognized environmental conditions in connection with the subject site. The ESA is intended to evaluate the potential for the presence of hazardous or toxic chemicals in the soil and/or groundwater resulting from past and present land use activities. To the extent possible, potential sources of hazardous or toxic chemicals from adjacent off-site operations will also be evaluated; and

- Render findings and professional opinion regarding the potential for adverse environmental impacts on or adjacent to the site.

1.2 Scope of Work

The scope of work performed for this ESA consisted of the following tasks:

- Field reconnaissance and personal interviews to evaluate environmental land-use conditions on the subject site and view adjacent properties;

- Aerial photograph, City Directory and/or Fire Insurance/Topographic Map review (typically back to 1940 or first developed use of the property) to evaluate former environmental land-use conditions on the subject site and adjacent properties;

- Review of federal, state and county files and environmental database search report obtained from a commercial service providing up to date and current information;

- Evaluation of the physical setting (geomorphic, geologic and hydrogeologic) of the subject site property; and

- Preparation of this ESA report to present the findings and professional opinions regarding potential recognized environmental conditions on the site.

The work for this ESA was performed within the client approved scope of work and budget for the investigation.

1.3 Special Terms and Conditions

The goal of this ESA is to identify recognized environmental conditions indicating the presence or likely presence of any hazardous substances or petroleum hydrocarbons in structures, ground, groundwater, or surface water of the property. Recognized environmental conditions are not intended to include *de minimis* conditions that do not present risks to public health or environment and that would not be subject to enforcement actions by government agencies.

1.4 Limitations and Exceptions

This ESA only includes a visual evaluation of the presence of asbestos, lead paint, radon, or mold, if applicable. In addition, this ESA does not include the results of any sampling, monitoring, or other types of field and/or laboratory testing or investigation.

1.5 User Responsibilities

The user of this ESA will be responsible for: (1) determining the relationship of the purchase price to the value of the property; (2) disclosure of specialized knowledge, experience or information which may affect the environmental condition of the subject site; and (3) disclosure of any environmental cleanup liens against the property within recorded land title records, if applicable. None of the above was provided by the client for our review.

2.0 SITE DESCRIPTION AND RECONNAISSANCE

2.1 Site Description and Uses

2.1.1 Interviews

A Basics representative visited the subject site on September 30, 2020. Basics observed the various facilities and operations conducted at the site and also noted the land-use in the vicinity of the site. Mr. Bruce Myers, Site Representative, provided access to the available areas. A standard environmental questionnaire was utilized to obtain disclosure of specialized knowledge, experience or information that may affect the environmental condition of the subject site.

Information provided by Mr. Myers indicated to his knowledge no hazardous materials or underground storage tanks are currently utilized onsite. Mr. Myers indicated that, for purposes of this assessment, he has no specialized knowledge or experience pertaining to the site or the adjacent properties that is material to RECs in connection with the subject property.

Additional information obtained from the interviews is incorporated within the appropriate sections of this report.

2.1.2 Site Description and Uses

The subject site is located within the City of Lathrop, along the southern side of East Lathrop Road one parcel to the east of the southeast intersection of McKinley Avenue and Lathrop Road and approximately 2.29 miles east of the San Joaquin River (See Drawings 1 and 2). The subject site consists of an approximately 18.15-acre “irregular” shaped parcel of land. There are currently no improvements on the subject site parcel.

Underground services for natural gas, water, and sanitary sewers are located along Lathrop Road. No obvious evidence of electrical transformers was observed at the subject site. Information obtained from the site inspection indicated no evidence that PCB-containing equipment is now used or has been used in connection with the property.

The general area surrounding the property is developed commercial and zoned CS (Commercial Service). A site plan illustrating the site and adjacent properties is shown in Drawing 3.

2.1.3 Environmental Land-Use Conditions

The subject site was evaluated for the use and storage of hazardous substances and petroleum products; use of aboveground and underground storage tanks, storage and disposal of hazardous wastes; evidence of releases from hazardous materials, and identification of conduits to the subsurface.

18.15-Acre Vacant Parcel of Land (APN 198-040-140) – The subject site consists of one "irregular" shaped parcel of land totaling 18.15 acres of land. The subject site consists of a vacant lot on a relatively flat topography. A driveway entrance is located along the central northern side of the subject site accessible via Lathrop Road to the north. A metal fence runs along the southern, eastern and western borders of the subject site parcel.

During the time of the site visit, the surface of the central portion of the subject site consisted of bare soil and short & tall unmanaged vegetation. Located along the northern dirt driveway entrance are mounds of soil. The origin of these mounds of soil is unknown. Visual observations of the mounds of exposed soil did not reveal any obvious signs of hazardous materials, stains or spills.

Located in the northwestern, southwestern and southeastern portions of the subject site are three abandoned in-place groundwater monitoring wells. Visual observations of the groundwater monitoring wells appeared in good condition and did not reveal any obvious signs of hazardous materials, stains or spills. Visual observations of the bare soil and unmanaged vegetation surrounding the groundwater monitoring wells did not reveal any other obvious evidence of drains, sumps, major cracks or other conduits to the subsurface.

Visual observations of the rest of the vacant lot did not reveal any obvious signs of hazardous materials, stains or spills. Visual observations of rest of the vacant lot did not reveal any other obvious evidence of drains, sumps, major cracks or other conduits to the subsurface. In addition, no obvious evidence of rinsing or dumping, underground storage tanks, distressed

vegetation, or surface impoundments was observed. No obvious evidence of underground storage tanks, distressed vegetation, or surface impoundments were observed throughout the site during the inspection.

2.2 Adjacent Properties

2.2.1 Immediate Adjacent Properties

Sites in the vicinity of the subject site were observed during the sites reconnaissance to evaluate conditions or businesses indicative of hazardous or potentially toxic materials use.

The following are the uses of the adjoining properties.

North - Lathrop Road followed by a landscaped area as part of the San Joaquin Distribution Center – Sharpe Army Depot Complex (700 & 850 East Roth Road)
South - "AMG Resources Corp" Metal Processing Plant (15332 McKinley Avenue)
East - "Con-Fab Corp" Concrete Product Manufacturing Plant (1910 East Lathrop Road) and San Joaquin Irrigation District Well (1750 East Lathrop Road)
West - "UPS Freight" Shipping Service Truck Storage Yard (1444 East Lathrop Road) and a Vacant Lot

Visual observations of the immediate adjacent properties did not reveal any obvious business activities indicative to the use, storage and/or treatment of hazardous materials. In addition, no obvious evidence was noted at the immediate adjacent properties that would represent a significant environmental concern to the subject site.

2.2.2 Wells

Three groundwater monitoring wells were noted on the northwestern, southwestern and southeastern corners of the subject site and were installed on the subject site as part of a previous groundwater sampling report performed in 2004 on the subject site. No other obvious evidence of wells, such as water supply wells and/or groundwater-monitoring wells were noted on or nearby the subject site. **See Section – 5.3 Previous Environmental Reports**

2.3 Non-ASTM E1527 Considerations

2.3.1 Asbestos Containing Construction Materials

An asbestos survey was not conducted at the property as part of this assessment. However, no structures are currently located at the subject site. In addition, no obvious evidence of friable or non-friable suspect asbestos containing materials was observed on the subject site.

Asbestos is a mineral fiber that occurs in rock and soil. Because of its fiber strength and heat resistance asbestos has been used in a variety of building construction materials for insulation and as a fire retardant. Original building materials not easily accessible including, but not limited to, flooring and masting materials, sheet rock muds and taping compounds, ceiling and roofing materials, and ducting and surfacing materials may contain ACCMs. To confirm if any asbestos materials are contained within the structure on the subject site, an asbestos survey should be performed by an AHERA trained asbestos professional. If the property building is slated for renovation or demolition, an asbestos inspection will be required, pursuant to the National Emission Standards for Hazardous Air Pollutant (NESHAPs).

2.3.2 Lead-Based Paint

A lead-based paint survey was not conducted at the property as a part of this assessment. However, no structures are currently located at the subject site. In addition, no obvious evidence of dumping of lead-based paint containing materials was observed on the subject site.

Lead-based paint is any paint, varnish, stain, or other applied coating that has 1 mg per square cm (or 5,000 µg/g by dry weight) or more of lead. In Section 1017 of the Housing and Urban Development Guidelines, Residential Lead-Based Paint Hazard Reduction Act of 1992, otherwise known as " Title X", states that a lead-based paint hazard is "any condition that causes exposure to lead that would result in adverse human health effects" resulting from lead-contaminated dust, bare, lead-contaminated soil, and/or lead-contaminated paint that is deteriorated or present on accessible, friction, or impact surfaces. Therefore, under Title X, intact lead-based paint on most walls and ceilings would not be considered a "hazard," although the paint

should be maintained and its condition monitored to ensure that it does not deteriorate and become a hazard.

Note: It is our understanding that the subject site parcel is under consideration of redevelopment. Due to (Pre-1978) structures on-site, there is a low potential for these former structures to have impacted the shallow soil with lead-based paint. However, the construction contractor for the site should be prepared to deal with the possible discovery and removal of lead impacted soil (and/or associated contamination, if any) in accordance with local and state regulations.

2.3.3 Radon

Radon testing was not conducted at the property as a part of this assessment. However, based on the Map of Radon Zones provided by the United States Environmental Protection Agency (EPA), there is a moderate potential that radon concentrations at, or above, 4 picocuries per liter (pCi/l) are present at the site. Concentrations at, or above, 4 pCi/l are considered to be concentrations of concern per Cal-EPA and EPA. Based on the map, radon has been detected in San Joaquin County at average levels between 2 pCi/l and 4 pCi/l. Additional information can also be obtained from the California Department of Public Health's Radon Program, which provides a list of radon test results from throughout the state that are sorted by zip code.

Radon is a naturally occurring radioactive gas that is odorless, invisible, and without taste. It is released during the natural decay of uranium, which is present in most rock, soil and water. Its occurrence in the state is influenced primarily by geology. Radon can be found throughout California because uranium exists in all rock and soil. Although certain areas of the state are more likely to contain higher radon levels than others, radon is a house-to-house issue. You may live in an area of low radon potential yet your house can have elevated radon but your neighbor's house has a low radon level. Radon, in its natural state cannot be detected with the human senses. To confirm if any radon is contained within the structure on the subject site, testing should be performed by an EPA-authorized state certified radon testing professional.

2.3.4 Mold

A mold survey was not conducted at the property as a part of this assessment. However, no obvious evidence of mold or water damaged materials were observed within easily accessible areas of the structure.

In general, mold is a subset of the fungi family. Fungi are common and found in most ecosystems. Fungi is needed to help recycle organic material to sustain plant and animal life. In order to reproduce, mold release tiny spores into the air, which eventually attach onto surfaces favorable for growth. A class of fungi, molds have been found to cause a variety of health problems in humans, including allergic, toxicological, and infectious responses. Molds are decomposers of organic materials, and thrive in humid environments, and produce spores to reproduce as plants produce seeds. When mold spores land on a damp spot indoors, they may begin growing and digesting whatever they are growing on in order to survive. When excessive moisture or water accumulates indoors, mold growth will often occur, particularly if the moisture problems remain undiscovered or not addressed.

Currently, there are no established "sound, science-based Permissible Exposure Limits (PELs) for indoor molds at this time." As mold becomes a more prevalent issue, building owners will need to stay informed on the subject. There are dozens of Internet web sites geared to the topic, and increased litigation in this area is also fueling increased interest. With any new trend there often is misinformation, incorrect conclusions, and conflicting information. Those involved in the building industry should consider the source and weight of information carefully before drawing conclusions and making decisions.

To confirm if any mold is present within the structure on the subject site, laboratory test and sampling can be performed by a qualified industrial hygienist for various species of fungi such as Aspergillus, Cladosporium, Stachybotris and other mycotoxins, and bacteria families such as Legionella, etc. However, the only types of evidence that have been related consistently to adverse health effects are the presence of current or past water damage, damp materials, visible mold, and mold odor, *not* the number or type of mold spores nor the presence of other markers of mold in indoor air or dust.

3.0 PHYSICAL SITE SETTING

3.1 Geomorphic Description

The subject site is located within the boundaries of the Sacramento/San Joaquin (Central) Valley, which extends from just north of Red Bluff southward to the Sacramento-San Joaquin River Delta, at approximately 15-18 feet above mean sea level. The Central Valley is part of the Great Valley, a large northwest-trending structural trough, bordered on the east by the Sierra Nevada and the on west by the Coast Ranges. The Central Valley can be divided into three primary geomorphic features; valley floors, uplands, and volcanic buttes (Olmsted and Davis, 1961). The valley floor features are generally composed of younger valley fill sediments and are located in the central part of the valley. On the east and west margins of the valley, upland geomorphic features predominate. These areas are generally composed of low hills, dissected uplands, and terraces mantled with a relatively thin soil cover. The sediments underlying these areas are generally older than those found in the flood plains.

3.2 Geologic Setting

The geologic formations in the Central Valley range in age from Paleozoic to Holocene. The oldest rocks are granitic, metamorphic, and marine sediments; these are found at considerable depth in the center of the valley and are exposed along the eastern and western margins. These rocks are overlain by Eocene marine and continental sediments containing saline or brackish water. The post-Eocene continental formations were deposited by streams flowing from the surrounding mountains into the subsiding valley. Review of the California Division of Mines and Geology "Geologic Map of the San Francisco —San Jose Quadrangle," indicates that the site is underlain by Quaternary alluvial fan deposits of the Modesto Formation.

Information regarding oil and gas fields was researched at the California Department of Conservations website. Based on the well finder produced by the Division of Oil, Gas, and Geothermal Resources (http://maps.conservation.ca.gov/doggr/), the subject site does not fall

within a known gas field. In addition, no oil or gas wells, plugged and abandoned dry holes were noted on or nearby the subject site.

Information regarding soil lithology was researched at the California Water Resources Control Board's website at https://geotracker.waterboards.ca.gov/. Based on a previous subsurface investigation performed at the subject site (, the subsurface of the site consists of generally fine-grained (predominantly sandy silts, sands, silty sands and sandy clays) to the total depth explored of 66 feet below ground surface (bgs) (Kleinfelder, 2004).

3.3 Hydrogeologic Setting

Information regarding first depth to groundwater and flow direction was researched at the California Regional Water Quality Control Board's (RWQCB) website at https://geotracker.waterboards.ca.gov/. Regionally, the ground water flow direction is to the north in the direction of the San Joaquin River. Locally, topography is relatively flat. Information regarding groundwater was researched at the California Water Resources Control Board's website at https://geotracker.waterboards.ca.gov/.

Based on a previous subsurface investigation performed for the subject site, Groundwater was encountered at approximately 14 to 19 feet bgs. The calculated groundwater flow direction at the subject site was west by southwest (Kleinfelder, 2004). Seasonal variations, hillside runoff, aquifer pumping, tidal fluctuations or other factors may influence ground water levels.

4.0 HISTORICAL REVIEW

Site historical information was obtained from a review of Sanborn Fire Insurance Maps, United States Geological Survey (U.S.G.S.) Topographic Maps, aerial photographs, Polk and Haines City Directories. In addition, local building department and newspaper records were also reviewed. The following Sanborn maps, topographic maps, and city directories were reviewed on September 30, 2020, within the libraries maintained by the University of California in Berkeley, California and City of Stockton Main Branch Library in Stockton, California. The aerial photographs were reviewed online within the sites maintained by National Environmental Title Research, LLC, TerraServer, and Google Earth. Additional Sanborn maps and aerial photographs were provided by EDR.

Note: Copies of supporting aerials, city directories and maps are not typically included in the report. The historical references are reviewed within local public libraries and are copyright protected and cannot be reproduced without the consent of the owner. As such, our reports properly cite and reference the historical reference in accordance with ASTM E1527-13/AAI protocols. Any incorporation of these documents without the permission of the owner would be against the law.

Reference	Date
Sanborn Fire Insurance Map	1884
Sanborn Fire Insurance Map	1891
Sanborn Fire Insurance Map	1898
Sanborn Fire Insurance Map	1908
U.S.G.S. Topographic Map	1915
Sanborn Fire Insurance Map	1929
Aerial Photograph	1937
Aerial Photograph	1940
U.S.G.S. Topographic Map	1952
Aerial Photograph	1957
Aerial Photograph	1963
Aerial Photograph	1968
U.S.G.S. Topographic Map	1968
Haines City Directory	1971
Haines City Directory	1975

Aerial Photograph	1975
U.S.G.S. Topographic Map	1976
Haines City Directory	1980
Aerial Photograph	1982
Haines City Directory	1985
U.S.G.S. Topographic Map	1987
Haines City Directory	1991
U.S.G.S. Topographic Map	1991
Aerial Photograph	1993
InfoUSA City Directory	1995
U.S.G.S. Topographic Map	1996
Haines City Directory	2000
InfoUSA City Directory	2002
Aerial Photograph	2006
InfoUSA City Directory	2007
Aerial Photograph	2009
Aerial Photograph	2012
InfoUSA City Directory	2012
Aerial Photograph	2016
InfoUSA City Directory	2017

In the Lathrop Sanborn Fire Insurance Maps of 1884, 1891, 1898, 1908 and 1929, the subject site and all immediate adjacent sites fall outside the area of coverage and no site-specific maps are available.

In the USGS topographic map of 1915, the subject site is shown as undeveloped land. During that time, bordering the site is a road (current Lathrop Road) followed by undeveloped land; undeveloped land to the south; undeveloped land to the east; and undeveloped land to the west.

In the aerial photographs of 1937 and 1940, the subject site is shown as undeveloped land. During this time, bordering the site is a road (currently Lathrop Road) followed by undeveloped land to the north; undeveloped land to the south; undeveloped land to the east; and undeveloped land and a small agricultural orchard to the west.

In the topographic maps of 1952 and 1968, and aerial photographs of 1957, 1963 and 1968, the subject site is shown as undeveloped land. During this time, bordering the site is a road (currently Lathrop Road) followed by a commercial building and landscaped area as part of the large San Joaquin Defense Distribution Sharpe Army Depot complex; undeveloped land to the south; undeveloped land to the east; and undeveloped land and a commercial building to the west.

In the city directory of 1971, the subject site address is not listed. However East Lathrop Road is listed.

In the aerial photograph of 1975 and topographic map of 1976, the subject site is shown as developed with the Reiter Trucks Truck Storage Yard with what appears to be several commercial buildings or shed storage structures along the northwestern corner of the subject site and what appears to be two covered truck ports along the northeastern border of the subject site. During this time, bordering the site is a road (currently Lathrop Road) followed by a commercial building and landscaped area as part of the large San Joaquin Defense Distribution Sharpe Army Depot complex; undeveloped land to the south; undeveloped land to the east; and undeveloped land and a commercial building to the west.

In the city directory of 1975, the subject site address is listed as being occupied by “Reiter Compton Truck” (1850 East Lathrop Road).

In the city directories of 1980 and 1985, the subject site address is listed as being occupied by “Reiter Trucks” (1850 East Lathrop Road).

In the aerial photograph of 1982, the subject site is shown as developed with the Reiter Trucks Storage Yard with what appears to be several commercial buildings located along the northwestern corner of the subject site. During this time, bordering the site is a road (currently Lathrop Road) followed by a commercial building and landscaped area as part of the large San Joaquin Defense Distribution Sharpe Army Depot complex; undeveloped land to the south; a large paved lot that appears to the be under construction to the east; and two commercial buildings with associated paved and landscaped areas to the west.

In the city directories of 1991, 1995 and 2000, the subject site address is listed as being occupied by “Reiter Trucks” (1520 East Lathrop Road).

In the topographic maps of 1987, 1991 and 1996, the subject site is shown as developed with the Reiter Trucks Storage Yard. During this time, bordering the site is a road (currently Lathrop Road) followed by a commercial building and landscaped area as part of the large San Joaquin Defense Distribution Sharpe Army Depot complex; a metal processing plant to the south; a concrete product manufacturing plant to the east; and two commercial buildings with associated paved and landscaped areas to the west.

In the aerial photograph of 1993, the subject site is shown as developed with the Reiter Trucks Storage Yard with what appears to be several commercial buildings or storage shed structures located along the northwestern corner of the subject site. During this time, bordering the site is a road (currently Lathrop Road) followed by a commercial building and landscaped area as part of the large San Joaquin Defense Distribution Sharpe Army Depot complex; a metal processing plant to the south; a concrete product manufacturing plant to the east; and two commercial buildings with associated paved and landscaped areas to the west.

In the city directories of 2002, 2007, 2012 and 2017, the subject site address is not listed. However East Lathrop Road is listed.

In the aerial photographs of 2006, 2012 and 2016, the subject site is shown as vacant land. During this time, bordering the site is a road (currently Lathrop Road) followed by a commercial building and landscaped area as part of the large San Joaquin Defense Distribution Sharpe Army Depot complex; a metal processing plant to the south; a concrete product manufacturing plant and San Joaquin County irrigation well to the east; and two commercial buildings with associated paved and landscaped areas to the west.

5.0 ENVIRONMENTAL DATABASE REVIEW

5.1 Agency Record Review

Environmental Data Resources, Inc. (EDR) was contracted to compile data from available government agency databases on locations of actual and potentially impacted sites within a one-mile radius of the subject property. Copies of the environmental database lists and the location map for the subject site are included in Appendix A.

The results of the database search by EDR revealed 85 mapped sites and 2 unmapped sites within a one-mile radius, of which 35 mapped sites are within a one-eighth mile radius of the subject site. Based on distance from the subject property and regional hydrogeology the following selected site(s) identified by EDR were deemed to have the highest potential to impact the subject site. In addition, a Tier 1 Vapor Encroachment Screen (VES) pursuant to ASTM E2600-10 was performed on the following selected site(s) to assess whether a potential vapor encroachment condition (VEC) exists at the subject property caused by the release of vapors from contaminated soil or groundwater either on or near the subject site. These sites identified by EDR were located either at, adjacent or possibly up gradient of the subject site.

- **Reiter Trucks/Pacific Union Homes** – 1520 East Lathrop Road, Lathrop
  Formerly located on the subject site. Listed on the HAZNET and HWTS databases.

  According to the information provided by EDR, this site is listed as manifesting off-specification, aged or surplus organics in 1992 and asbestos containing waste and other organic solids in 2004 (CAL EPA# CAC000708200, CAC002572990, CAC002584024). No reports of spills or unauthorized releases were reported for this site by EDR.

  See Section 5.2 – Local Agency File Review for more details.

- **San Joaquin Defense Distribution Center/Sharpe Army Depot** – 700 & 850 East Roth Road, Lathrop**.** Located across East Lathrop Road adjacent to the north and perceived cross/up gradient to the subject site. Listed on the DOD, NPL, SEMS, CORRACTS, RCRA-TSDF, US Eng Controls, US Inst Controls, Hist UST, RCRA NonGen/NLR, ROD, UST, CERS Tanks, LUST, Hist CORTESE, MCS, HAZNET, ICE, HWP, CERS, Envirostor and HWTS databases.

  According to the information provided by EDR, the Defense Distribution Depot San Joaquin – Sharpe site is listed as a military cleanup site and military underground storage tank site. The Defense Distribution Depot San Joaquin – Sharpe (DDJC – Sharpe), encompassing approximately 720 acres, forms a 0.5-mile-wide (east-west), 2-mile-long (north-south) rectangle. Current land use at DDJC-Sharpe is designated as industrial and it is anticipated that the land use designation will remain industrial in the future. The principal depot mission has been the storage, shipping, and packaging of general supplies in support of America's Armed Forces, as well as the maintenance of military equipment and these operations have been conducted on the site since the 1950s. These tasks require the use of petroleum hydrocarbon fuels and a variety of other industrial chemicals. Past use and disposal practices resulted in the release of these chemicals into the environment. In 1979, DDJC-Sharpe began conducting environmental restoration activities to address soil and groundwater contamination. Investigations at the depot revealed that contamination of soil and groundwater resulted primarily from industrial cleaning solvents, petroleum fuels, metals, and pesticides.

  Both on-site and off-site groundwater have been contaminated primarily with volatile organic compounds (TCE, PCE, BTEX Constituents). Fuel hydrocarbons appear only in wells on site. Soil excavated from the site was contaminated with TCE (a volatile organic compound (VOC), and metals, specifically lead and chromium. People may face a health threat if they ingest or come in direct contact with contaminated water or soil.

  Initial Actions: Environmental studies have been underway at the Sharpe Site since 1980 as part of DLA's Installation Restoration Program (IRP). Groundwater extraction and treatment were initiated in 1987 in the South Balloon and in 1990 in the North Balloon as interim remedial actions; UST site investigations began in 1992 and involved the removal of several USTs and excavation of fuel hydrocarbon-contaminated soil. SVE operated at five TCE sites (P-1A, P-1B, P-1C, P-1E, and P-6A) between 1998 and 2001. As of April 2010, SVE is operating at one site (P-5A). Excavation and off-site disposal of lead and chromium-contaminated soil was completed in 1998 and 2006 at two sites (S-3 and S-26). No active remediation was required at the other 10 TCE sites or the other three metals sites. Annual LUC and burrowing owl monitoring commenced in 2011.

  Entire Site: There are 386 groundwater wells at the Sharpe Site: 282 monitoring wells (dewatering wells [DWs] or monitoring wells [MWs]), 48 extraction wells (EWs), 10 injection wells (IWs), six injection observation wells (IOWs), and 40 piezometers (PZs)

(including 22 for the groundwater modeling system [GMS] boundary survey). In addition, there are more than 40 potable water supply wells (PWs) on and off the installation, of which 20 PWs are currently included in the Well Monitoring Program. During the 2011 monitoring period, two extraction wells (EWB4 and EWCB6) were installed.

There are 13 vapor wells at Site P-5A, which is the only OU 2 site currently undergoing active remediation at the Sharpe Site: five vapor extraction wells (VEWs), three dual-completion vapor monitoring wells (VMWs), and two single-completion VMWs. Figure 5.2-1 in Section 5.0 shows the well locations at Site P-5A.

These systems will continue to operate until cleanup standards are achieved. Additional treatment facilities, primarily in high-concentration source areas, continue to be built and put into operation.

The selected remedy for groundwater contamination at the Sharpe Site is hydraulic control of contaminant plume migration and reduction of concentrations of groundwater contaminants of concern (COCs) via groundwater extraction and treatment of volatile COCs using air stripping, and discharge of the treated effluent for industrial reuse, to surface water, and/or for recharge to groundwater via percolation ponds to mitigate potential long-term contaminant migration and to protect human health and the environment.

for soil vapor are to SVE (termed in situ volatilization in the OU 2 ROD) is the remedy for soil with TCE concentrations in soil vapor that pose a threat to groundwater quality in order to prevent further degradation of groundwater and minimize aquifer cleanup time by reducing the mass of TCE that reaches groundwater. The removal of contaminated soil, use of in situ volatilization, and use of groundwater treatment systems have reduced the potential of exposure to contaminated materials at the Defense Distribution Depot San Joaquin - Sharpe main site while studies continue and cleanup activities are being conducted.

Representatives of DDSJ - Sharpe indicate that any residual soil and/or groundwater contamination emanating from the DDSJ - Sharpe site has been identified in the central west portion of the facility and is migrating to the west/northwest (cross gradient to the subject site).

According to the DDSJ - Sharpe 2013 Ground Water Project Annual Report, Since remediation began in 1996, approximately 1,576 pounds of VOCs have been removed at the Sharpe Site via soil excavation, soil vapor extraction and treatment, and groundwater treatment. Based on isoconcentration maps, the ground water beneath the subject site does not appear to have been impacted from DOD/DDSJ - Sharpe.

Currently, this site is still an active site under the oversight of the local enforcing agency. According to the latest available ground water monitoring report (U.S. Department of Defense 2013), ground water has been encountered at approximately 15 feet below ground surface and calculated to flow in a westerly to northwesterly direction. The closest ground water monitoring well/sampling point is (MW-431A). MW-431A is located across East Lathrop Road approximately 200 feet to the north of the subject site. In 2010, MW-431A was non-detect for all analytes tested (VOCs) and was not recommended for sampling in the future. In addition, according to the DDSJ - Sharpe 2013 Ground Water Project Annual Report, MW-431A has never detected any concentrations of TCE or PCE.

Based on this information, there is no record of groundwater impact from the adjacent site to the subject site. However, if future environmental investigations indicate an impact to ground water has spread from the adjacent site onto the subject site, it appears unlikely that there will be any financial liability to the owner of the subject site even if it has been impacted by the release. This conclusion is based on established State policy, which has been promulgated in Resolution 92-49 of the RWCQB, which is entitled Policies and Procedures for Investigation and Cleanup and Abatement of Water Discharges Under Water Code Section 13304. The Resolution reads in part, "The Regional Water Board shall... Require the discharger to extend the investigation, and cleanup and abatement, to any location affected by the discharge or threatened discharge." This language and the general practice of the governing regulatory agency are such that it is unlikely that any financial responsibility would be passed to the current or future owner(s) of the subject site in the unlikely event that the remedial investigation were to extend to the subject site.

This site is also within 528 feet of the critical distance to the nearest boundary of the subject site for suspect contaminated sites with petroleum hydrocarbon and MBTEX sources and within 1,760 feet of suspect contaminated sites with chlorinated solvents. The critical distance, as defined in E 2600-10, effectively is the upper limit distance a vapor can reasonably be expected to migrate in relatively permeable soil assuming the path of least resistance is directly from the nearest edge of the contaminated media (such as groundwater) to the nearest subject site boundary. As such, the conclusion from Tier 1 screening is that a VEC cannot be ruled out.

However, based on: (1) no record of ground water impact below the subject site: (2) the remedial actions conducted; (3) inhalation risk for VOCs; and (4) perceived cross/up gradient position, the probability of a subsurface environmental impact and/or potential vapor encroachment from this site to the subject site appears low at this time.

- **Dissalvo Trucking/Motor Cargo/Heartland Express/UPS Freight** – 1444 East Lathrop Road, Lathrop**.** Located adjacent to the west and perceived down/cross gradient to the subject site. Listed on the RCRA NonGen/NLR, Hist UST, UST, SWEEPS UST, CHMIRS, CORTESE, Hist CORTESE, NPDES, WDS, CERS Tanks, CERS, CERS Haz Waste, LUST, HAZNET and HWTS databases.

  According to the information provided by EDR, this site is listed as historically having four 12,000-gallon diesel USTs, one 10,000-gallon gasoline UST, one 6,000-gallon gasoline UST and unspecified-gallon waste oil UST. This site is also listed as manifesting unspecified oil-containing waste, empty containers less than 30 gallons, pesticides and other waste associated with pesticide production, waste oil and mixed oil, hydrocarbon solvents (benzene, hexane, Stoddard, Etc.), other inorganic solid waste, unspecified organic liquid mixture, off-specification, aged or surplus organics, unspecified aqueous solution and other organic solids from 2003 to 2019 (CAL EPA# CAC002995918, CAL000285947, CAL000307120, CAC002570774). Impacts to aquifer used for drinking water supply with diesel were first reported in 2003.

  According to the information provided by RWQCB's GeoTracker online database, a release was first noted on the site on October 1, 1993. The release was noted to have impacted soil and groundwater. the site received case closure as of January 4, 1996. No other information was provided by EDR or RWQCB's GeoTracker online database. In addition, no records of any groundwater sampling at the site were available.

  Based on this information, there is no record of ground water impact from the adjacent site to the subject site. However, if future environmental investigations indicate an impact to ground water has spread from the adjacent site onto the subject site, it appears unlikely that there will be any financial liability to the owner of the subject site even if it has been impacted by the release. This conclusion is based on established State policy, which has been promulgated in Resolution 92-49 of the RWCQB, which is entitled Policies and Procedures for Investigation and Cleanup and Abatement of Water Discharges Under Water Code Section 13304. The Resolution reads in part, "The Regional Water Board shall... Require the discharger (adjacent site) to extend the investigation, and cleanup and abatement, to any location affected by the discharge or threatened discharge; This language and the general practice of the governing regulatory agency are such that it is unlikely that any financial responsibility would be passed to the current or future owner(s) of the subject site in the unlikely event that the remedial investigation were to extend to the subject site.

  This site is also within 528 feet of the critical distance to the nearest boundary of the subject site for suspect contaminated sites with petroleum hydrocarbon and MBTEX sources and 1,760 feet of the critical distance to the nearest boundary of the subject site for suspect contaminated sites with chlorinated solvents. The critical distance, as defined in E 2600-10, effectively is the upper limit distance a vapor can reasonably be expected to migrate in relatively permeable soil assuming the path of least resistance is directly from the nearest

edge of the contaminated media (such as groundwater) to the nearest subject site boundary. As such, the conclusion from Tier 1 screening is that a vapor encroachment condition (VEC) cannot be ruled out.

However, based on: (1) no record of impact from this site to the subject site; (2) distance from the subject site; and (3) perceived down/cross gradient position, the probability of a subsurface environmental impact and/or potential vapor encroachment from this site to the subject site appears low at this time.

- **Con-Fab California Corp** – 1910 East Lathrop Road, Lathrop
  Located adjacent to the east and perceived cross/up gradient to the subject site. Listed on the RCRA NonGen/NLR, AST, CERS Haz Waste, CERS Tanks, CERS, HAZNET and HWTS databases.

  According to the information provided by EDR, this site is listed as being a hazardous waste generator with chemical storage facilities and an aboveground 2,000-gallon petroleum storage tank. This site is also listed as manifesting unspecified oil-containing waste, liquids with halogenated organic compounds >= 1,000 Mg./L, waste oil and mixed oil, other organic solids, oxygenated solvents (acetone, butanol, ethyl acetate, etc.), aqueous solution with total organic residues less than 10 percent, liquids with pH <= 2, latex waste and unspecified organic liquid mixture from 1998 to 2019 (CAL EPA# CAL000152295). No reports of spills or unauthorized releases were reported for this site by EDR. According to the information provided by the CAL EPA DTSC Envirostor and RWQCB GeoTracker online databases, this site is not listed as an active or inactive leak case. Based on this information, the probability of a subsurface environmental impact is low at this time.

- **AMG Resources Corp** – 15332 McKinley Avenue, Lathrop
  Located adjacent to the south and perceived down/cross gradient to the subject site. Listed on the RCRA NonGen/NLR, AST, CERS Haz Waste, CERS Tanks and CERS databases.

  According to the information provided by EDR, this site is listed as being a hazardous waste generator with chemical storage facilities and 2,000-gallon aboveground petroleum storage tank. No other information was provided by EDR. No reports of spills or unauthorized releases were reported for this site by EDR. According to the information provided by the CAL EPA DTSC Envirostor and RWQCB GeoTracker online databases, this site is not listed as an active or inactive leak case. Based on this information, the probability of a subsurface environmental impact is low at this time.

5.2 Local Agency File Review

On September 23, 2020, a Basics representative contacted the California EPA - Department of Toxic Substance Control (Cal-EPA DTSC) in Berkeley, California, in regards to any information concerning the subject site.

- **1520 East Lathrop Road, Lathrop CA (APN 180-040-140)**
  The subject site.

The following information was available within the Cal-EPA DTSC files:

1520 East Lathrop Road

On March 5, 1992, San Joaquin County Environmental Health and DTSC conducted a complaint inspection at Reiter Trucks, in Lathrop, CA. The complaint alleged the storage of hazardous waste. Mr. Reiter, owner of Reiter truck had purchased a lot of DRMO equipment and other items which included barrels of some substances known as IMPREGNITE. Impregnite is a chemical substance used to shield, by dusting on uniforms, against chemical liquid weapons. The powder contained high levels of zinc. The DTSC document also indicated the subject site was a "Military Surplus Equipment Sales Facility" After the inspection, DTSC, turn over the case to San Joaquin Environmental Health, San Joaquin County Environmental Health ordered the removal of the hazardous waste.

According to the complaint form, Errol Reiter asked the DRMS to take back 14,000 lbs of Impregnite, which he said he bought from them in 1975. Neither he nor DRMS have any records of this sale. The form also indicates the chemical is stored in fiber drums, three 2-cubic yard 3,000 lb containers, twenty 30-40 lb bags and one 3-cubic yard 4,000 lb container. According to photographs taken of the subject site as part of the report, the large metal bins were covered and stored directly on bare soil on the subject site.

On March 5, 1992, samples of Impregnite were collected from the bins of Impregnite on the site and were found to be hazardous. After the samples were tested and found to be hazardous, San Joaquin County Environmental Health Department ordered Reiter Trucks to remove the hazardous waste to be disposed to a permitted disposal facility.

On July 7, 1992, Reiter Trucks, removed the hazardous waste from their facility. A Hazardous waste manifest shows the removal and finial disposal of the impregnate hazardous waste. The finial facility the waste was disposed to was Chemical Waste Management in Kattleman City, CA.

No further action was required from San Joaquin County Environmental Health. DTSC did an area survey of the Reiter truck yard. None of the hazardous waste was present on the site. In addition, no other information was available within Cal-EPA DTSC files.

On September 23, 2020, a Basics representative contacted the Central Valley Regional Water Quality Control Board (RWQCB) in Sacramento, California, in regards to any information concerning the subject site.

- **1520 East Lathrop Road, Lathrop CA (APN 180-040-140)**
  The subject site.

  No information regarding the subject site was available within the RWQCB files or GeoTracker online database. No information regarding hazardous materials, underground storage tanks or unauthorized releases was available for the subject site.

On September 23, 2020, a Basics representative contacted the San Joaquin Valley Air Pollution Control District (SJVAPCD) in Modesto, California, in regards to any information concerning the subject site.

- **1520 East Lathrop Road, Lathrop CA (APN 180-040-140)**
  The subject site.

  No information regarding the subject site parcel was available within the SJVAPCD files. In addition, no information regarding hazardous materials, underground storage tanks or unauthorized releases was available for the subject site.

On September 23, 2020, a Basics representative contacted the San Joaquin County Department of Environmental Health (SJCDEH) in Stockton, California, in regards to any information concerning the subject site:

- **1520 East Lathrop Road, Lathrop CA (APN 180-040-140)**
  The subject site.

  The following information was available within the SJCDEH files:

  <u>1520 East Lathrop Road</u>

  On March 26, 2004, a well permit application was submitted for the subject site by Kleinfelder, Inc. to install three groundwater monitoring wells on the subject site as part of a subsurface investigation (See Section 5.3 – Previous Environmental Reports)

  On January 27, 2005, a well permit application was submitted for the subject site by ENGEO, Inc. to install ten push soil borings on the subject site as part of a subsurface investigation (See Section 5.3 – Previous Environmental Reports)

No other information regarding the subject site was available within the SJCDEH files. In addition, no additional information regarding hazardous materials, underground storage tanks or unauthorized releases was available for the subject site.

On September 23, 2020, a Basics representative contacted the Lathrop-Manteca Fire District (LMFD) in Lathrop, California, in regards to any information concerning the subject site:

- **1520 East Lathrop Road, Lathrop CA (APN 180-040-140)**
  The subject site.

The following information was revealed within LMFD files:

1520 East Lathrop Road

On June 16, 2003, the fire department was dispatched to an unknown type outdoor fire at the above location. Upon arrival found a small grass fire with several threatened exposures. Squad 31 pulled a booster line and Engine 31 pulled a 1 3/4' live line and started to extinguish the fire near the exposures. Requested Engine 33 for assistance. Engine 33 arrived and assumed command and supplied Engine 31. Engine 33 called for Battalion 30, Engine 243 and Water tender 18-1 for manpower and a water supply. Fire knocked down and overhaul was started. Battalion 30 arrived on scene and assumed command from Engine 33. Engine 243 was released and Engine 34 was requested to respond to the scene for manpower. Water tender 18-1 arrived on scene and supplied water to both Engine 31 and 34. Fire was overhauled and scene was turned over to the owner.

The fire incident report indicated there were no chemicals located on the subject site as part of subject site occupancy at the time of this incident.

No other information regarding the subject site parcel was available within the LMFD files. In addition, no information regarding hazardous materials, underground storage tanks or unauthorized releases was available for the subject site.

On September 23, 2020, a Basics representative contacted the City of Lathrop Building Department (LBD) in Lathrop, California, in regards to any information concerning the subject site:

- **1520 East Lathrop Road, Lathrop CA (APN 180-040-140)**
  The subject site.

  No information regarding the subject site parcel was available within the LBD files. In addition, no information regarding hazardous materials, underground storage tanks or unauthorized releases was available for the subject site.

5.3 Previous Environmental Reports

On October 6, 2020, a Basics representative reviewed the following prior reports provided by the client:

- *Groundwater Monitoring Well Installation, Sampling and Analysis Report, 1520 East Lathrop Road, Lathrop, California, Kleinfelder, Inc. (Kleinfelder), May 5, 2004 (Kleinfelder 2004).*

  According to this report, Kleinfelder, Inc. performed a previous Groundwater Monitoring Well Installation, Sampling and Analysis Report for the subject site. Sections of this previous report were incorporated into the appropriate sections of this current investigation.

  Kleinfelder, Inc. (Kleinfelder) performed a Groundwater Monitoring Well Installation, Sampling and Analysis Report at the subject site to evaluate groundwater quality as part of the proposed use for the property by the city of Lathrop as a treated wastewater irrigation spray field.

  At the time of this report, the subject was being utilized as storage for miscellaneous construction equipment and vehicles, with much of the site covered by vegetative growth. The site was proposed to be developed into a spray field for the City of Lathrop, Mossdale Wastewater Treatment Plant.

  Kleinfelder installed three monitoring wells on the site. Monitoring well MW-1 was advanced near the southeast corner of the parcel estimated to be the upgradient monitoring point. MW-2 was advanced near the southwest corner of the parcel. The location of MW-2 was proposed to be a downgradient monitoring point. MW-3 was advanced near the northwest corner of the parcel. The location of MW-3 was proposed to also be a downgradient monitoring point for the proposed spray field. Groundwater elevations ranged from 5.43 feet above msl to 8.24 feet msl. The depth to water was approximately

14 to 19 feet bgs. The groundwater flow direction was calculated to be west by southwest, with an overall gradient of 0.003 feet/foot.

Kleinfelder determined that the monitoring well network was sufficient to assess initial baseline groundwater conditions in the vicinity of a proposed spray field.

Three groundwater samples were taken at the subject site (one from each groundwater monitoring well) and the samples were compared to the maximum contaminant levels (MCLs) and applicable WQGs established by the State of California Environmental Protection Agency and the United States Environmental Protection Agency.

Samples were analyzed for a suite of general minerals and inorganic chemicals.

The concentrations of TDS found in each of the three samples analyzed were above the Secondary MCL level of 500 mg/1 for TDS. The highest concentrations of TDS were found in the downgradient wells MW-2 and MW-3 (1,600 mg/1 and 980 mg/1 respectively). Additionally, the concentration of sodium in each of the three groundwater samples exceeded the Suggested No Adverse Response Level (SNARL) for sodium of 20 mg/l. The highest concentrations of sodium were also found in the downgradient wells MW-2 and MW-3 (490 mg/I and 230 mg/1, respectively).

An elevated concentration of nitrate + nitrite as N was noted in MW-2 of 11.0 mg/l. The MCL for nitrate as N is 10 mg/1 and the MCL for nitrite as N is 1 mg/l. Although the laboratory results for nitrate + nitrite as N are a compilation of two components of the total nitrogen (11.6 mg/1), it is reasonable to estimate the nitrate and nitrite components as being near one or both of the respective MCLs.

Total coliform was detected in each sample >23 MPN/100 ml. The presence of total coliform organisms may be an indicator of pathogenic organisms or potentially harmful organisms in groundwater and may be a result of human and/or animal waste. Generally, the MCL for total coliform i s 0 MPN/100 m 1. There was no fecal coliform detected at or above the laboratory reporting limits of 1.1 MPN/100 ml.

In the conclusion section, Kleinfelder recommended additional quarterly monitoring events to assess future groundwater gradients and groundwater quality, stating it would be advantageous for Pacific Union Homes to have a breadth of data (for RWQCB) from which to calculate standard deviations of groundwater analyte concentrations rather than one event to base a background or baseline condition from.

- *Groundwater Quality Collection Results Report, 1520 East Lathrop Road, Lathrop, California, ENGEO, Inc. (ENGEO), January 5, 2005 (ENGEO 2005).*

  According to this report, ENGEO, Inc. performed a previous Groundwater Quality Collection Results Report for the subject site. Sections of this previous report were incorporated into the appropriate sections of this current investigation.

  ENGEO, Inc. (ENGEO) performed a Groundwater Quality Collection Report at the subject site to evaluate groundwater quality in response to the tentative waste discharge requirements as part of the proposed use for the property by the city of Lathrop as a treated wastewater irrigation spray field.

  The work scope included the following activities:

  - A GeoProbe rig was used to advance borings to a depth approximately 30 feet below ground surface (bgs) at a total of ten locations throughout the entirety of the subject site. Groundwater samples were collected using a HydroPunch from each location as described below.
  - Three HydroPunch water samples were collected from each of the three GeoProbe locations adjacent to the three already existing monitoring wells. Water samples were collected from depths at the following intervals: 15 to 19 feet bgs, 21 to 24 feet bgs, and 25-30 feet bgs.
  - Two HydroPunch water samples were collected from each of the remaining seven GeoProbe locations. Water samples were collected from the intervals 15 to 19 feet bgs and 21 to 24 feet bgs.
  - A small portion of each grab water sample was screened in the field for parameters of oxidation reduction potential, temperature, pH and electrical conductivity prior to sample collection.
  - Filtered groundwater samples were collected using a disposable polyethylene pressurized bailer. The collected samples were then passed through a 0.45 micron filter in the field and decanted into pre-cleaned laboratory sample containers.
  - Samples were preserved in a chilled cooler ice during transportation with a completed chain-of custody record to Excelchem Environmental Laboratories, in Roseville, California.
  - Purge water was discharged to land.

  Samples were analyzed for a suite of general minerals and inorganic chemicals.

  The general minerals suite included nitrates + nitrite as N, bicarbonate alkalinity, carbonate alkalinity, chloride, pH, sulfate, total dissolved solids (TDS), total Kjeldahl nitrogen (TKN).

The metals suite included filtered and unfiltered metals analyses of calcium, potassium, magnesium, and sodium.

Review of Table 1 shows that Total Dissolved Solids were measured at concentrations ranging from 230 ppb to 1400 ppm (highest at B-2), chloride was detected at concentrations ranging from 17 to 400 ppm, sulfate was detected at concentrations ranging from 17 to 400 ppm, calcium was detected at concentrations ranging from 1.9 to 400 ppm, sodium was detected at concentrations ranging from 23 to 760 ppb and magnesium was detected at concentrations ranging from 5.4 to 38 ppm.

In the results section, ENGEO recommended that groundwater sampling continue on a quarterly basis in order to verify the results of this sampling event. This would capture seasonal variations in concentrations of sampling parameters, including TDS. However, the City later determined that the use of spray fields on the subject site were not necessary and no further sampling events occurred on the subject site.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

These conclusions are based on the data collected during performance of this ESA and are therefore subject to the time limitations associated with accessing governmental and site data. The purpose of this assessment was to evaluate the likelihood of soil and ground water degradation as a result of the use, storage, treatment, and/or disposal of hazardous materials/waste on the subject site and sites located within a one-mile radius. Findings are based on a geological and hydrogeological information study, and an evaluation of historical and present property use (historical resource review, regulatory agency database and file review, personal interviews and site reconnaissance study).

6.1.1 Data Gaps

A data gap is the failure to obtain information required by the standard despite good faith efforts by the environmental professional to gather the information. Based on the findings of our investigation, it is our opinion that there are no apparent significant data gaps within the scope of work performed.

6.1.2 Environmental Issues/*De Minimis* Conditions

De Minimis Condition are defined by the ASTM Standard Practice E1527-13 as condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. On the basis of the information compiled and reviewed by Basics, our findings indicate the following *de minimis* conditions:

(1) In 1975, the subject site was developed with the Reiter Truck Company truck storage yard. Prior to this time, the subject site was shown as undeveloped land.

The subject site appeared to consist of a large lot utilized for long haul truck and equipment storage, a northwestern portion of the subject site improved with several small building/shed structures and what appear to be two covered truck ports that may have been utilized for truck maintenance located on the central eastern portion of the subject site.

By 1982, the covered truck ports were no longer shown.

By 2005, no truck storage yard, or associated structures and/or storage equipment was shown on the subject site.

According to historical references reviewed the subject site was occupied by "Reiter Trucks" (1970s-early 2000s) utilized as a truck storage yard and as a military surplus equipment sales operations during this time frame.

See Section 6.1.3 –Recognized Environmental Conditions (RECs).

(2) In 2004, Pacific Union Homes purchased the subject site on behalf of the City of Lathrop, as part of a proposed plan for the City of Lathrop to utilize the subject site for treated wastewater irrigation spray fields.

The city later deemed the spray fields unnecessary and the subject site was never utilized for spray fields has been vacant and unoccupied since 2004.

However, as part of the proposed plan to utilize the subject site as spray fields, the following subsurface assessments were conducted:

<u>Kleinfelder 2004 Groundwater Monitoring Well Installation, Sampling and Analysis</u>

In 2004, Kleinfelder, Inc. (Kleinfelder) performed a Groundwater Monitoring Well Installation, Sampling and Analysis Report at the subject site to evaluate groundwater quality as part of the proposed use for the property by the city of Lathrop as a treated wastewater irrigation spray field.

At the time of this report, the subject was being utilized as storage for miscellaneous construction equipment and vehicles, with much of the site covered by vegetative growth. The site was proposed to be developed into a spray field for the City of Lathrop, Mossdale Wastewater Treatment Plant.

Kleinfelder installed three monitoring wells on the site. Monitoring well MW-1 was advanced near the southeast corner of the parcel estimated to be the upgradient monitoring point. MW-2 was advanced near the southwest corner of the parcel. The location of MW-

2 was proposed to be a downgradient monitoring point. MW-3 was advanced near the northwest corner of the parcel. The location of MW-3 was proposed to also be a downgradient monitoring point for the proposed spray field. Groundwater elevations ranged from 5.43 feet above msl to 8.24 feet msl. The depth to water was approximately 14 to 19 feet bgs. The groundwater flow direction was calculated to be west by southwest, with an overall gradient of 0.003 feet/foot.

Kleinfelder determined that the monitoring well network was sufficient to assess initial baseline groundwater conditions in the vicinity of a proposed spray field.

Three groundwater samples were taken at the subject site (one from each groundwater monitoring well) and the samples were compared to the maximum contaminant levels (MCLs) and applicable WQGs established by the State of California Environmental Protection Agency and the United States Environmental Protection Agency.

Samples were analyzed for a suite of general minerals and inorganic chemicals.

The concentrations of TDS found in each of the three samples analyzed were above the Secondary MCL level of 500 mg/1 for TDS. The highest concentrations of TDS were found in the downgradient wells MW-2 and MW-3 (1,600 mg/1 and 980 mg/1 respectively). Additionally, the concentration of sodium in each of the three groundwater samples exceeded the Suggested No Adverse Response Level (SNARL) for sodium of 20 mg/l. The highest concentrations of sodium were also found in the downgradient wells MW-2 and MW-3 (490 mg/I and 230 mg/1, respectively).

An elevated concentration of nitrate + nitrite as N was noted in MW-2 of 11.0 mg/l. The MCL for nitrate as N is 10 mg/1 and the MCL for nitrite as N is 1 mg/l. Although the laboratory results for nitrate + nitrite as N are a compilation of two components of the total nitrogen (11.6 mg/1), it is reasonable to estimate the nitrate and nitrite components as being near one or both of the respective MCLs.

Total coliform was detected in each sample >23 MPN/100 ml. The presence of total coliform organisms may be an indicator of pathogenic organisms or potentially harmful organisms in groundwater and may be a result of human and/or animal waste. Generally, the MCL for total coliform i s 0 MPN/100 m 1. There was no fecal coliform detected at or above the laboratory reporting limits of 1.1 MPN/100 ml.

In the conclusion section, Kleinfelder recommended additional quarterly monitoring events to assess future groundwater gradients and groundwater quality, stating it would be advantageous for Pacific Union Homes to have a breadth of data (for RWQCB) from which to calculate standard deviations of groundwater analyte concentrations rather than one event to base a background or baseline condition from.

Engeo 2005 Groundwater Quality Collection Results Report

ENGEO, Inc. (ENGEO) performed a Groundwater Quality Collection Report at the subject site to evaluate groundwater quality in response to the tentative waste discharge requirements as part of the proposed use for the property by the city of Lathrop as a treated wastewater irrigation spray field.

The work scope included the following activities:

- A GeoProbe rig was used to advance borings to a depth approximately 30 feet below ground surface (bgs) at a total of ten locations throughout the entirety of the subject site. Groundwater samples were collected using a HydroPunch from each location as described below.
- Three HydroPunch water samples were collected from each of the three GeoProbe locations adjacent to the three already existing monitoring wells. Water samples were collected from depths at the following intervals: 15 to 19 feet bgs, 21 to 24 feet bgs, and 25-30 feet bgs.
- Two HydroPunch water samples were collected from each of the remaining seven GeoProbe locations. Water samples were collected from the intervals 15 to 19 feet bgs and 21 to 24 feet bgs.
- A small portion of each grab water sample was screened in the field for parameters of oxidation reduction potential, temperature, pH and electrical conductivity prior to sample collection.
- Filtered groundwater samples were collected using a disposable polyethylene pressurized bailer. The collected samples were then passed through a 0.45 micron filter in the field and decanted into pre-cleaned laboratory sample containers.
- Samples were preserved in a chilled cooler ice during transportation with a completed chain-of custody record to Excelchem Environmental Laboratories, in Roseville, California.
- Purge water was discharged to land.

Samples were analyzed for a suite of general minerals and inorganic chemicals.

The general minerals suite included nitrates + nitrite as N, bicarbonate alkalinity, carbonate alkalinity, chloride, pH, sulfate, total dissolved solids (TDS), total Kjeldahl nitrogen (TKN).

The metals suite included filtered and unfiltered metals analyses of calcium, potassium, magnesium, and sodium.

Review of Table 1 shows that Total Dissolved Solids were measured at concentrations ranging from 230 ppb to 1400 ppm (highest at B-2), chloride was detected at concentrations ranging from 17 to 400 ppm, sulfate was detected at concentrations ranging from 17 to 400 ppm, calcium was detected at concentrations ranging from 1.9 to 400 ppm, sodium was

detected at concentrations ranging from 23 to 760 ppb and magnesium was detected at concentrations ranging from 5.4 to 38 ppm.

In the results section, ENGEO recommended that groundwater sampling continue on a quarterly basis in order to verify the results of this sampling event. This would capture seasonal variations in concentrations of sampling parameters, including TDS.

However, the City later determined that the use of spray fields on the subject site were not necessary and no further sampling events occurred on the subject site.

During the time of the site visit, the subject site consisted of a vacant lot with tall and unmanaged vegetation on a relatively flat topography. Visual observations of the vacant lot appeared in good condition and did not reveal any obvious evidence of hazardous materials, stains or spills. Located on the property were three groundwater monitoring wells located on the northwestern, southwestern and southeastern corners of the subject site. Visual observations of the subject site did not reveal any other other obvious evidence of drains, sumps, major cracks or other conduits to the subsurface. In addition, no obvious evidence of rinsing or dumping, underground storage tanks, distressed vegetation, or surface impoundments was observed. No obvious evidence of underground storage tanks, distressed vegetation, or surface impoundments were observed throughout the site during the inspection.

Because ultimately it remains the user who accepts the liability for having entered into a chain of title, it remains important that the user recognize that the “risk tolerance” of a regulatory agency could change, as could be the case if information is later uncovered to suggest that the identified uses (i.e., those that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies) are of greater significance than once thought. In addition, no compelling evidence was discovered that a hazardous substance has been released from its operation onto (or into) the surface.

Based on the findings stated above, additional scope of services (i.e. baseline environmental sampling), but not limited to, may or may not disclose information which may significantly reduce the “risk tolerance” in connection with the acquisition of a parcel of commercial real estate.

6.1.3 Recognized Environmental Conditions (RECs)

Recognized Environmental Conditions (RECs) are defined by the ASTM Standard Practice E1527-13 as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. Based on the findings of our investigation, it is our opinion that there are apparent obvious RECs on site that warrant further investigation or documentation at this time:

(1) Perform environmental site sampling to assess potential subsurface impacts from former military surplus equipment sales and potential former truck fueling and maintenance as part of former "Reiter Truck" operations on the subject site.

In 1975, the subject site was developed with the Reiter Truck Company truck storage yard.

The subject site appeared to consist of a large lot utilized for long haul truck and equipment storage, a northwestern portion of the subject site improved with several small building/shed structures and what appear to be two covered truck ports that may have been utilized for truck maintenance located on the central eastern portion of the subject site.

By 1982, the covered truck ports were no longer shown.

By 2005, no truck storage yard, or associated structures and/or storage equipment was shown on the subject site.

According to historical references reviewed the subject site was occupied by "Reiter Trucks" (1970s-early 2000s) and utilized as a long haul truck and equipment storage yard and also as a military surplus equipment sales operations during this time frame.

The following information was revealed within Cal-EPA DTSC files:

On March 5, 1992, San Joaquin County Environmental Health and DTSC conducted a complaint inspection at Reiter Trucks, in Lathrop, CA. The complaint alleged the storage of hazardous waste. Mr. Reiter, owner of Reiter truck had purchased a lot of Defense Reutilization and Marketing Office (DRMO) equipment and other items which included barrels of some substances known as IMPREGNITE. Impregnite is a chemical substances used to shield, by dusting on uniforms, against chemical liquid weapons. The powder contained high levels of zinc. The DTSC document also indicated the subject site was a "Military Surplus Equipment Sales Facility" After the inspection, DTSC, turn over the case to San Joaquin Environmental Health, San Joaquin County Environmental Health ordered the removal of the hazardous waste.

According to the complaint form, Errol Reiter asked the DRMS to take back 14,000 lbs of Impregnite, which he said he bought from them in 1975. Neither he nor DRMS have any records of this sale. The form also indicates the chemical is stored in fiber drums, three 2-cubic yard 3,000 lb containers, twenty 30-40 lb bags and one 3-cubic yard 4,000 lb container. According to photographs taken of the subject site as part of the report, the large metal bins were covered and stored directly on bare soil on the subject site.

According to the National Technical Reports Library, Impregnite is a paste prepared from Ester gum, Neats-foot oil, paraffin wax and solvent.

On March 5, 1992, samples of Impregnite were collected from the bins of Impregnite on the site and were found to be hazardous. After the samples were tested and found to be hazardous, San Joaquin County Environmental Health Department ordered Reiter Trucks to remove the hazardous waste to be disposed to a permitted disposal facility. On July 7, 1992, Reiter Trucks, removed the hazardous waste from their facility. A Hazardous waste manifest shows the removal and finial disposal of the impregnate hazardous waste. The finial facility the waste was disposed to was Chemical Waste Management in Kattleman City, CA.

No other information regarding the use of hazardous materials was uncovered during this time frame within the scope of work performed.

No other information was uncovered regarding the operations of Reiter Trucks besides being a military surplus equipment sales operations and appearing to be a truck storage yard. No information was uncovered regarding potential truck fueling operations, USTs on-site or truck maintenance on-site was uncovered during this time frame within the scope of work performed. However, DTSC records indicate large amounts of Impregnite were stored on-site from approximately 1975 to 1992 as part of military surplus sales operations. In addition, located along the northern dirt driveway entrance are mounds of soil. The origin of these mounds of soil is unknown.

The primary environmental concern with potential truck repair operations and military surplus equipment sales is the environmental risk of inadvertent discharges to the subsurface due to mishandling of hazardous materials (Impregnite, lubricating oils, antifreeze, solvents, etc.). Inadvertent discharges of hazardous materials to the bare soil are not always evident. In addition, the storage of hazardous materials bins directly on bare soil increase the potential of inadvertent discharges to the subsurface.

The subject site is not currently listed as a contaminated facility. However, given the evidence of storage and potential usage of hazardous materials for an extended period of time (approximately 25+ years military surplus equipment sales and truck storage yard) and lack of information regarding past trucking operations, this would represent a Recognized Environmental Condition.

(2) Comply with the requirements set forth by the San Joaquin County Environmental Health Division for the onsite abandoned wells.

Located in the northwestern, southwestern and southeastern portions of the subject site are three abandoned in-place groundwater monitoring wells.

A "permanently inactive well" is a well that has not been used for a period of one year, unless the person owning land in fee simple or in possession thereof under lease or contract of sale demonstrates an intent for future use for water supply, groundwater recharge, drainage, or groundwater level control, heating or cooling cathodic protection, groundwater monitoring, or related uses.

At a minimum, permanently inactive wells shall be destroyed in accordance with standards developed by the Department of Water Resources pursuant to Section 13800 of the Water Code and adopted by the State Water Resources Control Board or local agencies in accordance with Section 13801 of the Water Code.

Note: As part of the recommended environmental site sampling, the client may wish to sample the ground water prior to decommissioning this well.

6.1.4 Controlled Recognized Environmental Conditions (CRECs)

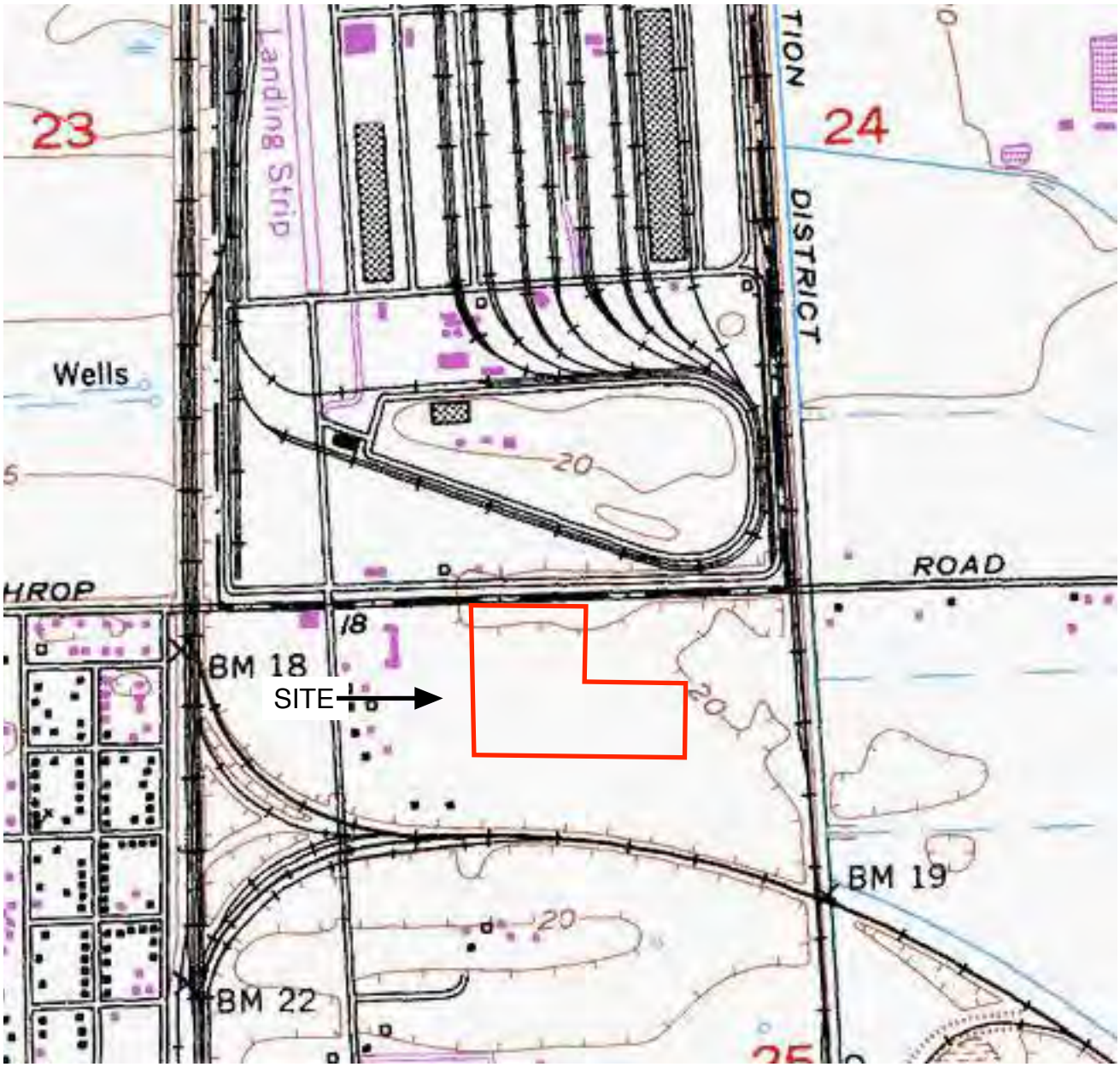
Controlled Recognized Environmental Conditions (CRECs) are defined by the ASTM Standard Practice E1527-13 as a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. Based on the findings of our investigation, no apparent CRECs were identified onsite.

6.1.5 Historical Recognized Environmental Conditions (HRECs)

Historical Recognized Environmental Condition (HRECs) are defined by the ASTM Standard Practice E1527-13 as a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. Based on the findings of our investigation, no apparent HRECs were identified onsite.

6.1.6 Recommendations

This assessment has revealed obvious evidence of recognized environmental conditions in connection with the property that warrants further investigation and/or documentation at this time. **See Section 6.1.3 –Recognized Environmental Conditions (RECs) above.**



0 1800

APPROXIMATE SCALE IN FEET

Topographic Map Source:U.S. Geological Survey, 1996 Lathrop Quadrangle, California

N

Site Location

basics ENVIRONMENTAL

Phase I Environmental Site Assessment
1520 East Lathrop Road
Lathrop, California

PROJECT NO.
20-ENV5814

DRAWING NO.
1



0 200 400

APPROXIMATE SCALE IN FEET AS DETERMINED FROM GOOGLE MAPS

N

SITE Aerial Photo Source:U.S. Geological Survey & Google Maps

Aerial Photograph (2019)

basics ENVIRONMENTAL

Phase I Environmental Site Assessment
1520 East Lathrop Road
Lathrop, California

PROJECT NO.
20-ENV5814

DRAWING NO.
2



Site Plan

basics ENVIRONMENTAL

Phase I Environmental Site Assessment
1520 East Lathrop Road
Lathrop, California

PROJECT NO.
20-ENV5814

DRAWING NO.
3

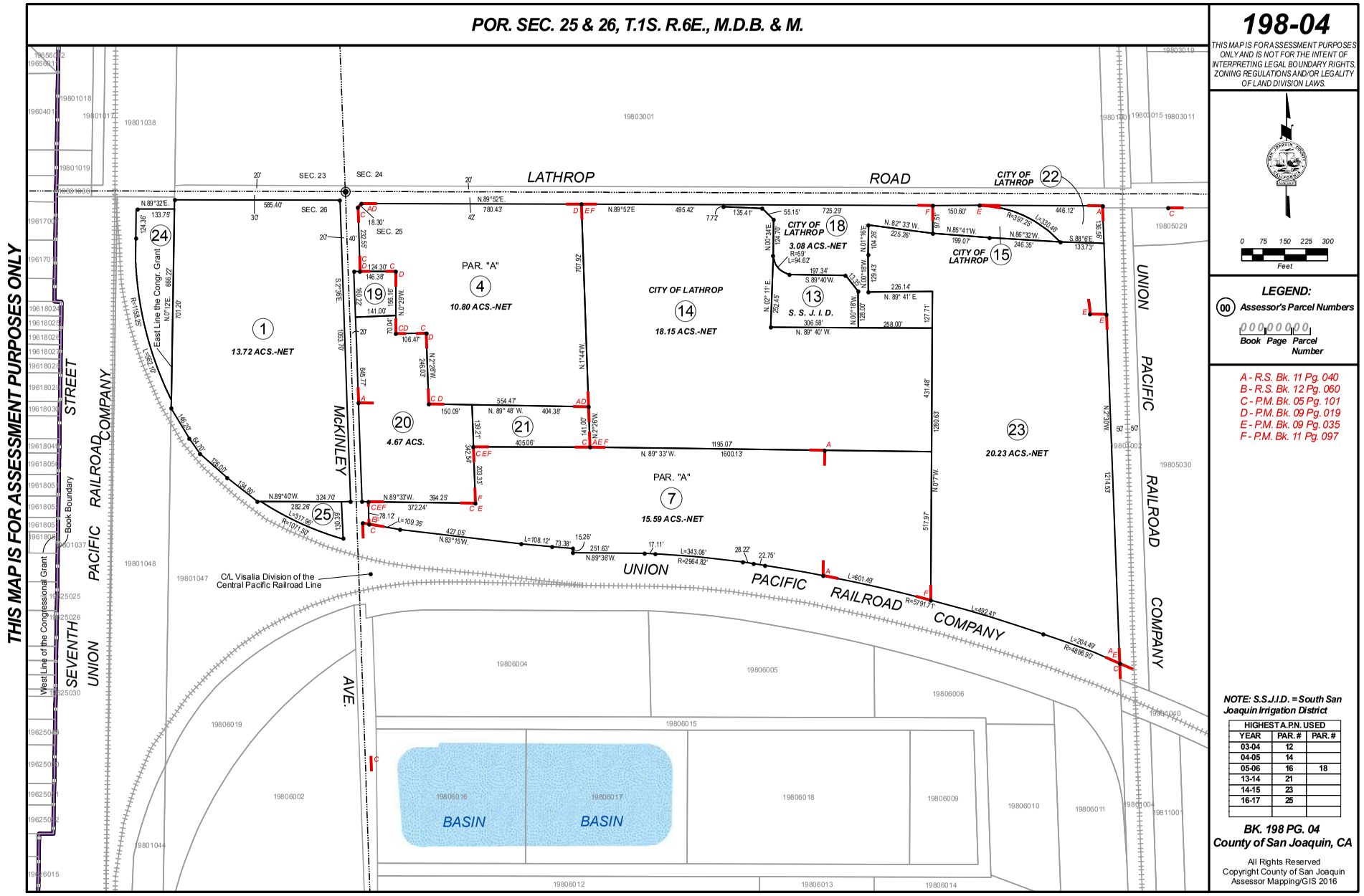

POR. SEC. 25 & 26, T.1S. R.6E., M.D.B. & M.
198-04
THIS MAP IS FOR ASSESSMENT PURPOSES ONLY AND IS NOT FOR THE INTENT OF INTERPRETING LEGAL BOUNDARY RIGHTS, ZONING REGULATIONS AND/OR LEGALITY OF LAND DIVISION LAWS.
THIS MAP IS FOR ASSESSMENT PURPOSES ONLY
LATHROP ROAD
SEC. 23
SEC. 24
SEC. 26
SEC. 25
CITY OF LATHROP
PAR. "A"
1
13.72 ACS.-NET
4
10.80 ACS.-NET
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18.15 ACS.-NET
18
3.08 ACS.-NET
15
13
S. S. J. I. D.
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21
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20.23 ACS.-NET
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22
McKINLEY AVE.
SEVENTH STREET
UNION PACIFIC RAILROAD COMPANY
East Line of the Congr. Grant
West Line of the Congressional Grant
Book Boundary
C/L Visalia Division of the Central Pacific Railroad Line
BASIN
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0 75 150 225 300
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LEGEND:
00 Assessor's Parcel Numbers
Book Page Parcel Number
A - R.S. Bk. 11 Pg. 040
B - R.S. Bk. 12 Pg. 060
C - P.M. Bk. 05 Pg. 101
D - P.M. Bk. 09 Pg. 019
E - P.M. Bk. 09 Pg. 035
F - P.M. Bk. 11 Pg. 097
NOTE: S.S.J.I.D. = South San Joaquin Irrigation District
HIGHEST A.P.N. USED
YEAR | PAR. # | PAR. #
03-04 | 12 |
04-05 | 14 |
05-06 | 16 | 18
13-14 | 21 |
14-15 | 23 |
16-17 | 25 |
BK. 198 PG. 04
County of San Joaquin, CA
All Rights Reserved
Copyright County of San Joaquin
Assessor Mapping/GIS 2016



Photo 1: Subject Site (Facing Southeast)
Vacant Lot
Along Northwestern Corner of Subject Site



Photo 2: Subject Site (Facing Southeast)
Vacant Lot and Northwestern Groundwater Monitoring Well (MW-1)
Along Northwestern Corner of Subject Site

Site Photographs



Photo 3: Subject Site (Facing Northeast)
Vacant Lot
Along Southwestern Corner of Subject Site



Photo 4: Subject Site (Facing Northeast)
Southwestern Groundwater Monitoring Well (MW-2)
Along Northwestern Corner of Subject Site

Site Photographs



Photo 5: Subject Site (Facing Northwest)
Vacant Lot
Along Southeastern Corner of Subject Site



Photo 6: Subject Site (Facing North)
Southeastern Groundwater Monitoring Well (MW-3)
Along Southeastern Corner of Subject Site

Site Photographs



Photo 7: Subject Site (Facing Southwest)
Vacant Lot
Along Northeastern Corner of Subject Site



Photo 8: Subject Site (Facing Southeast)
Vacant Lot
Along Northeastern Side of Subject Site

Site Photographs



Photo 9: Subject Site (Facing Southwest)
Vacant Lot
Along Northeastern Corner of Subject Site



Photo 10: Subject Site (Facing South)
Northern Dirt Entrance Road
Along South Side of Lathrop Road

Site Photographs

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APPENDIX E: PHASE II ENVIRONMENTAL SITE SAMPLING REPORT

LIMITED PHASE II ENVIRONMENTAL SITE SAMPLING REPORT

1520 East Lathrop Road
Lathrop
California

FOR

Scannell Properties
8801 River Cross Boulevard, Suite 300
Indianapolis, IN 46420

November 16, 2020
20-ENV5836

655 12TH STREET, #126 • OAKLAND, CA • 94607 • TEL / FAX 510-834-9099 / 9098

basics
ENVIRONMENTAL

November 16, 2020
20-ENV5836

Scannell Properties
8801 River Cross Boulevard, Suite 300
Indianapolis, IN 46420

Attention: Mr. Paul Starn

Subject: Limited Phase II Environmental Site Sampling Report
1520 East Lathrop Road
Lathrop, California 95330

Dear Mr. Starn:

This report presents the results of a Limited Phase II Environmental Site Sampling Report prepared by Basics Environmental, Inc. (Basics) for the site located at 1520 East Lathrop Road in Lathrop, California. This Limited Phase II Environmental Site Sampling Report is based on the information compiled by Basics' subconsultant Ms. Lita Freeman, Professional Geologist #7368 with Environmental Risk Assessors.

Based on six shallow surface soil samples and twelve stockpiled soil samples collected at the subject site, petroleum hydrocarbons and volatile organic compounds were not detected in site soil or stockpiled soil at concentrations above their respective Tier 1 ESL and secondary ESL. In addition, the reported concentrations of metals were not detected in site soil or stockpiled soil at concentrations above their respective Tier 1 ESL and/or secondary ESL and arsenic's lab RL is within its' naturally occurring background levels.).

Based on three ground water samples collected from the three onsite ground water monitoring wells (MW-1, MW-2 and MW-3), petroleum hydrocarbons and volatile organic compounds were not detected in groundwater samples at concentrations above their respective Tier 1 ESL and secondary ESL with the exception of chloroform in the sample from monitoring well MW-2, located near the subject site's southwestern corner. The reported chloroform concentration was slightly above its' secondary ESL.

The presence of chloroform is typically associated with chlorinated water in public water supplies. Vinyl chloride was not detected in groundwater samples at concentrations at or above its' lab RL or lab MDL; however, the lab MDL was slightly above its' secondary ESL. The secondary ESLs used in the evaluation for chloroform and vinyl chloride are based on vapor intrusion from groundwater at commercial/industrial properties.

The detection of chloroform in one groundwater sample at a concentration slightly above its' secondary ESL and vinyl chloride's lab MDL being slightly above its' secondary ESL does not appear to present a significant environmental concern for the subject site based on the depth to groundwater of approximately 15 feet or more and the presence of fine-grained soil from the surface to depths of approximately 9 feet or more, which would limit migration of vapors upward through the soil column.

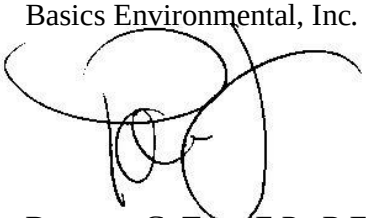
As such, further assessment does not appear warranted at this time.

In accordance with generally accepted professional environmental practice, the three onsite ground water monitoring wells (if no longer needed by the client) should be decommissioned in accordance with standards developed by the Department of Water Resources pursuant to Section 13800 of the Water Code and adopted by the State Water Resources Control Board or local agencies in accordance with Section 13801 of the Water Code.

Should you have any questions regarding this report, please contact the undersigned.

Sincerely,

Basics Environmental, Inc.



Donavan G. Tom, E.P., R.E.P.A.
Principal Consultant

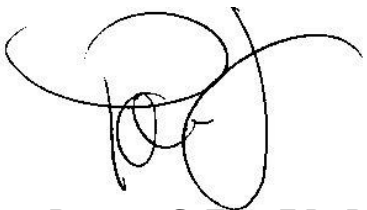
PROFESSIONAL CERTIFICATION

LIMITED PHASE II ENVIRONMENTAL SITE SAMPLING REPORT
1520 East Lathrop Road
Lathrop, California
For
Scannell Properties
20-ENV5836
November 16, 2020

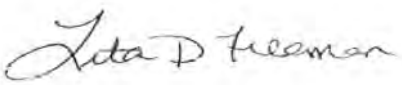
This report has been prepared by the staff of Basics Environmental, Inc. (Basics) under the professional supervision of an "Environmental Professional" as defined by the U.S. Environmental Protection Agency's Final Rule. The findings, interpretations of data, recommendations, specifications or professional opinions are presented within the limits prescribed by available information at the time the report was prepared, in accordance with generally accepted professional environmental practice and within the requirements by the Client. There is no other warranty, either expressed or implied.

The data and findings of this report are based on the data and information obtained from the agreed upon scope of work between Basics and the Client. Because contamination is not necessarily evenly distributed across the property's soils and ground water, it can easily remain undetected and geology may control the subsurface distribution of contamination. Additional scope of services including geologic interpretation (at greater cost) may or may not disclose information which may significantly modify the findings of this report. We accept no liability on completeness or accuracy of the information presented and or provided to us, or any conclusions and decisions which may be made by the Client or others regarding the subject site.

This report was prepared solely for the benefit of Basic's Client. Basics consents to the release of this report to third parties involved in the evaluation of the property for which the report was prepared, including without limitation, lenders, title companies, public institutions, attorneys, and other consultants. However, any use of or reliance upon this report shall be solely at the risk of such party and without legal recourse against Basics, or its subcontractors, affiliates, or their respective employees, officers, or directors, regardless of whether the action in which recovery of damage is sought is based upon contract, tort (including the sole, concurrent or other negligence and strict liability of Basics), statute or otherwise. This report shall not be used or relied upon by a party that does not agree to be bound by the above statements.



Donavan G. Tom, E.P., R.E.P.A.
Principal Consultant





Lita D. Freeman, P.G. #7368
Associate Consultant (Expires 11/30/21)

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1. EXECUTIVE SUMMARY

Environmental Risk Assessors (ERA) is pleased to present this Limited Phase II Environmental Site Assessment (ESA) Report (the "Report") to Basics Environmental, Inc. (Basics Environmental) for the property located at 1520 East Lathrop Road in Lathrop, California (the "Site"; Figure 1). The Site is currently vacant land (Figure 2).

1.1 Site Description and Background

The 18.15-acre L-shaped property was vacant land with several soil stockpiles and three groundwater monitoring wells present on site at the time of ERA's investigation.

Information contained in Basics Environmental's Phase I ESA report indicated the Site was undeveloped land prior to 1975 when Reiter Truck Company began using the Site as a truck storage yard and military surplus equipment sales operations (Basics Environmental, 2020). Several small structures were noted to be present on site between the mid-1970 and mid-2000s.

Pacific Union Homes reportedly purchased the Site in 2004 on behalf of the City of Lathrop for use as treated wastewater irrigation spray fields. Kleinfelder installed three groundwater monitoring wells on site to evaluate groundwater quality (Kleinfelder, 2004). Analysis of groundwater samples revealed total dissolved solids (TDS) in the downgradient wells at concentrations above the 2004 Secondary Maximum Contaminant Level (MCL). In 2005, Engeo collected soil and groundwater samples from on-site borings; analysis of groundwater samples revealed TDS concentrations above 2004 Secondary MCLs. The City of Lathrop decided against use of the Site as spray fields and the Site has been vacant land since 2004 (Engeo, 2005).

During a site visit, Basics Environmental's staff noted no evidence of: hazardous materials; chemical stains; chemical spills; drains, sumps, major cracks, or other conduits to the subsurface; rinsing equipment or dumping of rinseate; surface impoundments; underground storage tanks (USTs); or distressed vegetation. The origin of the soil stockpiles observed on the Site's northern portion was not established by Basics Environmental. Basics Environmental reviewed a complaint inspection contained in regulatory agency files regarding storage of hazardous waste. A compound containing high levels of zinc and referred to as "Impregnite" was reported to be stored on site from approximately 1975 to 1992. Impregnite was removed from the Site in accordance with San Joaquin County Environmental Health Department's order and transported to Chemical Waste Management's facility in Kettleman City, California for disposal.

Basics Environmental documented the following: 1) recognized environmental conditions (RECs) identified as the long-term storage and possible usage of hazardous materials and lack of information regarding past trucking operations; and 2) three abandoned monitoring wells. To help evaluate the identified RECs, Basics Environmental recommended further assessment.

1.2 Investigation

The objective of the limited Phase II ESA was to evaluate current conditions in select on-site areas. To meet this objective, soil samples were collected from the former Reiter Truck Company operations area and stockpiles, and groundwater samples were collected from the wells with samples submitted to the laboratory for analysis. This report presents results of the assessment. ERA notes that MW-1 and MW-3 were interchanged in field notes and laboratory reports.

1.3 Findings

Soil and groundwater samples were collected from the Site and analyzed for petroleum hydrocarbons and volatile organic compounds (VOCs) with soil samples also analyzed for California Administrative Manual (CAM) 17 metals. A total of 18 soil samples were collected with six surface samples (SS-1 through SS-6) discretely analyzed and 12 near-surface stockpile

samples (SP-1, -2, -3, -4, -5, -6, -7, -8, 9, -10, -11, and -12) composited into three 4-point composites for analysis. Analytical results were compared to Tier 1 Environmental Screening Levels (ESLs) and secondary ESLs established by the California Environmental Protection Agency (Cal-EPA) Regional Water Quality Control Board-San Francisco Bay Region (SFBRWQCB, Environmental Screening Levels Tier 1 ESLs, 2019 [Rev. 2]). Secondary ESLs are Direct Exposure Human Health Risk Levels, Commercial/Industrial: Shallow Soil Exposure (commercial/industrial properties ESLs); Direct Exposure Human Health Risk Levels, Any Land Use/Any Depth Soil Exposure: Construction Worker ESLs (Construction Worker ESLs); Direct Exposure Human Health Risk Levels: MCL Priority (MCL Priority ESLs); and Groundwater Vapor Intrusion Human Health Risk Levels, Commercial/Industrial (commercial/industrial groundwater vapor intrusion ESLs). A discussion of the use of ESLs is presented in Appendix A.

Soil Results

Total petroleum hydrocarbons (TPH) quantified as gasoline (TPHg) was not detected in the soil samples at concentrations at or above its' laboratory reporting limit (lab RL) of 0.25 milligrams per kilogram (mg/kg). TPH quantified as diesel (TPHd) was reported in four discrete samples (SS-1, SS-3, SS-5, and SS-6) at concentrations up to 7.3 mg/kg (estimated; maximum reported in sample SS-6) and in the three composite samples at concentrations up to 24 mg/kg (maximum reported in sample SP-9, -10, -11, -12). Comparison of the reported TPHd concentrations for the discrete samples and the maximum potential concentration in any one of the four discrete samples comprising the 4-point composite samples to the Tier 1 ESLs (SFBRWQCB, 2019 [Rev. 2]) indicated that TPHd was not reported at concentrations above its' Tier 1 ESL of 260 mg/kg. TPHmo was reported in each discrete soil samples at concentrations up to 21 mg/kg (maximum reported in sample SS-1) and in each composite sample at a maximum concentration of 300 mg/kg (maximum reported in sample SP-9, -10, -11, -12). Comparison of the reported TPHmo concentrations for the discrete samples and the maximum potential concentration in any one of the four discrete samples comprising the 4-point composite samples to the Tier 1 ESLs (SFBRWQCB, 2019 [Rev. 2]) indicated that TPHmo was not reported at concentrations above its' Tier 1 ESL of 1,600 mg/kg.

VOCs were not detected in soil samples at concentrations at or above their respective lab RLs with the exception of methylene chloride, a common laboratory contaminant. Methylene chloride was reported at concentrations up to 0.0046 mg/kg (estimated) in the discrete samples (maximum reported in sample SS-1) and 0.0073 mg/kg (estimated) in the three composite samples (maximum reported in sample SP-1, -2, -3, -4). Methylene chloride was also detected in the laboratory method blank, suggesting that it is a laboratory contaminant and not actually present in the site's soil samples. Comparison of the reported methylene chloride concentrations for the discrete samples and the maximum potential concentration in any one of the four discrete samples comprising the 4-point composite samples to the Tier 1 ESLs (SFBRWQCB, 2019 [Rev. 2]) indicated that methylene chloride was not reported at concentrations above its' Tier 1 ESL of 0.12 mg/kg.

Analysis of the six discrete samples and three discrete samples from the composite samples revealed various metals in each sample. Comparison of the reported concentrations for the metals to the Tier 1 ESLs (SFBRWQCB, 2019 [Rev. 2]) indicated that each reported metal concentration is below its' Tier 1 ESL with the exception of vanadium. The reported vanadium concentrations are above its' Tier 1 ESL of 18 mg/kg (SFBRWQCB, 2019 [Rev. 2]) in each of the nine discrete soil samples with the exception of sample SS-1 (reported concentration of 17 mg/kg which is slightly below its' Tier 1 ESL). The reported vanadium concentrations in the remaining samples are well below its' secondary ESL (commercial/industrial properties ESLs) of 470 mg/kg.

ERA noted that the lab RL of 0.0025 mg/kg for the VOC vinyl chloride for each soil sample is above its' Tier 1 ESL of 0.0015 mg/kg but below its' secondary ESL (commercial/industrial properties ESL) of 0.15 mg/kg. The laboratory method detection limit (lab MDL) of 0.00014 mg/kg

for each soil sample is below its' Tier 1 ESL and secondary ESL (commercial/industrial properties ESL). The lab RLs of 4.5 mg/kg to 5.0 mg/kg and lab MDLs of 0.73 mg/kg to 0.80 mg/kg for arsenic (a metal) are above its' Tier 1 ESL of 0.067 mg/kg and its' secondary ESL (commercial/industrial properties ESL) of 0.31 mg/kg. The lab RLs and lab MDLs are below the naturally occurring background levels for arsenic of up to 12 mg/kg.

Groundwater Results

Based on depth-to-water measurements in on-site monitoring wells, groundwater flow direction was inferred to be westward and groundwater gradient was calculated to be 0.002 feet/foot.

Petroleum hydrocarbons were not detected in the groundwater samples at concentrations at or above their respective lab RL.

Chloroform was the only VOC detected in the groundwater samples and was detected in one of the three groundwater samples. Comparison of the reported chloroform concentration (4 micrograms per liter [µg/L] in sample MW-2) to its' Tier 1 ESL (SFBRWQCB, 2019 [Rev. 2]) indicated that the reported chloroform concentration is above both its' Tier 1 ESL of 0.81 µg/L and secondary ESL (commercial/industrial groundwater vapor intrusion ESL) of 3.6 µg/L.

The lab RL of 0.5 µg/L for benzene for each groundwater sample is above its' Tier 1 ESL of 0.42 µg/L but below its' secondary ESL (commercial/industrial groundwater vapor intrusion ESL) of 1.8 µg/L. The lab RL and lab MDL of 1.0 µg/L and 0.22 µg/L, respectively, for vinyl chloride for each groundwater sample are above both its' Tier 1 ESL of 0.0086 µg/L and secondary ESL (commercial/industrial groundwater vapor intrusion ESL) of 0.14 µg/L.

1.4 Conclusions

Based on the limited data collected during this investigation, including field observations and analytical results, petroleum hydrocarbons and VOCs were not detected in site soil or stockpiled soil at concentrations above their respective Tier 1 ESL and secondary ESL. In addition, the reported concentrations of metals were not detected in site soil or stockpiled soil at concentrations above their respective Tier 1 ESL and/or secondary ESL and arsenic's lab RL is within its' naturally occurring background levels.

Petroleum hydrocarbons and VOCs were not detected in groundwater samples at concentrations above their respective Tier 1 ESL and secondary ESL with the exception of chloroform in the sample from monitoring well MW-2, located near the Site's southwestern corner. The reported chloroform concentration was slightly above its' secondary ESL. The presence of chloroform is typically associated with chlorinated water in public water supplies. Vinyl chloride was not detected in groundwater samples at concentrations at or above its' lab RL or lab MDL; however, the lab MDL was slightly above its' secondary ESL. The secondary ESLs used in the evaluation for chloroform and vinyl chloride are based on vapor intrusion from groundwater at commercial/industrial properties.

1.5 Recommendations

The detection of chloroform in one groundwater sample at a concentration slightly above its' secondary ESL and vinyl chloride's lab MDL being slightly above its' secondary ESL do not appear to present a significant environmental concern for the Site based on the depth to groundwater of approximately 15 feet or more and the presence of fine-grained soil from the surface to depths of approximately 9 feet or more, which would limit migration of vapors upward through the soil column. Further assessment does not appear warranted at this time.

2. INTRODUCTION

ERA is pleased to present this Limited Phase II ESA Report for the property located at 1520 East Lathrop Road in Lathrop, California (Figure 1) to Basics Environmental. The Site is currently vacant land with several soil stockpiles and three groundwater monitoring wells (Figure 2). The findings and conclusions presented in this Report are based on results of a limited assessment that included collecting and analyzing soil and groundwater samples from the Site, and evaluating data obtained during the field investigation and provided by the analytical laboratory.

2.1 Site Description

The 18.15-acre L-shaped property is vacant land. Several soil stockpiles are present on the northern portion of the Site: the westernmost stockpile was covered with vegetation and appeared to have been present on site for the longest time, the central stockpile featured some vegetation, and the easternmost stockpile consisted of numerous individual "end dumps" from transport trucks which appeared to have been recently placed on site. In addition, three groundwater monitoring wells are present on site with "stovepipe" completions and traffic bollards or metal pipes around each well. Site-specific information is presented in Table 1.

Table 1. General Site Information

Project Name: East Lathrop Road Property	**Address:** 1520 East Lathrop Road, Lathrop, San Joaquin County
Current Development: Vacant land	**Occupant(s):** Vacant land
Location: Southern side of East Lathrop Road	

2.2 Background

According to information contained in the Phase I ESA report prepared for the Site by Basics Environmental, the Site was undeveloped land prior to 1975. In 1975 Reiter Truck Company began using the Site as a truck storage yard (long haul truck and equipment storage) and military surplus equipment sales operations with several small structures (use unknown) constructed on the Site's northwestern portion and two structures (possibly covered truck ports used for truck maintenance) constructed on the Site's central portion. By 1982 the covered truck ports had been removed and by 2005 no evidence of structures or truck/equipment storage was noted by Basics Environmental.

Pacific Union Homes reportedly purchased the Site in 2004 on behalf of the City of Lathrop. The City of Lathrop had plans to utilize the Site for treated wastewater irrigation spray fields ("spray fields"). Kleinfelder conducted environmental investigations (as discussed below) for planning purposes for site use as spray fields. Subsequently, the City of Lathrop decided against use of the Site as spray fields and the Site has been vacant land/unoccupied since 2004.

Kleinfelder environmental investigations included installing and sampling three groundwater monitoring wells on site to evaluate groundwater quality for the City of Lathrop. Groundwater was reportedly present at depths of approximately 14 feet to 19 feet below ground surface and groundwater flow direction was calculated to be towards the west-southwest. Analysis of groundwater samples from the monitoring wells for general minerals and inorganic chemicals revealed total dissolved solids (TDS) in each of the three samples at concentrations up to 1,600 milligrams per liter (mg/L) with concentrations in downgradient wells MW-2 and MW-3 above the 2004 Secondary Maximum Contaminant Level (MCL) of 500 mg/L. Select pages from Kleinfelder's report are included in Appendix B. Elevations surveyed by Kleinfelder are presented in Table 2 in Section 3.2.2.

In 2005, Engeo collected soil and groundwater samples from ten borings advanced on site using a direct push drilling rig. Groundwater samples were collected for general minerals and inorganic chemicals analysis. TDS were reported at concentrations of up to 1,400 mg/L, chloride up to 400 mg/L, sulfate up to 400 mg/L, calcium up to 400 mg/L, sodium up to 760 mg/L, and magnesium up to 38 mg/L.

At the time of Basics Environmental's site visit, the Site was covered with tall vegetation with no obvious evidence of: hazardous materials; chemical stains; chemical spills; drains, sumps, major cracks, or other conduits to the subsurface; rinsing equipment or dumping of rinseate; surface impoundments; underground storage tanks (USTs); or distressed vegetation. Soil stockpiles were observed on the northern portion of the Site during the site visit; the origin of the soil was not established by Basics Environmental.

Review of regulatory agency files by Basics Environmental revealed a complaint inspection regarding storage of hazardous waste on site. Approximately 14,000 pounds of a compound referred to as "Impregnite" which contains high levels of zinc were observed to be stored on site. Impregnite was reportedly used to shield against liquid chemical weapons by dusting the compound on uniforms. Information obtained from California Environmental Protection Agency Department of Toxic Substances Control (DTSC) files indicated that large quantities of Impregnite were purchased from military surplus sales and stored on site from approximately 1975 to 1992. San Joaquin County Environmental Health Department ordered the removal of hazardous waste, including Impregnite, from the Site. Impregnite was removed from the Site for disposal at the Chemical Waste Management facility in Kettleman City, California.

To help address issues associated with the former site uses and evaluate current conditions, Basics Environmental recommended further assessment of the Site.

2.3 Objective and Scope of Work

The objective of the limited Phase II ESA was to evaluate current conditions in select on-site areas. To meet this objective, further assessment was conducted and consisted of the following:

- Collecting soil samples (designated SS-1 through SS-6 on the Site Plan, Figure 2) from the former Reiter Truck Company operations area (on the Site's northern and central portions);
- Collecting samples (designated SP-1 through SP-12 on the Site Plan, Figure 2) from the three soil stockpiles on the northern portion of the Site;
- Collecting groundwater samples from the three monitoring wells (designated MW-1 through MW-3 on the Site Plan, Figure 2) installed by Kleinfelder;
- Submitting soil and groundwater samples to the project laboratory for analysis; and
- Preparing this report presenting the results of the Limited Phase II ESA.

2.4 Limitations and Exceptions

The opinions and recommendations presented in this Report are based upon the scope of services, information obtained through the performance of the services, and the schedule as agreed upon by ERA and the party for whom this report was originally prepared. This Report is an instrument of professional service and was prepared in accordance with the generally accepted standards and level of skill and care under similar conditions and circumstances established by the environmental consulting industry. No representation, warranty, or guarantee, express or implied, is intended or given. To the extent that ERA relied upon any information prepared by other parties

not under contract to ERA, ERA makes no representation as to the accuracy or completeness of such information.

This Report is expressly for the sole and exclusive use of the parties for which this Report was originally prepared for a particular purpose. Only the parties for which this Report was originally prepared and/or other specifically named parties, may make use of and rely upon the information in this Report. Reuse of this Report or any portion thereof for other than its intended purpose, or if modified, or if used by third parties without proper authorization, shall be at the user's sole risk.

The findings presented in this Report apply solely to site conditions existing at the time when ERA's assessment was performed. It must be recognized, however, that a Limited Phase II ESA is conducted for the purpose of evaluating the potential for contamination through limited investigative activities and in no way represents a conclusive or complete site characterization. Conditions in other parts of the project site may vary from those at the locations where data were collected. ERA's ability to interpret investigation results is related to the availability of the data and the extent of the investigation activities. As such, 100 percent confidence in limited Phase II ESA conclusions cannot reasonably be achieved.

Nothing contained in this document shall relieve any other party of its responsibility to abide by contract documents and applicable laws, codes, regulations, or standards.

2.5 Special Terms and Conditions

The limited Phase II ESA scope of work (SOW) was presented in ERA's proposal dated November 12, 2020. The SOW for the assessment did not include tasks not specifically noted in the proposal.

2.6 User Reliance

This Report is for the exclusive use of the parties for which it was prepared, their agents, and assignees, and for such other parties as ERA agrees may rely on the Report. Use of this Report by any other party shall be at such party's sole risk.

2.7 Qualifications

A summary of the ERA personnel who worked on this project follows:

- Ms. Lita Freeman, California Professional Geologist and California Asbestos Consultant, has over 25 years of experience providing site assessment services. This has included evaluating potential property impacts from historical on- and off-site operations, conducting subsurface investigations, and implementing site remediation plans. Ms. Freeman works with property owners, attorneys, and regulators to mitigate and resolve environmental issues.

3. FIELD INVESTIGATION

This Limited Phase II ESA was conducted to evaluate current conditions by collecting soil samples from select on-site locations and groundwater samples from the three monitoring wells for analysis with comparison of the analytical results to established screening levels. The scope of work and results of this Limited Phase II ESA are presented below.

Photographs of the Site and site investigation are included in Appendix C.

3.1 Pre-Field Activities

Prior to conducting field activities associated with the proposed assessment, the pre-field tasks described below were completed.

3.1.1 Health and Safety

ERA prepared a site-specific *Health and Safety Plan* for the scope of work as required by the Occupational Health and Safety Administration (OSHA) Standard "Hazardous Waste Operations and Emergency Response" guidelines (29 CFR 1910.120). The document was reviewed and signed by ERA staff and contractors performing work on site under the oversight of ERA personnel.

3.1.2 Permitting

ERA did not obtain a soil boring permit from San Joaquin County Environmental Health Department (SJCCEHD) as the maximum depth for shallow soil samples was less than 1 foot.

3.2 Field Activities

A description of the field activities is presented below. ERA notes that MW-1 and MW-3 were interchanged in the field notes and laboratory reports which did not affect the findings.

3.2.1 Soil Sampling

On October 27, 2020, ERA personnel collected soil samples from select on-site locations. The soil sample locations are presented in Table 3 and shown on Figure 2.

The soil samples were collected using a shovel, trowel, or similar equipment and disposable gloves with the samples placed in glass jars provided by the project laboratory. The sample jars were labeled with the identifying information, sealed in re-sealable plastic bags, and placed on ice for transport under chain-of-custody protocols to SunStar's offices by ERA personnel.

3.2.2 Well Re-Development and Groundwater Sampling

Kleinfelder constructed groundwater monitoring wells in three soil borings advanced to a total depth of 30 feet bgs on March 30 and 31, 2004 (Kleinfelder, 2004). The monitoring wells were constructed of 2-inch diameter polyvinyl chloride (PVC) casing with slotted casing reportedly installed between 15 feet and 30 feet bgs (screened interval). A monument style lockable well vault completed each monitoring well. Well MW-1 is located near the Site's northwestern corner, MW-2 is located near the Site's southwestern corner, and MW-3 is located near the Site's southeastern corner. Kleinfelder and Engeo sampled the monitoring wells in 2004 and 2005, respectively. The monitoring well locations are presented in Table 3 and shown on Figure 2.

On October 23, 2020, Blaine Tech personnel re-developed the three monitoring wells to remove fine-grained sediments that had settled to the bottom of the well casing during the approximately 15 years since the monitoring wells had been sampled last. The wells were re-developed by scrubbing along the screened interval of the well casing then using a positive air displacement pump (well MW-3) or disposable bailer (wells MW-1 and MW-2). The discharged groundwater was periodically monitored for pH, temperature, and specific conductance. Re-development was completed when the discharged groundwater was relatively clear and monitored parameters were generally stable. A total of 78 gallons of groundwater was purged during re-development of the monitoring wells.

On October 27, 2020, Blaine Tech personnel collected groundwater samples from the three monitoring wells. Prior to purging (removing three well volumes) and sampling of the monitoring wells, depth-to-groundwater measurements were collected by Blaine Tech. The monitoring wells were purged of three wells volumes using a submersible pump (well MW-3) or disposable bailer (wells MW-1 and MW-2). Approximately 6 gallons of groundwater were purged from each of two wells (wells MW-2 and MW-3) and approximately 9 gallons of groundwater were purged from the remaining well (well MW-1). Groundwater elevations as documented by Kleinfelder are presented in Table 2, following.

Table 2. Groundwater Elevations (10/27/2020)			
Well	TOC Elevation (amsl, feet)	Depth to GW BTOC (feet bgs)	GW Elevation (amsl, feet)
MW-1	22.78	14.82	7.96
MW-2	24.26	18.40	5.86
MW-3	24.87	18.89	5.98

Notes:
amsl = Above mean sea level
TOC = Top of casing
BTOC = Below top of casing

The groundwater samples were collected using a submersible pump (well MW-3) or disposable bailer (wells MW-1 and MW-2) and decanted into laboratory-provided containers appropriate for the requested analysis. The groundwater sample containers were labeled with the identifying information and placed on ice for transport under chain-of-custody protocols to SunStar.

Based on depth-to-water measurements documented for on-site monitoring wells, groundwater flow direction was inferred to be westward and groundwater gradient was calculated to be 0.002 feet/foot. The groundwater flow direction and groundwater gradient were similar to those obtained by Kleinfelder in 2004 (groundwater flow direction was inferred to be west-southwest and gradient was calculated to be 0.003 feet/foot).

Purged groundwater (total of approximately 99 gallons) was containerized by Blaine Tech and transported to Blaine Tech's yard in San Jose, California.

Field reports prepared by Blaine Tech for the well development and groundwater sampling activities are presented in Appendix D.

4. ANALYSIS, RESULTS, AND EVALUATION

The soil and groundwater samples were submitted to SunStar, a laboratory certified by the State of California to perform the requested analyses. The analytical methods, results, and evaluation of this Limited Phase II ESA are presented in Tables 4, 5, and 6 and summarized in the following sections. Copies of the laboratory analytical reports and chain-of-custody documentation are included in Appendix E.

4.1 ANALYSIS AND RESULTS

This section presents the analysis and results for the soil and groundwater samples.

4.1.1 Soil Analysis and Results

Six discrete soil samples (SS-1 through SS-6) and three 4-point composite soil samples (SP-1, -2, -3, -4; SP-5, -6, -7, -8; and SP-9, -10, -11, -12) were analyzed for the following:

- TPHg using U.S. EPA Method 8015B (purgeable);
- TPHd and TPHmo using U.S. EPA Method 8015B (extractable); and
- VOCs using U.S. EPA Method 8260B.

In addition, samples SS-1-0.25 through SS-6-0.25, SP-3, SP-6, and SP-11 were analyzed for CAM 17 metals using U.S. EPA Method 6010/7000 series.

As shown in Table 4, TPHg was not detected in the soil samples at concentrations at or above the lab RL of 0.25 mg/kg. TPHd was reported in four of the six discrete soil samples (SS-1, SS-3, SS-5,

and SS-6) at concentrations up to 7.3 mg/kg (estimated; maximum reported in sample SS-6) and in each of the three composite soil samples at concentrations up to 24 mg/kg (maximum reported in composite sample SP-9, -10, -11, -12). TPHmo was reported in each of the six discrete soil samples (SS-1 through SS-6) at concentrations up to 21 mg/kg (maximum reported in sample SS-1) and in each of the three composite samples at a maximum concentration of 300 mg/kg (maximum reported in composite sample SP-9, -10, -11, -12).

VOCs, including BTEX, PCE, and PCE breakdown products, were not detected in the soil samples at concentrations at or above their respective lab RLs with the exception of methylene chloride, which is a common laboratory contaminant. Methylene chloride was detected at concentrations of up to 0.0046 mg/kg (estimated) in the six discrete samples (maximum reported in sample SS-1) and 0.0073 mg/kg (estimated) in the three composite samples (maximum reported in composite sample SP-1, -2, -3, -4). A review of the laboratory data report indicated that methylene chloride was also detected in the laboratory method blank at a concentration of 0.00665 mg/kg, suggesting that it is a laboratory contaminant and not actually present in the site's soil samples.

As shown in Table 5, various metals were detected in the nine discrete soil samples (SS-1 through SS-6, SP-3, SP-6, and SP-11) analyzed for CAM 17 metals.

As noted above, three 4-point composites were analyzed for petroleum hydrocarbons and VOCs. Because the analytical laboratory composited the samples, ensuring the same weight or volume from each sample comprising the composite, each composite sample is considered to be homogenous and the resulting detection limits were not increased. Analytical results and lab RLs of the composite samples were evaluated considering the number of discrete samples that comprise the composite sample. To establish the potential concentration in a discrete sample comprising the composite sample to be used for screening against the comparison criteria and evaluate the need to analyze each discrete sample that comprises a particular composite sample, the reported concentration is multiplied by the number of discrete samples in the composite sample.

TPHd, for example, was reported at a concentration of 24 mg/kg in composite SP-9, -10, -11, -12 so TPHd could potentially be present at an estimated concentration of 96 mg/kg (24 mg/kg x 4 = 96 mg/kg) in any one of the discrete samples comprising the composite sample. Table 4 presents the concentrations as reported by SunStar, but the data was further evaluated with this consideration as well to evaluate whether a composite sample required further evaluation of the individual discrete samples.

In summary, the potential concentration of discrete samples within this investigation could be:

- TPHd was detected in each of the three composite samples at a maximum concentration of 24 mg/kg which was reported for composite sample SP-9, -10, -11, -12 (with an estimated maximum concentration of 96 mg/kg within any one of the four discrete samples comprising this 4-point composite);
- TPHmo was detected in each of the three composite samples at a maximum concentration of 300 mg/kg which was reported for composite sample SP-9, -10, -11, -12 (with an estimated maximum concentration of 1,200 mg/kg within any one of the four discrete samples comprising this 4-point composite); and
- Methylene chloride was detected in each of the three composite samples at a maximum concentration of 0.0073 mg/kg which was reported for composite sample SP-1, -2, -3, -4 (with an estimated maximum concentration of 0.0292 mg/kg within any one of the four discrete samples comprising this 4-point composite).

Comparison of the analytical results and the ESLs are presented in Tables 4 and 5 and

discussed below in Section 4.2.

4.1.2 Groundwater Analysis and Results

The three groundwater samples (MW-1, MW-2, and MW-3) were analyzed for the following:

- TPHg using U.S. EPA Method 8015B (purgeable);
- TPHd and TPHmo using U.S. EPA Method 8015B (extractable); and
- VOCs using U.S. EPA Method 8260B.

As shown on Table 6, petroleum hydrocarbons and VOCs (with the exception of chloroform) were not detected in the groundwater samples at concentrations at or above their respective lab RL. Chloroform was reported in the groundwater sample from monitoring well MW-2 at a concentration of 4 µg/L.

Comparison of the analytical results and the ESLs are presented in Table 6 and discussed below in Section 4.2.

4.2 EVALUATION

Analytical results were compared to 1) Tier 1 ESLs; 2) Direct Exposure Human Health Risk Levels, Commercial/Industrial: Shallow Soil Exposure (commercial/industrial properties ESLs); 3) Direct Exposure Human Health Risk Levels, Any Land Use/Any Depth Soil Exposure: Construction Worker ESLs (Construction Worker ESLs); 4) Direct Exposure Human Health Risk Levels: MCL Priority (MCL Priority ESLs); and 5) Groundwater Vapor Intrusion Human Health Risk Levels, Commercial/Industrial (commercial/industrial groundwater vapor intrusion ESLs) established by the SFBRWQCB, Environmental Screening Levels Tier 1 ESLs, 2019 (Rev. 2). Use of these ESLs is based on the Site's planned commercial use. A discussion of ESLs is presented in Appendix A.

4.2.1 Soil Results Evaluation

The analytical results and the ESLs (Tier 1 ESLs and secondary ESLs) for the compounds detected in the soil samples are presented in Tables 4 and 5.

The maximum reported TPHd concentration in the six discrete samples was 7.3 mg/kg (estimated) with the maximum concentration reported in sample SS-6 and the maximum reported TPHd concentration in the three composite samples was 24 mg/kg with the maximum concentration reported in sample SP-9, -10, -11, -12. As noted above in Section 4.1.1, the maximum potential concentration for TPHd was 96 mg/kg within any one of the four discrete samples comprising the 4-point composite sample SP-9, -10, -11, -12. Comparison of the reported TPHd concentrations for the discrete samples and the maximum potential concentration in any one of the four discrete samples comprising the 4-point composite samples to the Tier 1 ESLs (SFBRWQCB, 2019 [Rev. 2]) indicated that TPHd was not reported at concentrations above its' Tier 1 ESL of 260 mg/kg.

The maximum reported TPHmo concentration in the six discrete samples was 21 mg/kg with the maximum concentration reported in sample SS-1 and the maximum reported TPHmo concentration in the three composite samples was 300 mg/kg with the maximum concentration reported in sample SP-9, -10, -11, -12. As noted above in Section 4.1.1, the maximum potential concentration for TPHmo was 1,200 mg/kg within any one of the four discrete samples comprising the 4-point composite sample SP-9, -10, -11, -12. Comparison of the reported TPHmo concentrations for the discrete samples and the maximum potential concentration in any one of the four discrete samples comprising the 4-point composite samples to the Tier 1 ESLs (SFBRWQCB, 2019 [Rev. 2]) indicated that TPHmo was not reported at concentrations above its' Tier 1 ESL of 1,600 mg/kg.

The maximum reported methylene chloride concentration in the six discrete samples was 0.0046 mg/kg (estimated) with the maximum concentration reported in sample SS-1 and the maximum reported methylene chloride concentration in the three composite samples was 0.0073 mg/kg with the maximum concentration reported in sample SP-1, -2, -3, -4. As noted above in Section 4.1.1, the maximum potential concentration for methylene chloride was 0.0292 mg/kg within any one of the four discrete samples comprising the 4-point composite sample SP-1, -2, -3, -4; however, a review of the laboratory data report indicated that methylene chloride was also detected in the laboratory method blank, suggesting that it is a laboratory contaminant and not actually present in the site's soil samples. Comparison of the reported methylene chloride concentrations for the discrete samples and the maximum potential concentration in any one of the four discrete samples comprising the 4-point composite samples to the Tier 1 ESLs (SFBRWQCB, 2019 [Rev. 2]) indicated that methylene chloride was not reported at concentrations above its' Tier 1 ESL of 0.12 mg/kg.

Various metals were reported in each of the nine discrete soil samples (SS-1 through SS-6, SP-3, SP-6, and SP-11) analyzed for CAM 17 metals. Comparison of the reported concentrations for the metals to the Tier 1 ESLs (SFBRWQCB, 2019 [Rev. 2]) indicated that each reported metal concentration is below its' Tier 1 ESL with the exception of vanadium. The reported vanadium concentrations are above its' Tier 1 ESL of 18 mg/kg (SFBRWQCB, 2019 [Rev. 2]) in each of the nine discrete soil samples with the exception of sample SS-1 (reported concentration of 17 mg/kg which is slightly below its' Tier 1 ESL). The reported vanadium concentrations in the remaining samples are well below its' secondary ESL (commercial/industrial properties ESLs) of 470 mg/kg.

The lab RLs for the VOCs presented in Table 4 and metals presented in Table 5 are below their respective Tier 1 ESL except as noted below.

- The lab RL of 0.0025 mg/kg for the VOC vinyl chloride for each soil sample is above its' Tier 1 ESL of 0.0015 mg/kg but below its' secondary ESL (commercial/industrial properties ESL) of 0.15 mg/kg. The lab MDL of 0.00014 mg/kg for each soil sample is below its' Tier 1 ESL and secondary ESL (commercial/industrial properties ESL).
- The lab RLs of 4.5 mg/kg to 5.0 mg/kg and lab MDLs of 0.73 mg/kg to 0.80 mg/kg for the metal arsenic are above its' Tier 1 ESL of 0.067 mg/kg and its' secondary ESL (commercial/industrial properties ESL) of 0.31 mg/kg. The lab RLs and lab MDLs are below the naturally occurring background levels for arsenic of up to 12 mg/kg.

4.2.2 Groundwater Results Evaluation

The analytical results and the ESLs (Tier 1 ESLs and secondary ESLs) for the compounds detected in the groundwater samples are presented in Table 6.

Comparison of the reported concentration (4 µg/L in sample MW-2) for the only VOC (chloroform) detected in the groundwater samples to its' Tier 1 ESL (SFBRWQCB, 2019 [Rev. 2]) indicated that the reported chloroform concentration in sample MW-2 is above both its' Tier 1 ESL of 0.81 µg/L and secondary ESL (commercial/industrial groundwater vapor intrusion ESL) of 3.6 µg/L.

The lab RLs for the petroleum hydrocarbons and VOCs presented in Table 6 are below their respective Tier 1 ESL except as noted below.

- The lab RL of 0.5 µg/L for benzene for each groundwater sample is above its' Tier 1 ESL of 0.42 µg/L but below its' secondary ESL (commercial/industrial groundwater vapor intrusion ESL) of 1.8 µg/L.

- The lab RL and lab MDL of 1.0 µg/L and 0.22 µg/L, respectively, for vinyl chloride for each groundwater sample are above both its' Tier 1 ESL of 0.0086 µg/L and secondary ESL (commercial/industrial groundwater vapor intrusion ESL) of 0.14 µg/L.

5. CONCLUSIONS

ERA conducted this investigation that included sampling and analysis of soil and groundwater. Based on the analytical results and the comparison to ESLs, our conclusions are presented below.

Based on the limited data collected during this investigation, including field observations and analytical results, petroleum hydrocarbons and VOCs were not detected in site soil or stockpiled soil at concentrations above their respective Tier 1 ESL and secondary ESL. In addition, the reported concentrations of metals were not detected in site soil or stockpiled soil at concentrations above their respective Tier 1 ESL and/or secondary ESL and arsenic's lab RL is within its' naturally occurring background levels.

Petroleum hydrocarbons and VOCs were not detected in groundwater samples at concentrations above their respective Tier 1 ESL and secondary ESL with the exception of chloroform in the sample from monitoring well MW-2, located near the Site's southwestern corner. The reported chloroform concentration was slightly above its' secondary ESL. The presence of chloroform is typically associated with chlorinated water in public water supplies. Vinyl chloride was not detected in groundwater samples at concentrations at or above its' lab RL or lab MDL; however, the lab MDL was slightly above its' secondary ESL. The secondary ESLs used in the evaluation for chloroform and vinyl chloride are based on vapor intrusion from groundwater at commercial/industrial properties.

6. RECOMMENDATIONS

The detection of chloroform in one groundwater sample at a concentration slightly above its' secondary ESL and vinyl chloride's lab MDL being slightly above its' secondary ESL do not appear to present a significant environmental concern for the Site based on the depth to groundwater of approximately 15 feet or more and the presence of fine-grained soil from the surface to depths of approximately 9 feet or more, which would limit migration of vapors upward through the soil column. Further assessment does not appear warranted at this time.

7. REFERENCES

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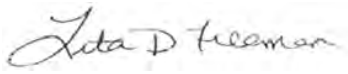
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SIGNATURES OF ENVIRONMENTAL PROFESSIONAL

Report Prepared By:



November 16, 2020

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* A professional geologist's certification of conditions comprises a declaration of his or her professional judgment. It does not constitute a warranty or guarantee, expressed or implied, nor does it relieve any other party of its responsibility to abide by contract documents, applicable codes, standards, regulations, and ordinances.

Tables

Table 3
Soil Sample and Monitoring Well Locations
East Lathrop Road Property
1520 East Lathrop Road
Lathrop, California 95330

Sample ID	Sample Depth (feet bgs)[1]	On-Site Location/Comments
SS-1	0-0.25	Northwestern portion of former Reiter Truck Company operations area
SS-2	0-0.25	Northeastern portion of former Reiter Truck Company operations area
SS-3	0-0.25	East-central portion of former Reiter Truck Company operations area
SS-4	0-0.25	Southwestern portion of former Reiter Truck Company operations area
SS-5	0-0.25	South-central portion of former Reiter Truck Company operations area
SS-6	0-0.25	Southeastern portion of former Reiter Truck Company operations area
SP-1	0.15-0.5	Northwestern portion of westernmost stockpile
SP-2	0.25-0.65	Northeastern portion of westernmost stockpile
SP-3	0.25-0.75	Southeastern portion of westernmost stockpile
SP-4	0.2-0.5	Southwestern portion of westernmost stockpile
SP-5	0.25-0.5	Northwestern portion of central stockpile
SP-6	0.25-0.75	Northeastern portion of central stockpile
SP-7	0.3-0.8	Southwestern portion of central stockpile
SP-8	0.15-0.45	Southeastern portion of central stockpile
SP-9	0.3-0.8	Northwestern portion of easternmost stockpile
SP-10	0.15-0.5	North-central portion of easternmost stockpile
SP-11	0.25-0.75	South-central portion of easternmost stockpile
SP-12	0.2-0.6	Southeastern portion of easternmost stockpile
MW-1	-	Southeastern portion of Site
MW-2	-	Southwestern portion of Site
MW-3	-	Northwestern portion of Site

Notes:
1. bgs = below ground surface

Table 4
Soil Samples - TPH and VOCs Analytical Summary
East Lathrop Road Property
1520 East Lathrop Road
Lathrop, California 95330

Sample ID	Sample Depth (feet bgs)[1]	Petroleum Hydrocarbons (units: mg/kg)			VOCs[2] (units: mg/kg)										
Analytes		**TPHg[3]**	**TPHd[3]**	**TPHmo[3]**	**Benzene**	**Ethylbenzene**	**Toluene**	**Xylenes (m,p and o-)**	**Methylene Chloride**	**cis-1,2-DCE**	**trans-1,2-DCE**	**PCE**	**TCE**	**Vinyl Chloride**	**Other VOC Analytes**
2019 Tier 1 ESL for Shallow Soil[4]		100	260	1,600	0.025	0.43	3.2	2.1	0.12	0.19	0.65	0.08	0.085	0.0015	--
2019 Secondary ESL for Soil[5]		1,800 [6]	1,100 [6]	54,000 [6]	1.4	26	5,300	2,500	25	78 [6]	570 [6]	2.7	6.1	0.15	--
SS-1	0-0.25	<0.25	**2.6 J**	**21**	<0.0025	<0.0025	<0.0025	<0.0075	**0.0046 J**	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025/ (0.00014)	ND
SS-2	0-0.25	<0.25	<10	**17**	<0.0025	<0.0025	<0.0025	<0.0075	**0.0040 J**	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025/ (0.00014)	ND
SS-3	0-0.25	<0.25	**4.0 J**	**20**	<0.0025	<0.0025	<0.0025	<0.0075	**0.0039 J**	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025/ (0.00014)	ND
SS-4	0-0.25	<0.25	<10	**14**	<0.0025	<0.0025	<0.0025	<0.0075	**0.0038 J**	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025/ (0.00014)	ND
SS-5	0-0.25	<0.25	**7.0 J**	**14**	<0.0025	<0.0025	<0.0025	<0.0075	**0.0037 J**	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025/ (0.00014)	ND
SS-6	0-0.25	<0.25	**7.3 J**	**16**	<0.0025	<0.0025	<0.0025	<0.0075	**0.0035 J**	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025/ (0.00014)	ND
SP-1,2,3,4 Composite	0.25-0.75	<0.25	**8.5 J**	**140**	<0.0025	<0.0025	<0.0025	<0.0075	**0.0073 J**	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025/ (0.00014)	ND
SP-5,6,7,8 Composite	0.25-0.75	<0.25	**6.6 J**	**66**	<0.0025	<0.0025	<0.0025	<0.0075	**0.0017 J**	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025/ (0.00014)	ND
SP-9,10,11,12 Composite	0.25-0.75	<0.25	**24**	**300**	<0.0025	<0.0025	<0.0025	<0.0075	**0.0046 J**	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025/ (0.00014)	ND

Notes:

Samples were collected on October 27, 2020 and analyzed by SunStar Laboratories Inc., of Lake Forest, California

mg/kg = milligrams per kilogram

J = Compound detected but below the standard laboratory reporting limit (lab RL); therefore, result is an estimated concentration.

1. bgs = below ground surface

2. Volatile Organic Compound (VOCs) were analyzed using U.S. EPA Method 8260B. Select analytes reported above (e.g. BTEX, PCE and related breakdown products. Additional analytes were selected if they were detected at a concentration at or above the laboratory reporting limit (lab RL) in at least one soil sample). Please refer to analytical laboratory report for remaining list of analytes. cis-1,2-DCE=cis-1,2-dichloroethene; trans-1,2-DCE=trans-1,2-dichloroethene; PCE=tetrachloroethene; TCE=trichloroethene

Table 4
Soil Samples - TPH and VOCs Analytical Summary
East Lathrop Road Property
1520 East Lathrop Road
Lathrop, California 95330

Sample ID	Sample Depth (feet bgs)[1]	Petroleum Hydrocarbons (units: mg/kg)			VOCs[2] (units: mg/kg)										
Analytes		**TPHg[3]**	**TPHd[3]**	**TPHmo[3]**	**Benzene**	**Ethylbenzene**	**Toluene**	**Xylenes (m,p and o-)**	**Methylene Chloride**	**cis-1,2-DCE**	**trans-1,2-DCE**	**PCE**	**TCE**	**Vinyl Chloride**	**Other VOC Analytes**
2019 Tier 1 ESL for Shallow Soil[4]		100	260	1,600	0.025	0.43	3.2	2.1	0.12	0.19	0.65	0.08	0.085	0.0015	--
2019 Secondary ESL for Soil[5]		1,800 [6]	1,100 [6]	54,000 [6]	1.4	26	5,300	2,500	25	78 [6]	570 [6]	2.7	6.1	0.15	--

3. TPHg, TPHd, TPHmo = Total petroleum hydrocarbons (TPH) quantified as gasoline analyzed by U.S. EPA Method 8015B; TPH quantified as diesel, and TPH quantified as motor oil.

4. Tier 1 ESL = Tier 1 Environmental Screening Levels (ESLs) for soil as established by the California Environmental Protection Agency, San Francisco Bay Regional Water Quality Control Board, Tier 1 Environmental Screening Levels (SFBRWQCB). January 2019 (Rev. 2). NE = ESL Not Established.

5. Secondary ESL (unless otherwise noted) = Direct Exposure Human Health Risk Levels, Commercial/Industrial: Shallow Soil Exposure. SFBRWQCB. January 2019 (Rev. 2).

6. Secondary ESL = Direct Exposure Human Health Risk Levels, Construction Worker: Any Land Use/Any Depth Soil Exposure. SFBRWQCB. January 2019 (Rev. 2).

NA = Not Analyzed

<10 = Analyte was not detected at concentration at or above the stated lab RL

Bold = Analyte was reported at stated concentration

Bold = Analyte was reported as non-detect but it is noted that the lab RL is above the Tier 1 ESL. The lab RL and/or method detection limit (MDL) is below the secondary ESL

Table 5
Soil Samples - Metals Analytical Summary
East Lathrop Road Property
1520 East Lathrop Road
Lathrop, California 95330

Sample ID	Sample Depth (feet bgs)[1]	Metals[2] (units: mg/kg)																
Analytes		**Antimony**	**Arsenic**	**Barium**	**Beryllium**	**Cadmium**	**Chromium**	**Cobalt**	**Copper**	**Lead**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Thallium**	**Vanadium**	**Zinc**
2019 Tier 1 ESL for Soil[3]		11	0.067 [5]	390	5	1.9	See Note 6	23	180	32	13	6.9	86	2.4	25	0.78	18	340
2019 Secondary ESL for Soil[4]		50	0.31 [5]	3,000	27	51	See Note 6	28	14,000	160	44	1,800	86	1,700	1,800	3.5	470	110,000
SS-1	0-0.25	<3.0	<5.0/ (<0.80)	**57**	<1.0	**0.37 J**	**7.4**	**4.0**	**6.0**	**16**	<0.10	<5.0	**6.3**	<5.0/(2.2)	<2.0	<5.0/(1.7)	**17**	**27**
SS-2	0-0.25	<3.0	<5.0/ (<0.80)	**60**	<1.0	**0.42 J**	**7.6**	**3.9**	**7.1**	**14**	<0.10	<5.0	**6.0**	<5.0/(2.2)	<2.0	<5.0/(1.7)	**20**	**32**
SS-3	0-0.25	<3.0	<5.0/ (<0.80)	**50**	<1.0	**0.92 J**	**7.7**	**4.2**	**8.1**	**16**	<0.10	<5.0	**5.5**	<5.0/(2.2)	<2.0	<5.0/(1.7)	**21**	**35**
SS-4	0-0.25	<3.0	<5.0/ (<0.80)	**41**	<1.0	**0.57 J**	**7.7**	**3.6**	**5.3**	**17**	<0.10	**0.21 J**	**4.9**	<5.0/(2.2)	<2.0	<5.0/(1.7)	**19**	**38**
SS-5	0-0.25	<3.0	<5.0/ (<0.80)	**40**	<1.0	**0.49 J**	**6.2**	**3.6**	**5.0**	**11**	<0.10	<5.0	**4.6**	<5.0/(2.2)	<2.0	<5.0/(1.7)	**18**	**96**
SS-6	0-0.25	<3.0	<5.0/ (<0.80)	**52**	<1.0	**1.3 J**	**7.8**	**4.2**	**9.3**	**17**	<0.10	**0.22 J**	**5.9**	<5.0/(2.2)	<2.0	<5.0/(1.7)	**19**	**64**
SP-3	0.25-0.75	<3.0	<5.0/ (<0.80)	**71**	<1.0	**0.24 J**	**9.9**	**4.6**	**7.5**	**6.6**	<0.10	<5.0	**10**	<5.0/(2.2)	<2.0	<5.0/(1.7)	**23**	**28**
SP-6	0.25-0.75	<2.7	<4.5/ (<0.73)	**51**	<0.91	**0.21 J**	**8.8**	**4.5**	**8.5**	**2.7**	<0.10	<4.5	**7.9**	<4.5/(2.0)	<1.8	<4.5/(1.5)	**22**	**26**
SP-11	0.25-0.75	<3.0	<5.0/ (<0.80)	**66**	<1.0	**0.22 J**	**15**	**4.9**	**10**	**4.9**	<0.10	<5.0	**17**	<5.0/(2.2)	<2.0	<5.0/(1.7)	**19**	**26**

Notes:

Samples were collected on October 27, 2020 and analyzed by SunStar Laboratories Inc., of Lake Forest, California

mg/kg = milligrams per kilogram

1. bgs = below ground surface
2. Metals were analyzed by EPA Method 6010B
3. Tier 1 ESL = Tier 1 Environmental Screening Levels (ESL) for soil as established by the California Environmental Protection Agency, San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). February 2019 (Rev.
4. Secondary ESL (unless otherwise noted) = Direct Exposure Human Health Risk Levels, Construction Worker: Any Land Use/Any Depth Soil Exposure. SFBRWQCB. January 2019 (Rev. 2).
5. Secondary ESL = Direct Exposure Human Health Risk Levels, Commercial/Industrial: Shallow Soil Exposure. SFBRWQCB. January 2019 (Rev. 2).
6. Chromium III Tier 1 ESL = 120,000 mg/kg; Construction Worker ESL = 530,000 mg/kg; Commercial/Industrial ESL = 1,800,000 mg/kg. Chromium VI Tier 1 ESL = 0.3 mg/kg; Construction Worker ESL = 2.8 mg/kg; Commercial/Industrial ESL = 6.2 mg/kg; Total Chromium Tier 1 = 160 mg/kg.

<0.5 = Analyte was not detected at concentration at or above the stated laboratory reporting limit

<5.0/ (0.80) = Analyte was not detected at concentration at or above the stated laboratory reporting limit and the method detection limit (reported in paranthesis). MDL is also provided when the RL is above the Tier 1 ESL.

Table 5
Soil Samples - Metals Analytical Summary
East Lathrop Road Property
1520 East Lathrop Road
Lathrop, California 95330

Sample ID	Sample Depth (feet bgs)[1]	Metals[2] (units: mg/kg)																
Analytes		**Antimony**	**Arsenic**	**Barium**	**Beryllium**	**Cadmium**	**Chromium**	**Cobalt**	**Copper**	**Lead**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Thallium**	**Vanadium**	**Zinc**
2019 Tier 1 ESL for Soil[3]		11	0.067 [5]	390	5	1.9	See Note 6	23	180	32	13	6.9	86	2.4	25	0.78	18	340
2019 Secondary ESL for Soil[4]		50	0.31 [5]	3,000	27	51	See Note 6	28	14,000	160	44	1,800	86	1,700	1,800	3.5	470	110,000

Bold = Analyte was reported at
Bold = Analyte was reported at a concentration above the Tier 1 ESL but below the secondary ESL
Bold = Analyte was reported at a concentration equal to the Tier 1 ESL but below the secondary ESL
Bold = Analyte was reported at a concentration above both the Tier 1 ESL and the secondary ESL

Table 6
Groundwater Samples - TPH and VOCs Analytical Summary
East Lathrop Road Property
1520 East Lathrop Road
Lathrop, California 95330

On-Site Location/ Comments	Sample ID	Sample Depth (feet bgs)[1]	Petroleum Hydrocarbons (units: µg/L)			VOCs[2] (units: µg/L)										
Analytes			TPHg[3]	TPHd[3]	TPHmo[3]	Benzene	Toluene	Ethylbenzene	Xylenes (m,p and o-)	Chloroform	cis-1,2-DCE	trans-1,2-DCE	PCE	TCE	Vinyl Chloride	Other VOC Analytes
2019 Tier 1 ESL for Groundwater[4]			100	100	NE	0.42	40	3.5	20	0.81	6.0	10	0.64	1.2	0.0086	--
2019 Secondary ESL for Groundwater[5]			760 [6]	200 [6]	NE	1.8 [7]	4,900 [7]	15 [7]	1,600 [7]	3.6 [7]	210 [7]	920 [7]	2.8 [7]	7.5 [7]	0.14 [7]	--
Southeastern Portion of Site	MW-1	NA	<50	<50	<100	<0.50	<0.50	<0.50	<2.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0/ (0.22)	ND
Southwestern Portion of Site	MW-2	NA	<50	<50	<100	<0.50	<0.50	<0.50	<2.5	**4.0**	<1.0	<1.0	<1.0	<1.0	<1.0/ (0.22)	ND
Northwestern Portion of Site	MW-3	NA	<50	<50	<100	<0.50	<0.50	<0.50	<2.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0/ (0.22)	ND

Notes:

Samples were collected on October 27, 2020 and analyzed by SunStar Laboratories Inc., of Lake Forest, California

µg/L = micrograms per liter

1. bgs = below ground surface

2. Volatile Organic Compound (VOCs) were analyzed using U.S. EPA Method 8260B. Select analytes reported above (e.g. BTEX, PCE and related breakdown products. Additional analytes were selected if they were detected at a concentration at or above the laboratory reporting limit (lab RL) in at least one soil sample). cis-1,2-DCE=cis-1,2-dichloroethene; trans-1,2-DCE=trans-1,2-dichloroethene; PCE=tetrachloroethene; TCE=trichloroethene.

3. TPHg, TPHd, TPHmo = Total petroleum hydrocarbons (TPH) quantified as gasoline ; TPH quantified as diesel, and TPH quantified as motor oil were analyzed using U.S. EPA Method 8015B.

4. Tier 1 ESL = Tier 1 Environmental Screening Levels (ESLs) for groundwater as established by the California Environmental Protection Agency, San Francisco Bay Regional Water Quality Control Board, Tier 1 Environmental Screening Levels (SFBRWQCB). January 2019 (Rev. 2).

5. Secondary ESL = Other ESL as presented in Notes 6 and 7. SFBRWQCB January 2019 (Rev. 2).

6. ESL for Direct Exposure Human Health Risk Levels: MCL Priority. SFBRWQCB January 2019 (Rev. 2).

7. ESL for Groundwater Vapor Intrusion Human Health Risk Levels, Commercial/Industrial. SFBRWQCB January 2019 (Rev. 2).

NA = Not Analyzed

NE = Not Established

Table 6
Groundwater Samples - TPH and VOCs Analytical Summary
East Lathrop Road Property
1520 East Lathrop Road
Lathrop, California 95330

On-Site Location/ Comments	Sample ID	Sample Depth (feet bgs)[1]	Petroleum Hydrocarbons (units: µg/L)			VOCs[2] (units: µg/L)										
Analytes			TPHg[3]	TPHd[3]	TPHmo[3]	Benzene	Toluene	Ethylbenzene	Xylenes (m,p and o-)	Chloroform	cis-1,2-DCE	trans-1,2-DCE	PCE	TCE	Vinyl Chloride	Other VOC Analytes
2019 Tier 1 ESL for Groundwater[4]			100	100	NE	0.42	40	3.5	20	0.81	6.0	10	0.64	1.2	0.0086	--
2019 Secondary ESL for Groundwater[5]			760 [6]	200 [6]	NE	1.8 [7]	4,900 [7]	15 [7]	1,600 [7]	3.6 [7]	210 [7]	920 [7]	2.8 [7]	7.5 [7]	0.14 [7]	--

<50 = Analyte was not detected at concentration at or above the stated lab RL

<1.0/ (0.22) = Analyte was not detected at concentration at or above the stated laboratory reporting limit and the method detection limit (reported in paranthesis). MDL is also provided when the RL is above the Tier 1 ESL.

Bold = Analyte was reported at stated

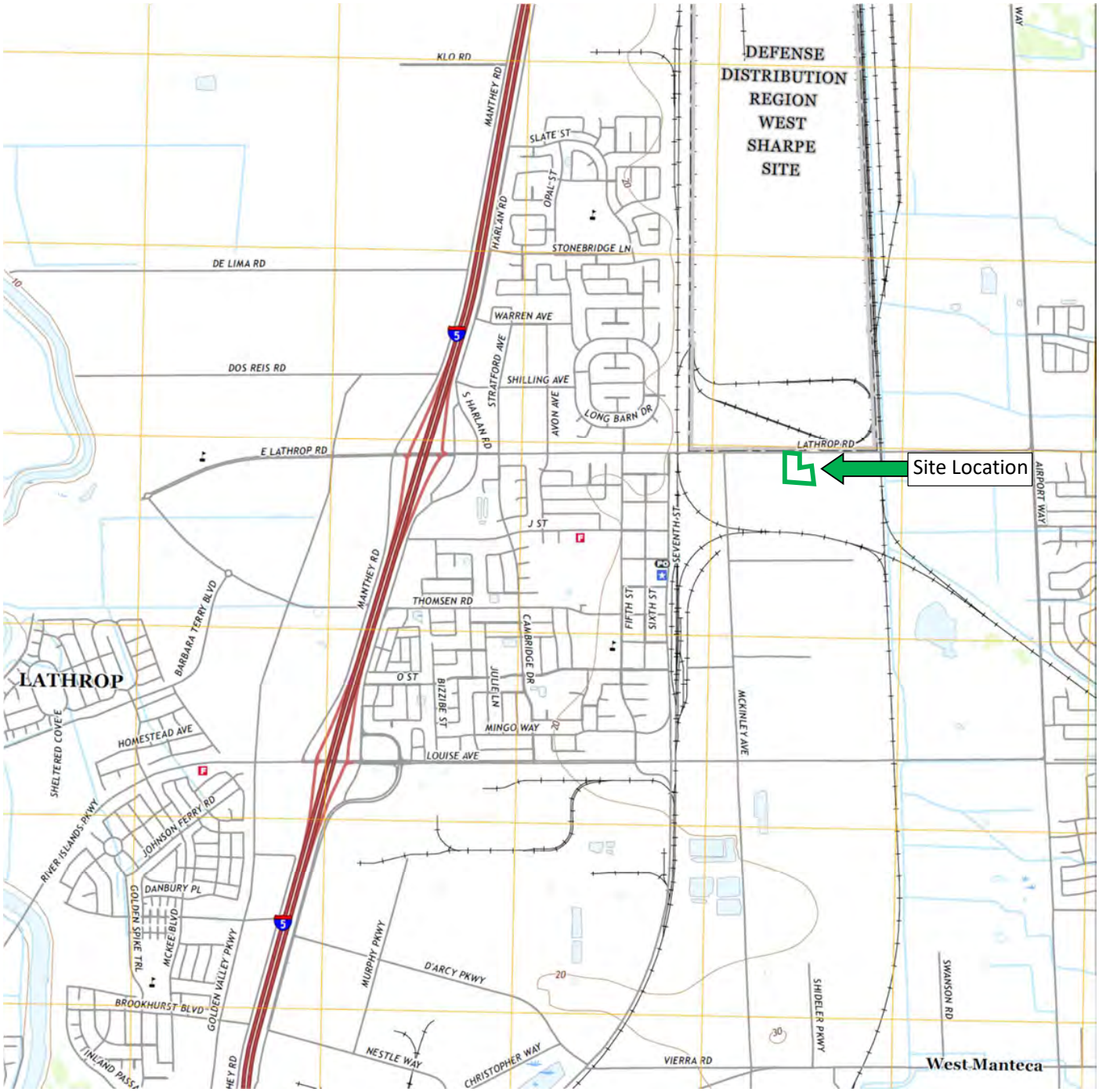
Bold = Analyte was reported at a concentration above the Tier 1 ESL but below the secondary ESL

Analyte was reported as non-detect but it is noted that the lab RL is above the Tier 1 ESL. The lab RL or method detection limit is below the secondary ESL

Bold = Analyte was reported at a concentration above both the Tier 1 ESL and secondary ESL

Analyte was reported as non-detect but it is noted that the lab RL is above both the Tier 1 ESL and the secondary ESL

Figures



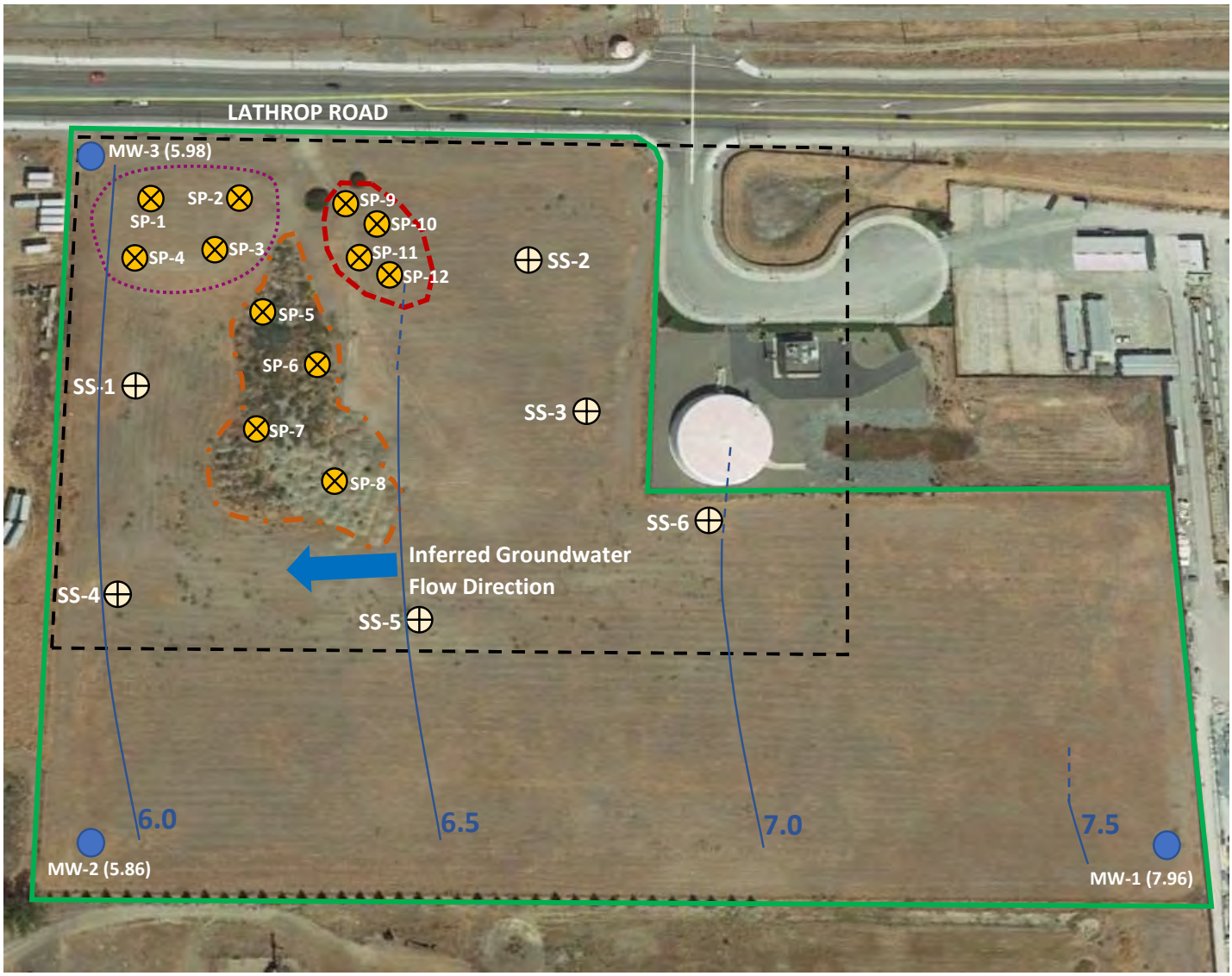
Legend

Site Boundary (approximate)

North

Source: USGS Lathrop, CA Quadrangle Topographic Map, 2018

ERA soil-water-vapor	**Site Location Map**	PN: 01-2020-500-008
		Date: November 16, 2020
	LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT	EP: Lita Freeman
	1520 East Lathrop Road, Lathrop, California	**Figure 1**



Legend

- Site Boundary (approximate)
- Boundary of Former Reiter Truck Operations (approximate)
- SS-1 Surface Soil Sample Location/Identification
- SP-1 Stockpile Sample Location/Identification
- MW-1 Groundwater Monitoring Well (GW elevation, amsl)
- Western Stockpile
- Central Stockpile
- Eastern Stockpile
- Groundwater Elevation Contour (feet amsl, dashed where inferred)

North

0 200 400

Scale (approximate, feet)
Based on Google Earth

ERA soil-water-vapor	**Site Plan**	PN: 01-2020-500-008
	LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT	Date: November 16, 2020
		EP: Lita Freeman
	1520 East Lathrop Road, Lathrop, California	**Figure 2**

Appendix A

Use of California Environmental Protection Agency,
Regional Water Quality Control Board-San Francisco Bay
Region Environmental Screening Levels

Environmental Screening Levels (ESLs) have been established by the California Environmental Protection Agency, Regional Water Quality Control Board-San Francisco Bay Region (SFBRWQCB, Environmental Screening Levels Tier 1 ESLs, January 2019 [Rev. 2]). The Tier 1 ESLs are NOT regulatory cleanup standards. Use of the ESLs in general is intended to be entirely optional on the part of the regulated facility and subject to the approval of the case manager in the overseeing regulatory agency. The presence of a chemical at concentrations in excess of an ESL does not necessarily indicate that adverse impacts to human health or the environment are occurring; this simply indicates that a potential for adverse risk may exist and that additional evaluation is warranted. Use of the ESLs as cleanup levels should be evaluated in view of the overall site investigation results and the cost/benefit of performing a more site-specific risk assessment.

Reliance on only the Tier 1 ESLs to identify potential environmental concerns may not be appropriate for some sites. Examples include sites that require a detailed discussion of potential risks to human health, sites where physical conditions substantially differ from those assumed in development of the ESLs (e.g., mine sites, landfills, etc., with high or low pH) and sites where impacts pose heightened threats to sensitive ecological habitats. The latter could include sites that are adjacent to wetlands, streams, rivers, lakes, ponds, marine shorelines, or sites that otherwise contain or border on areas where protected or endangered species may be present. Potential impacts to sediment are also not addressed. The need for a detailed ecological risk assessment should be evaluated on a site-by-site basis for areas where significant concerns may exist. Notification to the Natural Resource Trustee Agencies (including the state Department of Toxics Substances Control and Department of Fish and Game and the federal Fish and Wildlife Service, Department of the Interior and National Oceanic and Atmospheric Administration) may also be required, particularly if the release of a hazardous substance may impact surface waters.

The ESLs should not be used to determine when impacts at a site should be reported to a regulatory agency. All releases of hazardous substances to the environment should be reported to the appropriate regulatory agency in accordance with governing regulations. The lookup tables are updated on a regular basis, as needed, in order to reflect changes in the referenced sources as well as lessons gained from site investigations and field observations.

Appendix B

Kleinfelder, Inc. Well Installation Report, Select Pages

REPORT
GROUNDWATER MONITORING WELL INSTALLATION, SAMPLING, AND ANALYSIS
REITER PROPERTY
LATHROP, CALIFORNIA

May 5, 2004

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A Report Prepared for:

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REPORT
GROUNDWATER MONITORING
WELL INSTALLATION, SAMPLING, AND ANALYSIS
REITER PROPERTY
LATHROP, CALIFORNIA

Kleinfelder Job No.: 34091.E01
May 5, 2004

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1 EXECUTIVE SUMMARY

Kleinfelder prepared a workplan for Pacific Union Homes in response to the request of Mr. Mike Badner of Pacific Union Homes. The workplan was submitted to the Regional Water Quality Control Board (RWQCB) for review and approval. The workplan was titled "Baseline Groundwater Quality Assessment, Reiter Property, Lathrop, California" dated March 24, 2004 (File No. 3947.P01). The workplan was conditionally approved by the RWQCB on March 29, 2004. Kleinfelder prepared and submitted an addendum (dated April 1, 2004) to the RWQCB to address the condition of sampling and analyzing all three groundwater monitoring wells. The monitoring well locations in the workplan were intended to evaluate both first encountered groundwater conditions both in the estimated upgradient and down gradient locations near the proposed spray field for the City of Lathrop, Mossdale Wastewater Treatment Plant. This initial groundwater sampling event was conducted to assess baseline groundwater conditions prior to installation of the spray field.

Kleinfelder installed and developed three monitoring wells on the site. Groundwater elevations at the site ranged from 5.43 feet above mean sea level (msl) to 8.24 feet msl. Depth to groundwater was approximately 14 to 19 feet below ground surface (bgs). The groundwater flow direction was calculated to be west by southwest, with an overall gradient of 0.003 feet/foot. The three wells were developed and sampled in accordance with the approved Kleinfelder workplan.

Groundwater samples were collected for laboratory analysis at the site from each of the three newly installed monitoring wells. The groundwater samples were analyzed for the following analytes:

- Total Nitrogen (calculation)
- Nitrates + Nitrite as N by EPA Method 4500NO3F
- Total Kjeldahl Nitrogen (TKN) by EPA Method 351.4
- Ammonia as N by EPA Method 350.3
- Sulfate by EPA Method 300.0
- Total Dissolved Solids (TDS) by EPA Method 160.1
- pH by EPA Method 150.1
- Carbonate Alkalinity by SM 403
- Bicarbonate Alkalinity by SM 403
- Total Alkalinity by SM 403
- Hardness by EPA Method 6010B
- Trihalomethanes by EPA Method 524.2
  (chloroform, bromodichloromethane, dibromochloromethane, bromoform)
- Total/Fecal Coliform Organisms by EPA Method 9221B

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Additionally, the groundwater samples were analyzed for the following metals:

- Barium by EPA Method 6010B
- Boron by EPA Method 6010B
- Calcium by EPA Method 6010B
- Iron by EPA Method 6010B
- Manganese by EPA Method 6010B
- Potassium by EPA Method 6010B
- Sodium by EPA Method 6010B

Based on the analytical result, the baseline groundwater quality at the site can be characterized as having exceedences over the applicable Water Quality Goals (WQGs) in TDS and sodium in each groundwater sample and an elevated concentration of total nitrogen (nitrate as N + nitrite as N and TKN) in MW-2 only. Total coliform organisms were also detected in each of the groundwater samples. Generally, any detection above zero is considered to be an exceedance over the water quality goals. For additional details, see Section 6.

This report is subject to the limitations presented in Chapter 7. Any other party (other than Pacific Union Homes or regulatory agencies having enforcement jurisdiction for the site) who would like to use this document shall notify Kleinfelder, Inc. of such intended use by requesting permission from Kleinfelder in writing.

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2 SITE SETTING

2.1. SITE LOCATION

The proposed location for the spray field is located at 1520 East Lathrop Road, Assessors Parcel Number 198-04-14, south of Lathrop Road and east of McKinley Avenue in Lathrop, San Joaquin County, California (Plate 1).

2.2. CURRENT USE AND SITE CHARACTERISTICS

The site encompasses approximately 18 acres. It is used currently as storage for miscellaneous construction equipment and vehicles, with much of the site covered by vegetative growth. The site is proposed to be developed into a spray field for the City of Lathrop, Mossdale Wastewater Treatment Plant.

2.3. REGIONAL GEOLOGY AND HYDROGEOLOGY

The site lies within the western portion of the Great Valley Geomorphic Province of California. The valley is approximately 400 miles long and averages about 50 miles wide, and comprises about 20,000 square miles. The valley has been filled with a thick sequence of marine and non-marine sediments from the late Jurassic to Holocene. The uppermost strata of the Great Valley represent, for the most part, the alluvial, flood, and delta plains of two major rivers (Sacramento and San Joaquin Rivers) and their tributaries.

The valley deposits are derived from the Coast Ranges to the west and the Sierra Nevada to the east. Granitic and metamorphic rocks outcrop along the eastern and southeastern flanks of the valley. Marine sedimentary rocks outcrop along most of the western, southwestern, southern, and southeastern flanks; and volcanic rocks and deposits outcrop along the northeastern flanks of the valley. The valley geomorphology includes dissected uplands, low alluvial plains and fans, river flood plains and channels, and overflow lands and lake bottoms. The majority of the native sediments near the site consist of Miocene to Holocene continental rocks and deposits of a heterogeneous mixture of generally poorly sorted clay, silt, sand, and gravel. Some beds of claystone, siltstone, sandstone, and conglomerate are also present.

Review of the California Division of Mines and Geology "Geologic Map of the San Francisco – San Jose Quadrangle," indicates that the site is underlain by Quaternary alluvial fan deposits of the Modesto Formation.

Groundwater was encountered at approximately 14 to 19 feet bgs. The calculated groundwater flow direction at the site (this event) was west by southwest.

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3 FIELD ACTIVITIES

3.1. PRE-FIELD ACTIVITIES

Kleinfelder prepared a workplan for Pacific Union Homes, for review and approval by the RWQCB. The workplan was conditionally approved by the RWQCB in a letter titled "Conditional Approval of Groundwater Monitoring Workplan, Reiter Property, Lathrop, San Joaquin County," dated March 29, 2004. The workplan was implemented on March 30, 2004.

The San Joaquin County Public Health Services Department/Environmental Health Division (EHD) required completion of a boring permit and payment of fees prior to advancing exploratory borings. Kleinfelder prepared the drilling permit application and submitted it to EHD along with the required fees. A copy of the permit to drill is found in Appendix B.

The site was marked and Underground Service Alert was contacted prior to conducting fieldwork to notify local utilities of our proposed subsurface work.

3.2. MONITORING WELL INSTALLATION

Three soil borings were drilled with a hollow stem auger drill rig equipped with 8-inch outside diameter hollow stem augers. Soil samples were collected every five feet from each soil boring for lithologic classification and potential laboratory analysis. Samples were collected by advancing the boring to a point immediately above the desired sampling depth and then driving a 2-inch diameter split-spoon sampler, lined with three 6-inch long stainless steel tubes, into the undisturbed soil. The sampler was then removed from the bottom of the boring. Soil samples were collected for lithologic analysis.

Kleinfelder installed a monitoring well in each of the three soil borings. Table 1 outlines groundwater monitoring well designations, locatious and ratiouale for their placement.

Table 1
Monitoring Well Locations

Monitoring Well Designation	Location	Monitoring Rationale
MW-1	Southeast corner of site	Upgradient location
MW-2	Southwest corner of site	Downgradient location
MW-3	Northwest corner of site.	Downgradient location

Monitoring well MW-1 was advanced near the southeast corner of the parcel estimated to be the upgradient monitoring point. MW-2 was advanced near the southwest corner of the parcel. The

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location of MW-2 was proposed to be a downgradient monitoring point. MW-3 was advanced near the northwest corner of the parcel. The location of MW-3 was proposed to also be a downgradient monitoring point for the proposed spray field.

Following completion of drilling the soil borings, a 2-inch diameter PVC well was installed in each of the borings. The soil borings were advanced approximately 10 feet into groundwater. The wells were constructed with Schedule 40 PVC, a 15 foot long 0.010 inch screened section, and surrounded by and covered by a clean sand filter pack. The filter pack was surged using a surge block to settle the filter pack during well installation. An approximate 2 to 3 foot thick bentonite transition seal was installed above the filter pack. The remainder of the annular space was grouted to the surface with a neat cement grout material in accordance with San Joaquin County EHD requirements of using neat cement.

The wells were finished with a locking pressure cap with the well casing extending above ground within a monument style lockable well vault. See the log of well borings in Appendix A for the graphical presentation of the monitoring well construction, and the following table for a tabularized summary of the monitoring well construction.

Table 2
Monitoring Well Construction

Monitoring Well Designation	Total Depth (feet)	Screened Interval (feet)	Filter-Pack Interval (feet)	Bentonite Seal (feet)	Grout Seal (feet)
MW-1	30	15 to 30	13 to 30	11 to 13	0 to 11
MW-2	30	15 to 30	13 to 30	10.5 to 13	0 to 10.5
MW-3	30	15 to 30	12 to 30	10 to 12	0 to 10

Note: All measurements are made relative to the ground surface at the time of drilling.

Once the monitoring wells were installed, the top of each well was surveyed (by Nolte Associates, Inc of Walnut Creek, California) so that depth to groundwater measurements in the wells could be converted to groundwater elevations to be used to assess groundwater flow direction and gradient. The wells were surveyed relative to a local benchmark. The wells were surveyed as described in Appendix E Section E-3.4. The following table outlines the monitoring well elevations, as measured from the tops of the well casings.

Table 3
Monitoring Well Elevations

Location	TOC Elevation (feet, msl)
MW-1	22.78
MW-2	24.26
MW-3	24.87

TOC = Top of well Casing
msl = mean sea level

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3.3. MONITORING WELL DEVELOPMENT

Approximately 24 to 48 hours after installation, the monitoring wells were developed to remove silt and clay from the well bore and to effectively increase the hydraulic radius of each monitoring well. Surging along the screened interval of the well was performed to set the sand pack during installation and again during the development stage. The monitoring wells were developed with a purge pump as described in Appendix F Section F.3.2. The discharge was periodically monitored for pH, temperature, and specific conductance.

The monitoring wells were developed on March 31 and April 1, 2004. For a copy of the Monitoring Well Development Logs refer to Appendix C. The well development purge water was discharged to the land surface in such a manner as not to allow the discharge to enter any surface water body or flow back into the monitoring wells.

3.4. MONITORING WELL SAMPLING

Groundwater was sampled after the monitoring wells were developed on April 2, 2004. Water level measurements were made in the monitoring wells prior to purging and sampling the wells according to the protocol described in Appendix F Section F-4.1. The following table outlines the groundwater elevations in each monitoring well prior to sampling.

Table 4
Groundwater Elevations

Location	TOC Elevation msl (feet)	Depth to GW BTOC (feet)	GW Elevation msl (feet)
MW-1	22.78	14.54	8.24
MW-2	24.26	18.83	5.43
MW-3	24.87	18.97	5.90

TOC=Top of Well Casing
BTOC=Below Top of Casing
GW=Groundwater
msl = mean sea level

Approximately three to five well volumes were purged by bailing. The groundwater samples were collected as described in Appendix F-4.2. Each of the water samples collected for quantitative analyses were submitted under chain-of-custody control to laboratories certified by the State of California Department of Health Services (DHS) for the requested analyses.

Equipment used for groundwater sampling was decontaminated prior to use at each sampling location by cleaning with a non-phosphate detergent wash followed by a distilled water rinse, or disposable sampling equipment was used.

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4 LABORATORY ANALYSIS

After collection, the three groundwater samples were labeled, logged on a chain-of-custody, and immediately stored in an iced cooler. The three groundwater samples were submitted to State certified laboratories and analyzed for the following:

- Total Nitrogen (calculation)
- Nitrates + Nitrite as N by EPA Method 4500NO3F (1)
- Total Kjeldahl Nitrogen (TKN) by EPA Method 351.4
- Ammonia as N by EPA Method 350.3
- Sulfate by EPA Method 300.0
- Total Dissolved Solids (TDS) by EPA Method 160.1
- pH by EPA Method 150.1
- Carbonate Alkalinity by SM 403
- Bicarbonate Alkalinity by SM 403
- Total Alkalinity by SM 403
- Hardness by EPA Method 6010B
- Trihalomethanes by EPA Method 524.2
  (chloroform, bromodichloromethane, dibromochloromethane, bromoform)
- Total/Fecal Coliform Organisms by EPA Method 9221B

Metals:

- Barium by EPA 6010B
- Boron by EPA 6010B
- Calcium by EPA 6010B
- Iron by EPA 6010B
- Manganese by EPA 6010B
- Potassium by EPA 6010B
- Sodium by EPA 6010B

Notes: (1) Due to laboratory error, Nitrite as N and Nitrate as N were reported as a combined concentration.

The samples were submitted under chain of custody control to Sequoia Analytical of Sacramento, California and FGL Environmental of Stockton, California (nitrates and coliform only). Both labs are certified by the State of California Department of Health Services (DHS) to perform the requested analyses. The samples were analyzed on an expedited 3-day turn around time (T.A.T.).

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5 RESULTS

5.1 GROUNDWATER FLOW DIRECTION AND GRADIENT

Water level measurements were made in each of the monitoring wells during drilling, development, and prior to sampling. The depth to water measurements obtained during the groundwater sampling event were converted to elevations in reference to the survey conducted. The tops of each monitoring well were chosen as the water level and survey measuring points.

The groundwater flow direction was calculated to be west by southwest. The groundwater gradient was calculated to be 0.003 feet/foot. See Plate 3 for a groundwater contour map.

5.2 GROUNDWATER SAMPLING RESULTS

Groundwater samples were collected from the three newly installed monitoring wells on the site. A total of three groundwater samples were collected for laboratory analysis.

The following table displays the detected concentrations of the analytes included in this assessment.

Table 5
Groundwater Laboratory Results

Analyte	Units	MW-1	MW-2	MW-3
		Concentration		
Total Nitrogen	mg/L	ND<.05	**11.6**	4.3
Nitrate + Nitrite as N	mg/L	ND<0.1	**11**	4.3
Total Kjeldahl Nitrogen	mg/L	ND<0.5	ND<0.5	ND<0.5
Ammonia as N	mg/L	ND<0.050	0.071	ND<0.050
Sulfate as SO4	mg/L	41	140	74
Total Dissolved Solids	mg/L	**610**	**1,600**	**980**
pH	S.U.	7.65	7.78	7.63
Carbonate Alkalinity	mg/L	ND<5.0	ND<5.0	ND<5.0
Bicarbonate Alkalinity	mg/L	390	640	540
Total Alkalinity	mg/L	390	640	540
Hardness	mg/L	84	310	310
Chloroform	ug/L	ND<0.500	ND<0.500	ND<0.500
Bromodichloromethane	ug/L	ND<0.500	ND<0.500	ND<0.500
Dibromochloromethane	ug/L	ND<0.500	ND<0.500	ND<0.500
Bromoform	ug/L	ND<0.500	ND<0.500	ND<0.500

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Table 5
Groundwater Laboratory Results
(continued)

Analyte	Units	MW-1	MW-2	MW-3
		Concentration		
Total Coliform	MPN/100 ml	**>23.0**	**>23.0**	**>23.0**
Fecal Coliform	MPN/100 ml	<1.1	<1.1	<1.1
Boron	mg/L	0.72	1.2	1.0
Barium	mg/L	0.45	ND<0.20	ND<0.20
Calcium	mg/L	19	67	77
Iron	mg/L	0.089	ND<0.040	ND<0.040
Potassium	mg/L	ND<2.0	5.5	4.6
Magnesium	mg/L	8.8	34	29
Manganese	mg/L	0.040	0.036	0.030
Sodium	mg/L	**180**	**490**	**230**

mg/l = milligrams per liter
ug/l = micrograms per liter
S.U. = Standard Units
MPN = Most Probable Number
TDS = Total Dissolved Solids
TKN = Total Kjeldahl Nitrogen
VDS = Volatile Dissolved Solids

Concentrations noted in bold type indicate exceedences of the applicable WQG

The electrical conductance (EC) of the groundwater at each monitoring location was measured while purging of the wells. The following ranges of EC were observed:

- MW-1 ranged from 862 umhos/cm to 896 umhos/cm.
- MW-2 ranged from 2,490 umhos/cm to 2,560 umhos/cm
- MW-3 ranged from 1,299 umhos/cm to 1,326 umhos/cm

For chain-of-custody records and laboratory analytical sheets refer to Appendix D.

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6 CONCLUSIONS AND RECOMMENDATIONS

6.1. CONCLUSIONS

Kleinfelder installed three monitoring wells on the site. Groundwater elevations ranged from 5.43 feet above msl to 8.24 feet msl. The depth to water was approximately 14 to 19 feet bgs. The groundwater flow direction was calculated to be west by southwest, with an overall gradient of 0.003 feet/foot.

It appears that the monitoring well network is sufficient to assess initial baseline groundwater conditions in the vicinity of a proposed spray field.

The groundwater samples were compared to the maximum contaminant levels (MCLs) and applicable WQGs established by the State of California Environmental Protection Agency and the United States Environmental Protection Agency.

Maximum contaminant levels (MCLs) are a part of the drinking water standards adopted by the California Department of Health Services (DHS). The United States Environmental Protection Agency (USEPA) also adopts MCLs under the Safe Drinking Water Act. DHS' drinking water standards must be at least as stringent as those adopted by the USEPA. Primary MCLs are derived from health based criteria (i.e. cancer risk). Secondary MCLs are derived from human welfare considerations (i.e. taste, odor, laundry staining).

The concentrations of TDS found in each of the three samples analyzed were above the Secondary MCL level of 500 mg/l for TDS. The highest concentrations of TDS were found in the downgradient wells MW-2 and MW-3 (1,600 mg/l and 980 mg/l respectively). Additionally, the concentration of sodium in each of the three groundwater samples exceeded the Suggested No Adverse Response Level (SNARL) for sodium of 20 mg/l. The highest concentrations of sodium were also found in the downgradient wells MW-2 and MW-3 (490 mg/l and 230 mg/l, respectively).

An elevated concentration of nitrate + nitrite as N was noted in MW-2 of 11.0 mg/l. The MCL for nitrate as N is 10 mg/l and the MCL for nitrite as N is 1 mg/l. Although the laboratory results for nitrate + nitrite as N are a compilation of two components of the total nitrogen (11.6 mg/l), it is reasonable to estimate the nitrate and nitrite components as being near one or both of the respective MCLs.

Total coliform was detected in each sample >23 MPN/100 ml. The presence of total coliform organisms may be an indicator of pathogenic organisms or potentially harmful organisms in groundwater and may be a result of human and/or animal waste. Generally, the MCL for total coliform is 0 MPN/100 ml. There was no fecal coliform detected at or above the laboratory reporting limits of 1.1 MPN/100 ml.

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6.2. RECOMMENDATIONS

1) Kleinfelder recommends additional quarterly monitoring events to assess future groundwater gradients and groundwater quality. It would be advantageous for Pacific Union Homes to have a breadth of data (for RWQCB) from which to calculate standard deviations of groundwater analyte concentrations rather than one event to base a background or baseline condition from.

2) The groundwater monitoring network at the site is based on proposed and uniform sprayfield at the site. If additional wastewater features such as ponds or specific sprayfield areas are proposed, Kleinfelder and the RWQCB should be consulted to ensure an adequate monitoring network.

3) A copy of this report should be forwarded to the RWQCB for their review and comment.

This report is subject to the "Limitations" presented in Chapter 7 of this report. Any other party (other than Pacific Union Homes or regulatory agencies having enforcement jurisdiction for this site) who would like to use this report shall notify Kleinfelder, Inc. of such intended use by requesting to Kleinfelder in writing of such use.

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7 LIMITATIONS

Kleinfelder has prepared this report in accordance with the generally accepted standards of care which exist in San Joaquin County at the time of writing. It should be recognized that definition and evaluation of geologic and chemical subsurface conditions are difficult. Judgments leading to conclusions and recommendations are generally made with an incomplete knowledge of the subsurface and/or historic conditions applicable to the site. More extensive studies may further reduce the uncertainties associated with this assessment. Kleinfelder should be notified for additional consultation if the client wishes to reduce the uncertaiuties beyond the level associated with this report. No warranty, expressed or implied, is made.

Kleinfelder offers various levels of investigative and engineering services to suit the varying needs of different clients. Although risk can never be eliminated, more detailed and extensive investigations yield more information, which may help understand and manage the level of risk. Since detailed investigation and analysis involves greater expense, our clients participate in determining levels of service which provide adequate information for their purposes at acceptable levels of risk. Pacific Union Homes has reviewed the scope of work and determined that it does not need or want a greater level of service than what was provided.

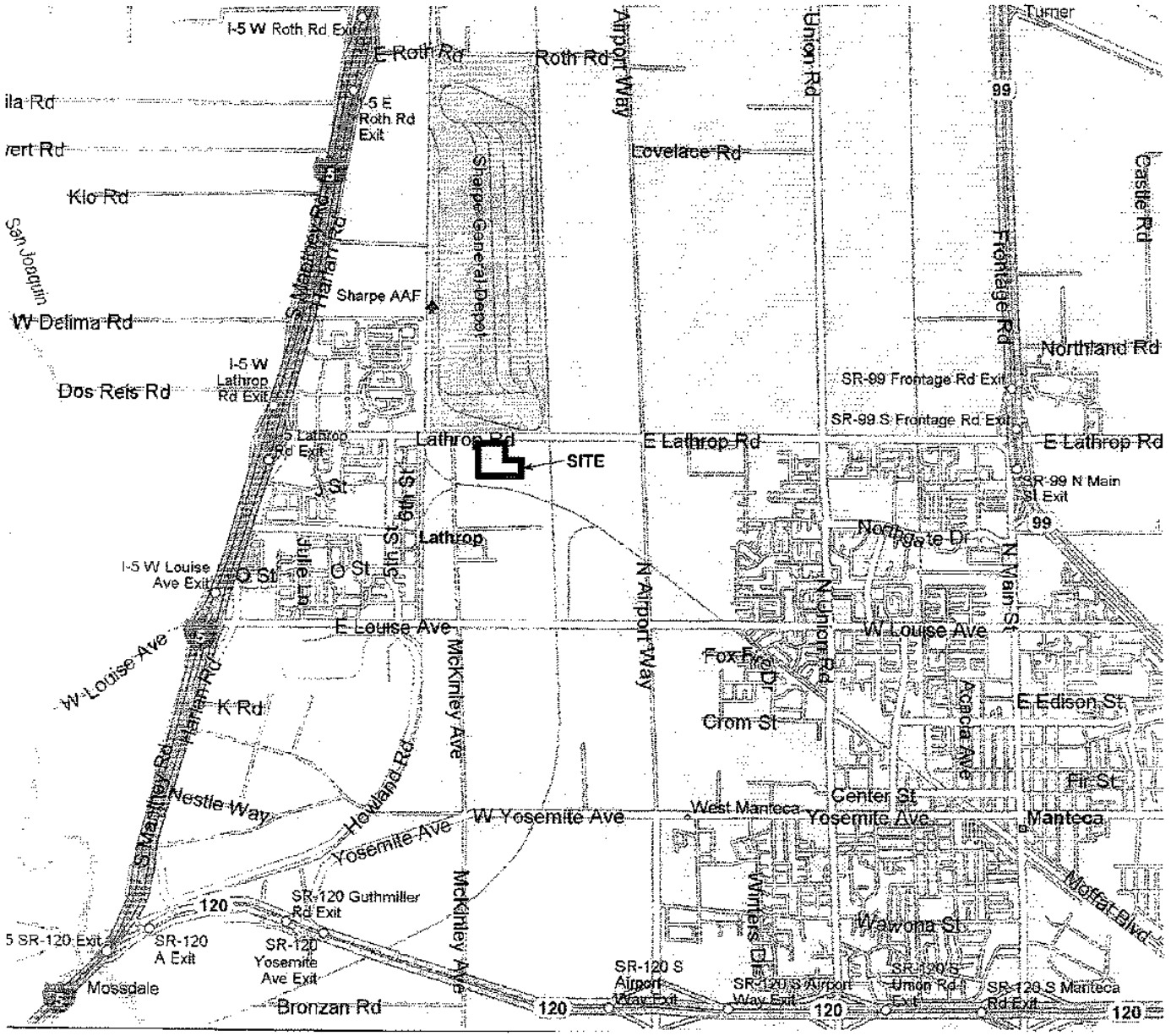
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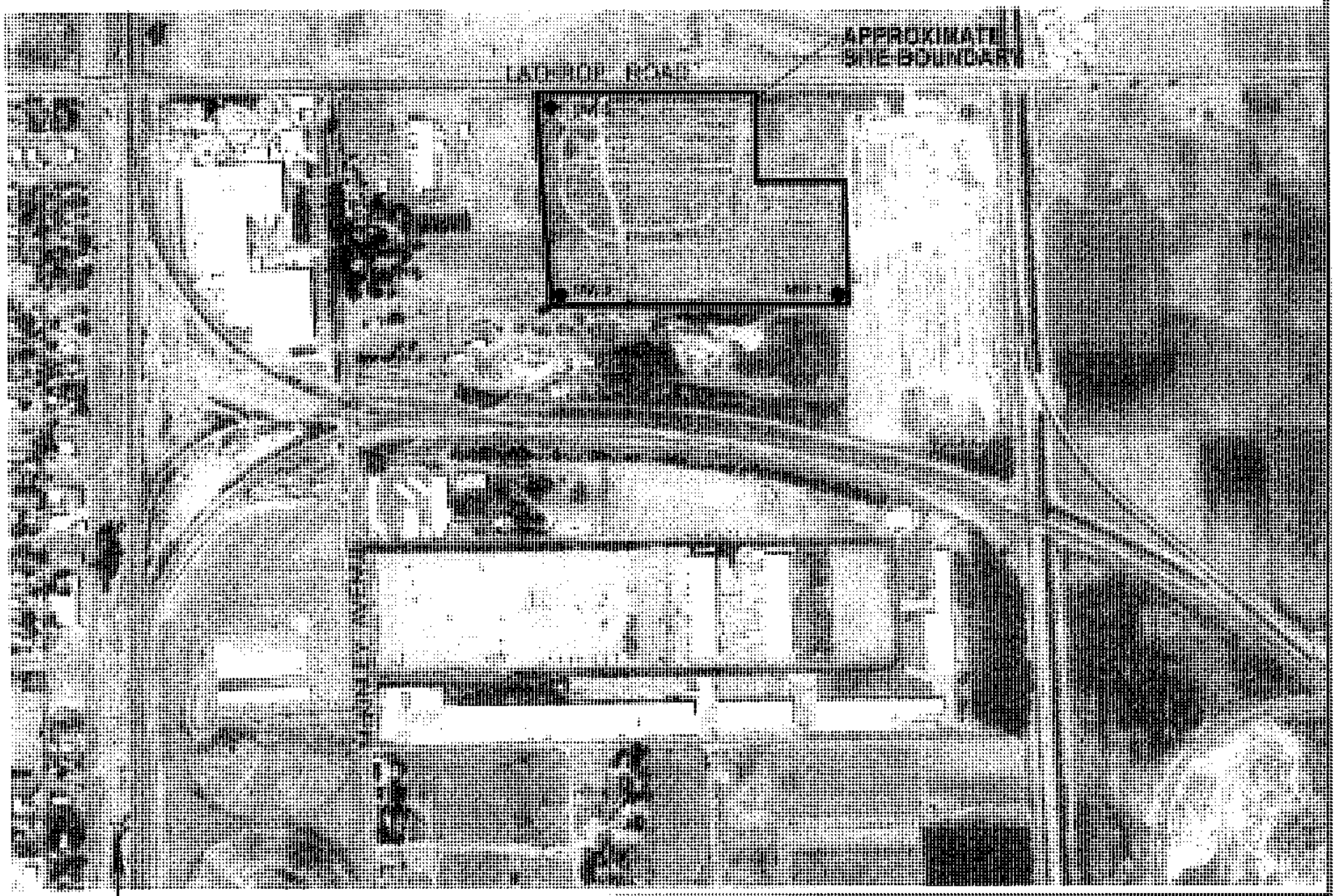
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NOT TO SCALE

KLEINFELDER		SITE LOCATION MAP REITER PROPERTY 1520 E. LATHROP ROAD LATHROP, CALIFORNIA	PLATE 1
DATE PRODUCED:3/24/2004	DATE REVISED:		
PROJ. NO. :39947.P01	FILENAME:STO4D230.FH9		

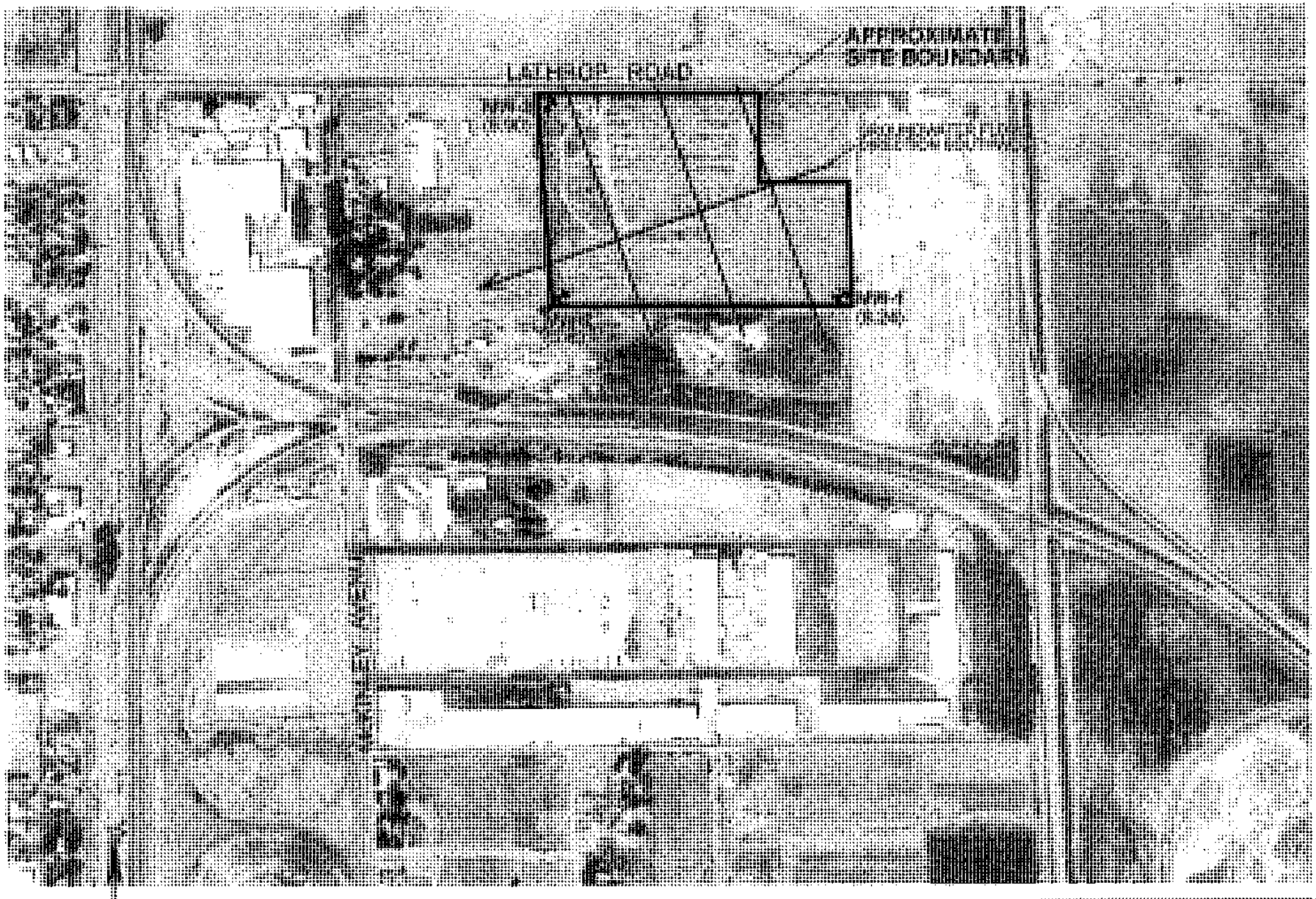
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KLEINFELDER

MONITORING WELL LOCATION MAP
REITER PROPERTY
1520 E. LATHROP ROAD
LATHROP, CALIFORNIA

PLATE
2



APPROXIMATE SCALE IN FEET: 1" = 500'

0 500 1000

KLEINFELDER

DATE PRODUCED:4/12/2004	DATE REVISED:
PROJ. NO. :39947.P01	FILENAME:STO4D288.FH9

GROUNDWATER ELEVATION CONTOUR MAP
REITER PROPERTY
1520 E. LATHROP ROAD
LATHROP, CALIFORNIA

4/2/04

PLATE
3

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UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			USCS SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS (More than half of material is larger than the #200 sieve)	GRAVELS (More than half of coarse fraction is larger than the #4 sieve)	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
			GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
		GRAVELS WITH OVER 12% FINES	GM	SILTY GRAVELS, GRAVEL-SILT-SAND MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SANDS (More than half of coarse fraction is smaller than the #4 sieve)	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
			SP	POORLY-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
		SANDS WITH OVER 12% FINES	SM	SILTY SANDS, SAND-GRAVEL-SILT MIXTURES
			SC	CLAYEY SANDS, SAND-GRAVEL-CLAY MIXTURES
FINE GRAINED SOILS (More than half of material is smaller than the #200 sieve)	SILTS AND CLAYS (Liquid limit less than 50)		ML	INORGANIC SILTS & VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS, CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC SILTS & ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (Liquid limit greater than 50)		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILT
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS & ORGANIC SILTS OF MEDIUM-TO-HIGH PLASTICITY
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENT

KLEINFELDER

Drafted By: GDG
Date: 4/29/2004
Project No.: 39947.P01
File Number: STO4G071

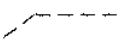
UNIFIED SOIL CLASSIFICATION SYSTEM
REITER PROPERTY
1520 E. LATHROP ROAD
LATHROP, CALIFORNIA

PLATE
A-1

KA-USCS STO4G071.GPJ 4/29/04

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LOG SYMBOLS

	BULK / BAG SAMPLE		SOLID PIPE BACKFILLED WITH CEMENT GROUT
	MODIFIED CALIFORNIA SAMPLER (2-1/2 inch outside diameter)		SOLID PIPE BACKFILLED WITH BENTONITE MATERIAL
	CALIFORNIA SAMPLER (3 inch outside diameter)		SOLID PIPE BACKFILLED WITH SAND
	STANDARD PENETRATION SPLIT SPOON SAMPLER (2 inch outside diameter)		SLOTTED PIPE BACKFILLED WITH SAND
	CONTINUOUS CORE		NO PIPE BACKFILLED WITH BENTONITE MATERIAL
N/R	NO SAMPLE RECOVERY		NO PIPE BACKFILLED WITH SAND
	WATER LEVEL (level where first encountered)		
	WATER LEVEL (level after completion)		NO PIPE BACKFILLED WITH NATIVE SOIL
	SOIL CONTACT NOTED WITHIN SAMPLE INTERVAL	FID	FLAME IONIZATION DETECTOR
	SOIL CONTACT INFERRED BETWEEN SAMPLE INTERVALS	PID	PHOTO IONIZATION DETECTOR

GENERAL NOTES

1. *Lines separating strata on the logs represent approximate boundaries only. Actual transitions may be gradual.*

2. *No warranty is provided as to the continuity of soil conditions between individual sample locations.*

3. *Logs represent general soil conditions observed at the point of exploration on the date indicated.*

4. *In general, Unified Soil Classification System designations presented on the logs were evaluated by visual methods only. Therefore, actual designations (based on laboratory tests) may vary.*

KLEINFELDER

Drafted By: GDG
Date: 4/29/2004

Project No.: 39947.P01
File Number: STO4G071

LOG KEY
REITER PROPERTY
1520 E. LATHROP ROAD
LATHROP, CALIFORNIA

PLATE
A-2

KA-WELL_KEY STO4G071.GPJ 4/29/04

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Surface Conditions: Weeds/grasses, dry

Groundwater: Groundwater encountered at a depth of approximately 15.5 feet below existing site grade.

Method: Drilling Rig, Hollow Stem Auger

Equipment: CME75

Date Completed: 3/31/2004

Logged By: 6238

Total Depth: 31.5 feet

Boring Diameter: 8-Inch

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/ft	FIELD: PID (ppmv)	Lithography	DESCRIPTION	Well Const.
5			14			**(ML) SANDY SILT** - Light brown, moist, medium dense, fine sands, no odor	
10			29			**(SP) SAND** - Gray, moist, medium dense, fine sand **(ML) SANDY SILT** - Light brown, moist, medium dense, fine grained	
15			16			Coarse grained, yellow brown **(SP) SAND** - Yellow brown, moist, medium dense, coarse grained **(SM) SILTY SAND** - Brown, wet at 15', medium dense, fine to coarse grained, with fine sands, no odor	
20			12			**(SP) SAND** - Dark gray, moist, wet, medium dense **(SC/ML) SANDY CLAY AND SANDY SILT** - Light tan, wet	
25			22			**(SM) SILTY SAND** - Light brown, wet, medium dense, fine silty sands, medium trace gravel	
30			66			Brown, very dense, coarse, no odor	
						Boring completed at a depth of approximately 31.5 feet below existing site grade.	

KLEINFELDER

Drafted By: GDG

Date: 4/29/2004

Project No.: 39947.P01

File Number: STO4G071

LOG OF BORING MW-1
REITER PROPERTY
1520 E. LATHROP ROAD
LATHROP, CALIFORNIA

PLATE
1 of 1
A-3

SAC 2004 STO4G071.GPJ 4/29/04

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Surface Conditions: Weeds/grasses, dry

Groundwater: Groundwater encountered at a depth of approximately 19.2 feet below existing site grade.

Method: Drilling Rig, Hollow Stem Auger

Equipment: CME75

Date Completed: 3/30/2004

Logged By: 6238

Total Depth: 31.5 feet

Boring Diameter: 8-inch

Depth (feet)	Sample Type	Sample No.	FIELD Blows/ft	FIELD PID (ppmv)	Lithography	DESCRIPTION	Well Const.
5			6			**(ML) SANDY SILT** - Light brown/brown, moist, loose, no odor	
10			15			**(SM) SILTY SAND** - Light brown/white, moist, medium dense	
15			14			**(CL) SILTY CLAY** - Light brown, moist	
						(SM) SANDY SILT - Olive brown, moist, medium dense, fine sands, no odor	
20			38			Brown/gray, wet, fine sands	
25			14			Increasing fines, brown/light brown	
						(CL) SILTY CLAY - Light brown, wet, stiff	
30			21			**(SM) SILTY SAND** - Brown, moist, fine sands, medium dense	
						Boring completed at a depth of approximately 31.5 feet below existing site grade.	

KLEINFELDER

Drafted By: GDG

Date: 4/29/2004

Project No.: 39947.P01

File Number: STO4G071

LOG OF BORING MW-2
REITER PROPERTY
1520 E. LATHROP ROAD
LATHROP, CALIFORNIA

PLATE
1 of 1
A-4

SAC 2004 STO4G071.GPJ 4/29/04

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Surface Conditions: Weeds/grasses, dry

Groundwater: Groundwater encountered at a depth of approximately 20 feet below existing site grade.

Method: Drilling Rig, Hollow Stem Auger

Equipment: CME75

Date Completed: 3/30/2004

Logged By: 6238

Total Depth: 31.5 feet

Boring Diameter: 8-Inch

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/ft	FIELD: PID (ppmv)	Lithography	DESCRIPTION	Well Const.
6			50/6			**(ML) SANDY SILT** - Light brown, moist, fine sands	
10			27			**(SM) SILTY SAND** - Brown/light brown, moist, medium dense, fine to medium sand	
15			11			**(CL) SILTY CLAY** - Brown/olive brown, moist, medium dense, some fine sands	
20			37			**(SP) SAND** - Olive brown, wet, coarse grained, dense **(SC) SANDY CLAY** - Brown, wet, very stiff, medium grained sand **(SP) SANDS** - Olive brown, wet, coarse sands, dense	
25			75			**(SC) SANDY CLAY** - Light brown, wet, fine sand **(SM) SILTY SAND** - Light brown, wet, very dense	
30			60			**(SP) SAND** - Brown to olive brown, wet, very dense, coarse sands **(CL) CLAY** Hard, wet Boring completed at a depth of approximately 31.5 feet below existing site grade.	

KLEINFELDER

Drafted By: GDG
Date: 4/29/2004
Project No.: 39947.P01
File Number: STO4G071

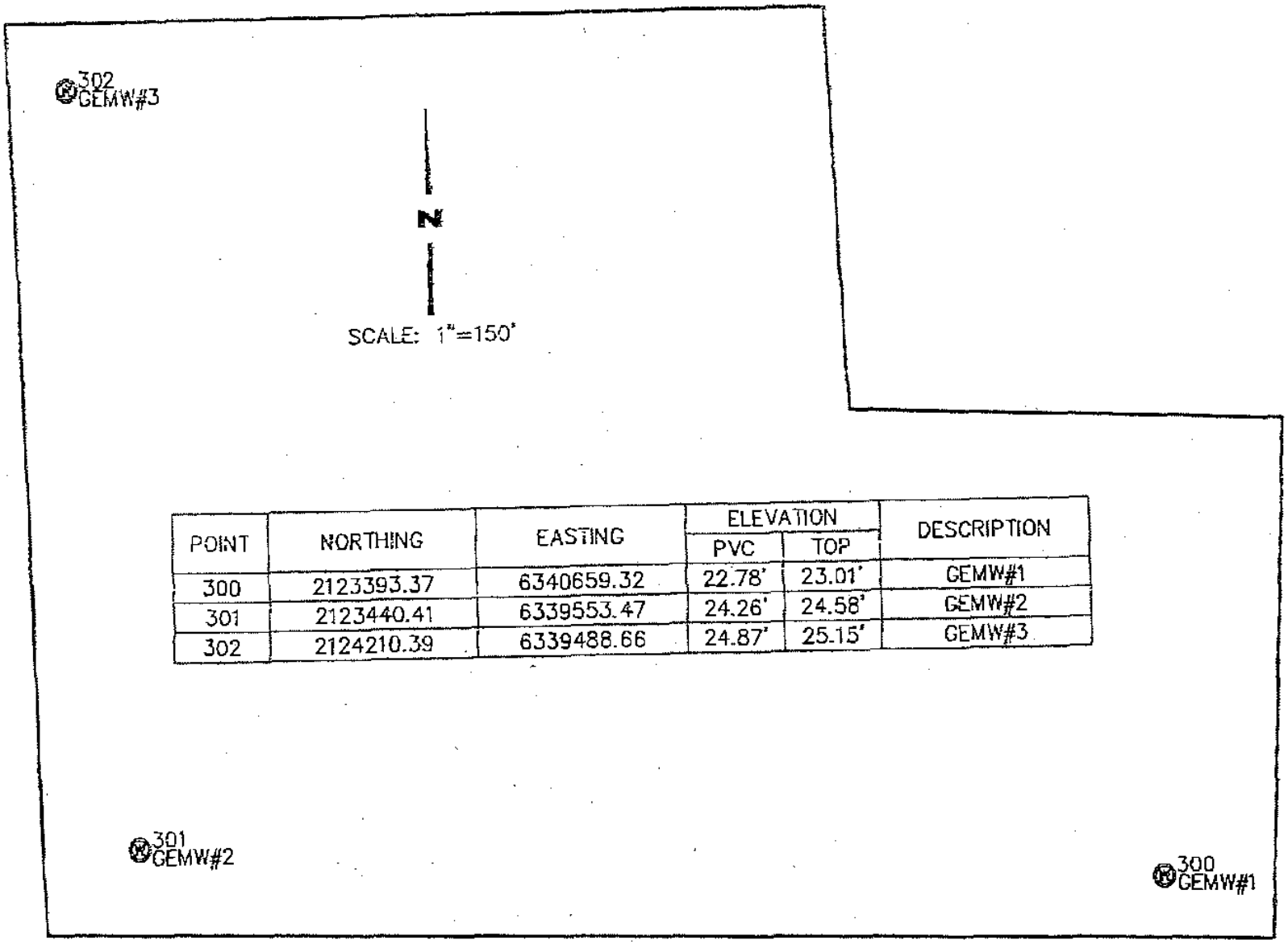
LOG OF BORING MW-3
REITER PROPERTY
1520 E. LATHROP ROAD
LATHROP, CALIFORNIA

PLATE
1 of 1
A-5

SAC 2004 STO4G071.GPJ 4/29/04

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LATHROP ROAD



POINT	NORTHING	EASTING	ELEVATION		DESCRIPTION
			PVC	TOP	
300	2123393.37	6340659.32	22.78'	23.01'	GEMW#1
301	2123440.41	6339553.47	24.26'	24.58'	GEMW#2
302	2124210.39	6339488.66	24.87'	25.15'	GEMW#3

Appendix C

Site Photographs

Photographic Log
East Lathrop Road Property
1520 East Lathrop Road
Lathrop, California 95330
ERA Project No. 01-2020-500-008

Photograph: 1 **Description:** Photo depicts view to the west across the northern portion of the Site. East Lathrop Road in on right in photo.	
Photograph: 2 **Description:** Photo depicts view to the southwest from near the southern border of the former Reiter Truck operations area.	

Photographic Log
East Lathrop Road Property
1520 East Lathrop Road
Lathrop, California 95330
ERA Project No. 01-2020-500-008

Photograph: 3 **Description:** Photo depicts view to the east from near the western border of the former Reiter Truck operations area. Soil stockpiles on the northern portion of the Site are visible across background of photo.	

Photograph: 4 **Description:** Photo depicts view to the southeast across the southeastern portion of the Site.	

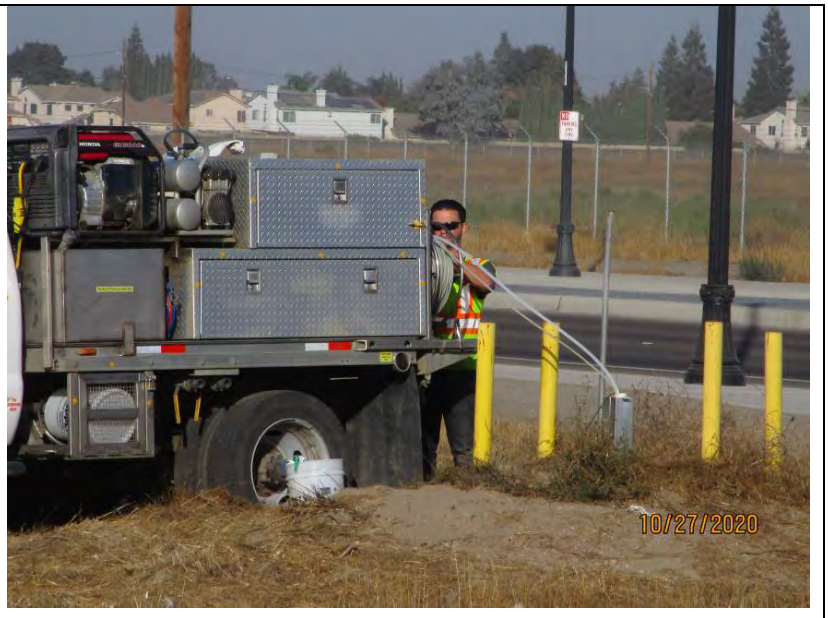
Photographic Log
East Lathrop Road Property
1520 East Lathrop Road
Lathrop, California 95330
ERA Project No. 01-2020-500-008

Photograph: 5 **Description:** Photo depicts soil stockpiles on the northern portion of the Site with the more recently placed stockpile (eastern stockpile) in the center and older stockpiles to right in photo.	
Photograph: 6 **Description:** Photo depicts sample location SP-7 in the central soil stockpile.	

Photographic Log
East Lathrop Road Property
1520 East Lathrop Road
Lathrop, California 95330
ERA Project No. 01-2020-500-008

Photograph: 7 **Description:** Photo depicts sample location SP-12 in the eastern soil stockpile.	
Photograph: 8 **Description:** Photo depicts view to the northeast of groundwater monitoring well MW-3. East Lathrop Road is in background of photo.	

Photographic Log
East Lathrop Road Property
1520 East Lathrop Road
Lathrop, California 95330
ERA Project No. 01-2020-500-008

Photograph: 9 **Description:** Photo depicts field crew developing groundwater monitoring well MW-3.	
Photograph: 10 **Description:** Photo depicts field crew sampling groundwater monitoring well MW-3.	

Appendix D

Blaine Tech Services Field Reports

WELL GAUGING DATA

Project # 201027TD-1 Date 10/27/20 Client Env Risk

Site 1520 East Lathrop Rd. Lathrop CA

Well ID	Well Size (in.)	Time Gauged	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC
MW-3	2	0810					18.83	33.30	
MW-2	2	0822					18.45	33.36	
MW-1	2	0835					15.00	33.46	

WELL DEVELOPMENT DATA SHEET

Project #: 201023TD-1	Client: Env. Risk
Developer: T. Divi	Date Developed: 10-23-20
Well I.D. MW-3	Well Diameter: (circle one) (2) 3 4 6
Total Well Depth: Before 33.30 After 33.32	Depth to Water: Before 18.83 After 18.85
Reason not developed: NA	If Free Product, thickness: NA
Additional Notations: NA	

Volume Conversion Factor (VCF):
{12 x (d^2/4) x π} /231
where
12 = in / foot
d = diameter (in.)
π = 3.1416
231 = in 3/gal

Well dia.		VCF
2"	=	0.16
3"	=	0.37
4"	=	0.65
6"	=	1.47
10"	=	4.08
12"	=	6.87

* Swabbed well for 15 min prior to purge

1 Case Volume	X	Specified Volumes	=	gallons
~~2.3~~ 2.3		10		23.0

Purging Device:
- ☐ Bailer
- ☐ Suction Pump
- ☐ Electric Submersible
- ☒ Positive Air Displacement

Type of Installed Pump _____
Other equipment used _____

TIME	TEMP (F)	pH	Cond. (mS or (µS))	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
0920	68.4	6.27	1121	71000	2.3	
0925	69.1	6.71	1098	71000	4.6	
0930	68.9	6.98	1088	71000	6.9	
0934	68.5	7.10	1083	71000	9.2	
0937	68.3	7.26	1078	71000	11.5	
0940	68.6	7.33	1079	71000	13.8	
0943	69.0	7.36	1081	71000	16.1	
0946	68.9	7.38	1084	71000	18.4	
0949	68.8	7.39	1086	71000	20.7	
0952	68.9	7.39	1088	71000	23.0	
0955	68.5	7.37	1086	71000	25.3	
0957	68.7	7.35	1080	860	27.6	
0959	68.9	7.36	1077	836	29.9	
Did Well Dewater? NN		If yes, note above.		Gallons Actually Evacuated:		46.0

WELL DEVELOPMENT DATA SHEET

Well I.D. MW-3	PAGE 2 OF 2
Project #: 20102 3TD-1	Client: Env Risk

TIME	TEMP (F)	pH	Cond. (mS or (µS))	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
1001	68.7	7.40	1074	826	32.2	
1004	68.9	7.35	1078	820	34.5	
1006	68.9	7.38	1080	818	36.8	
1008	68.9	7.39	1079	814	39.1	
1010	69.1	7.42	1078	810	41.4	
1012	69.1	7.44	1076	809	43.7	
1014	69.0	7.46	1078	809	46.0	

WELL DEVELOPMENT DATA SHEET

Project #: 201023TP-1	Client: ENV. RSK
Developer: T. Dahl	Date Developed: 10-23-20
Well I.D. MW-2	Well Diameter: (circle one) (2) 3 4 6 ___
Total Well Depth: Before 33.36 After 33.41	Depth to Water: Before 18.45 After 18.60
Reason not developed: NA	If Free Product, thickness: NA
Additional Notations: Swabbed well for 15 min Prior to Purge	

Volume Conversion Factor (VCF):	Well dia.		VCF
{12 x (d^2/4) x π} 231	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

2.3	X	10	=	23.0
1 Case Volume		Specified Volumes		gallons

Purging Device:
- ☒ Bailer
- ☐ Suction Pump
- ☐ Electric Submersible
- ☐ Positive Air Displacement

Type of Installed Pump _____
Other equipment used _____

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
1056	68.0	7.71	1618	71000	2.3	
1104	66.3	7.73	1621	71000	4.6	
1111	66.4	7.80	1630	71000	6.9	
1120	66.6	7.83	1640	71000	9.2	
1125	66.4	7.82	1638	680	11.5	
1130	66.3	7.85	1630	631	13.8	
1135	66.2	7.84	1633	616	16.1	
1140	66.4	7.88	1637	606	18.4	
1145	66.6	7.90	1641	603	20.7	
1150	66.4	7.88	1635	601	23.0	

Did Well Dewater? No	If yes, note above.	Gallons Actually Evacuated:	23.0 gal

WELL DEVELOPMENT DATA SHEET

Project #: 20102STD-1	Client: Env. Risk
Developer: T. Dahl	Date Developed: 10-23-20
Well I.D. MW-1	Well Diameter: (circle one) (2) 3 4 6
Total Well Depth: Before 33.46 After 33.46	Depth to Water: Before 15.00 After 15.20
Reason not developed: NA	If Free Product, thickness: NA
Additional Notations: Swabbed well for 19 min Prior to Purge	

Volume Conversion Factor (VCF):	Well dia.		VCF
{12 x (d^2/4) x π} ÷231	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

3.0	X	3	=	9.0
1 Case Volume		Specified Volumes		gallons

Purging Device:
- ☒ Bailer
- ☐ Suction Pump
- ☐ Electric Submersible
- ☐ Positive Air Displacement

Type of Installed Pump _____
Other equipment used _____

TIME	TEMP (F)	pH	Cond. (mS or (µS))	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
1235	68.1	7.69	1239	16	3.0	
1242	69.0	7.62	1249	13	6.0	
1249	69.2	7.60	1253	11	9.0	

Did Well Dewater? NO	If yes, note above.	Gallons Actually Evacuated:	9.0 gal

WELLHEAD INSPECTION CHECKLIST

Client Environmental Risk Date 10.23.20

Site Address 1520 East Lathrop Rd Lathrop CA

Job Number 201023TD-1 Technician T Davi

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)	Repair Order Submitted
MW-3					X			
MW-2					X			
MW-1					X			

NOTES:

WELL GAUGING DATA

Project # 201023TD-1 (201027DB-1) Date 10/27/20 Client Env. Sit

Site 1520 East Lathrop Rd

Well ID	Well Size (in.)	Time Gauged	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC
MW-3	2	0831					18.89	33.39	
MW-2	2	0836					18.40	33.45	
MW-1	2	0845					14.82	33.62	

WELL MONITORING DATA SHEET

Project #: 201023TD-1	Site: 1520 E. Lathrop Rd
Sampler: DB	Date: 10/27/20
Well I.D.: MW-3	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 33.39	Depth to Water (DTW): 18.89
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: (PVC) Grade	Flow Cell Type: —
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 21.79	

Purge Method: Disposable Bailer; Positive Air Displacement; Electric (Submersible); Waterra; 2" Rediflo pump; Extraction Pump; Other____

Sampling Method: (Disposable Bailer); Extraction Port; Dedicated Tubing; Other:____

Flow Rate= Approx 0.67 GPM WC=14.5

2 (Gals.) X 3 = 6 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Gals. Removed	Observations
0926	65.3	7.56	1165	49	—	104	2	Slight cloudy
0929	65.9	7.49	1146	17	—	111	4	Clear
0932	66.1	7.51	1139	17	—	113	6	J
	— Water Became		cloudy/	turbid	after	dropping	Bailer/	
			filling	Bottles —				

Did well dewater? Yes No Gallons actually evacuated: 6

Sampling Date: 10/27/20 Sampling Time: 0935 Depth to Water: 19.32

Sample I.D.: MW-3 Laboratory:

Analyzed for: Sel COC Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

FB I.D. (if applicable): @ Time Analyzed for:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 201023TO-1	Site: 1520 E. Lathrop Rd
Sampler: DB	Date: 10/27/20
Well I.D.: MW-2	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 33.45	Depth to Water (DTW): 18.40
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: (PVC) Grade	Flow Cell Type: —
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 21.41	

Purge Method: (Disposable Bailer) / Positive Air Displacement / Electric Submersible / Waterra / 2" Rediflo pump / Extraction Pump / Other____

Sampling Method: (Disposable Bailer) / Extraction Port / Dedicated Tubing / Other: ____

Flow Rate= — DC = 16.05

2 (Gals.) X 3 = 6 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Gals. Removed	Observations
1003	64.3	7.63	1649	71000	—	111	2	Turb'd
1008	64.4	7.59	1621	71000	—	113	4	↓
1014	64.6	7.60	1603	71000	—	114	6	↓

Did well dewater? Yes (No) Gallons actually evacuated: 6

Sampling Date: 10/27/20 Sampling Time: 1020 Depth to Water: 19.00

Sample I.D.: MW-2 Laboratory:

Analyzed for: See COC Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

FB I.D. (if applicable): @ Time Analyzed for:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 201023 TD-1	Site: 1520 E. Lathrop Rd
Sampler: DB	Date: 10/27/20
Well I.D.: MW-1	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 35.62	Depth to Water (DTW): 14.82
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: (PVC) Grade	Flow Cell Type: —
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 18.58	

Purge Method: Disposable Bailer (circled); Positive Air Displacement; Electric Submersible; Waterra; 2" Rediflo pump; Extraction Pump; Other_____

Sampling Method: Disposable Bailer (circled); Extraction Port; Dedicated Tubing; Other:_____

Flow Rate= — LWC= 18.8

3 (Gals.) X 3 = 9 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Gals. Removed	Observations
~~1054~~ ~~1103~~	68.4	8.08	~~1273~~ ~~1278~~	17	—	62	3	clear
1101	70.0	7.67	1281	13	—	67	6	↓
1107	70.1	7.65	1293	10	—	69	9	↓

Did well dewater? Yes (No) Gallons actually evacuated: 9

Sampling Date: 10/27/20 Sampling Time: 1115 Depth to Water: 15.00

Sample I.D.: MW-1 Laboratory:

Analyzed for: See COC Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

FB I.D. (if applicable): @ Time Analyzed for:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELLHEAD INSPECTION CHECKLIST

Client Env. Risk Date 10/27/20

Site Address 1520 East Lathrop Rd.

Job Number ~~20102703-1~~ 20102370-1 Technician DB

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)	Repair Order Submitted
MW-3	X							
MW-2	X							
MW-1	X							

NOTES:

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME 1520 E. Lathrop Rd. Lathrop CA				PROJECT NUMBER 210025TD-1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP. °C	INITIALS
Myron L Ultrameter II		10-27-20 0900	pH 7 10 4	7.01 10.00 4.01	✓	16.1	TD
↓		↓	Cond 3900	3900	✓	16.0	TD
Myron L Ultrameter II	6222712	10/27/20 @0907	Cond 3900	3900	✓	14.8	DB
↓	↓	↓	pH 10 7 4	10.04 7.00 4.00	✓ ✓	14.9	DB

Appendix E

Laboratory Analytical Report with Chain-of-Custody Documentation

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

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04 November 2020

Lita Freeman
Basics Environmental, Inc.
655 12th Street, Suite 126
Oakland, CA 94607

RE: Lathrop Road Property

Enclosed are the results of analyses for samples received by the laboratory on 10/28/20 09:48. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jeff Lee
Project Manager

SunStar Laboratories, Inc.
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Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-1	T203714-01	Soil	10/27/20 11:02	10/28/20 09:48
SS-2	T203714-02	Soil	10/27/20 11:25	10/28/20 09:48
SS-3	T203714-03	Soil	10/27/20 11:21	10/28/20 09:48
SS-4	T203714-04	Soil	10/27/20 11:07	10/28/20 09:48
SS-5	T203714-05	Soil	10/27/20 11:10	10/28/20 09:48
SS-6	T203714-06	Soil	10/27/20 11:16	10/28/20 09:48
SP-3	T203714-09	Soil	10/27/20 10:00	10/28/20 09:48
SP-6	T203714-12	Soil	10/27/20 10:53	10/28/20 09:48
SP-11	T203714-17	Soil	10/27/20 11:41	10/28/20 09:48
MW-1	T203714-19	Water	10/27/20 09:35	10/28/20 09:48
MW-2	T203714-20	Water	10/27/20 10:20	10/28/20 09:48
MW-3	T203714-21	Water	10/27/20 11:15	10/28/20 09:48
SP-1,2,3,4 COMPOSITE	T203714-22	Soil	10/27/20 00:00	10/28/20 09:48
SP-5,6,7,8 COMPOSITE	T203714-23	Soil	10/27/20 00:00	10/28/20 09:48
SP-9,10,11,12 COMPOSITE	T203714-24	Soil	10/27/20 00:00	10/28/20 09:48

CAM-17 Metals Analysis has been added to samples SP-3, SP-6, SP-11, SS-1, SS-2, SS-3, SS-4, SS-5, and SS-6 per client's request via email. JL 10/28/20

Sample 22's 8015 GRO Gas Purge analysis surrogate recovery had low recovery below method acceptable limits likely due to matrix interference. Sample was re-analyzed with similar surrogate recovery. Matrix interference has been confirmed. Data is reported based on passing blank and LCS. JL 11/4/20

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Jeff Lee, Project Manager

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Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

DETECTIONS SUMMARY

Sample ID: SS-1 **Laboratory ID:** T203714-01

Analyte	Result	Reporting Limit	Units	Method	Notes
C29-C40 (MORO)	**21**	10	mg/kg	EPA 8015B	
Barium	**57**	1.0	mg/kg	EPA 6010b	
Chromium	**7.4**	2.0	mg/kg	EPA 6010b	
Cobalt	**4.0**	2.0	mg/kg	EPA 6010b	
Copper	**6.0**	1.0	mg/kg	EPA 6010b	
Lead	**16**	3.0	mg/kg	EPA 6010b	
Nickel	**6.3**	2.0	mg/kg	EPA 6010b	
Vanadium	**17**	5.0	mg/kg	EPA 6010b	
Zinc	**27**	1.0	mg/kg	EPA 6010b	

Sample ID: SS-2 **Laboratory ID:** T203714-02

Analyte	Result	Reporting Limit	Units	Method	Notes
C29-C40 (MORO)	**17**	10	mg/kg	EPA 8015B	
Barium	**60**	1.0	mg/kg	EPA 6010b	
Chromium	**7.6**	2.0	mg/kg	EPA 6010b	
Cobalt	**3.9**	2.0	mg/kg	EPA 6010b	
Copper	**7.1**	1.0	mg/kg	EPA 6010b	
Lead	**14**	3.0	mg/kg	EPA 6010b	
Nickel	**6.0**	2.0	mg/kg	EPA 6010b	
Vanadium	**20**	5.0	mg/kg	EPA 6010b	
Zinc	**32**	1.0	mg/kg	EPA 6010b	

Sample ID: SS-3 **Laboratory ID:** T203714-03

Analyte	Result	Reporting Limit	Units	Method	Notes
C29-C40 (MORO)	**20**	10	mg/kg	EPA 8015B	
Barium	**50**	1.0	mg/kg	EPA 6010b	
Chromium	**7.7**	2.0	mg/kg	EPA 6010b	
Cobalt	**4.2**	2.0	mg/kg	EPA 6010b	
Copper	**8.1**	1.0	mg/kg	EPA 6010b	

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

Sample ID: SS-3 **Laboratory ID:** T203714-03

Analyte	Result	Reporting Limit	Units	Method	Notes
Lead	**16**	3.0	mg/kg	EPA 6010b	
Nickel	**5.5**	2.0	mg/kg	EPA 6010b	
Vanadium	**21**	5.0	mg/kg	EPA 6010b	
Zinc	**35**	1.0	mg/kg	EPA 6010b	

Sample ID: SS-4 **Laboratory ID:** T203714-04

Analyte	Result	Reporting Limit	Units	Method	Notes
C29-C40 (MORO)	**14**	10	mg/kg	EPA 8015B	
Barium	**41**	1.0	mg/kg	EPA 6010b	
Chromium	**7.7**	2.0	mg/kg	EPA 6010b	
Cobalt	**3.6**	2.0	mg/kg	EPA 6010b	
Copper	**5.3**	1.0	mg/kg	EPA 6010b	
Lead	**17**	3.0	mg/kg	EPA 6010b	
Nickel	**4.9**	2.0	mg/kg	EPA 6010b	
Vanadium	**19**	5.0	mg/kg	EPA 6010b	
Zinc	**38**	1.0	mg/kg	EPA 6010b	

Sample ID: SS-5 **Laboratory ID:** T203714-05

Analyte	Result	Reporting Limit	Units	Method	Notes
C29-C40 (MORO)	**14**	10	mg/kg	EPA 8015B	
Barium	**40**	1.0	mg/kg	EPA 6010b	
Chromium	**6.2**	2.0	mg/kg	EPA 6010b	
Cobalt	**3.6**	2.0	mg/kg	EPA 6010b	
Copper	**5.0**	1.0	mg/kg	EPA 6010b	
Lead	**11**	3.0	mg/kg	EPA 6010b	
Nickel	**4.6**	2.0	mg/kg	EPA 6010b	
Vanadium	**18**	5.0	mg/kg	EPA 6010b	
Zinc	**96**	1.0	mg/kg	EPA 6010b	

Sample ID: SS-6 **Laboratory ID:** T203714-06

Analyte	Result	Reporting Limit	Units	Method	Notes

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

Sample ID: SS-6 **Laboratory ID:** T203714-06

Analyte	Result	Reporting Limit	Units	Method	Notes
C29-C40 (MORO)	**16**	10	mg/kg	EPA 8015B	
Barium	**52**	1.0	mg/kg	EPA 6010b	
Chromium	**7.8**	2.0	mg/kg	EPA 6010b	
Cobalt	**4.2**	2.0	mg/kg	EPA 6010b	
Copper	**9.3**	1.0	mg/kg	EPA 6010b	
Lead	**17**	3.0	mg/kg	EPA 6010b	
Nickel	**5.9**	2.0	mg/kg	EPA 6010b	
Vanadium	**19**	5.0	mg/kg	EPA 6010b	
Zinc	**64**	1.0	mg/kg	EPA 6010b	

Sample ID: SP-3 **Laboratory ID:** T203714-09

Analyte	Result	Reporting Limit	Units	Method	Notes
Barium	**71**	1.0	mg/kg	EPA 6010b	
Chromium	**9.9**	2.0	mg/kg	EPA 6010b	
Cobalt	**4.6**	2.0	mg/kg	EPA 6010b	
Copper	**7.5**	1.0	mg/kg	EPA 6010b	
Lead	**6.6**	3.0	mg/kg	EPA 6010b	
Nickel	**10**	2.0	mg/kg	EPA 6010b	
Vanadium	**23**	5.0	mg/kg	EPA 6010b	
Zinc	**28**	1.0	mg/kg	EPA 6010b	

Sample ID: SP-6 **Laboratory ID:** T203714-12

Analyte	Result	Reporting Limit	Units	Method	Notes
Barium	**51**	0.91	mg/kg	EPA 6010b	
Chromium	**8.8**	1.8	mg/kg	EPA 6010b	
Cobalt	**4.5**	1.8	mg/kg	EPA 6010b	
Copper	**8.5**	0.91	mg/kg	EPA 6010b	
Lead	**2.7**	2.7	mg/kg	EPA 6010b	
Nickel	**7.9**	1.8	mg/kg	EPA 6010b	
Vanadium	**22**	4.5	mg/kg	EPA 6010b	
Zinc	**26**	0.91	mg/kg	EPA 6010b	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

Sample ID: SP-11 **Laboratory ID:** T203714-17

Analyte	Result	Reporting Limit	Units	Method	Notes
Barium	**66**	1.0	mg/kg	EPA 6010b	
Chromium	**15**	2.0	mg/kg	EPA 6010b	
Cobalt	**4.9**	2.0	mg/kg	EPA 6010b	
Copper	**10**	1.0	mg/kg	EPA 6010b	
Lead	**4.9**	3.0	mg/kg	EPA 6010b	
Nickel	**17**	2.0	mg/kg	EPA 6010b	
Vanadium	**19**	5.0	mg/kg	EPA 6010b	
Zinc	**26**	1.0	mg/kg	EPA 6010b	

Sample ID: MW-1 **Laboratory ID:** T203714-19

No Results Detected

Sample ID: MW-2 **Laboratory ID:** T203714-20

Analyte	Result	Reporting Limit	Units	Method	Notes
Chloroform	**4.0**	1.0	ug/l	EPA 8260B	

Sample ID: MW-3 **Laboratory ID:** T203714-21

No Results Detected

Sample ID: SP-1,2,3,4 COMPOSITE **Laboratory ID:** T203714-22

Analyte	Result	Reporting Limit	Units	Method	Notes
C29-C40 (MORO)	**140**	10	mg/kg	EPA 8015B	

Sample ID: SP-5,6,7,8 COMPOSITE **Laboratory ID:** T203714-23

Analyte	Result	Reporting Limit	Units	Method	Notes

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

Sample ID: SP-5,6,7,8 COMPOSITE **Laboratory ID:** T203714-23

Analyte	Result	Reporting Limit	Units	Method	Notes
C29-C40 (MORO)	**66**	10	mg/kg	EPA 8015B	

Sample ID: SP-9,10,11,12 COMPOSITE **Laboratory ID:** T203714-24

Analyte	Result	Reporting Limit	Units	Method	Notes
C13-C28 (DRO)	**24**	10	mg/kg	EPA 8015B	
C29-C40 (MORO)	**300**	10	mg/kg	EPA 8015B	

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Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-1

T203714-01 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Purgeable Petroleum Hydrocarbons by EPA 8015B									
C6-C12 (GRO)	ND	0.25	mg/kg	1	0102920	10/29/20	11/02/20	EPA 8015B	
Surrogate: a,a,a-Trifluorotoluene		*92.0 %*	*65-135*		"	"	"	"	
Extractable Petroleum Hydrocarbons by 8015B									
C13-C28 (DRO)	ND	10	mg/kg	1	0102819	10/28/20	10/31/20	EPA 8015B	
C29-C40 (MORO)	**21**	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*85.0 %*	*65-135*		"	"	"	"	
Metals by EPA 6010B									
Antimony	ND	3.0	mg/kg	1	0102826	10/28/20	11/02/20	EPA 6010b	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	**57**	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	**7.4**	2.0	"	"	"	"	"	"	
Cobalt	**4.0**	2.0	"	"	"	"	"	"	
Copper	**6.0**	1.0	"	"	"	"	"	"	
Lead	**16**	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	**6.3**	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	5.0	"	"	"	"	"	"	
Vanadium	**17**	5.0	"	"	"	"	"	"	
Zinc	**27**	1.0	"	"	"	"	"	"	

SunStar Laboratories, Inc.



Jeff Lee, Project Manager

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-1

T203714-01 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.10	mg/kg	1	0102827	10/28/20	11/02/20	EPA 7471A Soil	
Volatile Organic Compounds by EPA Method 8260B									**M-04**
Bromobenzene	ND	0.0025	mg/kg	1	0102828	10/28/20	10/28/20	EPA 8260B	
Bromochloromethane	ND	0.0025	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0025	"	"	"	"	"	"	
Bromoform	ND	0.0025	"	"	"	"	"	"	
Bromomethane	ND	0.0025	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0025	"	"	"	"	"	"	
Chlorobenzene	ND	0.0025	"	"	"	"	"	"	
Chloroethane	ND	0.0025	"	"	"	"	"	"	
Chloroform	ND	0.0025	"	"	"	"	"	"	
Chloromethane	ND	0.0025	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0025	"	"	"	"	"	"	
Dibromomethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	

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Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-1

T203714-01 (Soil)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B **M-04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,3-Dichloropropane	ND	0.0025	mg/kg	1	0102828	10/28/20	10/28/20	EPA 8260B	
2,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0025	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0025	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.0025	"	"	"	"	"	"	
Methylene chloride	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.0025	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0025	"	"	"	"	"	"	
Styrene	ND	0.0025	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
Tetrachloroethene	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
Trichloroethene	ND	0.0025	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
Vinyl chloride	ND	0.0025	"	"	"	"	"	"	
Benzene	ND	0.0025	"	"	"	"	"	"	
Toluene	ND	0.0025	"	"	"	"	"	"	
Ethylbenzene	ND	0.0025	"	"	"	"	"	"	
m,p-Xylene	ND	0.0050	"	"	"	"	"	"	
o-Xylene	ND	0.0025	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.3 %*	*75.4-139*		"	"	"	"	
Surrogate: Dibromofluoromethane		*113 %*	*73.1-125*		"	"	"	"	

SunStar Laboratories, Inc.



Jeff Lee, Project Manager

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Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-1

T203714-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Volatile Organic Compounds by EPA Method 8260B									**M-04**
Surrogate: Toluene-d8		*94.8 %*	*82.6-117*		*0102828*	*10/28/20*	*10/28/20*	*EPA 8260B*	

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Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-2

T203714-02 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Purgeable Petroleum Hydrocarbons by EPA 8015B									
C6-C12 (GRO)	ND	0.25	mg/kg	1	0102920	10/29/20	11/04/20	EPA 8015B	
Surrogate: a,a,a-Trifluorotoluene		*96.3 %*	*65-135*		"	"	"	"	
Extractable Petroleum Hydrocarbons by 8015B									
C13-C28 (DRO)	ND	10	mg/kg	1	0102819	10/28/20	10/31/20	EPA 8015B	
C29-C40 (MORO)	**17**	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*83.5 %*	*65-135*		"	"	"	"	
Metals by EPA 6010B									
Antimony	ND	3.0	mg/kg	1	0102826	10/28/20	11/02/20	EPA 6010b	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	**60**	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	**7.6**	2.0	"	"	"	"	"	"	
Cobalt	**3.9**	2.0	"	"	"	"	"	"	
Copper	**7.1**	1.0	"	"	"	"	"	"	
Lead	**14**	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	**6.0**	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	5.0	"	"	"	"	"	"	
Vanadium	**20**	5.0	"	"	"	"	"	"	
Zinc	**32**	1.0	"	"	"	"	"	"	

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-2

T203714-02 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.10	mg/kg	1	0102827	10/28/20	11/02/20	EPA 7471A Soil	
Volatile Organic Compounds by EPA Method 8260B									
Bromobenzene	ND	0.0025	mg/kg	1	0102828	10/28/20	10/28/20	EPA 8260B	
Bromochloromethane	ND	0.0025	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0025	"	"	"	"	"	"	
Bromoform	ND	0.0025	"	"	"	"	"	"	
Bromomethane	ND	0.0025	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0025	"	"	"	"	"	"	
Chlorobenzene	ND	0.0025	"	"	"	"	"	"	
Chloroethane	ND	0.0025	"	"	"	"	"	"	
Chloroform	ND	0.0025	"	"	"	"	"	"	
Chloromethane	ND	0.0025	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0025	"	"	"	"	"	"	
Dibromomethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-2

T203714-02 (Soil)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,3-Dichloropropane	ND	0.0025	mg/kg	1	0102828	10/28/20	10/28/20	EPA 8260B	
2,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0025	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0025	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.0025	"	"	"	"	"	"	
Methylene chloride	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.0025	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0025	"	"	"	"	"	"	
Styrene	ND	0.0025	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
Tetrachloroethene	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
Trichloroethene	ND	0.0025	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
Vinyl chloride	ND	0.0025	"	"	"	"	"	"	
Benzene	ND	0.0025	"	"	"	"	"	"	
Toluene	ND	0.0025	"	"	"	"	"	"	
Ethylbenzene	ND	0.0025	"	"	"	"	"	"	
m,p-Xylene	ND	0.0050	"	"	"	"	"	"	
o-Xylene	ND	0.0025	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.5 %*	*75.4-139*		"	"	"	"	
Surrogate: Dibromofluoromethane		*111 %*	*73.1-125*		"	"	"	"	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-2

T203714-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Volatile Organic Compounds by EPA Method 8260B									
Surrogate: Toluene-d8		*95.8 %*	*82.6-117*		*0102828*	*10/28/20*	*10/28/20*	*EPA 8260B*	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-3

T203714-03 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Purgeable Petroleum Hydrocarbons by EPA 8015B									
C6-C12 (GRO)	ND	0.25	mg/kg	1	0102920	10/29/20	11/02/20	EPA 8015B	
Surrogate: a,a,a-Trifluorotoluene		*84.4 %*	*65-135*		"	"	"	"	
Extractable Petroleum Hydrocarbons by 8015B									
C13-C28 (DRO)	ND	10	mg/kg	1	0102819	10/28/20	10/31/20	EPA 8015B	
C29-C40 (MORO)	**20**	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*80.8 %*	*65-135*		"	"	"	"	
Metals by EPA 6010B									
Antimony	ND	3.0	mg/kg	1	0102826	10/28/20	11/02/20	EPA 6010b	
Silver	ND	2.0	"	"	"	"	11/02/20	"	
Arsenic	ND	5.0	"	"	"	"	11/02/20	"	
Barium	**50**	1.0	"	"	"	"	11/02/20	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	11/02/20	"	
Chromium	**7.7**	2.0	"	"	"	"	11/02/20	"	
Cobalt	**4.2**	2.0	"	"	"	"	11/02/20	"	
Copper	**8.1**	1.0	"	"	"	"	11/02/20	"	
Lead	**16**	3.0	"	"	"	"	11/02/20	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	**5.5**	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	5.0	"	"	"	"	"	"	
Vanadium	**21**	5.0	"	"	"	"	11/02/20	"	
Zinc	**35**	1.0	"	"	"	"	"	"	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-3

T203714-03 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.10	mg/kg	1	0102827	10/28/20	11/02/20	EPA 7471A Soil	
Volatile Organic Compounds by EPA Method 8260B									
Bromobenzene	ND	0.0025	mg/kg	1	0102828	10/28/20	10/28/20	EPA 8260B	
Bromochloromethane	ND	0.0025	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0025	"	"	"	"	"	"	
Bromoform	ND	0.0025	"	"	"	"	"	"	
Bromomethane	ND	0.0025	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0025	"	"	"	"	"	"	
Chlorobenzene	ND	0.0025	"	"	"	"	"	"	
Chloroethane	ND	0.0025	"	"	"	"	"	"	
Chloroform	ND	0.0025	"	"	"	"	"	"	
Chloromethane	ND	0.0025	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0025	"	"	"	"	"	"	
Dibromomethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-3

T203714-03 (Soil)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,3-Dichloropropane	ND	0.0025	mg/kg	1	0102828	10/28/20	10/28/20	EPA 8260B	
2,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0025	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0025	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.0025	"	"	"	"	"	"	
Methylene chloride	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.0025	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0025	"	"	"	"	"	"	
Styrene	ND	0.0025	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
Tetrachloroethene	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
Trichloroethene	ND	0.0025	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
Vinyl chloride	ND	0.0025	"	"	"	"	"	"	
Benzene	ND	0.0025	"	"	"	"	"	"	
Toluene	ND	0.0025	"	"	"	"	"	"	
Ethylbenzene	ND	0.0025	"	"	"	"	"	"	
m,p-Xylene	ND	0.0050	"	"	"	"	"	"	
o-Xylene	ND	0.0025	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.7 %*	*75.4-139*		"	"	"	"	
Surrogate: Dibromofluoromethane		*109 %*	*73.1-125*		"	"	"	"	

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Jeff Lee, Project Manager

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Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-3

T203714-03 (Soil)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Toluene-d8	*95.0 %*		*82.6-117*		*0102828*	*10/28/20*	*10/28/20*	*EPA 8260B*	

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Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-4

T203714-04 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Purgeable Petroleum Hydrocarbons by EPA 8015B									
C6-C12 (GRO)	ND	0.25	mg/kg	1	0102920	10/29/20	11/02/20	EPA 8015B	
Surrogate: a,a,a-Trifluorotoluene		*88.2 %*	*65-135*		"	"	"	"	
Extractable Petroleum Hydrocarbons by 8015B									
C13-C28 (DRO)	ND	10	mg/kg	1	0102819	10/28/20	10/31/20	EPA 8015B	
C29-C40 (MORO)	**14**	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*86.9 %*	*65-135*		"	"	"	"	
Metals by EPA 6010B									
Antimony	ND	3.0	mg/kg	1	0102826	10/28/20	11/02/20	EPA 6010b	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	**41**	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	11/02/20	"	
Cadmium	ND	2.0	"	"	"	"	11/02/20	"	
Chromium	**7.7**	2.0	"	"	"	"	"	"	
Cobalt	**3.6**	2.0	"	"	"	"	"	"	
Copper	**5.3**	1.0	"	"	"	"	"	"	
Lead	**17**	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	**4.9**	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	5.0	"	"	"	"	"	"	
Vanadium	**19**	5.0	"	"	"	"	"	"	
Zinc	**38**	1.0	"	"	"	"	"	"	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-4

T203714-04 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.10	mg/kg	1	0102827	10/28/20	11/02/20	EPA 7471A Soil	
Volatile Organic Compounds by EPA Method 8260B									
Bromobenzene	ND	0.0025	mg/kg	1	0102828	10/28/20	10/28/20	EPA 8260B	
Bromochloromethane	ND	0.0025	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0025	"	"	"	"	"	"	
Bromoform	ND	0.0025	"	"	"	"	"	"	
Bromomethane	ND	0.0025	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0025	"	"	"	"	"	"	
Chlorobenzene	ND	0.0025	"	"	"	"	"	"	
Chloroethane	ND	0.0025	"	"	"	"	"	"	
Chloroform	ND	0.0025	"	"	"	"	"	"	
Chloromethane	ND	0.0025	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0025	"	"	"	"	"	"	
Dibromomethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-4

T203714-04 (Soil)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,3-Dichloropropane	ND	0.0025	mg/kg	1	0102828	10/28/20	10/28/20	EPA 8260B	
2,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0025	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0025	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.0025	"	"	"	"	"	"	
Methylene chloride	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.0025	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0025	"	"	"	"	"	"	
Styrene	ND	0.0025	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
Tetrachloroethene	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
Trichloroethene	ND	0.0025	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
Vinyl chloride	ND	0.0025	"	"	"	"	"	"	
Benzene	ND	0.0025	"	"	"	"	"	"	
Toluene	ND	0.0025	"	"	"	"	"	"	
Ethylbenzene	ND	0.0025	"	"	"	"	"	"	
m,p-Xylene	ND	0.0050	"	"	"	"	"	"	
o-Xylene	ND	0.0025	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.6 %*	*75.4-139*		"	"	"	"	
Surrogate: Dibromofluoromethane		*109 %*	*73.1-125*		"	"	"	"	

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-4

T203714-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Volatile Organic Compounds by EPA Method 8260B									
Surrogate: Toluene-d8		*96.0 %*	*82.6-117*		*0102828*	*10/28/20*	*10/28/20*	*EPA 8260B*	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-5

T203714-05 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Purgeable Petroleum Hydrocarbons by EPA 8015B									
C6-C12 (GRO)	ND	0.25	mg/kg	1	0102920	10/29/20	11/02/20	EPA 8015B	
Surrogate: a,a,a-Trifluorotoluene		*92.0 %*	*65-135*		"	"	"	"	
Extractable Petroleum Hydrocarbons by 8015B									
C13-C28 (DRO)	ND	10	mg/kg	1	0102819	10/28/20	10/31/20	EPA 8015B	
C29-C40 (MORO)	**14**	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*88.9 %*	*65-135*		"	"	"	"	
Metals by EPA 6010B									
Antimony	ND	3.0	mg/kg	1	0102826	10/28/20	11/02/20	EPA 6010b	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	**40**	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	**6.2**	2.0	"	"	"	"	"	"	
Cobalt	**3.6**	2.0	"	"	"	"	"	"	
Copper	**5.0**	1.0	"	"	"	"	"	"	
Lead	**11**	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	**4.6**	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	5.0	"	"	"	"	"	"	
Vanadium	**18**	5.0	"	"	"	"	"	"	
Zinc	**96**	1.0	"	"	"	"	"	"	

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SS-5

T203714-05 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.10	mg/kg	1	0102827	10/28/20	11/02/20	EPA 7471A Soil	
Volatile Organic Compounds by EPA Method 8260B									
Bromobenzene	ND	0.0025	mg/kg	1	0102828	10/28/20	10/29/20	EPA 8260B	
Bromochloromethane	ND	0.0025	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0025	"	"	"	"	"	"	
Bromoform	ND	0.0025	"	"	"	"	"	"	
Bromomethane	ND	0.0025	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0025	"	"	"	"	"	"	
Chlorobenzene	ND	0.0025	"	"	"	"	"	"	
Chloroethane	ND	0.0025	"	"	"	"	"	"	
Chloroform	ND	0.0025	"	"	"	"	"	"	
Chloromethane	ND	0.0025	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0025	"	"	"	"	"	"	
Dibromomethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-5

T203714-05 (Soil)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,3-Dichloropropane	ND	0.0025	mg/kg	1	0102828	10/28/20	10/29/20	EPA 8260B	
2,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0025	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0025	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.0025	"	"	"	"	"	"	
Methylene chloride	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.0025	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0025	"	"	"	"	"	"	
Styrene	ND	0.0025	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
Tetrachloroethene	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
Trichloroethene	ND	0.0025	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
Vinyl chloride	ND	0.0025	"	"	"	"	"	"	
Benzene	ND	0.0025	"	"	"	"	"	"	
Toluene	ND	0.0025	"	"	"	"	"	"	
Ethylbenzene	ND	0.0025	"	"	"	"	"	"	
m,p-Xylene	ND	0.0050	"	"	"	"	"	"	
o-Xylene	ND	0.0025	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*100 %*	*75.4-139*		"	"	"	"	
Surrogate: Dibromofluoromethane		*110 %*	*73.1-125*		"	"	"	"	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-5

T203714-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Volatile Organic Compounds by EPA Method 8260B									
Surrogate: Toluene-d8		*95.8 %*	*82.6-117*		*0102828*	*10/28/20*	*10/29/20*	*EPA 8260B*	

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-6

T203714-06 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Purgeable Petroleum Hydrocarbons by EPA 8015B									
C6-C12 (GRO)	ND	0.25	mg/kg	1	0102920	10/29/20	11/02/20	EPA 8015B	
Surrogate: a,a,a-Trifluorotoluene		*52.4 %*	*65-135*		"	"	"	"	*S-04*
Extractable Petroleum Hydrocarbons by 8015B									
C13-C28 (DRO)	ND	10	mg/kg	1	0102819	10/28/20	10/31/20	EPA 8015B	
C29-C40 (MORO)	**16**	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*84.4 %*	*65-135*		"	"	"	"	
Metals by EPA 6010B									
Antimony	ND	3.0	mg/kg	1	0102826	10/28/20	11/02/20	EPA 6010b	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	**52**	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	**7.8**	2.0	"	"	"	"	"	"	
Cobalt	**4.2**	2.0	"	"	"	"	"	"	
Copper	**9.3**	1.0	"	"	"	"	"	"	
Lead	**17**	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	**5.9**	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	5.0	"	"	"	"	"	"	
Vanadium	**19**	5.0	"	"	"	"	"	"	
Zinc	**64**	1.0	"	"	"	"	"	"	

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Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-6

T203714-06 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.10	mg/kg	1	0102827	10/28/20	11/02/20	EPA 7471A Soil	
Volatile Organic Compounds by EPA Method 8260B									
Bromobenzene	ND	0.0025	mg/kg	1	0102828	10/28/20	10/29/20	EPA 8260B	
Bromochloromethane	ND	0.0025	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0025	"	"	"	"	"	"	
Bromoform	ND	0.0025	"	"	"	"	"	"	
Bromomethane	ND	0.0025	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0025	"	"	"	"	"	"	
Chlorobenzene	ND	0.0025	"	"	"	"	"	"	
Chloroethane	ND	0.0025	"	"	"	"	"	"	
Chloroform	ND	0.0025	"	"	"	"	"	"	
Chloromethane	ND	0.0025	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0025	"	"	"	"	"	"	
Dibromomethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-6

T203714-06 (Soil)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,3-Dichloropropane	ND	0.0025	mg/kg	1	0102828	10/28/20	10/29/20	EPA 8260B	
2,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0025	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0025	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.0025	"	"	"	"	"	"	
Methylene chloride	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.0025	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0025	"	"	"	"	"	"	
Styrene	ND	0.0025	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
Tetrachloroethene	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
Trichloroethene	ND	0.0025	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
Vinyl chloride	ND	0.0025	"	"	"	"	"	"	
Benzene	ND	0.0025	"	"	"	"	"	"	
Toluene	ND	0.0025	"	"	"	"	"	"	
Ethylbenzene	ND	0.0025	"	"	"	"	"	"	
m,p-Xylene	ND	0.0050	"	"	"	"	"	"	
o-Xylene	ND	0.0025	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*99.0 %*	*75.4-139*		"	"	"	"	
Surrogate: Dibromofluoromethane		*108 %*	*73.1-125*		"	"	"	"	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SS-6

T203714-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Volatile Organic Compounds by EPA Method 8260B									
Surrogate: Toluene-d8		*95.4 %*	*82.6-117*		*0102828*	*10/28/20*	*10/29/20*	*EPA 8260B*	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SP-3

T203714-09 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 6010B									
Antimony	ND	3.0	mg/kg	1	0102817	10/28/20	10/29/20	EPA 6010b	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	**71**	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	10/29/20	"	
Cadmium	ND	2.0	"	"	"	"	10/29/20	"	
Chromium	**9.9**	2.0	"	"	"	"	"	"	
Cobalt	**4.6**	2.0	"	"	"	"	"	"	
Copper	**7.5**	1.0	"	"	"	"	"	"	
Lead	**6.6**	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	**10**	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	5.0	"	"	"	"	"	"	
Vanadium	**23**	5.0	"	"	"	"	"	"	
Zinc	**28**	1.0	"	"	"	"	"	"	
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.10	mg/kg	1	0102821	10/28/20	10/29/20	EPA 7471A Soil	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SP-6

T203714-12 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 6010B									
Antimony	ND	2.7	mg/kg	1	0102817	10/28/20	10/29/20	EPA 6010b	
Silver	ND	1.8	"	"	"	"	"	"	
Arsenic	ND	4.5	"	"	"	"	"	"	
Barium	**51**	0.91	"	"	"	"	"	"	
Beryllium	ND	0.91	"	"	"	"	"	"	
Cadmium	ND	1.8	"	"	"	"	"	"	
Chromium	**8.8**	1.8	"	"	"	"	"	"	
Cobalt	**4.5**	1.8	"	"	"	"	"	"	
Copper	**8.5**	0.91	"	"	"	"	"	"	
Lead	**2.7**	2.7	"	"	"	"	"	"	
Molybdenum	ND	4.5	"	"	"	"	"	"	
Nickel	**7.9**	1.8	"	"	"	"	"	"	
Selenium	ND	4.5	"	"	"	"	"	"	
Thallium	ND	4.5	"	"	"	"	"	"	
Vanadium	**22**	4.5	"	"	"	"	"	"	
Zinc	**26**	0.91	"	"	"	"	"	"	
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.10	mg/kg	1	0102821	10/28/20	10/29/20	EPA 7471A Soil	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SP-11

T203714-17 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 6010B									
Antimony	ND	3.0	mg/kg	1	0102817	10/28/20	10/29/20	EPA 6010b	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	**66**	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	**15**	2.0	"	"	"	"	"	"	
Cobalt	**4.9**	2.0	"	"	"	"	"	"	
Copper	**10**	1.0	"	"	"	"	"	"	
Lead	**4.9**	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	**17**	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	5.0	"	"	"	"	"	"	
Vanadium	**19**	5.0	"	"	"	"	"	"	
Zinc	**26**	1.0	"	"	"	"	"	"	
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.10	mg/kg	1	0102821	10/28/20	10/29/20	EPA 7471A Soil	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

MW-1

T203714-19 (Water)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Purgeable Petroleum Hydrocarbons by EPA 8015B									
C6-C12 (GRO)	ND	50	ug/l	1	0102929	10/29/20	10/30/20	EPA 8015B	
Surrogate: a,a,a-Trifluorotoluene		*103 %*	*65-135*		"	"	"	"	
Extractable Petroleum Hydrocarbons by 8015B									
C13-C28 (DRO)	ND	50	ug/l	1	0102820	10/28/20	10/29/20	EPA 8015B	
C29-C40 (MORO)	ND	100	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*83.3 %*	*65-135*		"	"	"	"	
Volatile Organic Compounds by EPA Method 8260B									
Bromobenzene	ND	1.0	ug/l	1	0102924	10/29/20	10/29/20	EPA 8260B	
Bromochloromethane	ND	1.0	"	"	"	"	"	"	
Bromodichloromethane	ND	1.0	"	"	"	"	"	"	
Bromoform	ND	1.0	"	"	"	"	"	"	
Bromomethane	ND	1.0	"	"	"	"	"	"	
n-Butylbenzene	ND	1.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	1.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	1.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	1.0	"	"	"	"	"	"	
Chloroethane	ND	1.0	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
Chloromethane	ND	1.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	1.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	1.0	"	"	"	"	"	"	
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1.0	"	"	"	"	"	"	
Dibromomethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.0	"	"	"	"	"	"	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

MW-1

T203714-19 (Water)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,2-Dichloroethane	ND	0.50	ug/l	1	0102924	10/29/20	10/29/20	EPA 8260B	
1,1-Dichloroethene	ND	1.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1.0	"	"	"	"	"	"	
Isopropylbenzene	ND	1.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
n-Propylbenzene	ND	1.0	"	"	"	"	"	"	
Styrene	ND	1.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
Tetrachloroethene	ND	1.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
Vinyl chloride	ND	1.0	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

MW-1

T203714-19 (Water)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Ethylbenzene	ND	0.50	ug/l	1	0102924	10/29/20	10/29/20	EPA 8260B	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*95.8 %*	*76.7-116*		"	"	"	"	
Surrogate: Dibromofluoromethane		*111 %*	*49.2-135*		"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*84.7-108*		"	"	"	"	

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

MW-2

T203714-20 (Water)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Purgeable Petroleum Hydrocarbons by EPA 8015B									
C6-C12 (GRO)	ND	50	ug/l	1	0102929	10/29/20	10/30/20	EPA 8015B	
Surrogate: a,a,a-Trifluorotoluene		*114 %*	*65-135*		"	"	"	"	
Extractable Petroleum Hydrocarbons by 8015B									
C13-C28 (DRO)	ND	50	ug/l	1	0102820	10/28/20	10/29/20	EPA 8015B	
C29-C40 (MORO)	ND	100	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*81.2 %*	*65-135*		"	"	"	"	
Volatile Organic Compounds by EPA Method 8260B									
Bromobenzene	ND	1.0	ug/l	1	0102924	10/29/20	10/29/20	EPA 8260B	
Bromochloromethane	ND	1.0	"	"	"	"	"	"	
Bromodichloromethane	ND	1.0	"	"	"	"	"	"	
Bromoform	ND	1.0	"	"	"	"	"	"	
Bromomethane	ND	1.0	"	"	"	"	"	"	
n-Butylbenzene	ND	1.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	1.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	1.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	1.0	"	"	"	"	"	"	
Chloroethane	ND	1.0	"	"	"	"	"	"	
Chloroform	**4.0**	1.0	"	"	"	"	"	"	
Chloromethane	ND	1.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	1.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	1.0	"	"	"	"	"	"	
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1.0	"	"	"	"	"	"	
Dibromomethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.0	"	"	"	"	"	"	

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Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

MW-2

T203714-20 (Water)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,2-Dichloroethane	ND	0.50	ug/l	1	0102924	10/29/20	10/29/20	EPA 8260B	
1,1-Dichloroethene	ND	1.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1.0	"	"	"	"	"	"	
Isopropylbenzene	ND	1.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
n-Propylbenzene	ND	1.0	"	"	"	"	"	"	
Styrene	ND	1.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
Tetrachloroethene	ND	1.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
Vinyl chloride	ND	1.0	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

MW-2

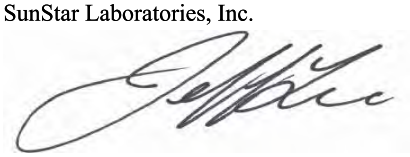
T203714-20 (Water)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Ethylbenzene	ND	0.50	ug/l	1	0102924	10/29/20	10/29/20	EPA 8260B	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*95.5 %*	*76.7-116*		"	"	"	"	
Surrogate: Dibromofluoromethane		*110 %*	*49.2-135*		"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*84.7-108*		"	"	"	"	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

MW-3

T203714-21 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Purgeable Petroleum Hydrocarbons by EPA 8015B									
C6-C12 (GRO)	ND	50	ug/l	1	0102929	10/29/20	10/30/20	EPA 8015B	
Surrogate: a,a,a-Trifluorotoluene		*113 %*		*65-135*		"	"	"	"
Extractable Petroleum Hydrocarbons by 8015B									
C13-C28 (DRO)	ND	50	ug/l	1	0102820	10/28/20	10/29/20	EPA 8015B	
C29-C40 (MORO)	ND	100	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*84.0 %*		*65-135*		"	"	"	"
Volatile Organic Compounds by EPA Method 8260B									
Bromobenzene	ND	1.0	ug/l	1	0102924	10/29/20	10/29/20	EPA 8260B	
Bromochloromethane	ND	1.0	"	"	"	"	"	"	
Bromodichloromethane	ND	1.0	"	"	"	"	"	"	
Bromoform	ND	1.0	"	"	"	"	"	"	
Bromomethane	ND	1.0	"	"	"	"	"	"	
n-Butylbenzene	ND	1.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	1.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	1.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	1.0	"	"	"	"	"	"	
Chloroethane	ND	1.0	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
Chloromethane	ND	1.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	1.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	1.0	"	"	"	"	"	"	
Dibromochloromethane	ND	1.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1.0	"	"	"	"	"	"	
Dibromomethane	ND	1.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.0	"	"	"	"	"	"	

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MW-3

T203714-21 (Water)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,2-Dichloroethane	ND	0.50	ug/l	1	0102924	10/29/20	10/29/20	EPA 8260B	
1,1-Dichloroethene	ND	1.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1.0	"	"	"	"	"	"	
Isopropylbenzene	ND	1.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
n-Propylbenzene	ND	1.0	"	"	"	"	"	"	
Styrene	ND	1.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.0	"	"	"	"	"	"	
Tetrachloroethene	ND	1.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
Vinyl chloride	ND	1.0	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

MW-3

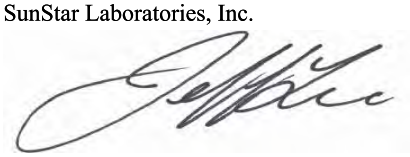
T203714-21 (Water)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Ethylbenzene	ND	0.50	ug/l	1	0102924	10/29/20	10/29/20	EPA 8260B	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*95.3 %*	*76.7-116*		"	"	"	"	
Surrogate: Dibromofluoromethane		*112 %*	*49.2-135*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*84.7-108*		"	"	"	"	

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SP-1,2,3,4 COMPOSITE

T203714-22 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Purgeable Petroleum Hydrocarbons by EPA 8015B									
C6-C12 (GRO)	ND	0.25	mg/kg	1	0102920	10/29/20	11/04/20	EPA 8015B	
Surrogate: a,a,a-Trifluorotoluene		*22.7 %*	*65-135*		"	"	"	"	*S-04*
Extractable Petroleum Hydrocarbons by 8015B									
C13-C28 (DRO)	ND	10	mg/kg	1	0102819	10/28/20	10/31/20	EPA 8015B	
C29-C40 (MORO)	**140**	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*77.3 %*	*65-135*		"	"	"	"	
Volatile Organic Compounds by EPA Method 8260B									
Bromobenzene	ND	0.0025	mg/kg	1	0102828	10/28/20	10/29/20	EPA 8260B	
Bromochloromethane	ND	0.0025	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0025	"	"	"	"	"	"	
Bromoform	ND	0.0025	"	"	"	"	"	"	
Bromomethane	ND	0.0025	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0025	"	"	"	"	"	"	
Chlorobenzene	ND	0.0025	"	"	"	"	"	"	
Chloroethane	ND	0.0025	"	"	"	"	"	"	
Chloroform	ND	0.0025	"	"	"	"	"	"	
Chloromethane	ND	0.0025	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0025	"	"	"	"	"	"	
Dibromomethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0025	"	"	"	"	"	"	

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
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SP-1,2,3,4 COMPOSITE

T203714-22 (Soil)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,2-Dichloroethane	ND	0.0025	mg/kg	1	0102828	10/28/20	10/29/20	EPA 8260B	
1,1-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0025	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0025	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.0025	"	"	"	"	"	"	
Methylene chloride	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.0025	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0025	"	"	"	"	"	"	
Styrene	ND	0.0025	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
Tetrachloroethene	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
Trichloroethene	ND	0.0025	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
Vinyl chloride	ND	0.0025	"	"	"	"	"	"	
Benzene	ND	0.0025	"	"	"	"	"	"	
Toluene	ND	0.0025	"	"	"	"	"	"	

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
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SP-1,2,3,4 COMPOSITE

T203714-22 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B									
Ethylbenzene	ND	0.0025	mg/kg	1	0102828	10/28/20	10/29/20	EPA 8260B	
m,p-Xylene	ND	0.0050	"	"	"	"	"	"	
o-Xylene	ND	0.0025	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.8 %*	*75.4-139*		"	"	"	"	
Surrogate: Dibromofluoromethane		*109 %*	*73.1-125*		"	"	"	"	
Surrogate: Toluene-d8		*95.1 %*	*82.6-117*		"	"	"	"	

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SP-5,6,7,8 COMPOSITE

T203714-23 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Purgeable Petroleum Hydrocarbons by EPA 8015B									
C6-C12 (GRO)	ND	0.25	mg/kg	1	0102920	10/29/20	11/04/20	EPA 8015B	
Surrogate: a,a,a-Trifluorotoluene		*87.8 %*	*65-135*		"	"	"	"	
Extractable Petroleum Hydrocarbons by 8015B									
C13-C28 (DRO)	ND	10	mg/kg	1	0102819	10/28/20	10/31/20	EPA 8015B	
C29-C40 (MORO)	**66**	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*88.8 %*	*65-135*		"	"	"	"	
Volatile Organic Compounds by EPA Method 8260B									
Bromobenzene	ND	0.0025	mg/kg	1	0102828	10/28/20	10/30/20	EPA 8260B	
Bromochloromethane	ND	0.0025	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0025	"	"	"	"	"	"	
Bromoform	ND	0.0025	"	"	"	"	"	"	
Bromomethane	ND	0.0025	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0025	"	"	"	"	"	"	
Chlorobenzene	ND	0.0025	"	"	"	"	"	"	
Chloroethane	ND	0.0025	"	"	"	"	"	"	
Chloroform	ND	0.0025	"	"	"	"	"	"	
Chloromethane	ND	0.0025	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0025	"	"	"	"	"	"	
Dibromomethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0025	"	"	"	"	"	"	

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Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SP-5,6,7,8 COMPOSITE

T203714-23 (Soil)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,2-Dichloroethane	ND	0.0025	mg/kg	1	0102828	10/28/20	10/30/20	EPA 8260B	
1,1-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0025	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0025	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.0025	"	"	"	"	"	"	
Methylene chloride	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.0025	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0025	"	"	"	"	"	"	
Styrene	ND	0.0025	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
Tetrachloroethene	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
Trichloroethene	ND	0.0025	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
Vinyl chloride	ND	0.0025	"	"	"	"	"	"	
Benzene	ND	0.0025	"	"	"	"	"	"	
Toluene	ND	0.0025	"	"	"	"	"	"	

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Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SP-5,6,7,8 COMPOSITE

T203714-23 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B									
Ethylbenzene	ND	0.0025	mg/kg	1	0102828	10/28/20	10/30/20	EPA 8260B	
m,p-Xylene	ND	0.0050	"	"	"	"	"	"	
o-Xylene	ND	0.0025	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.4 %*	*75.4-139*		"	"	"	"	
Surrogate: Dibromofluoromethane		*106 %*	*73.1-125*		"	"	"	"	
Surrogate: Toluene-d8		*95.7 %*	*82.6-117*		"	"	"	"	

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Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SP-9,10,11,12 COMPOSITE

T203714-24 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Purgeable Petroleum Hydrocarbons by EPA 8015B									
C6-C12 (GRO)	ND	0.25	mg/kg	1	0102920	11/02/20	11/02/20	EPA 8015B	
Surrogate: a,a,a-Trifluorotoluene		*85.4 %*	*65-135*		"	"	"	"	
Extractable Petroleum Hydrocarbons by 8015B									
C13-C28 (DRO)	**24**	10	mg/kg	1	0102819	10/28/20	10/31/20	EPA 8015B	
C29-C40 (MORO)	**300**	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*86.9 %*	*65-135*		"	"	"	"	
Volatile Organic Compounds by EPA Method 8260B									
Bromobenzene	ND	0.0025	mg/kg	1	0102828	10/28/20	10/29/20	EPA 8260B	
Bromochloromethane	ND	0.0025	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0025	"	"	"	"	"	"	
Bromoform	ND	0.0025	"	"	"	"	"	"	
Bromomethane	ND	0.0025	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0025	"	"	"	"	"	"	
Chlorobenzene	ND	0.0025	"	"	"	"	"	"	
Chloroethane	ND	0.0025	"	"	"	"	"	"	
Chloroform	ND	0.0025	"	"	"	"	"	"	
Chloromethane	ND	0.0025	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0025	"	"	"	"	"	"	
Dibromomethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0025	"	"	"	"	"	"	

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Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SP-9,10,11,12 COMPOSITE

T203714-24 (Soil)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,2-Dichloroethane	ND	0.0025	mg/kg	1	0102828	10/28/20	10/29/20	EPA 8260B	
1,1-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0025	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0025	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.0025	"	"	"	"	"	"	
Methylene chloride	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.0025	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0025	"	"	"	"	"	"	
Styrene	ND	0.0025	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
Tetrachloroethene	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
Trichloroethene	ND	0.0025	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
Vinyl chloride	ND	0.0025	"	"	"	"	"	"	
Benzene	ND	0.0025	"	"	"	"	"	"	
Toluene	ND	0.0025	"	"	"	"	"	"	

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

SP-9,10,11,12 COMPOSITE

T203714-24 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B									
Ethylbenzene	ND	0.0025	mg/kg	1	0102828	10/28/20	10/29/20	EPA 8260B	
m,p-Xylene	ND	0.0050	"	"	"	"	"	"	
o-Xylene	ND	0.0025	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.3 %*	*75.4-139*		"	"	"	"	
Surrogate: Dibromofluoromethane		*109 %*	*73.1-125*		"	"	"	"	
Surrogate: Toluene-d8		*95.4 %*	*82.6-117*		"	"	"	"	

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Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

Purgeable Petroleum Hydrocarbons by EPA 8015B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0102920 - EPA 5030 GC										
Blank (0102920-BLK1)				Prepared & Analyzed: 11/02/20						
C6-C12 (GRO)	ND	0.25	mg/kg							
Surrogate: a,a,a-Trifluorotoluene	*108*		"	*100*		*108*	*65-135*			
LCS (0102920-BS1)				Prepared & Analyzed: 11/02/20						
C6-C12 (GRO)	9.28	0.25	mg/kg	11.0		84.3	75-125			
Surrogate: a,a,a-Trifluorotoluene	*115*		"	*100*		*115*	*65-135*			
Matrix Spike (0102920-MS1)	**Source: T203714-24**			Prepared & Analyzed: 11/02/20						
C6-C12 (GRO)	8.49	0.25	mg/kg	11.0	ND	77.3	65-135			
Surrogate: a,a,a-Trifluorotoluene	*86.9*		"	*100*		*86.9*	*65-135*			
Matrix Spike Dup (0102920-MSD1)	**Source: T203714-24**			Prepared & Analyzed: 11/02/20						
C6-C12 (GRO)	10.0	0.25	mg/kg	11.0	ND	91.2	65-135	16.5	20	
Surrogate: a,a,a-Trifluorotoluene	*105*		"	*100*		*105*	*65-135*			
Batch 0102929 - EPA 5030 GC										
Blank (0102929-BLK1)				Prepared: 10/29/20 Analyzed: 10/30/20						
C6-C12 (GRO)	ND	50	ug/l							
Surrogate: a,a,a-Trifluorotoluene	*109*		"	*100*		*109*	*65-135*			
LCS (0102929-BS1)				Prepared: 10/29/20 Analyzed: 10/30/20						
C6-C12 (GRO)	4560	50	ug/l	5500		83.0	75-125			
Surrogate: a,a,a-Trifluorotoluene	*117*		"	*100*		*117*	*65-135*			
LCS Dup (0102929-BSD1)				Prepared: 10/29/20 Analyzed: 10/30/20						
C6-C12 (GRO)	4970	50	ug/l	5500		90.4	75-125	8.55	20	
Surrogate: a,a,a-Trifluorotoluene	*120*		"	*100*		*120*	*65-135*			

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

Extractable Petroleum Hydrocarbons by 8015B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0102819 - EPA 3550B GC										
Blank (0102819-BLK1)				Prepared: 10/28/20 Analyzed: 10/30/20						
C13-C28 (DRO)	ND	10	mg/kg							
C29-C40 (MORO)	ND	10	"							
Surrogate: p-Terphenyl	*93.8*		"	*101*		*92.9*	*65-135*			
LCS (0102819-BS1)				Prepared: 10/28/20 Analyzed: 10/30/20						
C13-C28 (DRO)	520	10	mg/kg	505		103	75-125			
Surrogate: p-Terphenyl	*91.8*		"	*101*		*90.8*	*65-135*			
LCS Dup (0102819-BSD1)				Prepared: 10/28/20 Analyzed: 10/30/20						
C13-C28 (DRO)	500	10	mg/kg	505		98.9	75-125	4.39	20	
Surrogate: p-Terphenyl	*101*		"	*101*		*99.5*	*65-135*			
Batch 0102820 - EPA 3510C GC										
Blank (0102820-BLK1)				Prepared: 10/28/20 Analyzed: 10/29/20						
C13-C28 (DRO)	ND	50	ug/l							
C29-C40 (MORO)	ND	100	"							
Surrogate: p-Terphenyl	*3470*		"	*4000*		*86.7*	*65-135*			
LCS (0102820-BS1)				Prepared: 10/28/20 Analyzed: 10/29/20						
C13-C28 (DRO)	17300	50	ug/l	20000		86.6	75-125			
Surrogate: p-Terphenyl	*3320*		"	*4000*		*83.1*	*65-135*			
LCS Dup (0102820-BSD1)				Prepared: 10/28/20 Analyzed: 10/29/20						
C13-C28 (DRO)	17400	50	ug/l	20000		86.9	75-125	0.335	20	
Surrogate: p-Terphenyl	*3380*		"	*4000*		*84.4*	*65-135*			

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Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

Metals by EPA 6010B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0102817 - EPA 3050B										
Blank (0102817-BLK1)				Prepared: 10/28/20 Analyzed: 10/29/20						
Antimony	ND	3.0	mg/kg							
Silver	ND	2.0	"							
Arsenic	ND	5.0	"							
Barium	ND	1.0	"							
Beryllium	ND	1.0	"							
Cadmium	ND	2.0	"							
Chromium	ND	2.0	"							
Cobalt	ND	2.0	"							
Copper	ND	1.0	"							
Lead	ND	3.0	"							
Molybdenum	ND	5.0	"							
Nickel	ND	2.0	"							
Selenium	ND	5.0	"							
Thallium	ND	5.0	"							
Vanadium	ND	5.0	"							
Zinc	ND	1.0	"							
LCS (0102817-BS1)				Prepared: 10/28/20 Analyzed: 10/29/20						
Arsenic	87.3	5.0	mg/kg	100		87.3	75-125			
Barium	86.2	1.0	"	100		86.2	75-125			
Cadmium	85.6	2.0	"	100		85.6	75-125			
Chromium	87.3	2.0	"	100		87.3	75-125			
Lead	87.9	3.0	"	100		87.9	75-125			
Matrix Spike (0102817-MS1)	**Source: T203711-03**			Prepared: 10/28/20 Analyzed: 10/29/20						
Arsenic	62.9	5.0	mg/kg	99.0	ND	63.5	75-125			QM-05
Barium	136	1.0	"	99.0	70.9	65.7	75-125			QM-05
Cadmium	60.2	2.0	"	99.0	0.394	60.4	75-125			QM-05
Chromium	78.3	2.0	"	99.0	15.1	63.9	75-125			QM-05
Lead	63.3	3.0	"	99.0	11.3	52.5	75-125			QM-05

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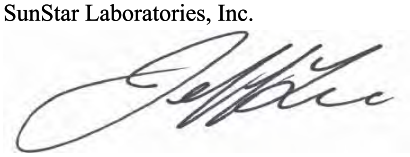
Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

Metals by EPA 6010B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0102817 - EPA 3050B										
Matrix Spike Dup (0102817-MSD1)	**Source: T203711-03**			Prepared: 10/28/20 Analyzed: 10/29/20						
Arsenic	69.2	5.0	mg/kg	100	ND	69.2	75-125	9.51	20	QM-05
Barium	136	1.0	"	100	70.9	65.1	75-125	0.0189	20	QM-05
Cadmium	63.8	2.0	"	100	0.394	63.4	75-125	5.95	20	QM-05
Chromium	80.1	2.0	"	100	15.1	65.0	75-125	2.25	20	QM-05
Lead	72.0	3.0	"	100	11.3	60.6	75-125	12.9	20	QM-05
Batch 0102826 - EPA 3050B										
Blank (0102826-BLK1)				Prepared: 10/28/20 Analyzed: 11/02/20						
Antimony	ND	3.0	mg/kg							
Silver	ND	2.0	"							
Arsenic	ND	5.0	"							
Barium	ND	1.0	"							
Beryllium	ND	1.0	"							
Cadmium	ND	2.0	"							
Chromium	ND	2.0	"							
Cobalt	ND	2.0	"							
Copper	ND	1.0	"							
Lead	ND	3.0	"							
Molybdenum	ND	5.0	"							
Nickel	ND	2.0	"							
Selenium	ND	5.0	"							
Thallium	ND	5.0	"							
Vanadium	ND	5.0	"							
Zinc	ND	1.0	"							
LCS (0102826-BS1)				Prepared: 10/28/20 Analyzed: 11/02/20						
Arsenic	183	5.0	mg/kg	200		91.3	75-125			
Barium	180	1.0	"	200		89.8	75-125			
Cadmium	181	2.0	"	200		90.6	75-125			
Chromium	181	2.0	"	200		90.5	75-125			
Lead	182	3.0	"	200		91.0	75-125			

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Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

Metals by EPA 6010B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0102826 - EPA 3050B										
Matrix Spike (0102826-MS1)	**Source: T203718-01**			Prepared: 10/28/20 Analyzed: 11/02/20						
Arsenic	147	5.0	mg/kg	198	ND	74.0	75-125			QM-05
Barium	209	1.0	"	198	61.3	74.6	75-125			QM-05
Cadmium	142	2.0	"	198	0.347	71.3	75-125			QM-05
Chromium	150	2.0	"	198	10.4	70.6	75-125			QM-05
Lead	139	3.0	"	198	2.28	69.0	75-125			QM-05
Matrix Spike Dup (0102826-MSD1)	**Source: T203718-01**			Prepared: 10/28/20 Analyzed: 11/02/20						
Arsenic	146	5.0	mg/kg	192	ND	76.1	75-125	0.171	20	
Barium	202	1.0	"	192	61.3	73.0	75-125	3.58	20	QM-05
Cadmium	139	2.0	"	192	0.347	72.1	75-125	1.89	20	QM-05
Chromium	150	2.0	"	192	10.4	72.6	75-125	0.0746	20	QM-05
Lead	138	3.0	"	192	2.28	70.3	75-125	1.07	20	QM-05

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

Cold Vapor Extraction EPA 7470/7471 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0102821 - EPA 7471A Soil										
Blank (0102821-BLK1)				Prepared: 10/28/20 Analyzed: 10/29/20						
Mercury	ND	0.10	mg/kg							
LCS (0102821-BS1)				Prepared: 10/28/20 Analyzed: 10/29/20						
Mercury	0.381	0.10	mg/kg	0.385		99.0	80-120			
Matrix Spike (0102821-MS1)	**Source: T203711-03**			Prepared: 10/28/20 Analyzed: 10/29/20						
Mercury	0.379	0.10	mg/kg	0.410	0.0505	80.1	75-125			
Matrix Spike Dup (0102821-MSD1)	**Source: T203711-03**			Prepared: 10/28/20 Analyzed: 10/29/20						
Mercury	0.325	0.10	mg/kg	0.417	0.0505	65.9	75-125	15.3	20	QM-05
Batch 0102827 - EPA 7471A Soil										
Blank (0102827-BLK1)				Prepared: 10/28/20 Analyzed: 11/02/20						
Mercury	ND	0.10	mg/kg							
LCS (0102827-BS1)				Prepared: 10/28/20 Analyzed: 11/02/20						
Mercury	0.342	0.10	mg/kg	0.397		86.1	80-120			
Matrix Spike (0102827-MS1)	**Source: T203714-01**			Prepared: 10/28/20 Analyzed: 11/02/20						
Mercury	0.341	0.10	mg/kg	0.403	ND	84.7	75-125			
Matrix Spike Dup (0102827-MSD1)	**Source: T203714-01**			Prepared: 10/28/20 Analyzed: 11/02/20						
Mercury	0.324	0.10	mg/kg	0.391	ND	82.9	75-125	5.26	20	

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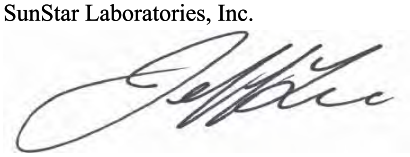
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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0102828 - EPA 5030 GCMS										
Blank (0102828-BLK1)				Prepared & Analyzed: 10/28/20						
Bromobenzene	ND	0.0025	mg/kg							
Bromochloromethane	ND	0.0025	"							
Bromodichloromethane	ND	0.0025	"							
Bromoform	ND	0.0025	"							
Bromomethane	ND	0.0025	"							
n-Butylbenzene	ND	0.0025	"							
sec-Butylbenzene	ND	0.0025	"							
tert-Butylbenzene	ND	0.0025	"							
Carbon tetrachloride	ND	0.0025	"							
Chlorobenzene	ND	0.0025	"							
Chloroethane	ND	0.0025	"							
Chloroform	ND	0.0025	"							
Chloromethane	ND	0.0025	"							
2-Chlorotoluene	ND	0.0025	"							
4-Chlorotoluene	ND	0.0025	"							
Dibromochloromethane	ND	0.0025	"							
1,2-Dibromo-3-chloropropane	ND	0.0050	"							
1,2-Dibromoethane (EDB)	ND	0.0025	"							
Dibromomethane	ND	0.0025	"							
1,2-Dichlorobenzene	ND	0.0025	"							
1,3-Dichlorobenzene	ND	0.0025	"							
1,4-Dichlorobenzene	ND	0.0025	"							
Dichlorodifluoromethane	ND	0.0025	"							
1,1-Dichloroethane	ND	0.0025	"							
1,2-Dichloroethane	ND	0.0025	"							
1,1-Dichloroethene	ND	0.0025	"							
cis-1,2-Dichloroethene	ND	0.0025	"							
trans-1,2-Dichloroethene	ND	0.0025	"							
1,2-Dichloropropane	ND	0.0025	"							
1,3-Dichloropropane	ND	0.0025	"							
2,2-Dichloropropane	ND	0.0025	"							
1,1-Dichloropropene	ND	0.0025	"							
cis-1,3-Dichloropropene	ND	0.0025	"							
trans-1,3-Dichloropropene	ND	0.0025	"							
Hexachlorobutadiene	ND	0.0025	"							
Isopropylbenzene	ND	0.0025	"							

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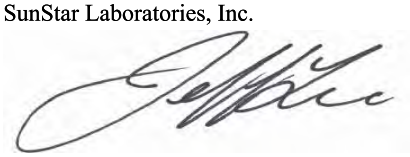
Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0102828 - EPA 5030 GCMS										
Blank (0102828-BLK1)				Prepared & Analyzed: 10/28/20						
p-Isopropyltoluene	ND	0.0025	mg/kg							
Methylene chloride	ND	0.010	"							
Naphthalene	ND	0.0025	"							
n-Propylbenzene	ND	0.0025	"							
Styrene	ND	0.0025	"							
1,1,2,2-Tetrachloroethane	ND	0.0025	"							
1,1,1,2-Tetrachloroethane	ND	0.0025	"							
Tetrachloroethene	ND	0.0025	"							
1,2,3-Trichlorobenzene	ND	0.0025	"							
1,2,4-Trichlorobenzene	ND	0.0025	"							
1,1,2-Trichloroethane	ND	0.0025	"							
1,1,1-Trichloroethane	ND	0.0025	"							
Trichloroethene	ND	0.0025	"							
Trichlorofluoromethane	ND	0.0025	"							
1,2,3-Trichloropropane	ND	0.0025	"							
1,3,5-Trimethylbenzene	ND	0.0025	"							
1,2,4-Trimethylbenzene	ND	0.0025	"							
Vinyl chloride	ND	0.0025	"							
Benzene	ND	0.0025	"							
Toluene	ND	0.0025	"							
Ethylbenzene	ND	0.0025	"							
m,p-Xylene	ND	0.0050	"							
o-Xylene	ND	0.0025	"							
Surrogate: 4-Bromofluorobenzene	*0.0502*		"	*0.0500*		*100*	*75.4-139*			
Surrogate: Dibromofluoromethane	*0.0532*		"	*0.0500*		*106*	*73.1-125*			
Surrogate: Toluene-d8	*0.0479*		"	*0.0500*		*95.8*	*82.6-117*			
LCS (0102828-BS1)				Prepared & Analyzed: 10/28/20						
Chlorobenzene	0.0525	0.0025	mg/kg	0.0500		105	65.2-124			
1,1-Dichloroethene	0.0537	0.0025	"	0.0500		107	60.9-131			
Trichloroethene	0.0514	0.0025	"	0.0500		103	62.1-126			
Benzene	0.0494	0.0025	"	0.0500		98.9	65.3-127			
Toluene	0.0464	0.0025	"	0.0500		92.8	64.3-122			
Surrogate: 4-Bromofluorobenzene	*0.0481*		"	*0.0500*		*96.3*	*75.4-139*			
Surrogate: Dibromofluoromethane	*0.0527*		"	*0.0500*		*105*	*73.1-125*			
Surrogate: Toluene-d8	*0.0487*		"	*0.0500*		*97.3*	*82.6-117*			

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Volatile Organic Compounds by EPA Method 8260B - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0102828 - EPA 5030 GCMS										
Matrix Spike (0102828-MS1)	**Source: T203709-03**			Prepared & Analyzed: 10/28/20						
Chlorobenzene	0.0464	0.0025	mg/kg	0.0497	ND	93.3	65.2-125			
1,1-Dichloroethene	0.0464	0.0025	"	0.0497	ND	93.4	60.9-131			
Trichloroethene	0.0452	0.0025	"	0.0497	ND	91.0	62.1-126			
Benzene	0.0437	0.0025	"	0.0497	ND	87.9	65.3-127			
Toluene	0.0409	0.0025	"	0.0497	ND	82.3	64.3-125			
Surrogate: 4-Bromofluorobenzene	*0.0480*		"	*0.0497*		*96.6*	*75.4-139*			
Surrogate: Dibromofluoromethane	*0.0530*		"	*0.0497*		*107*	*73.1-125*			
Surrogate: Toluene-d8	*0.0484*		"	*0.0497*		*97.5*	*82.6-117*			
Matrix Spike Dup (0102828-MSD1)	**Source: T203709-03**			Prepared & Analyzed: 10/28/20						
Chlorobenzene	0.0486	0.0025	mg/kg	0.0500	ND	97.3	65.2-125	4.78	20	
1,1-Dichloroethene	0.0500	0.0025	"	0.0500	ND	99.9	60.9-131	7.32	20	
Trichloroethene	0.0482	0.0025	"	0.0500	ND	96.4	62.1-126	6.36	20	
Benzene	0.0462	0.0025	"	0.0500	ND	92.4	65.3-127	5.57	20	
Toluene	0.0429	0.0025	"	0.0500	ND	85.7	64.3-125	4.62	20	
Surrogate: 4-Bromofluorobenzene	*0.0478*		"	*0.0500*		*95.7*	*75.4-139*			
Surrogate: Dibromofluoromethane	*0.0537*		"	*0.0500*		*107*	*73.1-125*			
Surrogate: Toluene-d8	*0.0489*		"	*0.0500*		*97.9*	*82.6-117*			
Batch 0102924 - EPA 5030 GCMS										
Blank (0102924-BLK1)				Prepared & Analyzed: 10/29/20						
Bromobenzene	ND	1.0	ug/l							
Bromochloromethane	ND	1.0	"							
Bromodichloromethane	ND	1.0	"							
Bromoform	ND	1.0	"							
Bromomethane	ND	1.0	"							
n-Butylbenzene	ND	1.0	"							
sec-Butylbenzene	ND	1.0	"							
tert-Butylbenzene	ND	1.0	"							
Carbon tetrachloride	ND	0.50	"							
Chlorobenzene	ND	1.0	"							
Chloroethane	ND	1.0	"							
Chloroform	ND	1.0	"							
Chloromethane	ND	1.0	"							
2-Chlorotoluene	ND	1.0	"							

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Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0102924 - EPA 5030 GCMS										
Blank (0102924-BLK1)				Prepared & Analyzed: 10/29/20						
4-Chlorotoluene	ND	1.0	ug/l							
Dibromochloromethane	ND	1.0	"							
1,2-Dibromo-3-chloropropane	ND	2.0	"							
1,2-Dibromoethane (EDB)	ND	1.0	"							
Dibromomethane	ND	1.0	"							
1,2-Dichlorobenzene	ND	1.0	"							
1,3-Dichlorobenzene	ND	1.0	"							
1,4-Dichlorobenzene	ND	1.0	"							
Dichlorodifluoromethane	ND	0.50	"							
1,1-Dichloroethane	ND	1.0	"							
1,2-Dichloroethane	ND	0.50	"							
1,1-Dichloroethene	ND	1.0	"							
cis-1,2-Dichloroethene	ND	1.0	"							
trans-1,2-Dichloroethene	ND	1.0	"							
1,2-Dichloropropane	ND	1.0	"							
1,3-Dichloropropane	ND	1.0	"							
2,2-Dichloropropane	ND	1.0	"							
1,1-Dichloropropene	ND	1.0	"							
cis-1,3-Dichloropropene	ND	0.50	"							
trans-1,3-Dichloropropene	ND	0.50	"							
Hexachlorobutadiene	ND	1.0	"							
Isopropylbenzene	ND	1.0	"							
p-Isopropyltoluene	ND	1.0	"							
Methylene chloride	ND	5.0	"							
Naphthalene	ND	1.0	"							
n-Propylbenzene	ND	1.0	"							
Styrene	ND	1.0	"							
1,1,2,2-Tetrachloroethane	ND	1.0	"							
1,1,1,2-Tetrachloroethane	ND	1.0	"							
Tetrachloroethene	ND	1.0	"							
1,2,3-Trichlorobenzene	ND	1.0	"							
1,2,4-Trichlorobenzene	ND	1.0	"							
1,1,2-Trichloroethane	ND	1.0	"							
1,1,1-Trichloroethane	ND	1.0	"							
Trichloroethene	ND	1.0	"							
Trichlorofluoromethane	ND	1.0	"							

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655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0102924 - EPA 5030 GCMS										
Blank (0102924-BLK1)				Prepared & Analyzed: 10/29/20						
1,2,3-Trichloropropane	ND	1.0	ug/l							
1,3,5-Trimethylbenzene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
Vinyl chloride	ND	1.0	"							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
m,p-Xylene	ND	2.0	"							
o-Xylene	ND	0.50	"							
Surrogate: 4-Bromofluorobenzene	*19.5*		"	*20.0*		*97.6*	*76.7-116*			
Surrogate: Dibromofluoromethane	*21.8*		"	*20.0*		*109*	*49.2-135*			
Surrogate: Toluene-d8	*20.4*		"	*20.0*		*102*	*84.7-108*			
LCS (0102924-BS1)				Prepared & Analyzed: 10/29/20						
Chlorobenzene	21.4	1.0	ug/l	20.0		107	81.1-121			
1,1-Dichloroethene	19.7	1.0	"	20.0		98.6	69.9-130			
Trichloroethene	19.5	1.0	"	20.0		97.3	84.9-120			
Benzene	18.1	0.50	"	20.0		90.4	78.1-123			
Toluene	18.3	0.50	"	20.0		91.6	79.6-123			
Surrogate: 4-Bromofluorobenzene	*19.8*		"	*20.0*		*99.0*	*76.7-116*			
Surrogate: Dibromofluoromethane	*20.6*		"	*20.0*		*103*	*49.2-135*			
Surrogate: Toluene-d8	*20.1*		"	*20.0*		*101*	*84.7-108*			
LCS Dup (0102924-BSD1)				Prepared & Analyzed: 10/29/20						
Chlorobenzene	22.8	1.0	ug/l	20.0		114	81.1-121	6.16	20	
1,1-Dichloroethene	20.9	1.0	"	20.0		105	69.9-130	5.91	20	
Trichloroethene	20.3	1.0	"	20.0		102	84.9-120	4.27	20	
Benzene	19.2	0.50	"	20.0		96.2	78.1-123	6.16	20	
Toluene	19.4	0.50	"	20.0		97.0	79.6-123	5.67	20	
Surrogate: 4-Bromofluorobenzene	*19.8*		"	*20.0*		*99.1*	*76.7-116*			
Surrogate: Dibromofluoromethane	*20.8*		"	*20.0*		*104*	*49.2-135*			
Surrogate: Toluene-d8	*20.2*		"	*20.0*		*101*	*84.7-108*			

SunStar Laboratories, Inc.



Jeff Lee, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

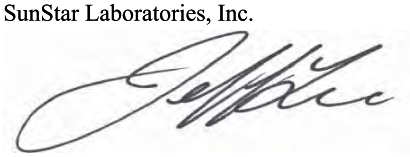
25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Basics Environmental, Inc.	Project: Lathrop Road Property	
655 12th Street, Suite 126	Project Number: 20-ENV-5814	**Reported:**
Oakland CA, 94607	Project Manager: Lita Freeman	11/04/20 17:20

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to possible sample matrix effect.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to possible matrix interference. The LCS was within acceptance criteria. The data is acceptable as no negative impact on data is expected.
M-04	Multiple analysis yielded low internal standard/or surrogate recoveries due to matrix effect. Low internal standard results may cause a potential high bias in sample results.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

SunStar Laboratories, Inc.



Jeff Lee, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SunStar Laboratories, Inc.

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive, Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: Basics Environmental
Address: 6551 12th St, Ste 126, Oakland, CA 94607
Phone: 510-834-9099 Fax:
Project Manager:

Date: 10/27/20 Page: 1 Of 2
Project Name: Lathrop Road Property
Collector: Lita Freeman Client Project #: 20-ENV-5814
Batch #: T203714 EDF #:

Laboratory ID #	Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 VOCs.	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel) + motor oil	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals				Comments/Preservative	Total # of containers
01	SS-1	10/27/20	1102	Soil	Jar	X					X	X								1
02	SS-2	10/27/20	1125	Soil	Jar	X					X	X								1
03	SS-3	10/27/20	1121	Soil	Jar	X					X	X								1
04	SS-4	10/27/20	1107	Soil	Jar	X					X	X								1
05	SS-5	10/27/20	1110	Soil	Jar	X					X	X								1
06	SS-6	10/27/20	1116	Soil	Jar	X					X	X								1
07	SP-1	10/27/20	0938	Soil	Jar	X					X	X								1
08	SP-2	10/27/20	0949	Soil	Jar	X					X	X								1
09	SP 3	10/27/20	1000	Soil	Jar	X					X	X								1
10	SP 4	10/27/20	1008	Soil	Jar	X					X	X								1
11	SP-5	10/27/20	1024	Soil	Jar	X					X	X								1
12	SP-6	10/27/20	1053	Soil	Jar	X					X	X								1
13	SP-7	10/27/20	1037	Soil	Jar	X					X	X								1
14	SP-8	10/27/20	1046	Soil	Jar	X					X	X								1

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
Lita Freeman	10/27/20 1342	[signature]	10/27/20 1342
GLS	10/28/2020 9:48	[signature]	10/28/2020 9.48

Total # of containers: 14
Chain of Custody seals (Y)/N/NA: Y
Seals intact? (Y)/N/NA: Y
Received good condition/cold: 5.6°C

Turn around time: Normal

Notes
Report to
BasicsEnvironmental@gmail.com
LitaFreeman@gmail.com

Sample disposal Instructions: Disposal @ $2.00 each ___ Return to client ___ Pickup ___

COC 192914

SunStar Laboratories, Inc.

PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive, Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: Basics Environmental
Address: 655 12th St, Ste 126 Oakland, CA 94607
Phone: 510-834-9099 Fax:
Project Manager: Lita Freeman

Date: 10/27/20 Page: 2 Of 2
Project Name: Lathrop Road Property
Collector: Lita Freeman Client Project #: 20 ENV 5814
Batch #: T203714 EDF #:

Laboratory ID #	Sample ID	Date Sampled	Time	Sample Type	Container Type	8260 VOCs	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel) Motor oil	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	6020 ICP-MS Metals					Comments/Preservative	Total # of containers
15	SP-9	10/27/20	1137	Soil	Jar	X					X	X									1
16	SP-10	10/27/20	1139	Soil	Jar	X					X	X									1
17	SP-11	10/27/20	1141	Soil	Jar	X					X	X									1
18	SP-12	10/27/20	1144	Soil	Jar	X					X	X									1
19	MW-1	10/27/20	0935	Water	VOAs	X	X				X	X									6
20	MW-2	10/27/20	1020	Water	VOAs	X	X				X	X									6
21	MW-3	10/27/20	1115	Water	VOAs	X	X				X	X									6

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
Lita Freeman	10/27/20 1342	Ed Duenas	10/27/20 1342
GLS	10/28/2020 9:48	Paul Dunn	10/28/2020 9:48

Total # of containers: 22
Chain of Custody seals Ø/N/NA: Y
Seals intact? (Y)/N/NA: Y
Received good condition/cold: 5.6°C

Turn around time: Normal

Notes

Sample disposal Instructions: Disposal @ $2.00 each ___ Return to client ___ Pickup ___

COC 192153

T203714

FW: Samples for Lathrop

Jeff Lee <jefflee@sunstarlabs.com>
Wed 10/28/2020 1:06 PM

To: Dan Marteski <dan@sunstarlabs.com>; Dave/Paul Berner <berner@sunstarlabs.com>; Brian Charon <bcharon@sunstarlabs.com>

Hi team,

Please help add metals to these samples requested by Lita below.

-----Original Message-----
From: Lita Freeman
Sent: Wednesday, October 28, 2020 1:03 PM
To: Bill Hannell <bill@sunstarlabs.com>; Jeff Lee <jefflee@sunstarlabs.com>
Subject: Samples for Lathrop

Hi

I need the six discrete samples, sample SP-3, sample SP-6, and sample SP-11 analyzed for CAM 17 metals.

Thank you
Lita

Sent from my iPhone

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

Rev. 02 Date 07/19
Receiving Form 001

SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T20 3714

Client Name: Basics Environmental Project: Lathrop Road Property

Delivered by: ☐ Client ☐ SunStar Courier ☑ GLS ☐ FedEx ☐ Other

If Courier, Received by: _____ Date Time Courier Received: _____

Lab Received by: Paul Date Time Lab Received: 10/28/2020 9:48

Total number of coolers received: 1 Thermometer ID: SC-1 Calibration due: 8/17/21

Temperature:	Cooler #1	5.8 °C +/- the CF (-0.2°C) =	5.6	°C corrected temperature
Temperature:	Cooler #2	°C +/- the CF (-0.2°C) =		°C corrected temperature
Temperature:	Cooler #3	°C +/- the CF (-0.2°C) =		°C corrected temperature

Temperature criteria = ≤ 6°C (no frozen containers)	Within criteria?	☑ **Yes** ☐ **No**
If NO:		
Samples received on ice?	☐ Yes	☐ **No → Complete Non-Conformance Sheet**
If on ice, samples received same day collected?	☐ Yes → Acceptable	☐ **No → Complete Non-Conformance Sheet**

Custody seals intact on cooler/sample	☑ Yes	☐ No*	☐ N/A
Sample containers intact	☑ Yes	☐ No*	
Sample labels match Chain of Custody IDs	☑ Yes	☐ No*	
Total number of containers received match COC	☑ Yes	☐ No*	
Proper containers received for analyses requested on COC	☑ Yes	☐ No*	
Proper preservative indicated on COC/containers for analyses requested	☑ Yes	☐ No*	☐ N/A
Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times	☑ **Yes**	☐ **No***	

* Complete Non-Conformance Receiving Sheet if checked

Cooler Sample Review - Initials and date: PB 10/28/2020

Comments:

(949) 297-5020 ■ www.sunstarlabs.com ■ 25712 Commercentre Drive ■ Lake Forest, CA 92630

Jeff Lee

From: Lita Freeman <litafreeman@gmail.com>
Sent: Wednesday, October 28, 2020 1:03 PM
To: Bill Hannell; Jeff Lee
Subject: Samples for Lathrop

Hi

I need the six discrete samples, sample SP-3, sample SP-6, and sample SP-11 analyzed for CAM 17 metals.

Thank you
Lita

Sent from my iPhone

Jeff Lee

From: Lita Freeman <litafreeman@gmail.com>
Sent: Wednesday, October 28, 2020 4:53 PM
To: Jeff Lee
Cc: Basics Environmental
Subject: Re: Work Order Confirmation for Lathrop Road Property (T203714)

Hi

I also need samples SS-1 through SS-6 analyzed for CAM 17 metals. Do all CAM 17 metals analysis by 6010 if RLs are below the ESLs as they normally are

Thank you

Lita

Sent from my iPhone

> On Oct 28, 2020, at 3:06 PM, Jeff Lee <jefflee@sunstarlabs.com> wrote:
>
> Hello Lita,
>
> Please find attached the work order and chain of custody for the samples we received:
>
> Project: **Lathrop Road Property**
> Project Number: **20-ENV-5814**
> Due Date: **11/04/20**
>
> **Discrete sample SP-3, sample SP-6, and sample SP-11 have CAM-17 metals analysis added per your request via email.**
>
> *Please carefully review the work order to ensure the Analysis, Due Date, and Turn Around Time (TAT) are accurate. If you have any questions or concerns, please feel free to contact me.*
>
> Thank you for choosing Sunstar! We appreciate your business!
>
> Best regards,
>
> **Jeff Lee**
> **Project Manager**
> <image001.jpg>
>
> 25712 Commercentre Dr., Lake Forest, CA 92630
> Office: (949) 297-5020 | Fax: (949) 297-5027
> CA ELAP Accreditation: 2250 | State of Nevada Accreditation: CA012842019-1
> ISO/IEC 17025 Accreditation: AT-2642 | CA Small Business Certification: 31511

T203714

SunStar Laboratories, Inc.

Client: Basics Environmental, Inc.
Project: Lathrop Road Property
Project Manager: Jeff Lee
Project Number: 20-ENV-5814

Report To:
Basics Environmental, Inc.
Lita Freeman
655 12th Street, Suite 126
Oakland, CA 94607
Phone: (916) 677-9897
Fax:

Invoice To:
Basics Environmental, Inc.
Lita Freeman
655 12th Street, Suite 126
Oakland, CA 94607
Phone :(916) 677-9897
Fax:

Date Due: 11/04/20 17:00 (5 day TAT)
Received By: Paul Berner
Date Received: 10/28/20 09:48
Logged In By: Dan Marteski
Date Logged In: 10/28/20 12:41

Samples Received at: **5.6°C**
Custody Seals Yes Received On Ice Yes
Containers Intact Yes
COC/Labels Agree Yes
Preservation Confirı No

Analysis	Due	TAT	Expires	Comments
T203714-01 SS-1 [Soil] Sampled 10/27/20 11:02 (GMT-08:00) Pacific Time (US &				
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 11:02	
8260	11/04/20 15:00	5	11/10/20 11:02	
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 11:02	
T203714-02 SS-2 [Soil] Sampled 10/27/20 11:25 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 11:25	
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 11:25	
8260	11/04/20 15:00	5	11/10/20 11:25	
T203714-03 SS-3 [Soil] Sampled 10/27/20 11:21 (GMT-08:00) Pacific Time (US &				
8260	11/04/20 15:00	5	11/10/20 11:21	
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 11:21	
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 11:21	
T203714-04 SS-4 [Soil] Sampled 10/27/20 11:07 (GMT-08:00) Pacific Time (US &				
8260	11/04/20 15:00	5	11/10/20 11:07	
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 11:07	
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 11:07	

T203714

SunStar Laboratories, Inc.

Client: Basics Environmental, Inc. **Project Manager:** Jeff Lee
Project: Lathrop Road Property **Project Number:** 20-ENV-5814

Analysis	Due	TAT	Expires	Comments
T203714-05 SS-5 [Soil] Sampled 10/27/20 11:10 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 11:10	
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 11:10	
8260	11/04/20 15:00	5	11/10/20 11:10	
T203714-06 SS-6 [Soil] Sampled 10/27/20 11:16 (GMT-08:00) Pacific Time (US &				
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 11:16	
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 11:16	
8260	11/04/20 15:00	5	11/10/20 11:16	
T203714-07 SP-1 [Soil] Sampled 10/27/20 09:38 (GMT-08:00) Pacific Time (US &				
[NO ANALYSES]				
T203714-08 SP-2 [Soil] Sampled 10/27/20 09:49 (GMT-08:00) Pacific Time (US &				
[NO ANALYSES]				
T203714-09 SP-3 [Soil] Sampled 10/27/20 10:00 (GMT-08:00) Pacific Time (US &				
6010 Title 22	11/04/20 15:00	5	04/25/21 10:00	
T203714-10 SP-4 [Soil] Sampled 10/27/20 10:08 (GMT-08:00) Pacific Time (US &				
[NO ANALYSES]				
T203714-11 SP-5 [Soil] Sampled 10/27/20 10:24 (GMT-08:00) Pacific Time (US &				
[NO ANALYSES]				
T203714-12 SP-6 [Soil] Sampled 10/27/20 10:53 (GMT-08:00) Pacific Time (US &				
6010 Title 22	11/04/20 15:00	5	04/25/21 10:53	
T203714-13 SP-7 [Soil] Sampled 10/27/20 10:37 (GMT-08:00) Pacific Time (US &				
[NO ANALYSES]				
T203714-14 SP-8 [Soil] Sampled 10/27/20 10:46 (GMT-08:00) Pacific Time (US &				
[NO ANALYSES]				

T203714

SunStar Laboratories, Inc.

Client:	**Basics Environmental, Inc.**	**Project Manager:**	**Jeff Lee**
Project:	**Lathrop Road Property**	**Project Number:**	**20-ENV-5814**

Analysis	Due	TAT	Expires	Comments
T203714-15 SP-9 [Soil] Sampled 10/27/20 11:37 (GMT-08:00) Pacific Time (US &				
[NO ANALYSES]				
T203714-16 SP-10 [Soil] Sampled 10/27/20 11:39 (GMT-08:00) Pacific Time (US &				
[NO ANALYSES]				
T203714-17 SP-11 [Soil] Sampled 10/27/20 11:41 (GMT-08:00) Pacific Time (US &				
6010 Title 22	11/04/20 15:00	5	04/25/21 11:41	
T203714-18 SP-12 [Soil] Sampled 10/27/20 11:44 (GMT-08:00) Pacific Time (US &				
[NO ANALYSES]				
T203714-19 MW-1 [Water] Sampled 10/27/20 09:35 (GMT-08:00) Pacific Time (US &				
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 09:35	
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 09:35	
8260	11/04/20 15:00	5	11/10/20 09:35	
T203714-20 MW-2 [Water] Sampled 10/27/20 10:20 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 10:20	
8260	11/04/20 15:00	5	11/10/20 10:20	
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 10:20	
T203714-21 MW-3 [Water] Sampled 10/27/20 11:15 (GMT-08:00) Pacific Time (US &				
8260	11/04/20 15:00	5	11/10/20 11:15	
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 11:15	
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 11:15	
T203714-22 SP-1,2,3,4 COMPOSITE [Soil] Sampled 10/27/20 00:00 (GMT-08:00) Pacific Time (US &				**COMPOSITE 4:1 (SAMPLES 07, 08, 09, 10)**
8260	11/04/20 15:00	5	11/10/20 00:00	
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 00:00	
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 00:00	

T203714

SunStar Laboratories, Inc.

Client: Basics Environmental, Inc.
Project: Lathrop Road Property
Project Manager: Jeff Lee
Project Number: 20-ENV-5814

Analysis	Due	TAT	Expires	Comments
T203714-23 SP-5,6,7,8 COMPOSITE [Soil] Sampled 10/27/20 00:00 (GMT-08:00) Pacific Time (US &				**COMPOSITE 4:1 (SAMPLES 11, 12, 13, 14)**
8260	11/04/20 15:00	5	11/10/20 00:00	
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 00:00	
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 00:00	
T203714-24 SP-9,10,11,12 COMPOSITE [Soil] Sampled 10/27/20 00:00 (GMT-08:00) Pacific Time (US &				**COMPOSITE 4:1 (SAMPLES 15, 16, 17, 18)**
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 00:00	
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 00:00	
8260	11/04/20 15:00	5	11/10/20 00:00	

Analysis groups included in this work order

6010 Title 22

subgroup 6010B T22 7470/71 Hg

Reviewed By

Date

T203714

SunStar Laboratories, Inc.

Client: Basics Environmental, Inc.
Project: Lathrop Road Property

Project Manager: Jeff Lee
Project Number: 20-ENV-5814

Report To:
Basics Environmental, Inc.
Lita Freeman
655 12th Street, Suite 126
Oakland, CA 94607
Phone: (916) 677-9897
Fax:

Invoice To:
Basics Environmental, Inc.
Lita Freeman
655 12th Street, Suite 126
Oakland, CA 94607
Phone :(916) 677-9897
Fax:

Date Due: 11/04/20 17:00 (5 day TAT)

Received By: Paul Berner
Date Received: 10/28/20 09:48

Logged In By: Dan Marteski
Date Logged In: 10/28/20 12:41

Samples Received at: **5.6°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirı	No		

Analysis	Due	TAT	Expires	Comments
T203714-01 SS-1 [Soil] Sampled 10/27/20 11:02 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 11:02	
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 11:02	
8260	11/04/20 15:00	5	11/10/20 11:02	
6010 Title 22	11/04/20 15:00	5	04/25/21 11:02	
T203714-02 SS-2 [Soil] Sampled 10/27/20 11:25 (GMT-08:00) Pacific Time (US &				
6010 Title 22	11/04/20 15:00	5	04/25/21 11:25	
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 11:25	
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 11:25	
8260	11/04/20 15:00	5	11/10/20 11:25	
T203714-03 SS-3 [Soil] Sampled 10/27/20 11:21 (GMT-08:00) Pacific Time (US &				
8260	11/04/20 15:00	5	11/10/20 11:21	
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 11:21	
6010 Title 22	11/04/20 15:00	5	04/25/21 11:21	
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 11:21	

T203714

SunStar Laboratories, Inc.

Client:	**Basics Environmental, Inc.**	**Project Manager:**	**Jeff Lee**
Project:	**Lathrop Road Property**	**Project Number:**	**20-ENV-5814**

Analysis	Due	TAT	Expires	Comments
T203714-04 SS-4 [Soil] Sampled 10/27/20 11:07 (GMT-08:00) Pacific Time (US &				
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 11:07	
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 11:07	
8260	11/04/20 15:00	5	11/10/20 11:07	
6010 Title 22	11/04/20 15:00	5	04/25/21 11:07	
T203714-05 SS-5 [Soil] Sampled 10/27/20 11:10 (GMT-08:00) Pacific Time (US &				
8260	11/04/20 15:00	5	11/10/20 11:10	
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 11:10	
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 11:10	
6010 Title 22	11/04/20 15:00	5	04/25/21 11:10	
T203714-06 SS-6 [Soil] Sampled 10/27/20 11:16 (GMT-08:00) Pacific Time (US &				
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 11:16	
6010 Title 22	11/04/20 15:00	5	04/25/21 11:16	
8260	11/04/20 15:00	5	11/10/20 11:16	
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 11:16	
T203714-07 SP-1 [Soil] Sampled 10/27/20 09:38 (GMT-08:00) Pacific Time (US &				
[NO ANALYSES]				
T203714-08 SP-2 [Soil] Sampled 10/27/20 09:49 (GMT-08:00) Pacific Time (US &				
[NO ANALYSES]				
T203714-09 SP-3 [Soil] Sampled 10/27/20 10:00 (GMT-08:00) Pacific Time (US &				
6010 Title 22	11/04/20 15:00	5	04/25/21 10:00	
T203714-10 SP-4 [Soil] Sampled 10/27/20 10:08 (GMT-08:00) Pacific Time (US &				
[NO ANALYSES]				
T203714-11 SP-5 [Soil] Sampled 10/27/20 10:24 (GMT-08:00) Pacific Time (US &				
[NO ANALYSES]				

T203714

SunStar Laboratories, Inc.

Client:	**Basics Environmental, Inc.**	**Project Manager:**	**Jeff Lee**
Project:	**Lathrop Road Property**	**Project Number:**	**20-ENV-5814**

Analysis	Due	TAT	Expires	Comments
T203714-12 SP-6 [Soil] Sampled 10/27/20 10:53 (GMT-08:00) Pacific Time (US &				
6010 Title 22	11/04/20 15:00	5	04/25/21 10:53	
T203714-13 SP-7 [Soil] Sampled 10/27/20 10:37 (GMT-08:00) Pacific Time (US &				
[NO ANALYSES]				
T203714-14 SP-8 [Soil] Sampled 10/27/20 10:46 (GMT-08:00) Pacific Time (US &				
[NO ANALYSES]				
T203714-15 SP-9 [Soil] Sampled 10/27/20 11:37 (GMT-08:00) Pacific Time (US &				
[NO ANALYSES]				
T203714-16 SP-10 [Soil] Sampled 10/27/20 11:39 (GMT-08:00) Pacific Time (US &				
[NO ANALYSES]				
T203714-17 SP-11 [Soil] Sampled 10/27/20 11:41 (GMT-08:00) Pacific Time (US &				
6010 Title 22	11/04/20 15:00	5	04/25/21 11:41	
T203714-18 SP-12 [Soil] Sampled 10/27/20 11:44 (GMT-08:00) Pacific Time (US &				
[NO ANALYSES]				
T203714-19 MW-1 [Water] Sampled 10/27/20 09:35 (GMT-08:00) Pacific Time (US &				
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 09:35	
8260	11/04/20 15:00	5	11/10/20 09:35	
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 09:35	
T203714-20 MW-2 [Water] Sampled 10/27/20 10:20 (GMT-08:00) Pacific Time (US &				
8260	11/04/20 15:00	5	11/10/20 10:20	
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 10:20	
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 10:20	

T203714

SunStar Laboratories, Inc.

Client: Basics Environmental, Inc.
Project: Lathrop Road Property
Project Manager: Jeff Lee
Project Number: 20-ENV-5814

Analysis	Due	TAT	Expires	Comments
T203714-21 MW-3 [Water] Sampled 10/27/20 11:15 (GMT-08:00) Pacific Time (US &				
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 11:15	
8260	11/04/20 15:00	5	11/10/20 11:15	
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 11:15	
T203714-22 SP-1,2,3,4 COMPOSITE [Soil] Sampled 10/27/20 00:00 (GMT-08:00) Pacific Time (US &				**COMPOSITE 4:1 (SAMPLES 07, 08, 09, 10)**
8260	11/04/20 15:00	5	11/10/20 00:00	
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 00:00	
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 00:00	
T203714-23 SP-5,6,7,8 COMPOSITE [Soil] Sampled 10/27/20 00:00 (GMT-08:00) Pacific Time (US &				**COMPOSITE 4:1 (SAMPLES 11, 12, 13, 14)**
8260	11/04/20 15:00	5	11/10/20 00:00	
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 00:00	
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 00:00	
T203714-24 SP-9,10,11,12 COMPOSITE [Soil] Sampled 10/27/20 00:00 (GMT-08:00) Pacific Time (US &				**COMPOSITE 4:1 (SAMPLES 15, 16, 17, 18)**
8015 Carbon Chain	11/04/20 15:00	5	11/10/20 00:00	
8260	11/04/20 15:00	5	11/10/20 00:00	
8015 m Gas Purge	11/04/20 15:00	5	11/10/20 00:00	

Analysis groups included in this work order

6010 Title 22

subgroup 6010B T22 7470/71 Hg

Reviewed By

Date

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APPENDIX F: TRAFFIC IMPACT ANALYSIS

Scannell Industrial Development Project – Transportation Analysis

Prepared for:
De Novo Planning Group
City of Lathrop

September 9, 2021

RS21-4062

FEHR PEERS

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1. Introduction

This study addresses the potential transportation impacts associated with the proposed Scannell Industrial Development project located in the City of Lathrop. Intersection operations, site access, and consistency with relevant policies are analyzed. This report documents the methodologies, inputs, and results of the analysis.

1.1 Project Site Description

The proposed project includes the development of three industrial buildings totaling 191,160 square feet located in the City of Lathrop. The project is located on the south side of Lathrop Road between McKinley Avenue and D Street. Adjacent land uses to the north, south, east, and west are industrial. **Figure 1** displays the location of the proposed project.

Access is proposed via one right in/right out driveway on Lathrop Road and one driveway on D Street. **Figure 2** displays the project site plan and proposed access.

1.2 Study Description

The study area is based on the proposed project's location, site access, and expected trip generation, distribution, and assignment. Traffic operations are analyzed at the following intersections:

1) Lathrop Road/I-5 Southbound Ramps
2) Lathrop Road/I-5 Northbound Ramps
3) Lathrop Road/D Street
4) Lathrop Road/SR 99 Southbound Ramps
5) Lathrop Road/SR 99 Northbound Ramps
6) Lathrop Road/Project Driveway (future intersection)

The study intersections are evaluated for the following four scenarios:

- **Existing Conditions** – Analyzes operations as they exist today.

- **Existing Plus Project Conditions** – Analyzes existing operations with the addition of trips generated from the proposed project.

- **Cumulative No Project Conditions** - Analyzes cumulative year volumes based on the City of Lathrop Travel Demand Forecasting (TDF) Model, assuming the project is developed with a retail type development permitted under the current Service Commercial General Plan designation.

- **Cumulative Plus Project Conditions** – Analyzes cumulative year volumes, assuming the project is developed with the proposed industrial project, rather than a retail type development analyzed under Cumulative No Project Conditions.

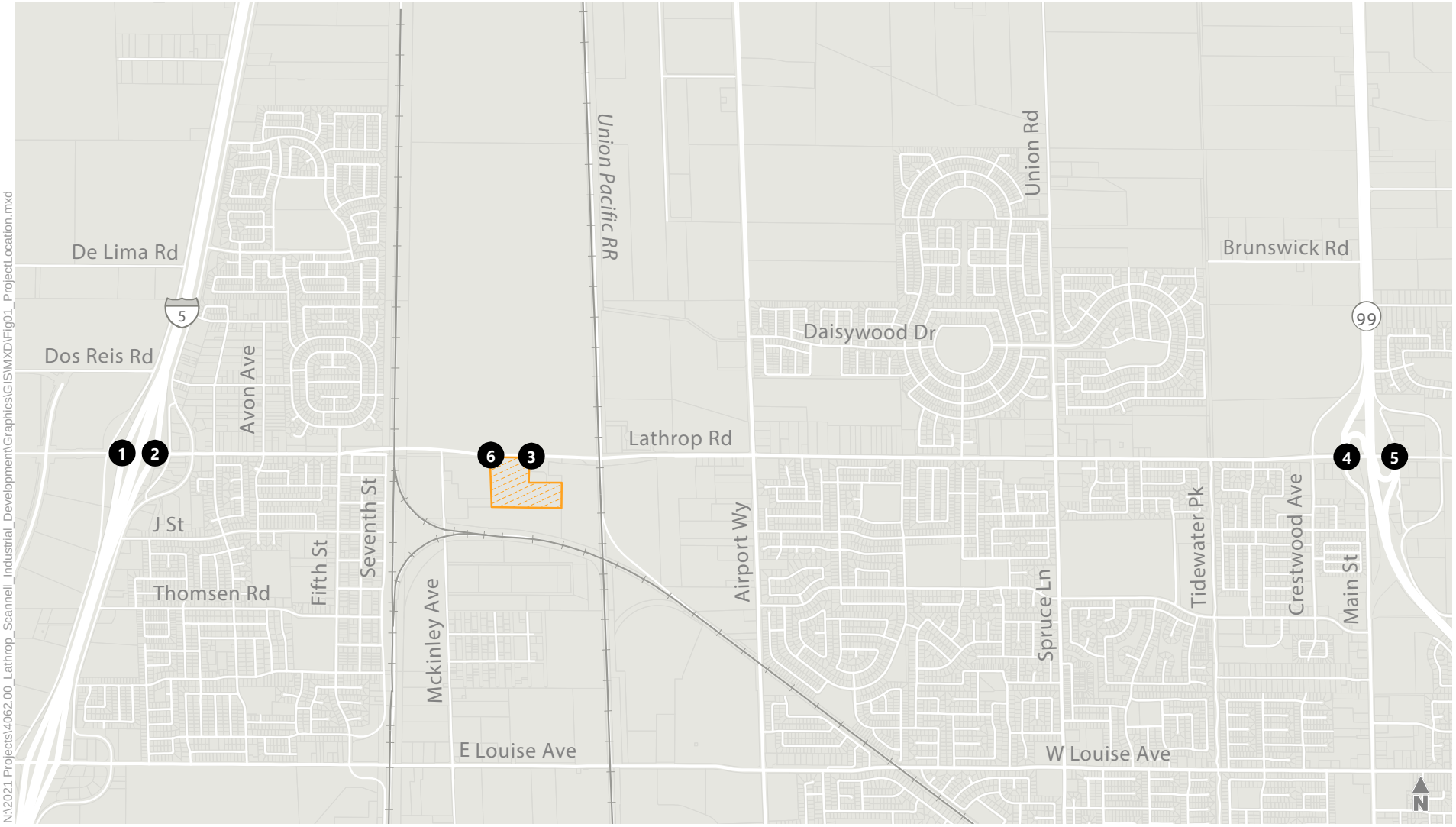
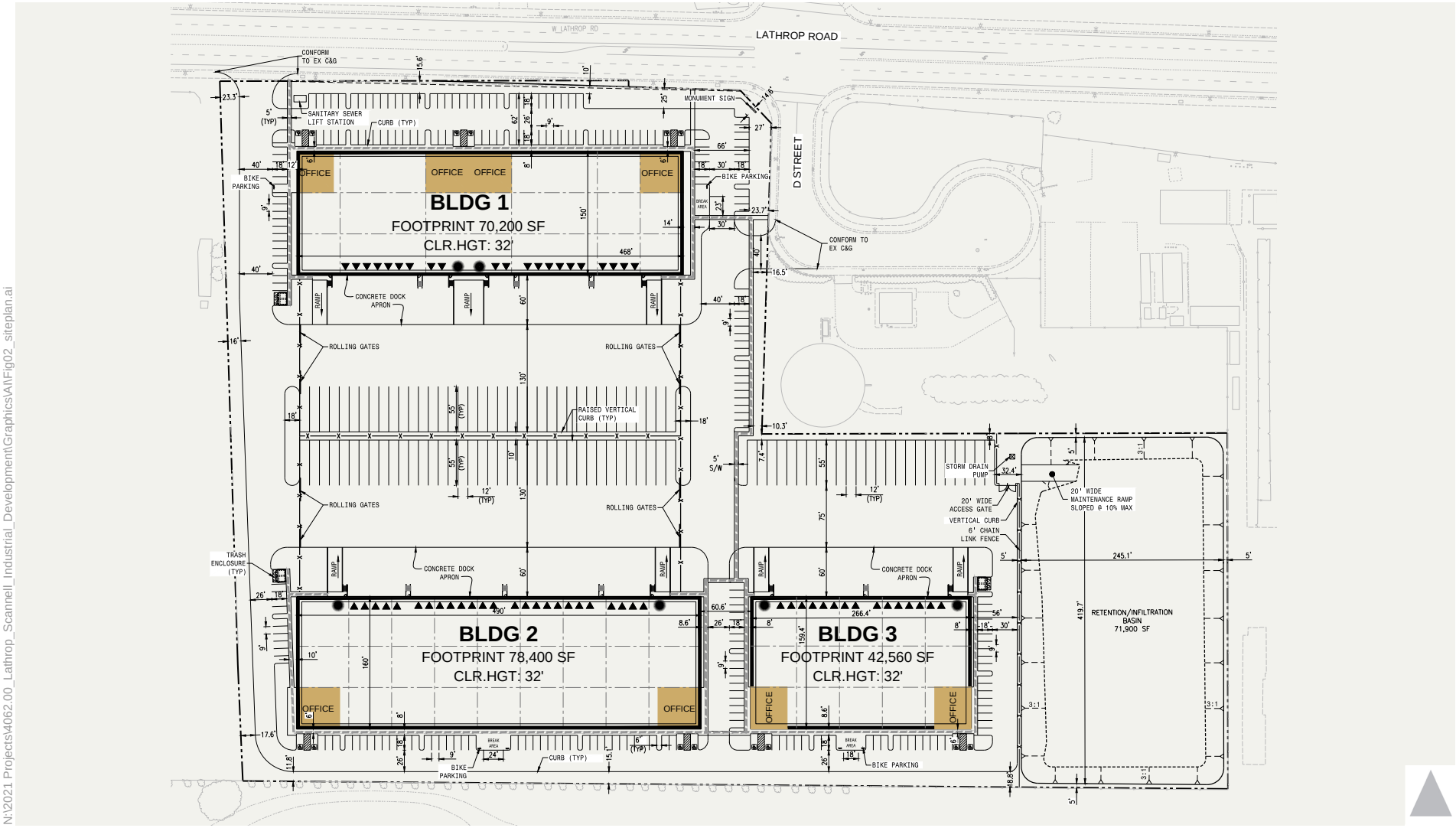


Figure 1

Project Location



N:\2021 Projects\4062.00_Lathrop_Scannell_Industrial_Development\Graphics\AI\Fig02_siteplan.ai

Figure 2

Project Site Plan

2. Applicable Standards and Analysis Methodology

This chapter describes applicable standards and methodology used to analyze the study intersections described above.

2.1 Applicable Policies and Standards

Intersection Operations

The study intersections are analyzed using procedures and methodologies contained in the *Highway Capacity Manual – 6th Edition* (Transportation Research Board, 2016). These methodologies are applied using Synchro 10 software which considers traffic volumes, lane configurations, signal timings, signal coordination, and other pertinent parameters of intersection operations. Individual peak hour volumes, peak hour factors, and heavy vehicle percentages are used for the study intersections.

Level of Service Definition

The study intersections are analyzed using the concept of Level of Service (LOS). LOS is a qualitative measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. In general, LOS A represents free-flow conditions with no congestion, and LOS F represents severe congestion and delay under stop-and-go conditions. For signalized intersections and all way stop control intersections, LOS is based on the average delay experienced by all vehicles passing through the intersection. For side-street stop controlled intersections, LOS is based on the average delay experienced by all vehicles passing through the intersection and delay experienced by vehicles making the worst-case movement at the intersection. **Table 1** displays the delay range associated with each LOS category for signalized and unsignalized intersections.

Table 1: Intersection Level of Service (LOS) Criteria			
LOS	**Description (for Signalized Intersections)**	**Average Delay (Seconds/Vehicle) at Signalized Intersections**	**Average Delay (Seconds/Vehicle) at Unsignalized Intersections**
A	Operations with very low delay occurring with favorable traffic signal progression and/or short cycle lengths.	< 10.0	< 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0	> 10.0 to 15.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0	> 15.0 to 25.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0	> 25.0 to 35.0
E	Operations with high delay values indicating poor progression, and long cycle lengths. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55.0 to 80.0	> 35.0 to 50.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0	> 50.0
Note: LOS = level of service; V/C ratio = volume-to-capacity ratio Source: Transportation Research Board, 2016			

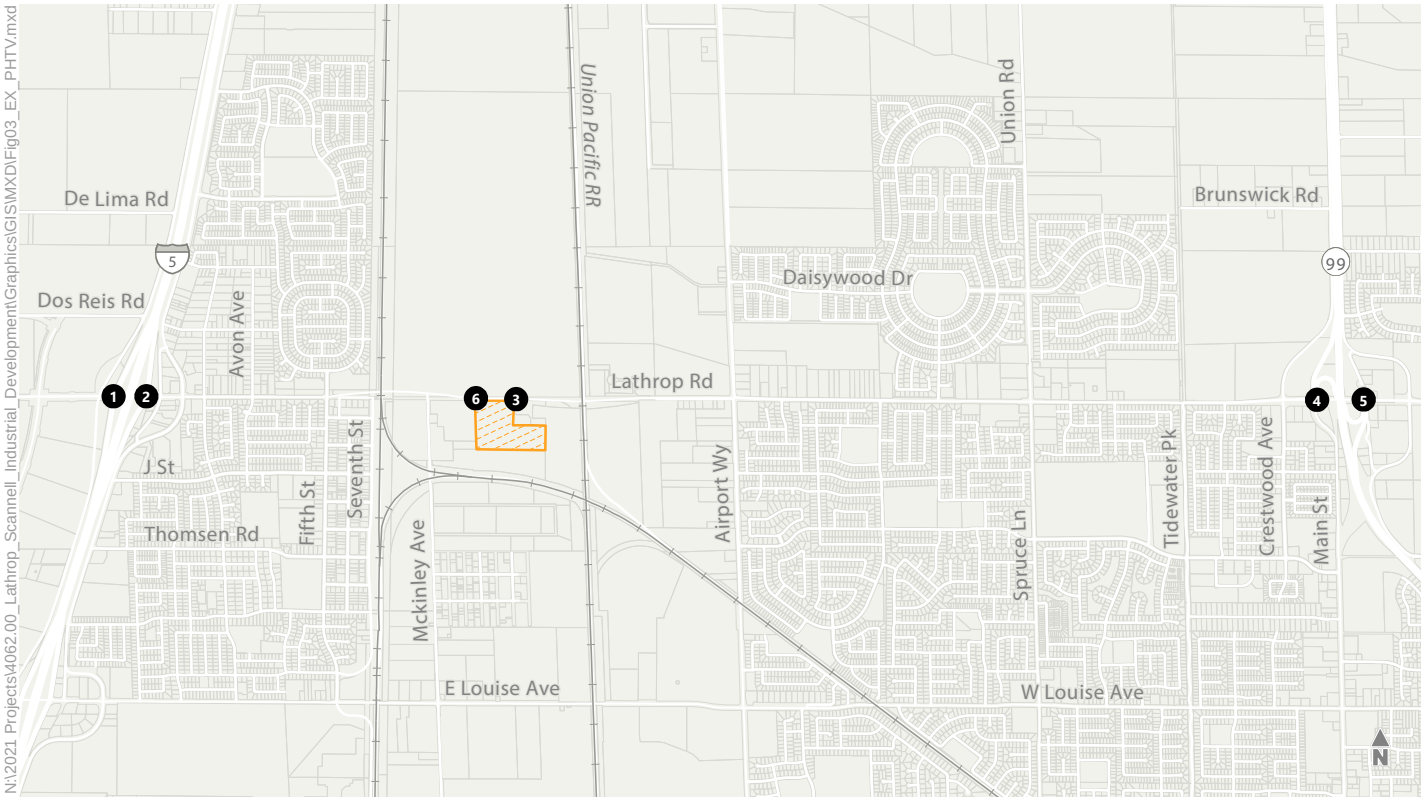
Intersection Operations Standards

While level of service (LOS) may no longer be used to identify significant transportation impacts in CEQA documents for land use projects, this analysis includes a LOS analysis to determine if the proposed project would result in unacceptable intersection operations at the study intersections. Based on policies identified in the City of Lathrop General Plan and the Transportation Concept Reports for I-5 and SR 99, LOS D or better is considered acceptable at the SR 99 NB and SB Ramps/Lathrop Road intersections and the I-5 NB and SB Ramps/Lathrop Road intersections, and LOS C or better is considered acceptable at the Lathrop Road/D Street and Lathrop Road/Project Driveway intersections.

Data Collection

Weekday AM and PM peak period traffic count data collected in April 2018 for the City of Lathrop 2018 Traffic Monitoring Program was used to develop AM and PM peak hour intersection turning movement counts at the I-5 NB and SB Ramps/Lathrop Road study intersections. Weekday AM and PM peak period traffic count data collected in June 2021 was used to develop AM and PM peak hour intersection turning movements for the SR 99 NB and SB Ramps/Lathrop Road intersections and the Lathrop Road/D Street

intersection. **Figure 3** displays the existing intersection turning movement counts at the study intersections.



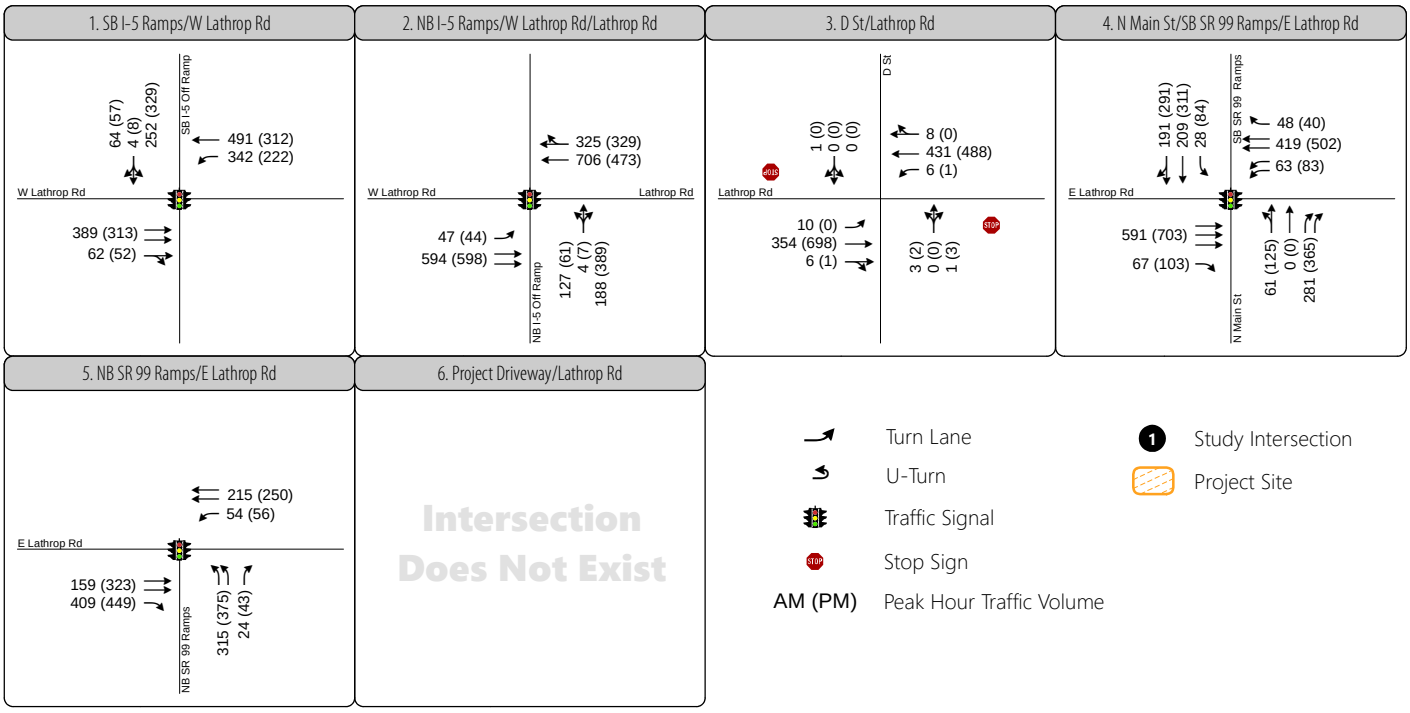


Figure 3

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions

Travel Demand Forecasting

The City of Lathrop Travel Demand Model (TDM), which is a modified version of the San Joaquin Council of Governments TDM, was used to develop cumulative year forecasts for the study intersections.

The City of Lathrop Base Year (2020) TDM was recently updated for the River Islands project. Minor modifications were more recently made based on on-going work Fehr & Peers is completing for the City of Manteca General Plan Update. The City of Lathrop Cumulative Year TDM was recently updated for the River Islands project and City of Manteca General Plan Update and incorporates cumulative year land use assumptions for the City of Manteca, City of Lathrop, City of Ripon and surrounding unincorporated areas of San Joaquin County. The TDF model was used to develop Cumulative No Project (assuming a retail type development consistent with the existing Service Commercial General Plan land use designation) intersection turning movement forecasts. The retail development was then removed from the TDF and project trips were added to develop Cumulative Plus Project forecasts.

The traffic forecasting adjustment procedure known as the "difference method" was used to develop Cumulative Year AM and PM peak hour traffic forecasts. For a given intersection, this forecasting procedure is calculated as follows for every movement at the study intersection:

Cumulative Year Forecast = Existing Volume + (Cumulative Year TDF Model – Base Year TDF Model)

3. Existing and Existing Plus Project Conditions

This chapter presents the intersection operations analysis under existing conditions and existing plus project conditions.

3.1 Existing Conditions

Existing Intersection Operations

Table 2 displays the existing AM and PM peak hour operations at the study intersections. Technical calculations are displayed in **Appendix A**.

Table 2: Intersection Operations – Existing Conditions

Intersection	Control Type	Peak Hour	Delay[1]	LOS
1. I-5 SB Ramps/Lathrop Rd	Signal	AM PM	18 17	B B
2. I-5 NB Ramps/Lathrop Rd	Signal	AM PM	16 19	B B
3. Lathrop Road/D St	SSSC	AM PM	1 (15) 1 (17)	A (B) A (C)
4. SR 99 SB Ramps/Lathrop Rd	Signal	AM PM	15 18	B B
5. SR 99 NB Ramps/Lathrop Rd	Signal	AM PM	12 12	B B

Notes:
SSSC = Side-Street Stop Control; LOS = Level of Service
[1] For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop controlled intersections, average intersection delay and (worst-case movement) are reported.
Source: Fehr & Peers, 2021

As displayed, all intersections operate acceptably during the AM and PM peak hours under existing conditions. At Lathrop Road/D Street, motorists making the northbound left turn experience the highest delay of approximately 15 seconds during the AM peak hour and 17 seconds during the peak hour.

3.2 Project Trip Generation

Project trips were estimated using trip rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual 10th Edition Supplement (2020)*. The 10th Edition Supplement provides trip rates for multiple industrial land uses. Because a specific tenant has not yet been identified, a blended trip rate based on the potential land uses was used to calculated daily, AM and PM peak hour trips. The following ITE land use categories are applicable to the proposed project and were used to develop the blended rate.

- Industrial Park (ITE 130) – An industrial park contains a number of industrial or related facilities and is characterized by a mix of manufacturing, service, and warehouse facilities with a wide variation in the proportion of each type of use from one location to another.

- Warehousing (ITE 150) – A warehouse is primarily devoted to the storage of materials, but it may also include office and maintenance areas.

- High-Cube Transload and Short-Term Storage Warehouse (ITE 154) – A high-cube warehouse is a building that typically has at least 200,000 gross square feet of floor area, has a ceiling height of 24 feet or more, and is used primarily for the storage and/or consolidation of manufactured goods prior to their distribution to retail locations or other warehouses. Transload facilities have a primary function of consolidation and distribution of pallet loads for manufacturers, wholesalers, or retailers. Short-term facilities are high-efficiency distribution facilities used for movement of large volumes of freight with only short-term storage of products.

- High-Cube Fulfillment Center Warehouse (ITE 155) – A high-cube fulfillment center is similar to a high-cube transload or short-term storage warehouse but is different in that it is typically used for a significant storage function and direct distribution of ecommerce product to end users. These facilities typically handle smaller packages and quantities than other types of high-cube warehouses.

In addition to total vehicle trips, the 10th Edition Supplement provides heavy vehicle trip rates. Similar to the total vehicle trip generation, a blended trip generation rate for heavy vehicles was used. **Table 3** displays the trip generation for the Proposed Project.

Table 3: Project Trip Generation									
Land Use	Quantity (ksf)	Trip Type	Daily	AM Peak			PM Peak		
				In	Out	Total	In	Out	Total
Industrial/Warehouse (ITE 130, 150, 154, 155)	191.2	Passenger Vehicle	320	27	5	32	10	26	36
		Heavy Vehicle	78	3	3	6	2	2	4
		Total	**398**	**30**	**8**	**38**	**12**	**28**	**40**
Notes: Trip generation is based on trip rates published in *Trip Generation Manuel 10th Edition Supplement* (Institute of Transportation Engineers, 2020). Source: Fehr & Peers, 2021									

3.3 Project Trip Distribution

Passenger vehicle (employee) trips were distributed throughout the study area based the location of proposed access, existing directional patterns and output from the Base Year TDM. City staff has indicated all inbound and outbound heavy vehicles (trucks) would be required to access the development via McKinley Road to Lathrop Road and no trucks would be permitted on Lathrop Road west of McKinley Avenue. Therefore, this analysis assumes no trucks would use Lathrop Road west of McKinley Avenue. Review of Streetlight Data Origin-Destination data indicates that a very low percentage of truck trips with an origin or destination in Lathrop take SR 99 to Lathrop Road; the majority of trips come directly from I-5, I-205, and SR 120. Therefore, no truck trips were assigned on Lathrop Road east of the project site.

Figure 4 displays the distribution of vehicle trips throughout the study area.

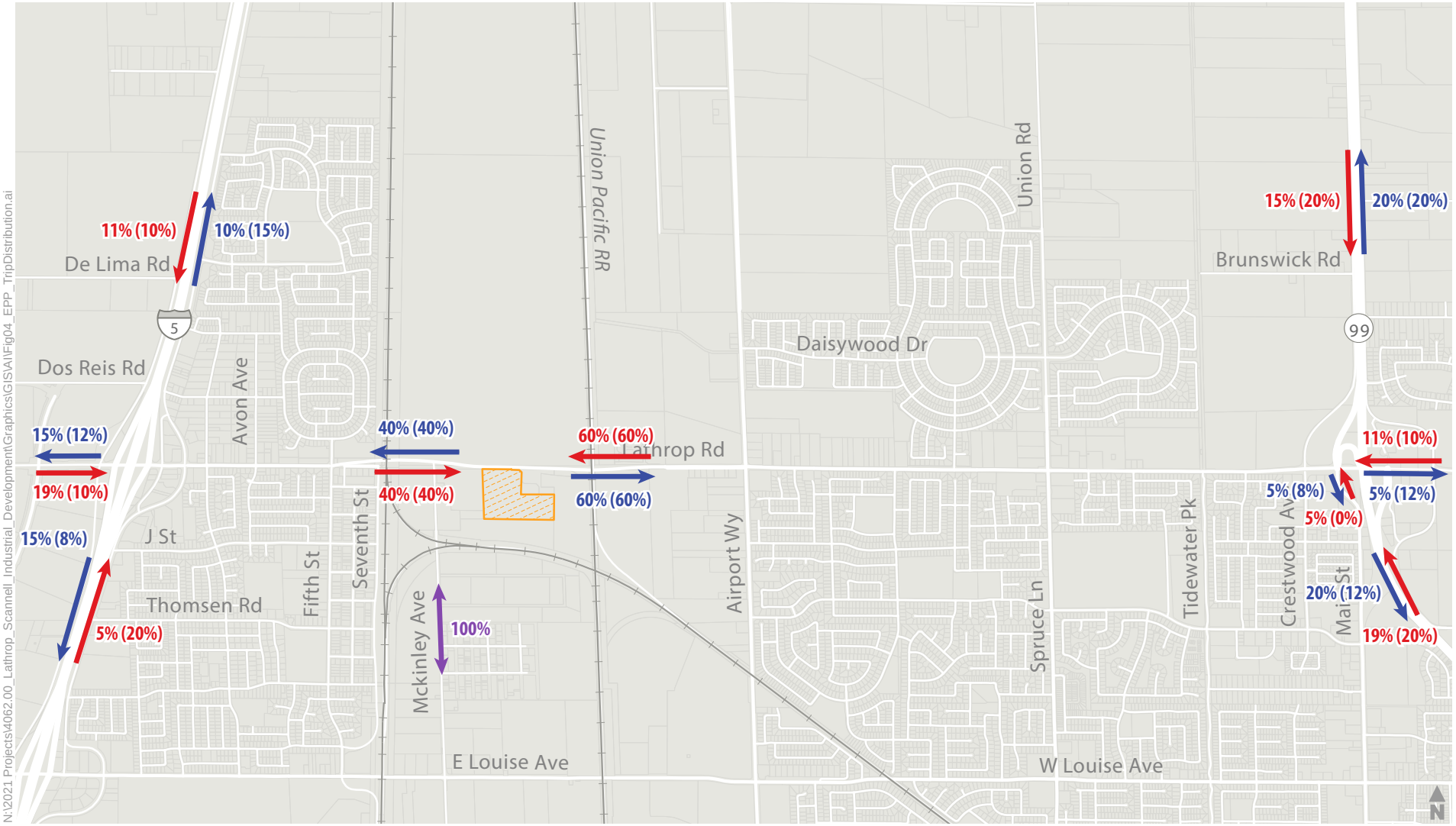
3.4 Existing Plus Project Conditions

Existing Plus Project Intersection Operations

As previously noted, access is proposed via one right in/right out driveway on Lathrop Road and one driveway on D Street. The D Street driveway would provide access to the Lathrop Road/D Street intersection, which is a full access intersection; therefore, it is anticipated that all westbound inbound and outbound trips would to use this intersection.

Project trips were added to the study intersections based on the trip distribution displayed in **Figure 4** and trip assignment described above. **Figure 5** displays the intersection turning movements under existing plus project conditions.

Table 4 displays the AM and PM peak hour intersection operations under existing plus project conditions. Technical calculations are displayed in **Appendix A.**



X% (X%) AM (PM) Passenger Vehicle Trip Distribution Percentage Inbound

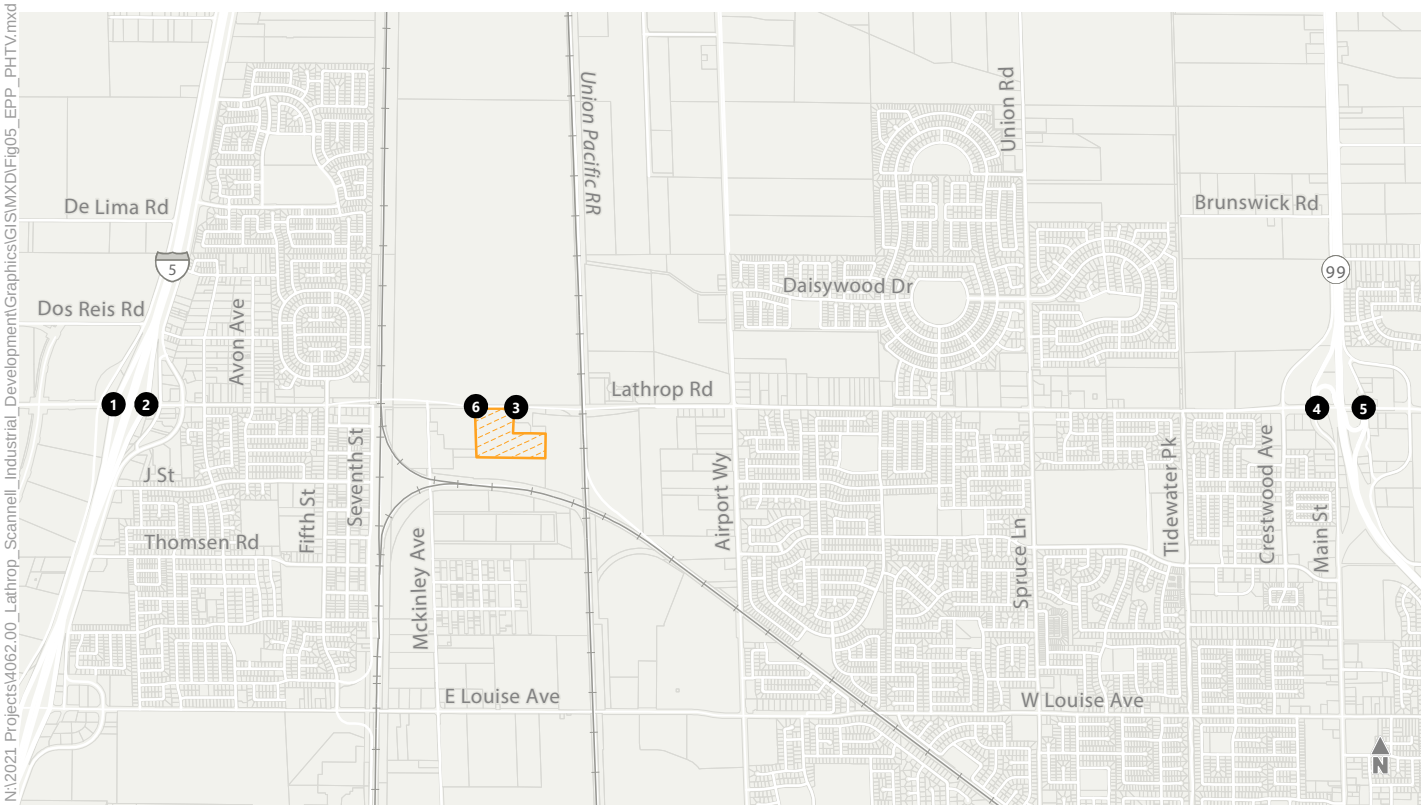
X% (X%) AM (PM) Passenger Vehicle Trip Distribution Percentage Outbound

X% Heavy Vehicle Trip Distribution (6 AM and 4 PM trips)

Project Site

Figure 4

Existing Plus Project Trip Distribution



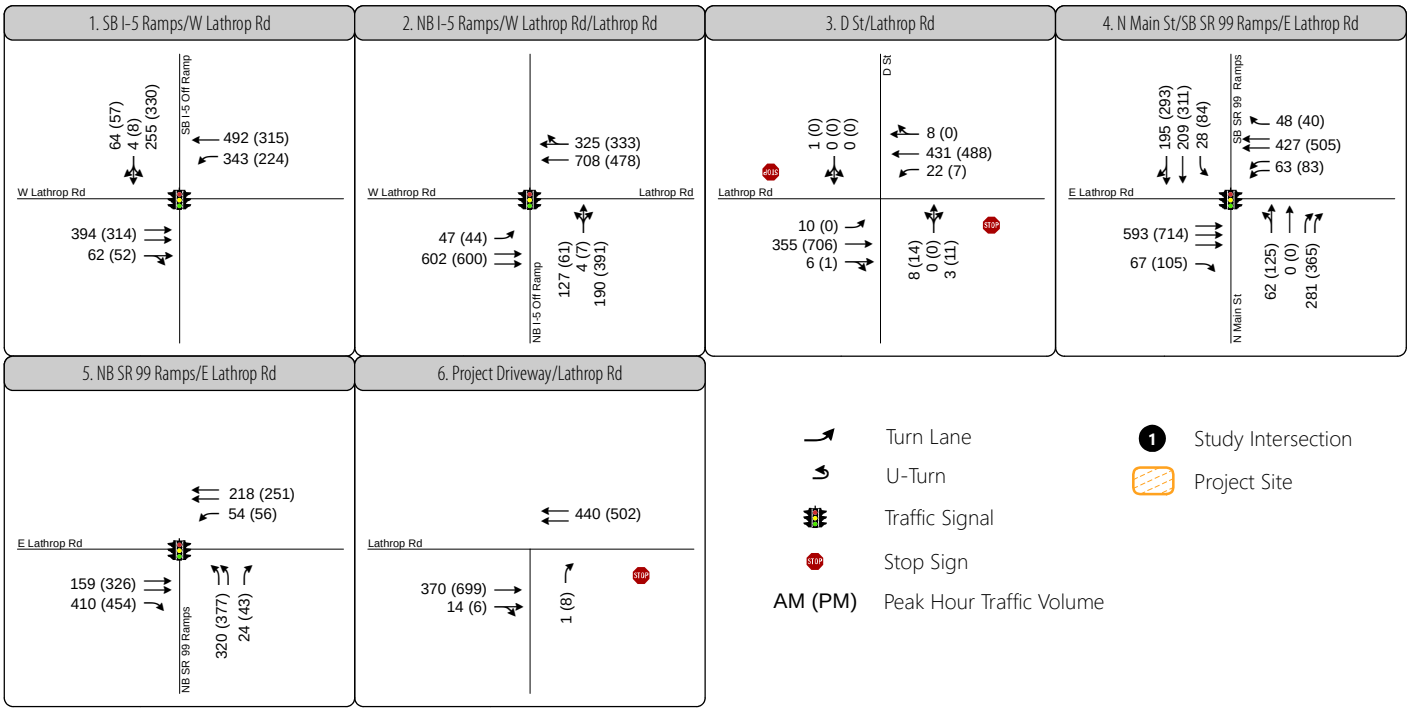


Figure 5

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

Table 4: Intersection Operations – Existing Plus Project Conditions						
Intersection	Control Type	Peak Hour	Existing Conditions		Existing Plus Project Conditions	
			Delay[1]	LOS	Delay[1]	LOS
1. I-5 SB Ramps/Lathrop Rd	Signal	AM PM	18 17	B B	18 17	B B
2. I-5 NB Ramps/Lathrop Rd	Signal	AM PM	16 19	B B	16 19	B B
3. Lathrop Road/D St	SSSC	AM PM	1 (15) 1 (17)	A (B)[2] A (C)	1 (15) 1 (21)	A (C)[2] A (C)
4. SR 99 SB Ramps/Lathrop Rd	Signal	AM PM	15 18	B B	15 18	B B
5. SR 99 NB Ramps/Lathrop Rd	Signal	AM PM	12 12	B B	12 12	B B
6. Lathrop Road/Project Driveway	SSSC	AM PM	N/A	N/A	1 (10) 1 (11)	A (A) A (B)

Notes:
SSSC = Side-Street Stop Control; LOS = Level of Service
[1] For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop controlled intersections, average intersection delay and (worst-case movement) are reported.
[2] Intersection LOS differs due to rounding.
Source: Fehr & Peers, 2021

As displayed, all intersections would operate acceptably with the addition of project trips. Intersection delay would remain the same at all intersections except for Lathrop Road/D Street. Motorists making a northbound left turn would continue to experience the highest delay at this intersection. With the addition of project trips, delay for this movement would increase by less than one second during the AM peak hour and by approximately 4 seconds during the PM peak hour.

4. Cumulative Conditions Analysis

This chapter analyzes the impacts of the project under cumulative conditions. The analysis reflects long-term development in the City of Lathrop, Manteca and other nearby jurisdictions using the Cumulative Year TDF model previously described. It is noted that under cumulative conditions, a significant amount of growth is planned in Lathrop (as the TDM assumes full build out of the City). As a result, forecasted AM and PM peak hour volumes are high, particularly near I-5. The City is currently in the process of updating the General Plan, which will include an in depth evaluation of land uses and anticipated growth over the next 20 years. The TDM will be updated with the General Plan effort and may result in different forecasts along study intersections.

It is also noted, the Sharpe Depot project has not come to fruition and land use plans are unknown at this time. Therefore, this analysis does not assume land use growth on the parcel directly north of the project site. When a project is proposed on that parcel, additional analysis, particularly for the Lathrop Road/D Street intersection, should be completed.

The City of Lathrop has completed a Project Study Report (PSR) for the Lathrop Road/I-5 interchange. A partial cloverleaf is proposed. However, the PSR needs to be updated with Caltrans before completing environmental and design documents. Although the project is still in early stages and is not fully funded, interchange improvements are identified in the City's Capital Improvement Plan (PS 06-16) and the City has been collecting funds for interchange improvements through the Capital Facilities Fee Program. Therefore, based on direction from City staff, the following interchange improvements are included in the cumulative year analysis:

- **Lathrop Road/I-5 SB Ramps:**
    - Modify the southbound approach to include two left turn lanes and two right turn lanes
    - Modify the eastbound approach to include three through lanes
    - Modify the westbound approach to include two through lanes, one shared through/right turn lane, and one right turn lane

- **Lathrop Road/I-5 NB Ramps:**
    - Modify the northbound approach to include one left turn lane, one shared through/left turn lane, and two right turn lanes
    - Modify the eastbound approach to include two left turn lanes and two through lanes
    - Modify the westbound approach to include one through lane, one shared through/right turn lane, and one right turn lane

The following Synchro inputs were used for the cumulative year analysis at the Lathrop Road/I-5 interchange:

- Coordinated signal timing

- Custom phasing on the I-5 SB off-ramp
- Optimized signal timings and offsets for each cumulative scenario

4.1 Cumulative No Project Conditions

Cumulative No Project Intersection Operations

The Cumulative Year TDF model was used to develop cumulative year intersection turning movement forecasts. This scenario assumes a retail type development consistent with the existing Service Commercial General Plan designation and an FAR of 0.30 is constructed on the site. No improvements are assumed at the study intersections under this scenario, except for the modifications to the Lathrop Road/I-5 interchange previously described. All trips to the project site were assigned to the Lathrop Road/D Street intersection as there is no specific project and no proposed driveway locations to consider.

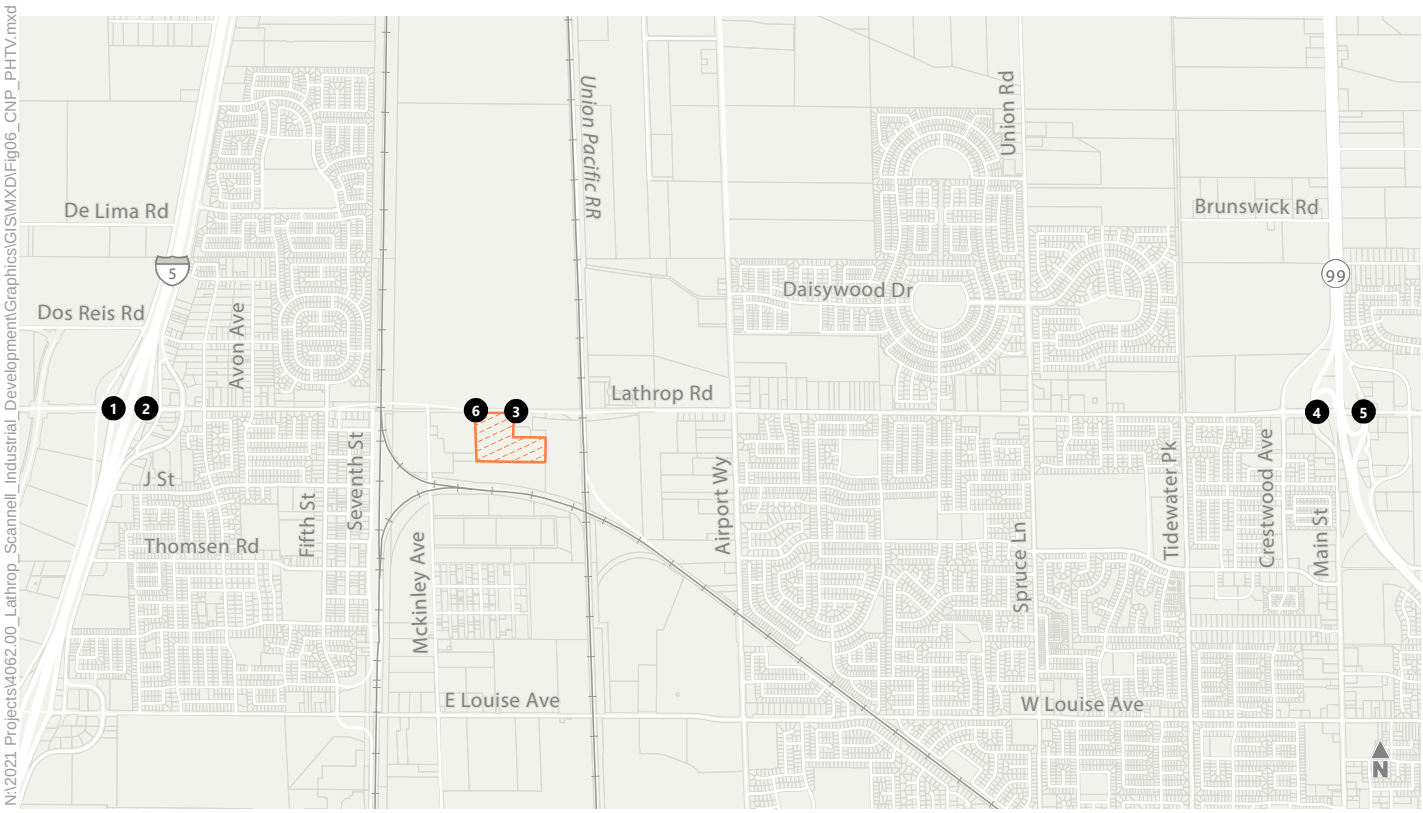
Figure 6 displays AM and PM peak hour turning movement and lane configurations at the study intersections. **Table 5** displays the AM and PM peak hour intersection operations. Technical calculations are displayed in **Appendix A**.

Table 5: Intersection Operations – Cumulative No Project Conditions

Intersection	Control Type	Peak Hour	Existing Conditions		Cumulative No Project Conditions	
			Delay[1]	LOS	Delay[1]	LOS
1. I-5 SB Ramps/Lathrop Rd[2]	Signal	AM PM	18 17	B B	47 69	D **E**
2. I-5 NB Ramps/Lathrop Rd	Signal	AM PM	16 19	B B	55 56	D **E**
3. Lathrop Road/D St	SSSC	AM PM	1 (15) 1 (17)	A (B) A (C)	31 (>1000) 426 (>1000)	**D (F)** **F (F)**
4. SR 99 SB Ramps/Lathrop Rd	Signal	AM PM	15 18	B B	29 28	C C
5. SR 99 NB Ramps/Lathrop Rd	Signal	AM PM	12 12	B B	29 35	C D

Notes:
SSSC = Side-Street Stop Control; LOS = Level of Service
Bold indicates unacceptable operations.
[1] For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop controlled intersections, average intersection delay and (worst-case movement) are reported.
[2] For cumulative no project conditions, intersection level of service and delay is reported using HCM 2000 methodology, as custom phasing cannot be analyzed using HCM 6th Edition methodology.
Source: Fehr & Peers, 2021

As displayed, the I-5 NB and SB Ramps/Lathrop Road intersections would operate unacceptably at LOS E during the PM peak hour and Lathrop Road/D Street would operate unacceptably at LOS F during the AM and PM peak hour.



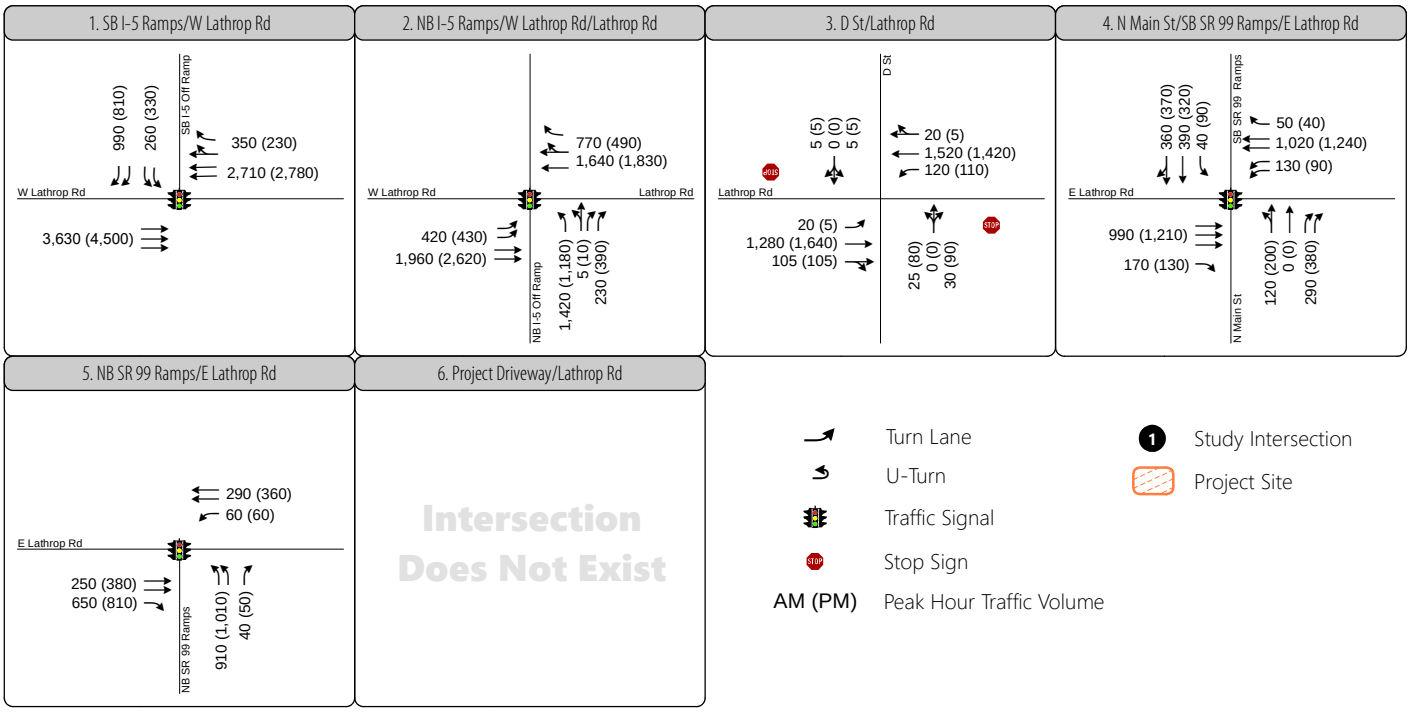


Figure 6

Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project Conditions

4.2 Cumulative Plus Project Conditions

Cumulative Plus Project Intersection Operations

Trips associated with the retail development were removed from the study intersections and project trips consistent with the trip generation displayed in Table 5 were added. The Cumulative Year TDF model was used to determine cumulative plus project trip distribution which is displayed on **Figure 7**.

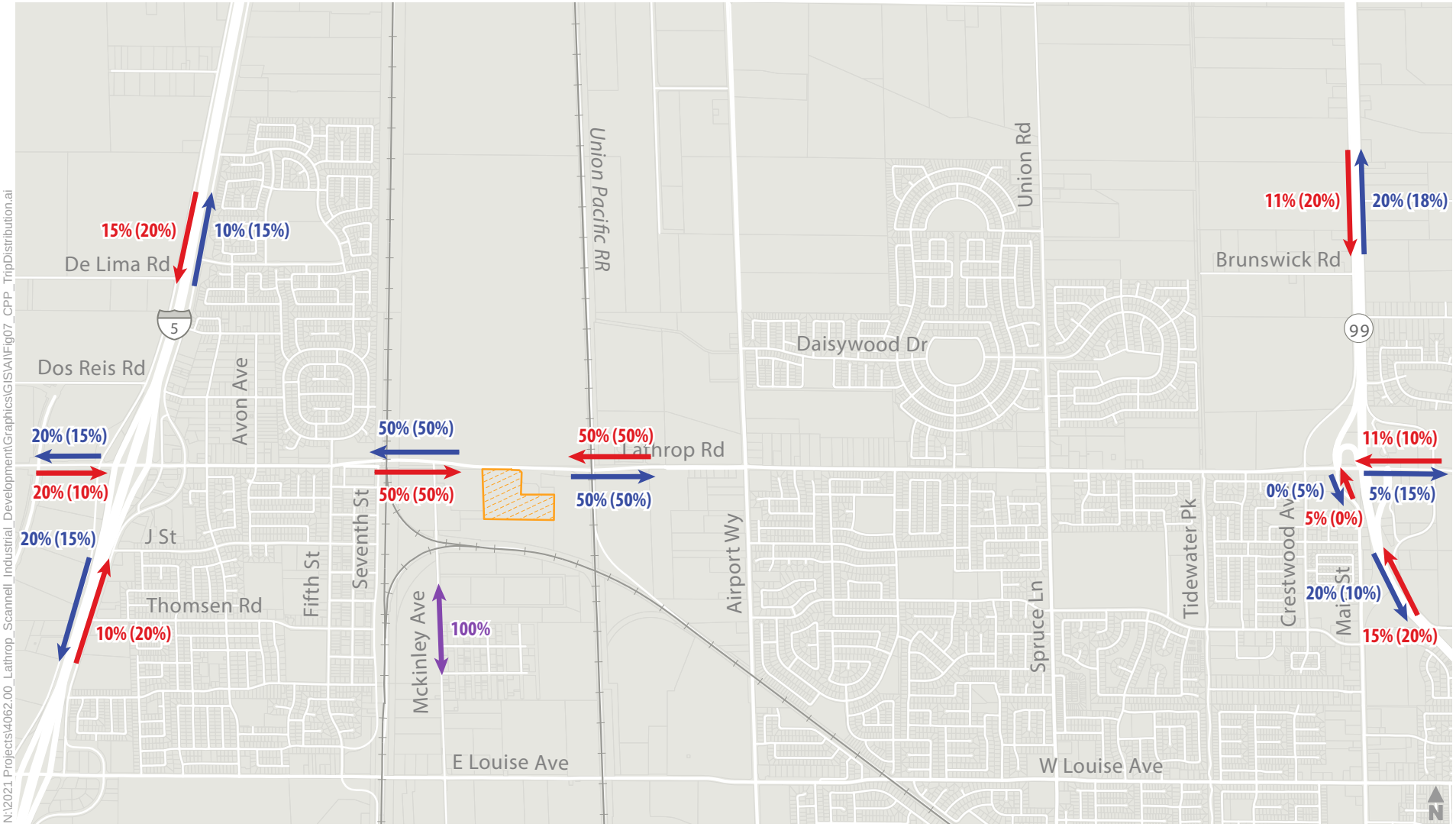
Figure 8 displays the intersection turning movements under cumulative plus project conditions. **Table 6** presents the results of the cumulative plus project intersection operations analysis.

Table 6: Intersection Operations – Cumulative Plus Project Conditions

Intersection	Control Type	Peak Hour	Cumulative No Project Conditions		Cumulative Plus Project Conditions	
			Delay[1]	LOS	Delay[1]	LOS
1. I-5 SB Ramps/Lathrop Rd[2]	Signal	AM PM	47 69	D **E**	40 48	D D
2. I-5 NB Ramps/Lathrop Rd	Signal	AM PM	55 56	D **E**	48 55	D D
3. Lathrop Road/D St	SSSC	AM PM	31 (>1000) 426 (>1000)	**D (F)** **F (F)**	3 (359) 20 (>1000)	**A (F)** **C (F)**
4. SR 99 SB Ramps/Lathrop Rd	Signal	AM PM	29 28	C C	29 28	C C
5. SR 99 NB Ramps/Lathrop Rd	Signal	AM PM	29 35	C D	29 30	C C
6. Lathrop Road/Project Driveway	SSSC	AM PM	N/A	N/A	0 (16) 1 (21)	A (C) A (C)

Notes:
SSSC = Side-Street Stop Control; LOS = Level of Service
[1] For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop controlled intersections, average intersection delay and (worst-case movement) are reported.
[2] Intersection level of service and delay is reported using HCM 2000 methodology, as custom phasing cannot be analyzed using HCM 6th Edition methodology.
Source: Fehr & Peers, 2021

As displayed, most intersections would operate acceptably under cumulative plus project conditions and delay at all intersections would decrease or remain the same with the proposed project as the industrial development would generate less trips than a retail type development permitted under the existing Service Commercial land use designation.



X% (X%) AM (PM) Passenger Vehicle Trip Distribution Percentage Inbound

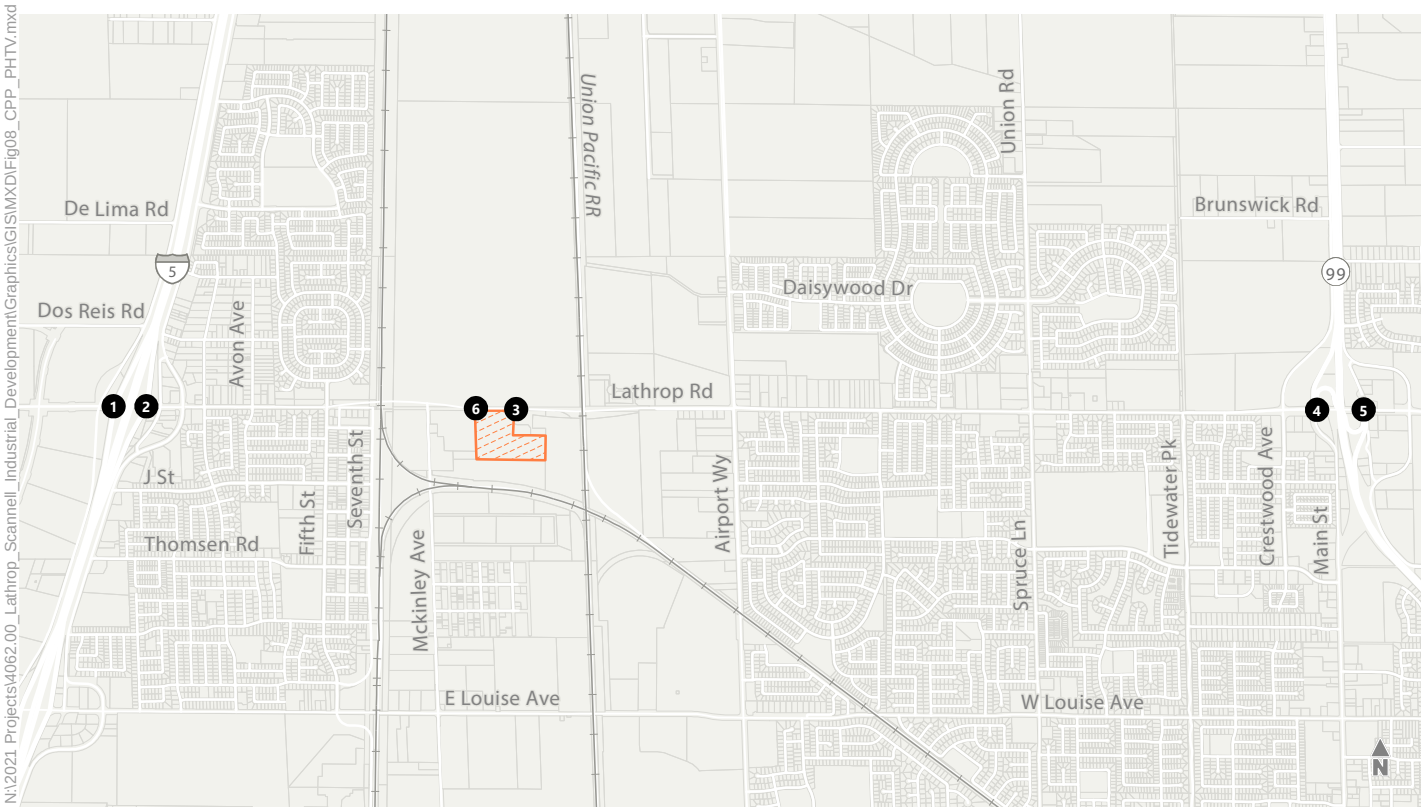
X% (X%) AM (PM) Passenger Vehicle Trip Distribution Percentage Outbound

X% Heavy Vehicle Trip Distribution (6 AM and 4 PM trips)

Project Site

Figure 7

Cumulative Plus Project Trip Distribution



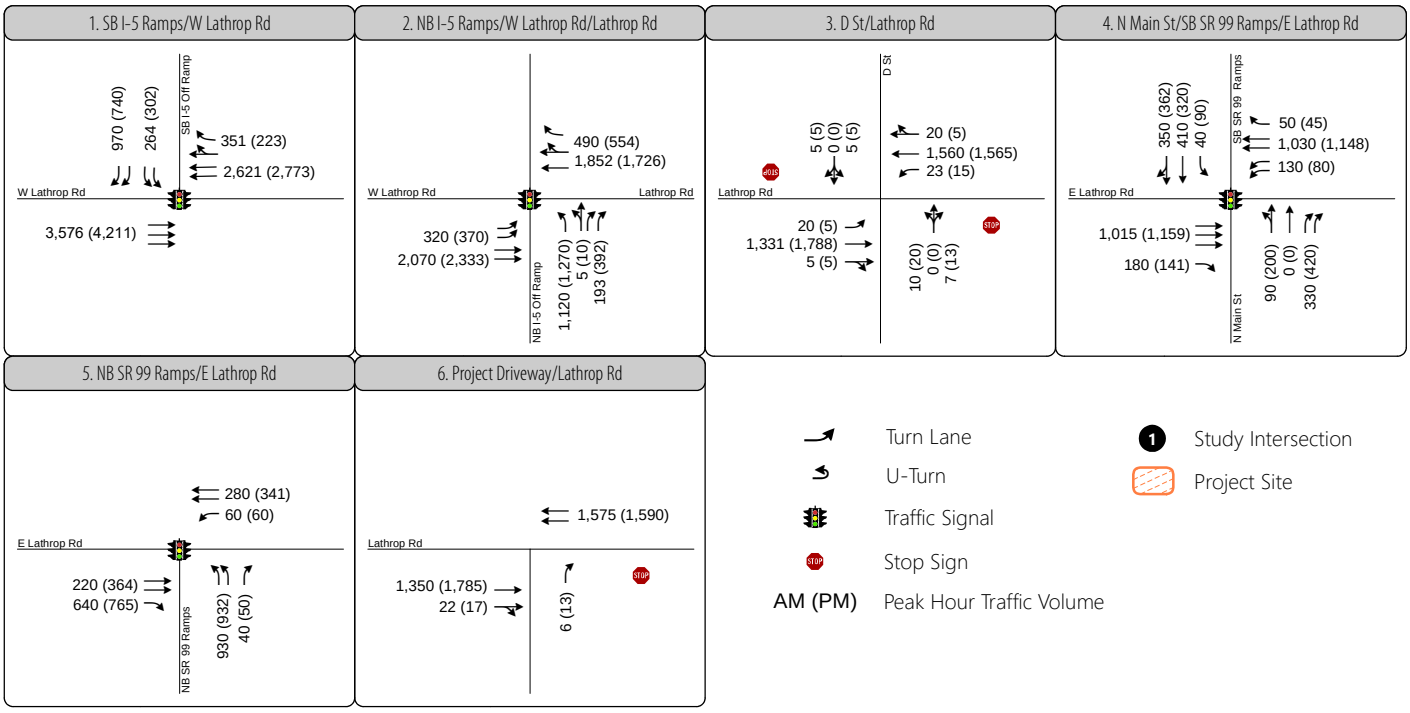


Figure 8

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions

However, the Lathrop Road/D Street intersection would continue to operate unacceptably under cumulative plus project conditions. Motorists making a northbound left turn would continue to experience the highest delay at this intersection.

Signal Warrant Analysis

Because the Lathrop Road/D Street intersection would operate unacceptably under both cumulative scenarios, we completed an AM and PM peak hour signal warrant analysis, consistent with the methodologies in the 2014 CA MUTCD, to evaluate the need for installation of a traffic signal.

Results of this analysis indicate traffic volumes on the minor street would not satisfy the warrant for installation of a traffic signal in the AM peak hour for either the cumulative no project or cumulative plus project scenarios or PM peak hour for the cumulative plus project scenario. Volumes would satisfy the warrant for installation of a traffic signal in the PM peak hour under the cumulative no project scenario.

However, a signal is recommended at this intersection due to high delay experienced on the minor streets, need for left turning movements into and out of D Street, and heavy trucks associated with the existing concrete facility and proposed project. It is recommended that the signal be installed with the proposed project or the developer pay a fair-share for future installation of the traffic signal. **Table 7** displays the results of intersection operations under cumulative conditions with installation of a traffic signal.

Table 7: Intersection Operations – Cumulative Conditions with Improvements

Intersection	Control Type	Peak Hour	Cumulative No Project Conditions		Cumulative No Project with Improvements		Cumulative Plus Project Conditions		Cumulative Plus Project with Improvements	
			Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1. Lathrop Road /D St	SSSC / Signal[2]	AM	31 (>1000)	**D (F)**	12	B	3 (359)	**A (F)**	9	A
		PM	426 (>1000)	**F (F)**	23	C	20 (>1000)	**C (F)**	9	A

Notes:
SSSC = Side-Street Stop Control; LOS = Level of Service
[1] For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop controlled intersections, average intersection delay and (worst-case movement) are reported.
[2] Intersection was analyzed as a signal under the "with improvements" scenarios
Source: Fehr & Peers, 2021

As displayed, the intersection would operate acceptably with installation of a traffic signal. However, this intersection should be re-evaluated when land use information for the Sharpe Depot project are known to determine if lane configuration or phasing modifications are necessary.

5. Additional Analysis

This chapter describes the additional analysis completed for the proposed project, including consistency with the General Plan and a site access evaluation.

5.1 General Plan Consistency

The City of Lathrop General Plan was reviewed to determine if the proposed development project would result in any inconsistencies with adopted transportation related policies. The proposed warehouse project is permitted under the existing Service Commercial General Plan land use designation. The City of Lathrop General Plan (adopted in 1991 and most recently amended in 2004) indicates the following improvements on Lathrop Road:

- Improve Lathrop Road to 4 traffic lanes between I-5 and the Manteca city limits; provide railroad separation structures.
- Construct Class II Bike Lanes

These improvements have been completed since adopted of the General Plan and the proposed project will not result in any inconsistencies with these improvements.

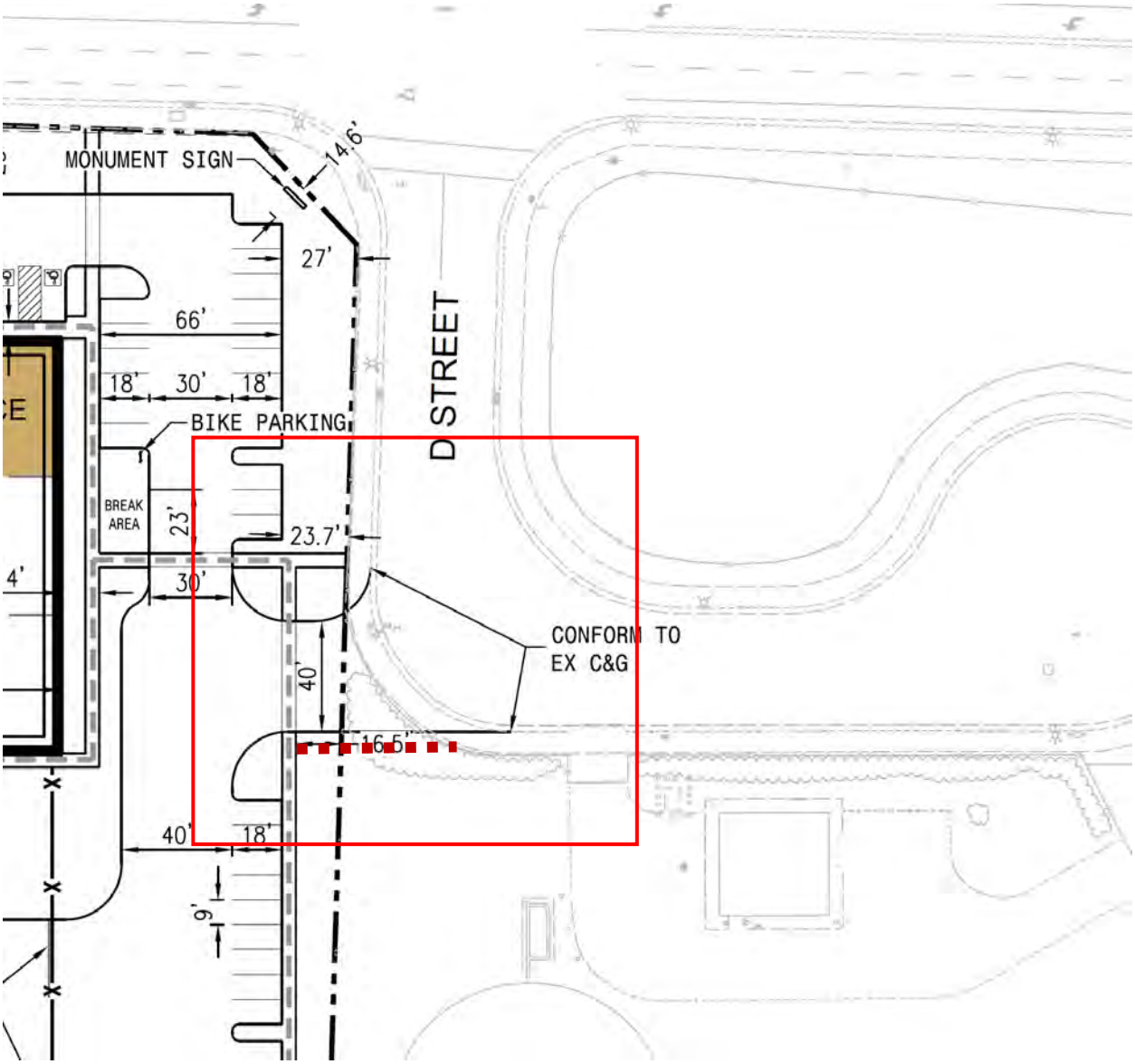
5.2 Site Access Evaluation

As described in Chapter 3 and displayed in **Figure 2**, access is proposed via one right in/right out driveway on Lathrop Road and one driveway on D Street. Civil Sheets 7, 8 and 9 (Mackay & Somps, April 2021) provide truck turning movements for semi-trailers (WB-50), fire trucks, and refuse trucks and indicate the project would provide adequate emergency and truck access. However, it is noted that because a tenant has not yet been identified, updated plans may be necessary to ensure adequate ingress and egress for larger trucks is provided should larger trucks need to access the site.

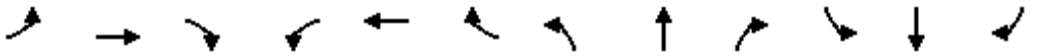
As previously noted, Fehr & Peers completed an AM and PM peak hour signal warrant analysis consistent with methodologies in the 2014 CA MUTCD for the Lathrop Road/D Street intersection under cumulative no project and cumulative plus project conditions. Results of this analysis indicate traffic volumes on the minor street would not satisfy the warrant for installation of a traffic signal in the AM peak hour for both scenarios or PM peak hour under the cumulative plus project scenario. Volumes would satisfy the warrant for installation of a traffic signal in the PM peak hour under the cumulative no project scenario.

However, a signal is recommended at this intersection due to high delay experienced on the minor streets, need for left turning movements into and out of D Street, and heavy trucks associated with the existing concrete facility and proposed project. It is recommended that the signal be installed with the proposed project or the developer pay a fair-share for future installation of the traffic signal.

Additionally, Civil Sheet 4 indicates that a portion of the existing sidewalk on D Street would be removed to accommodate the proposed driveway. It is unclear how this sidewalk on the southern side of the driveway approach would ultimately reconnect to provide adequate pedestrian access. If possible, this sidewalk should connect to the sidewalk proposed on-site for ADA access, similar to the connection to the sidewalk proposed to the north. This potential connection is displayed via the red dashed line below.



Appendix A – Technical Calculations



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	389	62	342	491	0	0	0	0	252	4	64
Future Volume (veh/h)	0	389	62	342	491	0	0	0	0	252	4	64
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1811	1811	1811	1811	0				1811	1811	1811
Adj Flow Rate, veh/h	0	418	67	368	528	0				271	4	69
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	6	6	6	6	0				6	6	6
Cap, veh/h	0	805	126	420	915	0				394	6	100
Arrive On Green	0.00	0.19	0.19	0.24	0.50	0.00				0.30	0.30	0.30
Sat Flow, veh/h	0	4474	675	1725	1811	0				1327	20	338
Grp Volume(v), veh/h	0	317	168	368	528	0				344	0	0
Grp Sat Flow(s),veh/h/ln	0	1648	1690	1725	1811	0				1684	0	0
Q Serve(g_s), s	0.0	4.6	4.8	11.0	10.9	0.0				9.7	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.6	4.8	11.0	10.9	0.0				9.7	0.0	0.0
Prop In Lane	0.00		0.40	1.00		0.00				0.79		0.20
Lane Grp Cap(c), veh/h	0	616	316	420	915	0				500	0	0
V/C Ratio(X)	0.00	0.52	0.53	0.88	0.58	0.00				0.69	0.00	0.00
Avail Cap(c_a), veh/h	0	2155	1105	644	1692	0				1573	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	19.6	19.7	19.5	9.3	0.0				16.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	1.3	5.8	0.5	0.0				3.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	1.8	4.3	2.9	0.0				3.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	20.2	20.9	25.3	9.8	0.0				20.2	0.0	0.0
LnGrp LOS	A	C	C	C	A	A				C	A	A
Approach Vol, veh/h		485			896						344	
Approach Delay, s/veh		20.4			16.1						20.2	
Approach LOS		C			B						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	17.0	14.6		21.9		31.6
Change Period (Y+Rc), s	4.0	4.6		6.0		4.6
Max Green Setting (Gmax), s	20.0	35.0		50.0		50.0
Max Q Clear Time (g_c+I1), s	13.0	6.8		11.7		12.9
Green Ext Time (p_c), s	0.1	3.1		4.3		3.0

Intersection Summary			
HCM 6th Ctrl Delay		18.2	
HCM 6th LOS		B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	594	0	0	706	325	127	4	188	0	0	0
Future Volume (veh/h)	47	594	0	0	706	325	127	4	188	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1811	1811	0	0	1811	1811	1811	1811	1811			
Adj Flow Rate, veh/h	51	639	0	0	759	349	137	4	202			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	6	6	0	0	6	6	6	6	6			
Cap, veh/h	81	1859	0	0	985	452	188	5	277			
Arrive On Green	0.05	0.54	0.00	0.00	0.43	0.43	0.29	0.29	0.29			
Sat Flow, veh/h	1725	3532	0	0	2381	1052	642	19	947			
Grp Volume(v), veh/h	51	639	0	0	570	538	343	0	0			
Grp Sat Flow(s),veh/h/ln	1725	1721	0	0	1721	1622	1608	0	0			
Q Serve(g_s), s	1.8	6.6	0.0	0.0	17.8	17.9	12.1	0.0	0.0			
Cycle Q Clear(g_c), s	1.8	6.6	0.0	0.0	17.8	17.9	12.1	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.65	0.40		0.59			
Lane Grp Cap(c), veh/h	81	1859	0	0	740	697	470	0	0			
V/C Ratio(X)	0.63	0.34	0.00	0.00	0.77	0.77	0.73	0.00	0.00			
Avail Cap(c_a), veh/h	546	1906	0	0	1362	1283	1273	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	29.6	8.2	0.0	0.0	15.3	15.4	20.1	0.0	0.0			
Incr Delay (d2), s/veh	3.0	0.1	0.0	0.0	1.6	1.7	4.6	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.8	1.8	0.0	0.0	5.8	5.5	4.5	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.6	8.3	0.0	0.0	16.9	17.0	24.7	0.0	0.0			
LnGrp LOS	C	A	A	A	B	B	C	A	A			
Approach Vol, veh/h		690			1108			343				
Approach Delay, s/veh		10.1			17.0			24.7				
Approach LOS		B			B			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		38.7			7.0	31.8		24.5				
Change Period (Y+Rc), s		4.6			4.0	4.6		6.0				
Max Green Setting (Gmax), s		35.0			20.0	50.0		50.0				
Max Q Clear Time (g_c+I1), s		8.6			3.8	19.9		14.1				
Green Ext Time (p_c), s		3.8			0.0	7.3		4.4				
Intersection Summary												
HCM 6th Ctrl Delay			16.0									
HCM 6th LOS			B									

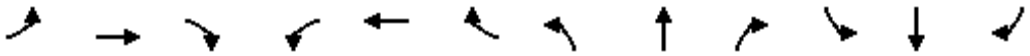
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	354	6	6	431	8	3	0	1	0	0	1
Future Vol, veh/h	10	354	6	6	431	8	3	0	1	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9
Mvmt Flow	11	389	7	7	474	9	3	0	1	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	483	0	0	396	0	0	666	912	198	710	911	242
Stage 1	-	-	-	-	-	-	415	415	-	493	493	-
Stage 2	-	-	-	-	-	-	251	497	-	217	418	-
Critical Hdwy	4.28	-	-	4.28	-	-	7.68	6.68	7.08	7.68	6.68	7.08
Critical Hdwy Stg 1	-	-	-	-	-	-	6.68	5.68	-	6.68	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.68	5.68	-	6.68	5.68	-
Follow-up Hdwy	2.29	-	-	2.29	-	-	3.59	4.09	3.39	3.59	4.09	3.39
Pot Cap-1 Maneuver	1028	-	-	1111	-	-	331	260	789	308	261	738
Stage 1	-	-	-	-	-	-	567	574	-	509	528	-
Stage 2	-	-	-	-	-	-	711	526	-	746	572	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1028	-	-	1111	-	-	326	256	789	304	257	738
Mov Cap-2 Maneuver	-	-	-	-	-	-	326	256	-	304	257	-
Stage 1	-	-	-	-	-	-	561	568	-	503	525	-
Stage 2	-	-	-	-	-	-	705	523	-	737	566	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	14.5	9.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	382	1028	-	-	1111	-	-	738
HCM Lane V/C Ratio	0.012	0.011	-	-	0.006	-	-	0.001
HCM Control Delay (s)	14.5	8.5	-	-	8.3	-	-	9.9
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	591	67	63	419	48	61	0	281	28	209	191
Future Volume (veh/h)	0	591	67	63	419	48	61	0	281	28	209	191
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	0	635	72	68	451	52	66	0	302	30	225	205
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	0	1302	448	204	1552	692	0	592	465	59	523	454
Arrive On Green	0.00	0.29	0.29	0.06	0.45	0.45	0.00	0.00	0.17	0.03	0.30	0.30
Sat Flow, veh/h	0	4781	1535	3346	3441	1535	0	3441	2701	1725	1744	1515
Grp Volume(v), veh/h	0	635	72	68	451	52	0	0	302	30	222	208
Grp Sat Flow(s),veh/h/ln	0	1485	1535	1673	1721	1535	0	1721	1351	1725	1721	1538
Q Serve(g_s), s	0.0	5.9	1.7	1.0	4.2	1.0	0.0	0.0	5.2	0.9	5.2	5.5
Cycle Q Clear(g_c), s	0.0	5.9	1.7	1.0	4.2	1.0	0.0	0.0	5.2	0.9	5.2	5.5
Prop In Lane	0.00		1.00	1.00		1.00	0.00		1.00	1.00		0.98
Lane Grp Cap(c), veh/h	0	1302	448	204	1552	692	0	592	465	59	516	461
V/C Ratio(X)	0.00	0.49	0.16	0.33	0.29	0.08	0.00	0.00	0.65	0.51	0.43	0.45
Avail Cap(c_a), veh/h	0	4442	1530	1001	3431	1530	0	2059	1616	516	1029	920
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	14.7	13.2	22.6	8.7	7.8	0.0	0.0	19.4	23.8	14.1	14.2
Incr Delay (d2), s/veh	0.0	0.4	0.2	1.1	0.1	0.1	0.0	0.0	2.0	7.5	0.8	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	0.5	0.4	1.3	0.2	0.0	0.0	1.5	0.4	1.7	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.0	13.4	23.6	8.8	7.9	0.0	0.0	21.3	31.3	14.9	15.2
LnGrp LOS	A	B	B	C	A	A	A	A	C	C	B	B
Approach Vol, veh/h		707			571			302			460	
Approach Delay, s/veh		14.9			10.5			21.3			16.1	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	8.0	20.6	0.0	21.5		28.6	6.4	15.1				
Change Period (Y+Rc), s	4.9	* 6	* 4.7	6.5		6.0	* 4.7	* 6.5				
Max Green Setting (Gmax), s	15.0	* 50	* 15	30.0		50.0	* 15	* 30				
Max Q Clear Time (g_c+I1), s	3.0	7.9	0.0	7.5		6.2	2.9	7.2				
Green Ext Time (p_c), s	0.1	6.7	0.0	3.5		5.0	0.0	1.5				

Intersection Summary			
HCM 6th Ctrl Delay		14.9	
HCM 6th LOS		B	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



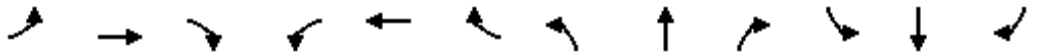
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	159	409	54	215	315	24
Future Volume (veh/h)	159	409	54	215	315	24
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	171	440	58	231	339	26
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	7	7	7	7	7	7
Cap, veh/h	1125	502	103	1694	691	317
Arrive On Green	0.33	0.33	0.06	0.50	0.21	0.21
Sat Flow, veh/h	3503	1522	1711	3503	3319	1522
Grp Volume(v), veh/h	171	440	58	231	339	26
Grp Sat Flow(s),veh/h/ln	1706	1522	1711	1706	1659	1522
Q Serve(g_s), s	1.3	10.2	1.2	1.4	3.4	0.5
Cycle Q Clear(g_c), s	1.3	10.2	1.2	1.4	3.4	0.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1125	502	103	1694	691	317
V/C Ratio(X)	0.15	0.88	0.56	0.14	0.49	0.08
Avail Cap(c_a), veh/h	2271	1013	683	2271	1766	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.9	11.9	17.2	5.1	13.1	12.0
Incr Delay (d2), s/veh	0.0	2.0	1.8	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.4	0.4	0.2	1.0	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.9	13.9	18.9	5.1	13.3	12.0
LnGrp LOS	A	B	B	A	B	B
Approach Vol, veh/h	611			289	365	
Approach Delay, s/veh	12.5			7.9	13.2	
Approach LOS	B			A	B	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.3	18.6			24.9	12.7
Change Period (Y+Rc), s	4.0	* 6.2			6.2	4.9
Max Green Setting (Gmax), s	15.0	* 25			25.0	20.0
Max Q Clear Time (g_c+I1), s	3.3	12.2			3.4	5.4
Green Ext Time (p_c), s	0.0	0.1			0.2	0.2

Intersection Summary		
HCM 6th Ctrl Delay	11.6	
HCM 6th LOS	B	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	313	52	222	312	0	0	0	0	329	8	57
Future Volume (veh/h)	0	313	52	222	312	0	0	0	0	329	8	57
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1811	1811	1811	1811	0				1811	1811	1811
Adj Flow Rate, veh/h	0	329	55	234	328	0				346	8	60
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	6	6	6	6	0				6	6	6
Cap, veh/h	0	840	136	285	796	0				500	12	87
Arrive On Green	0.00	0.20	0.20	0.17	0.44	0.00				0.35	0.35	0.35
Sat Flow, veh/h	0	4449	696	1725	1811	0				1417	33	246
Grp Volume(v), veh/h	0	251	133	234	328	0				414	0	0
Grp Sat Flow(s),veh/h/ln	0	1648	1686	1725	1811	0				1696	0	0
Q Serve(g_s), s	0.0	3.4	3.5	6.7	6.3	0.0				10.7	0.0	0.0
Cycle Q Clear(g_c), s	0.0	3.4	3.5	6.7	6.3	0.0				10.7	0.0	0.0
Prop In Lane	0.00		0.41	1.00		0.00				0.84		0.14
Lane Grp Cap(c), veh/h	0	646	330	285	796	0				598	0	0
V/C Ratio(X)	0.00	0.39	0.40	0.82	0.41	0.00				0.69	0.00	0.00
Avail Cap(c_a), veh/h	0	2260	1156	676	1242	0				1661	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	17.9	17.9	20.6	9.8	0.0				14.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.7	2.2	0.3	0.0				3.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	1.3	2.4	1.8	0.0				3.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	18.2	18.6	22.8	10.1	0.0				17.2	0.0	0.0
LnGrp LOS	A	B	B	C	B	A				B	A	A
Approach Vol, veh/h		384			562						414	
Approach Delay, s/veh		18.4			15.4						17.2	
Approach LOS		B			B						B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	12.4	14.6		24.0		27.0
Change Period (Y+Rc), s	4.0	4.6		6.0		4.6
Max Green Setting (Gmax), s	20.0	35.0		50.0		35.0
Max Q Clear Time (g_c+I1), s	8.7	5.5		12.7		8.3
Green Ext Time (p_c), s	0.1	2.4		5.4		1.6

Intersection Summary			
HCM 6th Ctrl Delay		16.8	
HCM 6th LOS		B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	598	0	0	473	329	61	7	389	0	0	0
Future Volume (veh/h)	44	598	0	0	473	329	61	7	389	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1811	1811	0	0	1811	1811	1811	1811	1811			
Adj Flow Rate, veh/h	46	629	0	0	498	346	64	7	409			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	6	6	0	0	6	6	6	6	6			
Cap, veh/h	75	1504	0	0	644	446	83	9	530			
Arrive On Green	0.04	0.44	0.00	0.00	0.33	0.33	0.40	0.40	0.40			
Sat Flow, veh/h	1725	3532	0	0	2033	1347	208	23	1330			
Grp Volume(v), veh/h	46	629	0	0	441	403	480	0	0			
Grp Sat Flow(s),veh/h/ln	1725	1721	0	0	1721	1569	1561	0	0			
Q Serve(g_s), s	1.7	8.1	0.0	0.0	14.9	14.9	17.2	0.0	0.0			
Cycle Q Clear(g_c), s	1.7	8.1	0.0	0.0	14.9	14.9	17.2	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.86	0.13		0.85			
Lane Grp Cap(c), veh/h	75	1504	0	0	570	520	622	0	0			
V/C Ratio(X)	0.61	0.42	0.00	0.00	0.77	0.78	0.77	0.00	0.00			
Avail Cap(c_a), veh/h	535	1868	0	0	934	852	1211	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	30.3	12.5	0.0	0.0	19.4	19.4	16.8	0.0	0.0			
Incr Delay (d2), s/veh	3.0	0.2	0.0	0.0	2.1	2.3	4.3	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.7	2.5	0.0	0.0	5.3	4.9	5.7	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	12.7	0.0	0.0	21.4	21.7	21.2	0.0	0.0			
LnGrp LOS	C	B	A	A	C	C	C	A	A			
Approach Vol, veh/h		675			844			480				
Approach Delay, s/veh		14.1			21.6			21.2				
Approach LOS		B			C			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		32.8			6.8	26.0		31.7				
Change Period (Y+Rc), s		4.6			4.0	4.6		6.0				
Max Green Setting (Gmax), s		35.0			20.0	35.0		50.0				
Max Q Clear Time (g_c+I1), s		10.1			3.7	16.9		19.2				
Green Ext Time (p_c), s		3.7			0.0	4.5		6.5				
Intersection Summary												
HCM 6th Ctrl Delay			18.9									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	698	1	1	488	0	2	0	3	0	0	0
Future Vol, veh/h	0	698	1	1	488	0	2	0	3	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9
Mvmt Flow	0	759	1	1	530	0	2	0	3	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	530	0	0	760	0	0	1027	1292	380	912	1292	265
Stage 1	-	-	-	-	-	-	760	760	-	532	532	-
Stage 2	-	-	-	-	-	-	267	532	-	380	760	-
Critical Hdwy	4.28	-	-	4.28	-	-	7.68	6.68	7.08	7.68	6.68	7.08
Critical Hdwy Stg 1	-	-	-	-	-	-	6.68	5.68	-	6.68	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.68	5.68	-	6.68	5.68	-
Follow-up Hdwy	2.29	-	-	2.29	-	-	3.59	4.09	3.39	3.59	4.09	3.39
Pot Cap-1 Maneuver	986	-	-	803	-	-	179	153	598	218	153	713
Stage 1	-	-	-	-	-	-	349	396	-	482	507	-
Stage 2	-	-	-	-	-	-	696	507	-	595	396	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	986	-	-	803	-	-	179	153	598	217	153	713
Mov Cap-2 Maneuver	-	-	-	-	-	-	179	153	-	217	153	-
Stage 1	-	-	-	-	-	-	349	396	-	482	506	-
Stage 2	-	-	-	-	-	-	695	506	-	592	396	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	16.9	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	309	986	-	-	803	-	-	-
HCM Lane V/C Ratio	0.018	-	-	-	0.001	-	-	-
HCM Control Delay (s)	16.9	0	-	-	9.5	-	-	0
HCM Lane LOS	C	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	703	103	83	502	40	125	0	365	84	311	291
Future Volume (veh/h)	0	703	103	83	502	40	125	0	365	84	311	291
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	0	732	107	86	523	42	130	0	380	88	324	303
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	0	1361	469	212	1551	692	0	676	531	114	587	523
Arrive On Green	0.00	0.31	0.31	0.06	0.45	0.45	0.00	0.00	0.20	0.07	0.34	0.34
Sat Flow, veh/h	0	4781	1535	3346	3441	1535	0	3441	2701	1725	1721	1535
Grp Volume(v), veh/h	0	732	107	86	523	42	0	0	380	88	324	303
Grp Sat Flow(s),veh/h/ln	0	1485	1535	1673	1721	1535	0	1721	1351	1725	1721	1535
Q Serve(g_s), s	0.0	8.2	3.1	1.5	5.9	0.9	0.0	0.0	7.9	3.0	9.2	9.7
Cycle Q Clear(g_c), s	0.0	8.2	3.1	1.5	5.9	0.9	0.0	0.0	7.9	3.0	9.2	9.7
Prop In Lane	0.00		1.00	1.00		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	1361	469	212	1551	692	0	676	531	114	587	523
V/C Ratio(X)	0.00	0.54	0.23	0.40	0.34	0.06	0.00	0.00	0.72	0.77	0.55	0.58
Avail Cap(c_a), veh/h	0	3714	1280	837	2869	1280	0	1721	1351	431	861	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	17.3	15.5	27.0	10.7	9.3	0.0	0.0	22.5	27.6	16.0	16.2
Incr Delay (d2), s/veh	0.0	0.5	0.3	1.4	0.2	0.1	0.0	0.0	2.3	11.8	1.2	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.4	1.0	0.6	2.0	0.2	0.0	0.0	2.3	1.5	3.2	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.8	15.9	28.4	10.8	9.4	0.0	0.0	24.9	39.3	17.2	17.7
LnGrp LOS	A	B	B	C	B	A	A	A	C	D	B	B
Approach Vol, veh/h		839			651			380			715	
Approach Delay, s/veh		17.5			13.1			24.9			20.2	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	8.7	24.3	0.0	26.9		33.0	8.7	18.3				
Change Period (Y+Rc), s	4.9	* 6	* 4.7	6.5		6.0	* 4.7	* 6.5				
Max Green Setting (Gmax), s	15.0	* 50	* 15	30.0		50.0	* 15	* 30				
Max Q Clear Time (g_c+I1), s	3.5	10.2	0.0	11.7		7.9	5.0	9.9				
Green Ext Time (p_c), s	0.2	8.1	0.0	5.0		5.9	0.1	1.9				

Intersection Summary			
HCM 6th Ctrl Delay		18.2	
HCM 6th LOS		B	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



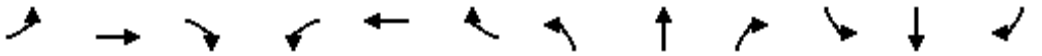
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	323	449	56	250	375	43
Future Volume (veh/h)	323	449	56	250	375	43
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	340	473	59	263	395	45
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	7	7	7	7	7
Cap, veh/h	1197	534	103	1752	673	309
Arrive On Green	0.35	0.35	0.06	0.51	0.20	0.20
Sat Flow, veh/h	3503	1522	1711	3503	3319	1522
Grp Volume(v), veh/h	340	473	59	263	395	45
Grp Sat Flow(s),veh/h/ln	1706	1522	1711	1706	1659	1522
Q Serve(g_s), s	2.8	11.5	1.3	1.6	4.2	1.0
Cycle Q Clear(g_c), s	2.8	11.5	1.3	1.6	4.2	1.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1197	534	103	1752	673	309
V/C Ratio(X)	0.28	0.89	0.57	0.15	0.59	0.15
Avail Cap(c_a), veh/h	2181	973	656	2181	1697	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.2	12.0	17.9	5.0	14.1	12.8
Incr Delay (d2), s/veh	0.0	2.0	1.8	0.0	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.7	0.5	0.2	1.3	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.2	14.0	19.7	5.0	14.4	12.9
LnGrp LOS	A	B	B	A	B	B
Approach Vol, veh/h	813			322	440	
Approach Delay, s/veh	12.0			7.7	14.3	
Approach LOS	B			A	B	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.4	19.9			26.3	12.8
Change Period (Y+Rc), s	4.0	* 6.2			6.2	4.9
Max Green Setting (Gmax), s	15.0	* 25			25.0	20.0
Max Q Clear Time (g_c+I1), s	3.3	13.5			3.6	6.2
Green Ext Time (p_c), s	0.0	0.3			0.3	0.3

Intersection Summary		
HCM 6th Ctrl Delay	11.7	
HCM 6th LOS	B	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	394	62	343	492	0	0	0	0	255	4	64
Future Volume (veh/h)	0	394	62	343	492	0	0	0	0	255	4	64
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1811	1811	1811	1811	0				1811	1811	1811
Adj Flow Rate, veh/h	0	415	65	361	518	0				268	4	67
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	6	6	6	6	0				6	6	6
Cap, veh/h	0	819	125	414	914	0				392	6	98
Arrive On Green	0.00	0.19	0.19	0.24	0.50	0.00				0.29	0.29	0.29
Sat Flow, veh/h	0	4489	662	1725	1811	0				1332	20	333
Grp Volume(v), veh/h	0	314	166	361	518	0				339	0	0
Grp Sat Flow(s),veh/h/ln	0	1648	1692	1725	1811	0				1685	0	0
Q Serve(g_s), s	0.0	4.5	4.7	10.6	10.5	0.0				9.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.5	4.7	10.6	10.5	0.0				9.4	0.0	0.0
Prop In Lane	0.00		0.39	1.00		0.00				0.79		0.20
Lane Grp Cap(c), veh/h	0	624	320	414	914	0				496	0	0
V/C Ratio(X)	0.00	0.50	0.52	0.87	0.57	0.00				0.68	0.00	0.00
Avail Cap(c_a), veh/h	0	2185	1121	653	1200	0				1595	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	19.2	19.2	19.3	9.1	0.0				16.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	1.2	4.9	0.5	0.0				3.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	1.8	4.0	2.8	0.0				3.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	19.7	20.4	24.2	9.6	0.0				20.0	0.0	0.0
LnGrp LOS	A	B	C	C	A	A				C	A	A
Approach Vol, veh/h		480			879						339	
Approach Delay, s/veh		20.0			15.6						20.0	
Approach LOS		B			B						C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	16.7	14.6		21.5		31.3						
Change Period (Y+Rc), s	4.0	4.6		6.0		4.6						
Max Green Setting (Gmax), s	20.0	35.0		50.0		35.0						
Max Q Clear Time (g_c+I1), s	12.6	6.7		11.4		12.5						
Green Ext Time (p_c), s	0.1	3.0		4.3		2.7						

Intersection Summary												
HCM 6th Ctrl Delay			17.7									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	602	0	0	708	325	127	4	190	0	0	0
Future Volume (veh/h)	47	602	0	0	708	325	127	4	190	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1811	1811	0	0	1811	1811	1811	1811	1811			
Adj Flow Rate, veh/h	49	634	0	0	745	342	134	4	200			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	6	6	0	0	6	6	6	6	6			
Cap, veh/h	81	1816	0	0	948	435	187	6	279			
Arrive On Green	0.05	0.53	0.00	0.00	0.41	0.41	0.29	0.29	0.29			
Sat Flow, veh/h	1725	3532	0	0	2382	1051	637	19	951			
Grp Volume(v), veh/h	49	634	0	0	559	528	338	0	0			
Grp Sat Flow(s),veh/h/ln	1725	1721	0	0	1721	1622	1608	0	0			
Q Serve(g_s), s	1.7	6.3	0.0	0.0	16.7	16.8	11.2	0.0	0.0			
Cycle Q Clear(g_c), s	1.7	6.3	0.0	0.0	16.7	16.8	11.2	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.65	0.40		0.59			
Lane Grp Cap(c), veh/h	81	1816	0	0	711	671	472	0	0			
V/C Ratio(X)	0.61	0.35	0.00	0.00	0.79	0.79	0.72	0.00	0.00			
Avail Cap(c_a), veh/h	582	2031	0	0	1015	957	1356	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	27.7	8.1	0.0	0.0	15.1	15.1	18.7	0.0	0.0			
Incr Delay (d2), s/veh	2.7	0.1	0.0	0.0	2.5	2.7	4.3	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.7	1.7	0.0	0.0	5.5	5.3	4.0	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	8.2	0.0	0.0	17.6	17.8	23.0	0.0	0.0			
LnGrp LOS	C	A	A	A	B	B	C	A	A			
Approach Vol, veh/h		683			1087			338				
Approach Delay, s/veh		9.8			17.7			23.0				
Approach LOS		A			B			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		35.9			6.8	29.1		23.4				
Change Period (Y+Rc), s		4.6			4.0	4.6		6.0				
Max Green Setting (Gmax), s		35.0			20.0	35.0		50.0				
Max Q Clear Time (g_c+I1), s		8.3			3.7	18.8		13.2				
Green Ext Time (p_c), s		3.8			0.0	5.7		4.3				
Intersection Summary												
HCM 6th Ctrl Delay			16.0									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	355	6	22	431	8	8	0	3	0	0	1
Future Vol, veh/h	10	355	6	22	431	8	8	0	3	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9
Mvmt Flow	11	386	7	24	468	9	9	0	3	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	477	0	0	393	0	0	694	937	197	736	936	239
Stage 1	-	-	-	-	-	-	412	412	-	521	521	-
Stage 2	-	-	-	-	-	-	282	525	-	215	415	-
Critical Hdwy	4.28	-	-	4.28	-	-	7.68	6.68	7.08	7.68	6.68	7.08
Critical Hdwy Stg 1	-	-	-	-	-	-	6.68	5.68	-	6.68	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.68	5.68	-	6.68	5.68	-
Follow-up Hdwy	2.29	-	-	2.29	-	-	3.59	4.09	3.39	3.59	4.09	3.39
Pot Cap-1 Maneuver	1034	-	-	1114	-	-	316	251	790	294	252	741
Stage 1	-	-	-	-	-	-	569	575	-	489	513	-
Stage 2	-	-	-	-	-	-	682	510	-	748	574	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1034	-	-	1114	-	-	308	243	790	286	244	741
Mov Cap-2 Maneuver	-	-	-	-	-	-	308	243	-	286	244	-
Stage 1	-	-	-	-	-	-	563	569	-	484	502	-
Stage 2	-	-	-	-	-	-	666	499	-	737	568	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.4	15.1	9.9
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	369	1034	-	-	1114	-	-	741
HCM Lane V/C Ratio	0.032	0.011	-	-	0.021	-	-	0.001
HCM Control Delay (s)	15.1	8.5	-	-	8.3	-	-	9.9
HCM Lane LOS	C	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	593	67	63	427	48	62	0	281	28	209	195
Future Volume (veh/h)	0	593	67	63	427	48	62	0	281	28	209	195
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	0	618	70	66	445	50	65	0	293	29	218	203
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	0	1284	442	202	1542	688	0	581	456	57	514	455
Arrive On Green	0.00	0.29	0.29	0.06	0.45	0.45	0.00	0.00	0.17	0.03	0.30	0.30
Sat Flow, veh/h	0	4781	1535	3346	3441	1535	0	3441	2701	1725	1727	1530
Grp Volume(v), veh/h	0	618	70	66	445	50	0	0	293	29	217	204
Grp Sat Flow(s),veh/h/ln	0	1485	1535	1673	1721	1535	0	1721	1351	1725	1721	1536
Q Serve(g_s), s	0.0	5.6	1.7	0.9	4.0	0.9	0.0	0.0	5.0	0.8	5.0	5.3
Cycle Q Clear(g_c), s	0.0	5.6	1.7	0.9	4.0	0.9	0.0	0.0	5.0	0.8	5.0	5.3
Prop In Lane	0.00		1.00	1.00		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	1284	442	202	1542	688	0	581	456	57	512	457
V/C Ratio(X)	0.00	0.48	0.16	0.33	0.29	0.07	0.00	0.00	0.64	0.51	0.42	0.45
Avail Cap(c_a), veh/h	0	4529	1560	1020	3498	1560	0	2099	1648	526	1049	937
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	14.5	13.1	22.1	8.6	7.7	0.0	0.0	19.1	23.4	13.9	14.0
Incr Delay (d2), s/veh	0.0	0.4	0.2	1.0	0.1	0.1	0.0	0.0	2.0	7.6	0.8	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.5	0.5	0.4	1.2	0.2	0.0	0.0	1.4	0.4	1.6	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	14.9	13.3	23.2	8.7	7.8	0.0	0.0	21.0	30.9	14.7	15.0
LnGrp LOS	A	B	B	C	A	A	A	A	C	C	B	B
Approach Vol, veh/h		688			561			293			450	
Approach Delay, s/veh		14.7			10.4			21.0			15.9	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	7.9	20.2	0.0	21.1		28.0	6.3	14.8				
Change Period (Y+Rc), s	4.9	* 6	* 4.7	6.5		6.0	* 4.7	* 6.5				
Max Green Setting (Gmax), s	15.0	* 50	* 15	30.0		50.0	* 15	* 30				
Max Q Clear Time (g_c+I1), s	2.9	7.6	0.0	7.3		6.0	2.8	7.0				
Green Ext Time (p_c), s	0.1	6.5	0.0	3.4		4.9	0.0	1.5				

Intersection Summary			
HCM 6th Ctrl Delay		14.7	
HCM 6th LOS		B	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	159	410	54	218	320	24
Future Volume (veh/h)	159	410	54	218	320	24
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	167	432	57	229	337	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	7	7	7	7	7
Cap, veh/h	1109	495	102	1680	696	319
Arrive On Green	0.32	0.32	0.06	0.49	0.21	0.21
Sat Flow, veh/h	3503	1522	1711	3503	3319	1522
Grp Volume(v), veh/h	167	432	57	229	337	25
Grp Sat Flow(s),veh/h/ln	1706	1522	1711	1706	1659	1522
Q Serve(g_s), s	1.3	10.0	1.2	1.4	3.3	0.5
Cycle Q Clear(g_c), s	1.3	10.0	1.2	1.4	3.3	0.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1109	495	102	1680	696	319
V/C Ratio(X)	0.15	0.87	0.56	0.14	0.48	0.08
Avail Cap(c_a), veh/h	2291	1022	689	2291	1783	818
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.9	11.8	17.0	5.1	12.9	11.8
Incr Delay (d2), s/veh	0.0	1.9	1.8	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.3	0.4	0.2	1.0	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.9	13.8	18.8	5.2	13.1	11.9
LnGrp LOS	A	B	B	A	B	B
Approach Vol, veh/h	599			286	362	
Approach Delay, s/veh	12.4			7.9	13.0	
Approach LOS	B			A	B	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.2	18.3			24.5	12.7
Change Period (Y+Rc), s	4.0	* 6.2			6.2	4.9
Max Green Setting (Gmax), s	15.0	* 25			25.0	20.0
Max Q Clear Time (g_c+I1), s	3.3	12.0			3.4	5.3
Green Ext Time (p_c), s	0.0	0.1			0.2	0.2

Intersection Summary		
HCM 6th Ctrl Delay	11.6	
HCM 6th LOS	B	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

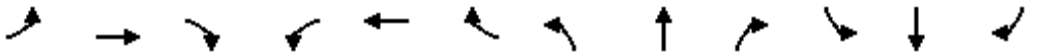
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	370	14	0	440	0	1
Future Vol, veh/h	370	14	0	440	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	402	15	0	478	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	209
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.36
Pot Cap-1 Maneuver	-	-	0	-	0	785
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	785
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	785	-	-	-
HCM Lane V/C Ratio	0.001	-	-	-
HCM Control Delay (s)	9.6	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	314	52	224	315	0	0	0	0	330	8	57
Future Volume (veh/h)	0	314	52	224	315	0	0	0	0	330	8	57
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1811	1811	1811	1811	0				1811	1811	1811
Adj Flow Rate, veh/h	0	331	55	236	332	0				347	8	60
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	6	6	6	6	0				6	6	6
Cap, veh/h	0	838	135	287	797	0				501	12	87
Arrive On Green	0.00	0.20	0.20	0.17	0.44	0.00				0.35	0.35	0.35
Sat Flow, veh/h	0	4453	692	1725	1811	0				1418	33	245
Grp Volume(v), veh/h	0	252	134	236	332	0				415	0	0
Grp Sat Flow(s),veh/h/ln	0	1648	1686	1725	1811	0				1696	0	0
Q Serve(g_s), s	0.0	3.4	3.6	6.8	6.4	0.0				10.7	0.0	0.0
Cycle Q Clear(g_c), s	0.0	3.4	3.6	6.8	6.4	0.0				10.7	0.0	0.0
Prop In Lane	0.00		0.41	1.00		0.00				0.84		0.14
Lane Grp Cap(c), veh/h	0	644	329	287	797	0				599	0	0
V/C Ratio(X)	0.00	0.39	0.41	0.82	0.42	0.00				0.69	0.00	0.00
Avail Cap(c_a), veh/h	0	2252	1152	673	1238	0				1656	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	18.0	18.0	20.6	9.8	0.0				14.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.7	2.2	0.3	0.0				3.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	1.3	2.4	1.8	0.0				3.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	18.3	18.7	22.9	10.2	0.0				17.3	0.0	0.0
LnGrp LOS	A	B	B	C	B	A				B	A	A
Approach Vol, veh/h		386			568						415	
Approach Delay, s/veh		18.5			15.4						17.3	
Approach LOS		B			B						B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	12.5	14.6		24.1		27.1						
Change Period (Y+Rc), s	4.0	4.6		6.0		4.6						
Max Green Setting (Gmax), s	20.0	35.0		50.0		35.0						
Max Q Clear Time (g_c+I1), s	8.8	5.6		12.7		8.4						
Green Ext Time (p_c), s	0.1	2.4		5.4		1.6						

Intersection Summary												
HCM 6th Ctrl Delay			16.8									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	600	0	0	478	333	61	7	391	0	0	0
Future Volume (veh/h)	44	600	0	0	478	333	61	7	391	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1811	1811	0	0	1811	1811	1811	1811	1811			
Adj Flow Rate, veh/h	46	632	0	0	503	351	64	7	412			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	6	6	0	0	6	6	6	6	6			
Cap, veh/h	75	1508	0	0	647	450	83	9	532			
Arrive On Green	0.04	0.44	0.00	0.00	0.33	0.33	0.40	0.40	0.40			
Sat Flow, veh/h	1725	3532	0	0	2029	1350	207	23	1332			
Grp Volume(v), veh/h	46	632	0	0	446	408	483	0	0			
Grp Sat Flow(s),veh/h/ln	1725	1721	0	0	1721	1568	1561	0	0			
Q Serve(g_s), s	1.7	8.3	0.0	0.0	15.2	15.3	17.6	0.0	0.0			
Cycle Q Clear(g_c), s	1.7	8.3	0.0	0.0	15.2	15.3	17.6	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.86	0.13		0.85			
Lane Grp Cap(c), veh/h	75	1508	0	0	574	523	624	0	0			
V/C Ratio(X)	0.62	0.42	0.00	0.00	0.78	0.78	0.77	0.00	0.00			
Avail Cap(c_a), veh/h	528	1845	0	0	922	841	1195	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	30.7	12.6	0.0	0.0	19.6	19.6	17.0	0.0	0.0			
Incr Delay (d2), s/veh	3.0	0.2	0.0	0.0	2.1	2.3	4.4	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.7	2.6	0.0	0.0	5.5	5.0	5.9	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	12.8	0.0	0.0	21.7	21.9	21.4	0.0	0.0			
LnGrp LOS	C	B	A	A	C	C	C	A	A			
Approach Vol, veh/h		678			854			483				
Approach Delay, s/veh		14.2			21.8			21.4				
Approach LOS		B			C			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		33.2			6.8	26.4		32.1				
Change Period (Y+Rc), s		4.6			4.0	4.6		6.0				
Max Green Setting (Gmax), s		35.0			20.0	35.0		50.0				
Max Q Clear Time (g_c+I1), s		10.3			3.7	17.3		19.6				
Green Ext Time (p_c), s		3.7			0.0	4.5		6.5				
Intersection Summary												
HCM 6th Ctrl Delay			19.2									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	706	1	7	488	0	14	0	11	0	0	0
Future Vol, veh/h	0	706	1	7	488	0	14	0	11	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9
Mvmt Flow	0	767	1	8	530	0	15	0	12	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	530	0	0	768	0	0	1049	1314	384	930	1314	265
Stage 1	-	-	-	-	-	-	768	768	-	546	546	-
Stage 2	-	-	-	-	-	-	281	546	-	384	768	-
Critical Hdwy	4.28	-	-	4.28	-	-	7.68	6.68	7.08	7.68	6.68	7.08
Critical Hdwy Stg 1	-	-	-	-	-	-	6.68	5.68	-	6.68	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.68	5.68	-	6.68	5.68	-
Follow-up Hdwy	2.29	-	-	2.29	-	-	3.59	4.09	3.39	3.59	4.09	3.39
Pot Cap-1 Maneuver	986	-	-	797	-	-	173	148	595	212	148	713
Stage 1	-	-	-	-	-	-	345	393	-	472	499	-
Stage 2	-	-	-	-	-	-	683	499	-	592	393	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	986	-	-	797	-	-	172	147	595	206	147	713
Mov Cap-2 Maneuver	-	-	-	-	-	-	172	147	-	206	147	-
Stage 1	-	-	-	-	-	-	345	393	-	472	494	-
Stage 2	-	-	-	-	-	-	676	494	-	580	393	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	21.1	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	250	986	-	-	797	-	-	-
HCM Lane V/C Ratio	0.109	-	-	-	0.01	-	-	-
HCM Control Delay (s)	21.1	0	-	-	9.6	-	-	0
HCM Lane LOS	C	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	714	105	83	505	40	125	0	365	84	311	293
Future Volume (veh/h)	0	714	105	83	505	40	125	0	365	84	311	293
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	0	744	109	86	526	42	130	0	380	88	324	305
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	0	1376	474	212	1560	696	0	675	530	114	585	522
Arrive On Green	0.00	0.31	0.31	0.06	0.45	0.45	0.00	0.00	0.20	0.07	0.34	0.34
Sat Flow, veh/h	0	4781	1535	3346	3441	1535	0	3441	2701	1725	1721	1535
Grp Volume(v), veh/h	0	744	109	86	526	42	0	0	380	88	324	305
Grp Sat Flow(s),veh/h/ln	0	1485	1535	1673	1721	1535	0	1721	1351	1725	1721	1535
Q Serve(g_s), s	0.0	8.4	3.2	1.5	6.0	0.9	0.0	0.0	8.0	3.0	9.3	9.9
Cycle Q Clear(g_c), s	0.0	8.4	3.2	1.5	6.0	0.9	0.0	0.0	8.0	3.0	9.3	9.9
Prop In Lane	0.00		1.00	1.00		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	1376	474	212	1560	696	0	675	530	114	585	522
V/C Ratio(X)	0.00	0.54	0.23	0.41	0.34	0.06	0.00	0.00	0.72	0.77	0.55	0.58
Avail Cap(c_a), veh/h	0	3687	1270	831	2847	1270	0	1708	1341	428	854	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	17.3	15.5	27.2	10.7	9.3	0.0	0.0	22.7	27.8	16.2	16.4
Incr Delay (d2), s/veh	0.0	0.5	0.3	1.4	0.2	0.0	0.0	0.0	2.4	11.8	1.2	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.4	1.0	0.6	2.0	0.3	0.0	0.0	2.4	1.5	3.2	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.8	15.9	28.6	10.8	9.3	0.0	0.0	25.1	39.5	17.4	18.0
LnGrp LOS	A	B	B	C	B	A	A	A	C	D	B	B
Approach Vol, veh/h		853			654			380			717	
Approach Delay, s/veh		17.5			13.1			25.1			20.4	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	8.7	24.7	0.0	27.0		33.4	8.7	18.4				
Change Period (Y+Rc), s	4.9	* 6	* 4.7	6.5		6.0	* 4.7	* 6.5				
Max Green Setting (Gmax), s	15.0	* 50	* 15	30.0		50.0	* 15	* 30				
Max Q Clear Time (g_c+I1), s	3.5	10.4	0.0	11.9		8.0	5.0	10.0				
Green Ext Time (p_c), s	0.2	8.3	0.0	5.0		5.9	0.1	1.9				

Intersection Summary												
HCM 6th Ctrl Delay			18.3									
HCM 6th LOS			B									

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	326	454	56	251	377	43
Future Volume (veh/h)	326	454	56	251	377	43
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	343	478	59	264	397	45
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	7	7	7	7	7
Cap, veh/h	1207	538	103	1760	670	307
Arrive On Green	0.35	0.35	0.06	0.52	0.20	0.20
Sat Flow, veh/h	3503	1522	1711	3503	3319	1522
Grp Volume(v), veh/h	343	478	59	264	397	45
Grp Sat Flow(s),veh/h/ln	1706	1522	1711	1706	1659	1522
Q Serve(g_s), s	2.8	11.6	1.3	1.6	4.3	1.0
Cycle Q Clear(g_c), s	2.8	11.6	1.3	1.6	4.3	1.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1207	538	103	1760	670	307
V/C Ratio(X)	0.28	0.89	0.57	0.15	0.59	0.15
Avail Cap(c_a), veh/h	2170	968	653	2170	1688	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.1	12.0	18.0	5.0	14.2	12.9
Incr Delay (d2), s/veh	0.0	2.0	1.8	0.0	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.7	0.5	0.2	1.3	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.2	14.0	19.8	5.0	14.5	13.0
LnGrp LOS	A	B	B	A	B	B
Approach Vol, veh/h	821			323	442	
Approach Delay, s/veh	12.0			7.7	14.4	
Approach LOS	B			A	B	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.4	20.1			26.5	12.8
Change Period (Y+Rc), s	4.0	* 6.2			6.2	4.9
Max Green Setting (Gmax), s	15.0	* 25			25.0	20.0
Max Q Clear Time (g_c+I1), s	3.3	13.6			3.6	6.3
Green Ext Time (p_c), s	0.0	0.3			0.3	0.3

Intersection Summary		
HCM 6th Ctrl Delay	11.8	
HCM 6th LOS	B	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

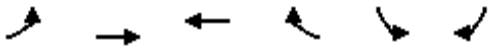
Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	699	6	0	502	0	8
Future Vol, veh/h	699	6	0	502	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	760	7	0	546	0	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	384
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.36
Pot Cap-1 Maneuver	-	-	0	-	0	603
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	603
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	603	-	-	-
HCM Lane V/C Ratio	0.014	-	-	-
HCM Control Delay (s)	11.1	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	3630	2710	350	260	990
Future Volume (vph)	0	3630	2710	350	260	990
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.6	6.0	6.0
Lane Util. Factor		0.91	0.86	0.86	0.97	0.88
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		4893	4616	1310	3303	2682
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		4893	4616	1310	3303	2682
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	3821	2853	368	274	1042
RTOR Reduction (vph)	0	0	1	81	0	1
Lane Group Flow (vph)	0	3821	2889	250	274	1041
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%
Turn Type		NA	NA	Perm	Prot	custom
Protected Phases		2	6		7	5 7
Permitted Phases				6		
Actuated Green, G (s)		127.4	85.4	85.4	12.0	54.0
Effective Green, g (s)		127.4	85.4	85.4	12.0	54.0
Actuated g/C Ratio		0.85	0.57	0.57	0.08	0.36
Clearance Time (s)		4.6	4.6	4.6	6.0	
Vehicle Extension (s)		2.8	2.8	2.8	5.0	
Lane Grp Cap (vph)		4155	2628	745	264	965
v/s Ratio Prot		0.78	c0.63		0.08	c0.39
v/s Ratio Perm				0.19		
v/c Ratio		0.92	1.10	0.34	1.04	1.08
Uniform Delay, d1		7.8	32.3	17.2	69.0	48.0
Progression Factor		1.00	0.75	0.75	1.00	1.00
Incremental Delay, d2		4.4	45.4	0.1	65.6	52.5
Delay (s)		12.2	69.8	13.0	134.6	100.5
Level of Service		B	E	B	F	F
Approach Delay (s)		12.2	63.9		107.6	
Approach LOS		B	E		F	

Intersection Summary			
HCM 2000 Control Delay	47.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	420	1960	0	0	1640	770	1420	5	230	0	0	0
Future Volume (veh/h)	420	1960	0	0	1640	770	1420	5	230	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1811	1811	0	0	1811	1811	1811	1811	1811			
Adj Flow Rate, veh/h	442	2063	0	0	1726	554	1499	0	210			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	6	6	0	0	6	6	6	6	6			
Cap, veh/h	665	2381	0	0	1676	710	1320	0	1175			
Arrive On Green	0.40	1.00	0.00	0.00	0.46	0.46	0.38	0.00	0.38			
Sat Flow, veh/h	3346	3532	0	0	3622	1535	3450	0	3070			
Grp Volume(v), veh/h	442	2063	0	0	1726	554	1499	0	210			
Grp Sat Flow(s),veh/h/ln	1673	1721	0	0	1811	1535	1725	0	1535			
Q Serve(g_s), s	16.2	0.0	0.0	0.0	69.4	45.5	57.4	0.0	6.8			
Cycle Q Clear(g_c), s	16.2	0.0	0.0	0.0	69.4	45.5	57.4	0.0	6.8			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	665	2381	0	0	1676	710	1320	0	1175			
V/C Ratio(X)	0.66	0.87	0.00	0.00	1.03	0.78	1.14	0.00	0.18			
Avail Cap(c_a), veh/h	665	2381	0	0	1676	710	1320	0	1175			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	41.1	0.0	0.0	0.0	40.3	33.9	46.3	0.0	30.7			
Incr Delay (d2), s/veh	2.0	4.6	0.0	0.0	30.0	8.3	70.8	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.7	1.5	0.0	0.0	36.3	17.9	36.7	0.0	2.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.1	4.6	0.0	0.0	70.3	42.2	117.1	0.0	30.7			
LnGrp LOS	D	A	A	A	F	D	F	A	C			
Approach Vol, veh/h		2505			2280			1709				
Approach Delay, s/veh		11.4			63.5			106.5				
Approach LOS		B			E			F				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		109.0			35.0	74.0		62.0				
Change Period (Y+Rc), s		4.6			4.6	* 4.6		4.6				
Max Green Setting (Gmax), s		83.4			10.0	* 69		57.4				
Max Q Clear Time (g_c+I1), s		2.0			18.2	71.4		59.4				
Green Ext Time (p_c), s		30.6			0.0	0.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	54.7
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	30.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	1280	105	120	1520	20	25	0	30	5	0	5
Future Vol, veh/h	20	1280	105	120	1520	20	25	0	30	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9
Mvmt Flow	22	1391	114	130	1652	22	27	0	33	5	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1674	0	0	1505	0	0	2578	3426	753	2663	3472	837
Stage 1	-	-	-	-	-	-	1492	1492	-	1923	1923	-
Stage 2	-	-	-	-	-	-	1086	1934	-	740	1549	-
Critical Hdwy	4.28	-	-	4.28	-	-	7.68	6.68	7.08	7.68	6.68	7.08
Critical Hdwy Stg 1	-	-	-	-	-	-	6.68	5.68	-	6.68	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.68	5.68	-	6.68	5.68	-
Follow-up Hdwy	2.29	-	-	2.29	-	-	3.59	4.09	3.39	3.59	4.09	3.39
Pot Cap-1 Maneuver	349	-	-	408	-	-	~ 11	6	337	10	6	296
Stage 1	-	-	-	-	-	-	121	174	-	64	104	-
Stage 2	-	-	-	-	-	-	219	103	-	359	162	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	349	-	-	408	-	-	~ 8	4	337	6	4	296
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 8	4	-	6	4	-
Stage 1	-	-	-	-	-	-	113	163	-	60	71	-
Stage 2	-	-	-	-	-	-	146	70	-	304	152	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.3	$ 1592.8	$ 634.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	17	349	-	-	408	-	-	12
HCM Lane V/C Ratio	3.517	0.062	-	-	0.32	-	-	0.906
HCM Control Delay (s)	$ 1592.8	16	-	-	17.9	-	-	$ 634.1
HCM Lane LOS	F	C	-	-	C	-	-	F
HCM 95th %tile Q(veh)	8.1	0.2	-	-	1.4	-	-	1.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	990	170	130	1020	50	120	0	290	40	390	360
Future Volume (veh/h)	0	990	170	130	1020	50	120	0	290	40	390	360
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	0	1031	58	135	1062	23	125	0	100	42	406	350
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	0	2357	812	186	2141	955	0	180	142	324	495	423
Arrive On Green	0.00	0.53	0.53	0.06	0.62	0.62	0.00	0.00	0.05	0.19	0.28	0.28
Sat Flow, veh/h	0	4781	1535	3346	3441	1535	0	3441	2701	1725	1757	1504
Grp Volume(v), veh/h	0	1031	58	135	1062	23	0	0	100	42	397	359
Grp Sat Flow(s),veh/h/ln	0	1485	1535	1673	1721	1535	0	1721	1351	1725	1721	1540
Q Serve(g_s), s	0.0	18.4	2.4	5.2	21.9	0.7	0.0	0.0	4.1	2.6	28.1	28.3
Cycle Q Clear(g_c), s	0.0	18.4	2.4	5.2	21.9	0.7	0.0	0.0	4.1	2.6	28.1	28.3
Prop In Lane	0.00		1.00	1.00		1.00	0.00		1.00	1.00		0.98
Lane Grp Cap(c), veh/h	0	2357	812	186	2141	955	0	180	142	324	485	434
V/C Ratio(X)	0.00	0.44	0.07	0.73	0.50	0.02	0.00	0.00	0.71	0.13	0.82	0.83
Avail Cap(c_a), veh/h	0	2357	812	260	2141	955	0	1236	970	324	655	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	18.8	15.0	60.4	13.4	9.4	0.0	0.0	44.6	44.0	43.6	43.7
Incr Delay (d2), s/veh	0.0	0.6	0.2	6.7	0.8	0.0	0.0	0.0	8.0	0.2	7.2	8.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.1	0.8	2.4	8.5	0.2	0.0	0.0	1.7	1.1	12.5	11.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	19.4	15.2	67.1	14.2	9.5	0.0	0.0	52.6	44.2	50.9	52.1
LnGrp LOS	A	B	B	E	B	A	A	A	D	D	D	D
Approach Vol, veh/h		1089			1220			100			798	
Approach Delay, s/veh		19.1			20.0			52.6			51.1	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	12.1	74.8	0.0	43.1		86.9	30.9	12.2				
Change Period (Y+Rc), s	4.9	* 6	* 4.7	6.5		6.0	6.5	* 5.4				
Max Green Setting (Gmax), s	10.1	* 44	* 5	49.5		58.3	8.9	* 47				
Max Q Clear Time (g_c+I1), s	7.2	20.4	0.0	30.3		23.9	4.6	6.1				
Green Ext Time (p_c), s	0.1	9.7	0.0	6.3		13.3	0.0	0.5				

Intersection Summary												
HCM 6th Ctrl Delay			28.5									
HCM 6th LOS			C									

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



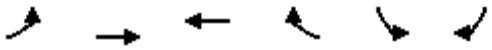
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	250	650	60	290	910	40
Future Volume (veh/h)	250	650	60	290	910	40
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	263	243	63	305	958	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	7	7	7	7	7
Cap, veh/h	642	286	405	1754	1047	480
Arrive On Green	0.19	0.19	0.24	0.51	0.32	0.32
Sat Flow, veh/h	3503	1522	1711	3503	3319	1522
Grp Volume(v), veh/h	263	243	63	305	958	13
Grp Sat Flow(s),veh/h/ln	1706	1522	1711	1706	1659	1522
Q Serve(g_s), s	4.4	10.0	1.9	3.1	18.1	0.4
Cycle Q Clear(g_c), s	4.4	10.0	1.9	3.1	18.1	0.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	642	286	405	1754	1047	480
V/C Ratio(X)	0.41	0.85	0.16	0.17	0.92	0.03
Avail Cap(c_a), veh/h	1134	506	405	1754	1185	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	25.5	19.7	8.4	21.4	15.4
Incr Delay (d2), s/veh	1.9	25.6	0.1	0.2	9.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	5.2	0.7	0.9	7.8	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.1	51.1	19.7	8.7	31.0	15.4
LnGrp LOS	C	D	B	A	C	B
Approach Vol, veh/h	506			368	971	
Approach Delay, s/veh	37.6			10.5	30.8	
Approach LOS	D			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	31.6	18.0				39.6	25.4
Change Period (Y+Rc), s	6.2	* 5.8				6.2	4.9
Max Green Setting (Gmax), s	25.5	* 22				30.7	23.2
Max Q Clear Time (g_c+I1), s	13.9	12.0				5.1	20.1
Green Ext Time (p_c), s	0.0	0.2				0.3	0.4

Intersection Summary	
HCM 6th Ctrl Delay	28.6
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	4500	2780	230	330	810
Future Volume (vph)	0	4500	2780	230	330	810
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.6	6.0	4.5
Lane Util. Factor		0.91	0.86	0.86	0.97	0.88
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		4893	4619	1310	3303	2682
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		4893	4619	1310	3303	2682
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	4737	2926	242	347	853
RTOR Reduction (vph)	0	0	0	51	0	2
Lane Group Flow (vph)	0	4737	2950	167	347	851
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%
Turn Type		NA	NA	Perm	Prot	custom
Protected Phases		2	6		7	5 7
Permitted Phases				6		
Actuated Green, G (s)		126.4	95.4	95.4	13.0	44.0
Effective Green, g (s)		126.4	95.4	95.4	13.0	44.0
Actuated g/C Ratio		0.84	0.64	0.64	0.09	0.29
Clearance Time (s)		4.6	4.6	4.6	6.0	
Vehicle Extension (s)		2.8	2.8	2.8	5.0	
Lane Grp Cap (vph)		4123	2937	833	286	786
v/s Ratio Prot		c0.97	0.64		0.11	c0.32
v/s Ratio Perm				0.13		
v/c Ratio		1.15	1.00	0.20	1.21	1.08
Uniform Delay, d1		11.8	27.3	11.4	68.5	53.0
Progression Factor		1.00	0.73	0.61	1.00	1.00
Incremental Delay, d2		70.2	6.1	0.0	123.7	56.8
Delay (s)		82.0	26.0	7.0	192.2	109.8
Level of Service		F	C	A	F	F
Approach Delay (s)		82.0	24.7		133.6	
Approach LOS		F	C		F	

Intersection Summary			
HCM 2000 Control Delay	68.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	105.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	430	2620	0	0	1830	490	1180	10	390	0	0	0
Future Volume (veh/h)	430	2620	0	0	1830	490	1180	10	390	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1811	1811	0	0	1811	1811	1811	1811	1811			
Adj Flow Rate, veh/h	453	2758	0	0	1926	392	1250	0	378			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	6	6	0	0	6	6	6	6	6			
Cap, veh/h	642	2611	0	0	1941	823	1090	0	970			
Arrive On Green	0.38	1.00	0.00	0.00	0.54	0.54	0.32	0.00	0.32			
Sat Flow, veh/h	3346	3532	0	0	3622	1535	3450	0	3070			
Grp Volume(v), veh/h	453	2758	0	0	1926	392	1250	0	378			
Grp Sat Flow(s),veh/h/ln	1673	1721	0	0	1811	1535	1725	0	1535			
Q Serve(g_s), s	17.2	0.0	0.0	0.0	79.0	23.9	47.4	0.0	14.4			
Cycle Q Clear(g_c), s	17.2	0.0	0.0	0.0	79.0	23.9	47.4	0.0	14.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	642	2611	0	0	1941	823	1090	0	970			
V/C Ratio(X)	0.71	1.06	0.00	0.00	0.99	0.48	1.15	0.00	0.39			
Avail Cap(c_a), veh/h	642	2611	0	0	1941	823	1090	0	970			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	42.6	0.0	0.0	0.0	34.5	21.7	51.3	0.0	40.0			
Incr Delay (d2), s/veh	3.0	34.8	0.0	0.0	18.6	2.0	77.1	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.1	12.6	0.0	0.0	37.4	8.7	31.5	0.0	5.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	34.8	0.0	0.0	53.1	23.7	128.4	0.0	40.1			
LnGrp LOS	D	F	A	A	D	C	F	A	D			
Approach Vol, veh/h		3211			2318			1628				
Approach Delay, s/veh		36.3			48.1			107.9				
Approach LOS		D			D			F				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		119.0			34.0	85.0		52.0				
Change Period (Y+Rc), s		4.6			4.6	* 4.6		4.6				
Max Green Setting (Gmax), s		93.4			9.0	* 80		47.4				
Max Q Clear Time (g_c+I1), s		2.0			19.2	81.0		49.4				
Green Ext Time (p_c), s		62.7			0.0	0.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	56.4
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	425.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1640	105	110	1420	5	80	0	90	5	0	5
Future Vol, veh/h	5	1640	105	110	1420	5	80	0	90	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9
Mvmt Flow	5	1783	114	120	1543	5	87	0	98	5	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1548	0	0	1897	0	0	2862	3638	949	2688	3693	774
Stage 1	-	-	-	-	-	-	1850	1850	-	1786	1786	-
Stage 2	-	-	-	-	-	-	1012	1788	-	902	1907	-
Critical Hdwy	4.28	-	-	4.28	-	-	7.68	6.68	7.08	7.68	6.68	7.08
Critical Hdwy Stg 1	-	-	-	-	-	-	6.68	5.68	-	6.68	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.68	5.68	-	6.68	5.68	-
Follow-up Hdwy	2.29	-	-	2.29	-	-	3.59	4.09	3.39	3.59	4.09	3.39
Pot Cap-1 Maneuver	392	-	-	284	-	-	~ 7	4	248	9	4	326
Stage 1	-	-	-	-	-	-	~ 71	114	-	78	123	-
Stage 2	-	-	-	-	-	-	244	123	-	285	106	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	392	-	-	284	-	-	~ 5	2	248	~ 4	2	326
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 5	2	-	~ 4	2	-
Stage 1	-	-	-	-	-	-	~ 70	113	-	77	71	-
Stage 2	-	-	-	-	-	-	139	71	-	170	105	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.9	$ 8594	$ 1066.4
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	10	392	-	-	284	-	-	8
HCM Lane V/C Ratio	18.478	0.014	-	-	0.421	-	-	1.359
HCM Control Delay (s)	$ 8594	14.3	-	-	26.6	-	-	$ 1066.4
HCM Lane LOS	F	B	-	-	D	-	-	F
HCM 95th %tile Q(veh)	24.7	0	-	-	2	-	-	2.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1210	130	90	1240	40	200	0	380	90	320	370
Future Volume (veh/h)	0	1210	130	90	1240	40	200	0	380	90	320	370
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	0	1260	46	94	1292	18	208	0	167	94	333	374
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	0	2389	823	140	2119	945	0	257	202	296	496	442
Arrive On Green	0.00	0.54	0.54	0.04	0.62	0.62	0.00	0.00	0.07	0.17	0.29	0.29
Sat Flow, veh/h	0	4781	1535	3346	3441	1535	0	3441	2701	1725	1721	1535
Grp Volume(v), veh/h	0	1260	46	94	1292	18	0	0	167	94	333	374
Grp Sat Flow(s),veh/h/ln	0	1485	1535	1673	1721	1535	0	1721	1351	1725	1721	1535
Q Serve(g_s), s	0.0	23.8	1.9	3.6	30.0	0.6	0.0	0.0	6.9	6.2	22.2	29.8
Cycle Q Clear(g_c), s	0.0	23.8	1.9	3.6	30.0	0.6	0.0	0.0	6.9	6.2	22.2	29.8
Prop In Lane	0.00		1.00	1.00		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	2389	823	140	2119	945	0	257	202	296	496	442
V/C Ratio(X)	0.00	0.53	0.06	0.67	0.61	0.02	0.00	0.00	0.83	0.32	0.67	0.85
Avail Cap(c_a), veh/h	0	2389	823	183	2119	945	0	1114	875	296	655	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	19.5	14.4	61.4	15.4	9.7	0.0	0.0	44.8	47.2	40.8	43.6
Incr Delay (d2), s/veh	0.0	0.8	0.1	6.6	1.3	0.0	0.0	0.0	10.4	0.7	2.4	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.9	0.7	1.7	11.8	0.2	0.0	0.0	2.9	2.7	9.5	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	20.3	14.5	68.0	16.7	9.7	0.0	0.0	55.2	47.8	43.3	53.5
LnGrp LOS	A	C	B	E	B	A	A	A	E	D	D	D
Approach Vol, veh/h		1306			1404			167			801	
Approach Delay, s/veh		20.1			20.0			55.2			48.6	
Approach LOS		C			C			E			D	

Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	10.3	75.7	0.0	44.0		86.0	28.8	15.1				
Change Period (Y+Rc), s	4.9	* 6	* 4.7	6.5		6.0	6.5	* 5.4				
Max Green Setting (Gmax), s	7.1	* 47	* 5	49.5		58.3	13.5	* 42				
Max Q Clear Time (g_c+I1), s	5.6	25.8	0.0	31.8		32.0	8.2	8.9				
Green Ext Time (p_c), s	0.0	11.2	0.0	5.6		14.7	0.1	0.9				

Intersection Summary			
HCM 6th Ctrl Delay		27.9	
HCM 6th LOS		C	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



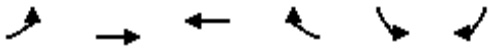
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	380	810	60	360	1010	50
Future Volume (veh/h)	380	810	60	360	1010	50
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	400	308	63	379	1063	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	7	7	7	7	7
Cap, veh/h	788	351	316	1722	1077	494
Arrive On Green	0.23	0.23	0.18	0.50	0.32	0.32
Sat Flow, veh/h	3503	1522	1711	3503	3319	1522
Grp Volume(v), veh/h	400	308	63	379	1063	15
Grp Sat Flow(s),veh/h/ln	1706	1522	1711	1706	1659	1522
Q Serve(g_s), s	6.6	12.7	2.0	4.0	20.7	0.4
Cycle Q Clear(g_c), s	6.6	12.7	2.0	4.0	20.7	0.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	788	351	316	1722	1077	494
V/C Ratio(X)	0.51	0.88	0.20	0.22	0.99	0.03
Avail Cap(c_a), veh/h	1244	555	316	1722	1077	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	24.1	22.4	9.0	21.8	15.0
Incr Delay (d2), s/veh	2.3	25.1	0.1	0.3	24.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	6.4	0.7	1.2	10.9	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.1	49.2	22.5	9.3	45.9	15.0
LnGrp LOS	C	D	C	A	D	B
Approach Vol, veh/h	708			442	1078	
Approach Delay, s/veh	35.0			11.2	45.5	
Approach LOS	D			B	D	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.2	20.8			39.0	26.0
Change Period (Y+Rc), s	6.2	* 5.8			6.2	4.9
Max Green Setting (Gmax), s	5.5	* 24			32.8	21.1
Max Q Clear Time (g_c+I1), s	14.0	14.7			6.0	22.7
Green Ext Time (p_c), s	0.0	0.3			0.4	0.0

Intersection Summary		
HCM 6th Ctrl Delay	35.3	
HCM 6th LOS	D	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	3576	2621	351	264	970
Future Volume (vph)	0	3576	2621	351	264	970
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.6	6.0	6.0
Lane Util. Factor		0.91	0.86	0.86	0.97	0.88
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		4893	4615	1310	3303	2682
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		4893	4615	1310	3303	2682
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	3764	2759	369	278	1021
RTOR Reduction (vph)	0	0	1	84	0	1
Lane Group Flow (vph)	0	3764	2795	248	278	1020
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%
Turn Type		NA	NA	Perm	Prot	custom
Protected Phases		2	6		7	5 7
Permitted Phases				6		
Actuated Green, G (s)		127.4	85.4	85.4	12.0	54.0
Effective Green, g (s)		127.4	85.4	85.4	12.0	54.0
Actuated g/C Ratio		0.85	0.57	0.57	0.08	0.36
Clearance Time (s)		4.6	4.6	4.6	6.0	
Vehicle Extension (s)		2.8	2.8	2.8	5.0	
Lane Grp Cap (vph)		4155	2627	745	264	965
v/s Ratio Prot		0.77	c0.61		0.08	c0.38
v/s Ratio Perm				0.19		
v/c Ratio		0.91	1.06	0.33	1.05	1.06
Uniform Delay, d1		7.4	32.3	17.2	69.0	48.0
Progression Factor		1.00	0.69	0.74	1.00	1.00
Incremental Delay, d2		3.8	29.8	0.1	70.0	45.2
Delay (s)		11.2	52.0	12.8	139.0	93.2
Level of Service		B	D	B	F	F
Approach Delay (s)		11.2	47.8		103.0	
Approach LOS		B	D		F	

Intersection Summary			
HCM 2000 Control Delay	39.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	2070	0	0	1852	490	1120	5	193	0	0	0
Future Volume (veh/h)	320	2070	0	0	1852	490	1120	5	193	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1811	1811	0	0	1811	1811	1811	1811	1811			
Adj Flow Rate, veh/h	337	2179	0	0	1949	259	1183	0	171			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	6	6	0	0	6	6	6	6	6			
Cap, veh/h	709	2634	0	0	1893	802	1067	0	950			
Arrive On Green	0.42	1.00	0.00	0.00	0.52	0.52	0.31	0.00	0.31			
Sat Flow, veh/h	3346	3532	0	0	3622	1535	3450	0	3070			
Grp Volume(v), veh/h	337	2179	0	0	1949	259	1183	0	171			
Grp Sat Flow(s),veh/h/ln	1673	1721	0	0	1811	1535	1725	0	1535			
Q Serve(g_s), s	10.9	0.0	0.0	0.0	78.4	14.5	46.4	0.0	6.1			
Cycle Q Clear(g_c), s	10.9	0.0	0.0	0.0	78.4	14.5	46.4	0.0	6.1			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	709	2634	0	0	1893	802	1067	0	950			
V/C Ratio(X)	0.48	0.83	0.00	0.00	1.03	0.32	1.11	0.00	0.18			
Avail Cap(c_a), veh/h	709	2634	0	0	1893	802	1067	0	950			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	37.2	0.0	0.0	0.0	35.8	20.6	51.8	0.0	37.9			
Incr Delay (d2), s/veh	0.2	3.1	0.0	0.0	28.6	1.1	62.4	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	8.9	1.2	0.0	0.0	39.9	5.3	28.7	0.0	2.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.4	3.1	0.0	0.0	64.4	21.6	114.2	0.0	37.9			
LnGrp LOS	D	A	A	A	F	C	F	A	D			
Approach Vol, veh/h		2516			2208			1354				
Approach Delay, s/veh		7.7			59.4			104.5				
Approach LOS		A			E			F				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		120.0			37.0	83.0		51.0				
Change Period (Y+Rc), s		4.6			4.6	* 4.6		4.6				
Max Green Setting (Gmax), s		94.4			12.0	* 78		46.4				
Max Q Clear Time (g_c+I1), s		2.0			12.9	80.4		48.4				
Green Ext Time (p_c), s		36.4			0.0	0.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	48.1
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	3.1

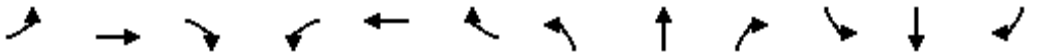
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	1331	5	23	1560	20	10	0	7	5	0	5
Future Vol, veh/h	20	1331	5	23	1560	20	10	0	7	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9
Mvmt Flow	22	1447	5	25	1696	22	11	0	8	5	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1718	0	0	1452	0	0	2392	3262	726	2525	3253	859
Stage 1	-	-	-	-	-	-	1494	1494	-	1757	1757	-
Stage 2	-	-	-	-	-	-	898	1768	-	768	1496	-
Critical Hdwy	4.28	-	-	4.28	-	-	7.68	6.68	7.08	7.68	6.68	7.08
Critical Hdwy Stg 1	-	-	-	-	-	-	6.68	5.68	-	6.68	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.68	5.68	-	6.68	5.68	-
Follow-up Hdwy	2.29	-	-	2.29	-	-	3.59	4.09	3.39	3.59	4.09	3.39
Pot Cap-1 Maneuver	335	-	-	429	-	-	16	8	352	13	8	286
Stage 1	-	-	-	-	-	-	121	173	-	82	127	-
Stage 2	-	-	-	-	-	-	287	125	-	345	173	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	335	-	-	429	-	-	14	7	352	12	7	286
Mov Cap-2 Maneuver	-	-	-	-	-	-	14	7	-	12	7	-
Stage 1	-	-	-	-	-	-	113	162	-	77	120	-
Stage 2	-	-	-	-	-	-	265	118	-	315	162	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	$ 359.2	260.5
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	23	335	-	-	429	-	-	23
HCM Lane V/C Ratio	0.803	0.065	-	-	0.058	-	-	0.473
HCM Control Delay (s)	$ 359.2	16.5	-	-	13.9	-	-	260.5
HCM Lane LOS	F	C	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2.4	0.2	-	-	0.2	-	-	1.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1015	180	130	1030	50	90	0	330	40	410	350
Future Volume (veh/h)	0	1015	180	130	1030	50	90	0	330	40	410	350
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	0	1057	69	135	1073	23	94	0	142	42	427	340
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	0	2345	808	186	2132	951	0	224	176	306	519	411
Arrive On Green	0.00	0.53	0.53	0.06	0.62	0.62	0.00	0.00	0.07	0.18	0.28	0.28
Sat Flow, veh/h	0	4781	1535	3346	3441	1535	0	3441	2701	1725	1826	1445
Grp Volume(v), veh/h	0	1057	69	135	1073	23	0	0	142	42	402	365
Grp Sat Flow(s),veh/h/ln	0	1485	1535	1673	1721	1535	0	1721	1351	1725	1721	1551
Q Serve(g_s), s	0.0	19.2	2.9	5.2	22.4	0.8	0.0	0.0	5.8	2.7	28.4	28.6
Cycle Q Clear(g_c), s	0.0	19.2	2.9	5.2	22.4	0.8	0.0	0.0	5.8	2.7	28.4	28.6
Prop In Lane	0.00		1.00	1.00		1.00	0.00		1.00	1.00		0.93
Lane Grp Cap(c), veh/h	0	2345	808	186	2132	951	0	224	176	306	489	441
V/C Ratio(X)	0.00	0.45	0.09	0.73	0.50	0.02	0.00	0.00	0.81	0.14	0.82	0.83
Avail Cap(c_a), veh/h	0	2345	808	260	2132	951	0	1236	970	306	655	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	19.1	15.3	60.4	13.7	9.5	0.0	0.0	43.9	45.1	43.5	43.5
Incr Delay (d2), s/veh	0.0	0.6	0.2	6.7	0.9	0.0	0.0	0.0	10.7	0.2	7.4	8.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.4	1.0	2.4	8.7	0.2	0.0	0.0	2.5	1.1	12.7	11.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	19.7	15.5	67.1	14.5	9.6	0.0	0.0	54.6	45.3	50.9	52.0
LnGrp LOS	A	B	B	E	B	A	A	A	D	D	D	D
Approach Vol, veh/h		1126			1231			142			809	
Approach Delay, s/veh		19.5			20.2			54.6			51.1	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	12.1	74.4	0.0	43.4		86.6	29.6	13.9				
Change Period (Y+Rc), s	4.9	* 6	* 4.7	6.5		6.0	6.5	* 5.4				
Max Green Setting (Gmax), s	10.1	* 44	* 5	49.5		58.3	8.9	* 47				
Max Q Clear Time (g_c+I1), s	7.2	21.2	0.0	30.6		24.4	4.7	7.8				
Green Ext Time (p_c), s	0.1	9.9	0.0	6.3		13.4	0.0	0.7				

Intersection Summary			
HCM 6th Ctrl Delay		29.0	
HCM 6th LOS		C	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	220	640	60	280	930	40
Future Volume (veh/h)	220	640	60	280	930	40
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	232	233	63	295	979	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	7	7	7	7	7
Cap, veh/h	619	276	406	1734	1066	489
Arrive On Green	0.18	0.18	0.24	0.51	0.32	0.32
Sat Flow, veh/h	3503	1522	1711	3503	3319	1522
Grp Volume(v), veh/h	232	233	63	295	979	13
Grp Sat Flow(s),veh/h/ln	1706	1522	1711	1706	1659	1522
Q Serve(g_s), s	3.9	9.6	1.9	3.0	18.5	0.4
Cycle Q Clear(g_c), s	3.9	9.6	1.9	3.0	18.5	0.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	619	276	406	1734	1066	489
V/C Ratio(X)	0.37	0.84	0.16	0.17	0.92	0.03
Avail Cap(c_a), veh/h	1134	506	406	1734	1185	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	25.7	19.6	8.6	21.2	15.1
Incr Delay (d2), s/veh	1.7	25.7	0.1	0.2	10.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	5.1	0.7	0.9	8.0	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.1	51.5	19.7	8.8	31.4	15.1
LnGrp LOS	C	D	B	A	C	B
Approach Vol, veh/h	465			358	992	
Approach Delay, s/veh	38.3			10.7	31.2	
Approach LOS	D			B	C	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	31.6	17.6			39.2	25.8
Change Period (Y+Rc), s	6.2	* 5.8			6.2	4.9
Max Green Setting (Gmax), s	25.5	* 22			30.7	23.2
Max Q Clear Time (g_c+I1), s	13.9	11.6			5.0	20.5
Green Ext Time (p_c), s	0.0	0.2			0.3	0.4

Intersection Summary		
HCM 6th Ctrl Delay	29.0	
HCM 6th LOS	C	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

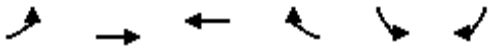
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1350	22	0	1575	0	6
Future Vol, veh/h	1350	22	0	1575	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	1467	24	0	1712	0	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	746
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.36
Pot Cap-1 Maneuver	-	-	0	-	0	347
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	347
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	347	-	-	-
HCM Lane V/C Ratio	0.019	-	-	-
HCM Control Delay (s)	15.6	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	4211	2773	223	302	740
Future Volume (vph)	0	4211	2773	223	302	740
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.6	6.0	4.5
Lane Util. Factor		0.91	0.86	0.86	0.97	0.88
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		4893	4619	1310	3303	2682
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		4893	4619	1310	3303	2682
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	4433	2919	235	318	779
RTOR Reduction (vph)	0	0	0	50	0	2
Lane Group Flow (vph)	0	4433	2943	161	318	777
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%
Turn Type		NA	NA	Perm	Prot	custom
Protected Phases		2	6		7	5 7
Permitted Phases				6		
Actuated Green, G (s)		126.4	95.4	95.4	13.0	44.0
Effective Green, g (s)		126.4	95.4	95.4	13.0	44.0
Actuated g/C Ratio		0.84	0.64	0.64	0.09	0.29
Clearance Time (s)		4.6	4.6	4.6	6.0	
Vehicle Extension (s)		2.8	2.8	2.8	5.0	
Lane Grp Cap (vph)		4123	2937	833	286	786
v/s Ratio Prot		c0.91	0.64		0.10	c0.29
v/s Ratio Perm				0.12		
v/c Ratio		1.08	1.00	0.19	1.11	0.99
Uniform Delay, d1		11.8	27.3	11.3	68.5	52.7
Progression Factor		1.00	0.75	0.75	1.00	1.00
Incremental Delay, d2		39.2	5.4	0.0	86.7	28.9
Delay (s)		51.0	26.0	8.6	155.2	81.6
Level of Service		D	C	A	F	F
Approach Delay (s)		51.0	24.9		103.0	
Approach LOS		D	C		F	

Intersection Summary			
HCM 2000 Control Delay	48.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.1
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	2333	0	0	1726	554	1270	10	392	0	0	0
Future Volume (veh/h)	370	2333	0	0	1726	554	1270	10	392	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1811	1811	0	0	1811	1811	1811	1811	1811			
Adj Flow Rate, veh/h	389	2456	0	0	1817	459	1345	0	380			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	6	6	0	0	6	6	6	6	6			
Cap, veh/h	732	2473	0	0	1700	720	1228	0	1093			
Arrive On Green	0.44	1.00	0.00	0.00	0.47	0.47	0.36	0.00	0.36			
Sat Flow, veh/h	3346	3532	0	0	3622	1535	3450	0	3070			
Grp Volume(v), veh/h	389	2456	0	0	1817	459	1345	0	380			
Grp Sat Flow(s),veh/h/ln	1673	1721	0	0	1811	1535	1725	0	1535			
Q Serve(g_s), s	12.8	0.0	0.0	0.0	70.4	34.0	53.4	0.0	13.6			
Cycle Q Clear(g_c), s	12.8	0.0	0.0	0.0	70.4	34.0	53.4	0.0	13.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	732	2473	0	0	1700	720	1228	0	1093			
V/C Ratio(X)	0.53	0.99	0.00	0.00	1.07	0.64	1.10	0.00	0.35			
Avail Cap(c_a), veh/h	732	2473	0	0	1700	720	1228	0	1093			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	36.6	0.0	0.0	0.0	39.8	30.1	48.3	0.0	35.5			
Incr Delay (d2), s/veh	0.4	16.6	0.0	0.0	42.9	4.3	55.8	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.5	5.7	0.0	0.0	39.8	13.0	31.7	0.0	5.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.0	16.6	0.0	0.0	82.7	34.4	104.1	0.0	35.6			
LnGrp LOS	D	B	A	A	F	C	F	A	D			
Approach Vol, veh/h		2845			2276			1725				
Approach Delay, s/veh		19.3			72.9			89.0				
Approach LOS		B			E			F				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		113.0			38.0	75.0		58.0				
Change Period (Y+Rc), s		4.6			4.6	* 4.6		4.6				
Max Green Setting (Gmax), s		87.4			13.0	* 70		53.4				
Max Q Clear Time (g_c+I1), s		2.0			14.8	72.4		55.4				
Green Ext Time (p_c), s		47.2			0.0	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	54.7	
HCM 6th LOS	D	

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	19.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1788	5	15	1565	5	20	0	13	5	0	5
Future Vol, veh/h	5	1788	5	15	1565	5	20	0	13	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9
Mvmt Flow	5	1943	5	16	1701	5	22	0	14	5	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1706	0	0	1948	0	0	2839	3694	974	2718	3694	853
Stage 1	-	-	-	-	-	-	1956	1956	-	1736	1736	-
Stage 2	-	-	-	-	-	-	883	1738	-	982	1958	-
Critical Hdwy	4.28	-	-	4.28	-	-	7.68	6.68	7.08	7.68	6.68	7.08
Critical Hdwy Stg 1	-	-	-	-	-	-	6.68	5.68	-	6.68	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.68	5.68	-	6.68	5.68	-
Follow-up Hdwy	2.29	-	-	2.29	-	-	3.59	4.09	3.39	3.59	4.09	3.39
Pot Cap-1 Maneuver	339	-	-	271	-	-	~ 7	4	239	9	4	289
Stage 1	-	-	-	-	-	-	60	100	-	84	130	-
Stage 2	-	-	-	-	-	-	293	130	-	254	100	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	339	-	-	271	-	-	~ 6	4	239	8	4	289
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 6	4	-	8	4	-
Stage 1	-	-	-	-	-	-	59	99	-	83	122	-
Stage 2	-	-	-	-	-	-	271	122	-	235	99	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	$ 1906.2	$ 429.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	10	339	-	-	271	-	-	16
HCM Lane V/C Ratio	3.587	0.016	-	-	0.06	-	-	0.679
HCM Control Delay (s)	$ 1906.2	15.8	-	-	19.1	-	-	$ 429.9
HCM Lane LOS	F	C	-	-	C	-	-	F
HCM 95th %tile Q(veh)	5.6	0	-	-	0.2	-	-	1.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1159	141	80	1148	45	200	0	420	90	320	362
Future Volume (veh/h)	0	1159	141	80	1148	45	200	0	420	90	320	362
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	0	1207	58	83	1196	23	208	0	209	94	333	366
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	0	2427	836	128	2135	952	0	310	244	261	487	435
Arrive On Green	0.00	0.54	0.54	0.04	0.62	0.62	0.00	0.00	0.09	0.15	0.28	0.28
Sat Flow, veh/h	0	4781	1535	3346	3441	1535	0	3441	2701	1725	1721	1535
Grp Volume(v), veh/h	0	1207	58	83	1196	23	0	0	209	94	333	366
Grp Sat Flow(s),veh/h/ln	0	1485	1535	1673	1721	1535	0	1721	1351	1725	1721	1535
Q Serve(g_s), s	0.0	22.0	2.3	3.2	26.3	0.8	0.0	0.0	8.6	6.4	22.4	29.2
Cycle Q Clear(g_c), s	0.0	22.0	2.3	3.2	26.3	0.8	0.0	0.0	8.6	6.4	22.4	29.2
Prop In Lane	0.00		1.00	1.00		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	2427	836	128	2135	952	0	310	244	261	487	435
V/C Ratio(X)	0.00	0.50	0.07	0.65	0.56	0.02	0.00	0.00	0.86	0.36	0.68	0.84
Avail Cap(c_a), veh/h	0	2427	836	183	2135	952	0	1114	875	261	655	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	18.5	14.0	61.7	14.3	9.5	0.0	0.0	44.2	49.5	41.4	43.8
Incr Delay (d2), s/veh	0.0	0.7	0.2	6.2	1.1	0.0	0.0	0.0	10.7	0.9	2.6	9.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.3	0.8	1.5	10.2	0.2	0.0	0.0	3.2	2.8	9.6	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	19.2	14.2	67.8	15.4	9.5	0.0	0.0	54.9	50.4	44.0	53.4
LnGrp LOS	A	B	B	E	B	A	A	A	D	D	D	D
Approach Vol, veh/h		1265			1302			209			793	
Approach Delay, s/veh		19.0			18.7			54.9			49.1	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	9.9	76.8	0.0	43.3		86.7	26.2	17.1				
Change Period (Y+Rc), s	4.9	* 6	* 4.7	6.5		6.0	6.5	* 5.4				
Max Green Setting (Gmax), s	7.1	* 47	* 5	49.5		58.3	13.5	* 42				
Max Q Clear Time (g_c+I1), s	5.2	24.0	0.0	31.2		28.3	8.4	10.6				
Green Ext Time (p_c), s	0.0	11.3	0.0	5.7		14.5	0.1	1.1				

Intersection Summary			
HCM 6th Ctrl Delay		27.7	
HCM 6th LOS		C	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	364	765	60	341	932	50
Future Volume (veh/h)	364	765	60	341	932	50
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	383	260	63	359	981	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	7	7	7	7	7
Cap, veh/h	684	305	379	1743	1057	485
Arrive On Green	0.20	0.20	0.22	0.51	0.32	0.32
Sat Flow, veh/h	3503	1522	1711	3503	3319	1522
Grp Volume(v), veh/h	383	260	63	359	981	15
Grp Sat Flow(s),veh/h/ln	1706	1522	1711	1706	1659	1522
Q Serve(g_s), s	6.6	10.7	1.9	3.7	18.6	0.4
Cycle Q Clear(g_c), s	6.6	10.7	1.9	3.7	18.6	0.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	684	305	379	1743	1057	485
V/C Ratio(X)	0.56	0.85	0.17	0.21	0.93	0.03
Avail Cap(c_a), veh/h	1244	555	379	1743	1077	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	25.1	20.5	8.7	21.4	15.2
Incr Delay (d2), s/veh	3.3	24.8	0.1	0.3	13.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	5.5	0.7	1.1	8.5	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.7	49.9	20.5	9.0	34.6	15.3
LnGrp LOS	C	D	C	A	C	B
Approach Vol, veh/h	643			422	996	
Approach Delay, s/veh	36.1			10.7	34.3	
Approach LOS	D			B	C	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	30.6	18.8			39.4	25.6
Change Period (Y+Rc), s	6.2	* 5.8			6.2	4.9
Max Green Setting (Gmax), s	25.5	* 24			32.8	21.1
Max Q Clear Time (g_c+I1), s	13.9	12.7			5.7	20.6
Green Ext Time (p_c), s	0.0	0.3			0.4	0.1

Intersection Summary		
HCM 6th Ctrl Delay	30.0	
HCM 6th LOS	C	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

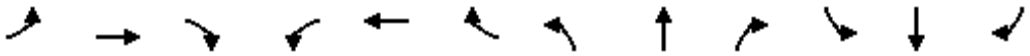
Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1785	17	0	1590	0	13
Future Vol, veh/h	1785	17	0	1590	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	1940	18	0	1728	0	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	979
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.36
Pot Cap-1 Maneuver	-	-	0	-	0	242
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	242
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.8
HCM LOS			C

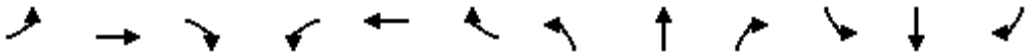
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	242	-	-	-
HCM Lane V/C Ratio	0.058	-	-	-
HCM Control Delay (s)	20.8	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	1280	105	120	1520	20	25	0	30	5	0	5
Future Volume (veh/h)	20	1280	105	120	1520	20	25	0	30	5	0	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	22	1391	114	130	1652	22	27	0	33	5	0	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	44	1764	144	164	2146	29	143	14	74	144	25	69
Arrive On Green	0.03	0.56	0.56	0.10	0.63	0.63	0.09	0.00	0.09	0.09	0.00	0.09
Sat Flow, veh/h	1682	3142	256	1682	3392	45	502	155	802	479	267	746
Grp Volume(v), veh/h	22	740	765	130	816	858	60	0	0	10	0	0
Grp Sat Flow(s),veh/h/ln	1682	1678	1720	1682	1678	1758	1459	0	0	1492	0	0
Q Serve(g_s), s	0.7	18.8	19.0	4.1	18.9	19.0	1.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	18.8	19.0	4.1	18.9	19.0	2.0	0.0	0.0	0.3	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.03	0.45		0.55	0.50		0.50
Lane Grp Cap(c), veh/h	44	942	966	164	1062	1113	231	0	0	237	0	0
V/C Ratio(X)	0.50	0.79	0.79	0.79	0.77	0.77	0.26	0.00	0.00	0.04	0.00	0.00
Avail Cap(c_a), veh/h	158	1198	1228	245	1284	1346	621	0	0	619	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	26.1	9.3	9.4	23.9	7.1	7.1	23.2	0.0	0.0	22.5	0.0	0.0
Incr Delay (d2), s/veh	8.7	2.7	2.8	10.0	2.4	2.3	0.6	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	4.7	4.9	1.9	3.8	4.0	0.7	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.7	12.1	12.2	34.0	9.5	9.4	23.8	0.0	0.0	22.6	0.0	0.0
LnGrp LOS	C	B	B	C	A	A	C	A	A	C	A	A
Approach Vol, veh/h		1527			1804			60			10	
Approach Delay, s/veh		12.5			11.2			23.8			22.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		9.5	9.8	34.9		9.5	5.9	38.8				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.9	7.9	38.7		19.9	5.1	41.5				
Max Q Clear Time (g_c+I1), s		4.0	6.1	21.0		2.3	2.7	21.0				
Green Ext Time (p_c), s		0.2	0.0	9.4		0.0	0.0	11.7				

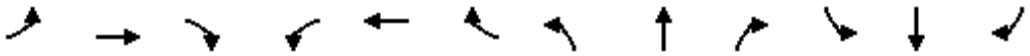
Intersection Summary												
HCM 6th Ctrl Delay			12.0									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1640	105	110	1420	5	80	0	90	5	0	5
Future Volume (veh/h)	5	1640	105	110	1420	5	80	0	90	5	0	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	5	1783	114	120	1543	5	87	0	98	5	0	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	11	1905	121	148	2319	8	156	13	118	153	19	107
Arrive On Green	0.01	0.59	0.59	0.09	0.68	0.68	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	1682	3205	203	1682	3432	11	593	82	761	567	125	692
Grp Volume(v), veh/h	5	925	972	120	754	794	185	0	0	10	0	0
Grp Sat Flow(s),veh/h/ln	1682	1678	1730	1682	1678	1765	1437	0	0	1384	0	0
Q Serve(g_s), s	0.2	41.3	43.1	5.8	21.9	22.0	8.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	41.3	43.1	5.8	21.9	22.0	10.3	0.0	0.0	0.4	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.01	0.47		0.53	0.50		0.50
Lane Grp Cap(c), veh/h	11	997	1028	148	1134	1193	286	0	0	279	0	0
V/C Ratio(X)	0.45	0.93	0.95	0.81	0.67	0.67	0.65	0.00	0.00	0.04	0.00	0.00
Avail Cap(c_a), veh/h	101	1012	1044	152	1134	1193	392	0	0	380	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.0	15.2	15.6	37.1	7.9	7.9	33.9	0.0	0.0	29.8	0.0	0.0
Incr Delay (d2), s/veh	26.4	14.0	16.3	26.2	1.5	1.4	2.4	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	15.8	17.5	3.3	5.8	6.1	3.7	0.0	0.0	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.4	29.2	31.8	63.3	9.4	9.3	36.3	0.0	0.0	29.8	0.0	0.0
LnGrp LOS	E	C	C	E	A	A	D	A	A	C	A	A
Approach Vol, veh/h		1902			1668			185			10	
Approach Delay, s/veh		30.7			13.2			36.3			29.8	
Approach LOS		C			B			D			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		17.3	11.8	53.8		17.3	5.0	60.5				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.0	7.5	50.0		19.0	5.0	52.5				
Max Q Clear Time (g_c+I1), s		12.3	7.8	45.1		2.4	2.2	24.0				
Green Ext Time (p_c), s		0.5	0.0	4.1		0.0	0.0	12.5				

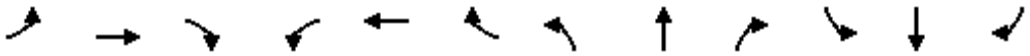
Intersection Summary	
HCM 6th Ctrl Delay	23.2
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	1331	5	23	1560	20	10	0	7	5	0	5
Future Volume (veh/h)	20	1331	5	23	1560	20	10	0	7	5	0	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	22	1447	5	25	1696	22	11	0	8	5	0	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	44	2156	7	49	2142	28	161	23	57	144	25	68
Arrive On Green	0.03	0.63	0.63	0.03	0.63	0.63	0.09	0.00	0.09	0.09	0.00	0.09
Sat Flow, veh/h	1682	3431	12	1682	3393	44	601	245	615	472	267	739
Grp Volume(v), veh/h	22	708	744	25	838	880	19	0	0	10	0	0
Grp Sat Flow(s),veh/h/ln	1682	1678	1764	1682	1678	1759	1460	0	0	1478	0	0
Q Serve(g_s), s	0.7	14.6	14.6	0.8	19.8	19.9	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	14.6	14.6	0.8	19.8	19.9	0.6	0.0	0.0	0.3	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.02	0.58		0.42	0.50		0.50
Lane Grp Cap(c), veh/h	44	1055	1109	49	1060	1110	241	0	0	237	0	0
V/C Ratio(X)	0.50	0.67	0.67	0.51	0.79	0.79	0.08	0.00	0.00	0.04	0.00	0.00
Avail Cap(c_a), veh/h	156	1321	1389	156	1321	1384	603	0	0	602	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.9	6.4	6.4	25.8	7.3	7.3	22.5	0.0	0.0	22.4	0.0	0.0
Incr Delay (d2), s/veh	8.6	0.9	0.9	8.1	2.7	2.6	0.1	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.8	2.9	0.4	4.1	4.3	0.2	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	7.4	7.3	34.0	10.0	9.9	22.6	0.0	0.0	22.4	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	C	A	A	C	A	A
Approach Vol, veh/h		1474			1743			19			10	
Approach Delay, s/veh		7.8			10.3			22.6			22.4	
Approach LOS		A			B			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		9.5	6.1	38.4		9.5	5.9	38.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.0	5.0	42.5		19.0	5.0	42.5				
Max Q Clear Time (g_c+I1), s		2.6	2.8	16.6		2.3	2.7	21.9				
Green Ext Time (p_c), s		0.0	0.0	10.8		0.0	0.0	12.1				

Intersection Summary												
HCM 6th Ctrl Delay			9.3									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1788	5	15	1565	5	20	0	13	5	0	5
Future Volume (veh/h)	5	1788	5	15	1565	5	20	0	13	5	0	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	5	1943	5	16	1701	5	22	0	14	5	0	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	11	2377	6	33	2419	7	142	17	44	121	21	58
Arrive On Green	0.01	0.69	0.69	0.02	0.70	0.70	0.08	0.00	0.08	0.08	0.00	0.08
Sat Flow, veh/h	1682	3434	9	1682	3433	10	663	223	564	471	267	738
Grp Volume(v), veh/h	5	949	999	16	831	875	36	0	0	10	0	0
Grp Sat Flow(s),veh/h/ln	1682	1678	1765	1682	1678	1765	1449	0	0	1475	0	0
Q Serve(g_s), s	0.2	25.7	25.7	0.6	18.6	18.6	0.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	25.7	25.7	0.6	18.6	18.6	1.4	0.0	0.0	0.4	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.01	0.61		0.39	0.50		0.50
Lane Grp Cap(c), veh/h	11	1161	1221	33	1183	1244	204	0	0	199	0	0
V/C Ratio(X)	0.45	0.82	0.82	0.49	0.70	0.70	0.18	0.00	0.00	0.05	0.00	0.00
Avail Cap(c_a), veh/h	131	1401	1473	131	1401	1473	486	0	0	484	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	31.7	7.0	7.0	31.1	5.5	5.5	27.8	0.0	0.0	27.4	0.0	0.0
Incr Delay (d2), s/veh	25.5	3.3	3.2	11.0	1.3	1.2	0.4	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.3	5.5	0.3	3.2	3.4	0.5	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.2	10.3	10.2	42.1	6.8	6.8	28.3	0.0	0.0	27.5	0.0	0.0
LnGrp LOS	E	B	B	D	A	A	C	A	A	C	A	A
Approach Vol, veh/h		1953			1722			36			10	
Approach Delay, s/veh		10.3			7.1			28.3			27.5	
Approach LOS		B			A			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		9.5	5.7	48.8		9.5	4.9	49.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0	5.0	53.5		18.0	5.0	53.5				
Max Q Clear Time (g_c+I1), s		3.4	2.6	27.7		2.4	2.2	20.6				
Green Ext Time (p_c), s		0.1	0.0	16.6		0.0	0.0	15.6				

Intersection Summary	
HCM 6th Ctrl Delay	9.1
HCM 6th LOS	A

FEHR PEERS

Memorandum

Date: August 2, 2021

To: Steve McMurtry & Josh Smith, DeNovo Planning Group

From: Carly Panos, Fehr & Peers

Subject: Scannell Industrial Project Vehicle Miles Traveled Analysis

RS21-4062

Fehr & Peers completed a vehicle miles traveled (VMT) analysis for the proposed Scannell Development Industrial Project located at 1520 Lathrop Road in Lathrop, CA. The project proposes three industrial buildings totaling 191,160 square feet on an existing 18.2-acre site. The existing parcel is vacant with a Service Commercial land use designation. The project proposes a General Plan Amendment and Rezone to General Industrial.

This VMT analysis compares both existing and cumulative VMT per industrial employee against the Citywide average for this use type to determine if the project would result in a significant impact. The memo also presents the difference in trip generation characteristics under the existing and proposed zoning.

Applicable Policies and Significance Criteria

Senate Bill 743

SB 743, which became effective statewide in July 2020, resulted in several statewide changes to the evaluation of transportation and traffic impacts under CEQA. It directed the California Office of Planning and Research (OPR) to amend the CEQA Guidelines to establish new metrics for determining the significance of transportation impacts of projects within transit priority areas (TPAs) and allowed OPR to extend use of the new metrics beyond TPAs. The California Natural Resources Agency certified and adopted the amended CEQA Guidelines in December 2018. In the amended CEQA Guidelines, OPR selected VMT as the preferred transportation impact metric. The amended CEQA Guidelines state that "generally, VMT is the most appropriate measure of transportation impacts".

SB 743 added section 21099 to the Public Resources Code, which states that automobile delay, as described by LOS or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment upon certification of the CEQA Guidelines by the Natural Resources Agency.

To aid in SB 743 implementation, in December 2018, OPR released its *Technical Advisory on Evaluating Transportation Impacts in CEQA* (*Technical Advisory*). The *Technical Advisory* provides advice and recommendations to CEQA lead agencies on how to implement the SB 743 changes. This includes technical recommendations regarding the assessment of VMT, thresholds of significance, VMT mitigation measures, and screening thresholds for certain land use projects. Lead agencies may consider and use these recommendations at their discretion and with the provision of substantial evidence to support alternative approaches.

City of Lathrop *Summary for SB 743 Implementation*

On September 14, 2020, the City of Lathrop adopted thresholds of significance and screening criteria for the purpose of analyzing transportation impacts under CEQA related to vehicle miles traveled consistent with SB 743 and OPR's *Technical Advisory*. Attachment 2 (*Summary for SB 743 Implementation)* of the resolution summarizes metrics, screening criteria, methodology, thresholds of significance, and mitigation options, which were used to evaluate VMT for the proposed project.

Metrics and Thresholds

The *Summary for SB 743 Implementation* identifies two primary metrics for measuring VMT – project-generated VMT and project's effect on VMT. Project-generated VMT measures the amount of VMT generated by the project, while the project's effect on VMT compares all VMT on roadways within the model with and without the project to evaluate if the project would result in an overall increase in VMT model-wide.

For the proposed project, home-based work VMT per industrial employee is the efficiency metric used to evaluate project-generated VMT.

OPR's *Technical Advisory* and the City of Lathrop *Summary for SB 743 Implementation* do not specifically identify thresholds for industrial development projects. Therefore, this analysis assumes the proposed project would result in a significant impact if:

- The proposed project would generate home-based work VMT per industrial employee that is greater than the existing or cumulative citywide average home-based work VMT for industrial developments per industrial employee.

The above thresholds recognizes that industrial uses are typically preferred to be placed in locations that are less dense, which preserves land in more dense areas for high density

residential and commercial/office uses. Industrial land uses are often land intensive; therefore, placing industrial land uses in less urban areas characterized by having higher VMT per employee allows land in efficient VMT areas to be more effectively utilized and can help achieve an overall reduction in VMT. Therefore, so long as the project does not exceed the citywide average home-based work VMT for industrial development per industrial employee, it can be concluded that the project is consistent with achieving an overall reduction in regional VMT.

Methodology

The *Summary for SB 743 Implementation* indicates potential impacts could be assessed based on both efficiency metrics and/or the project's effect on VMT. This analysis uses the efficiency metric previously described to determine if the project would result in a significant impact.

The City of Lathrop Travel Demand Model (TDM), which is a modified version of the San Joaquin Council of Governments TDM, was used to evaluate project-generated VMT as the model was recently updated to include detailed land use and transportation inputs in the Cities of Lathrop, Manteca, and Ripon. Consistent with guidance contained in the *Technical Advisory*, VMT reported by the model has been adjusted to account for trips (and VMT) that extend beyond the model boundaries (e.g., commute to the Bay Area). Both the Base Year (2020) and Cumulative Year (2040) versions of the model were used to evaluate project-generated VMT for the proposed project under existing and cumulative conditions.

First, the Base Year (2020) TDM was used to calculate the existing (baseline) citywide average home-based work VMT of 38.9 miles per industrial employee for industrial developments in the City. The Base Year TDM was then updated to include the proposed industrial development project and used to estimate the proposed project's home-based work VMT per industrial employee.

Second, the Cumulative Year (2040) TDM was used to calculate the cumulative citywide average home-based work VMT of 39.0 miles per industrial employee for industrial developments in the City. The Cumulative Year TDM was then updated to include the proposed industrial development project and used to estimate the proposed project's home-based work VMT per industrial employee.

Additionally, because the proposed project includes a General Plan Amendment and Rezone from Service Commercial to Industrial, trip generation rates published in the *Trip Generation Manual 10th Edition Supplement (Institute of Transportation Engineers, 2020)* are used to discuss how the General Plan Amendment and Rezone may result in an overall increase or decrease in daily trips generated by the property, which can qualitatively be used to describe if the project could result in an increase or decrease in VMT due to the land use designation change.

VMT Analysis

Project-Generated VMT

To evaluate project-generated VMT, the proposed project was added to the Base Year (2020) and Cumulative Year (2040) TDMs to determine the proposed project's home-based work VMT per industrial employee. **Table 1** displays the existing and cumulative citywide average home-based work VMT for industrial developments per industrial employee, and the proposed project's home-based work VMT per industrial employee under existing and cumulative conditions.

Table 1 – VMT Analysis - Project-Generated VMT

Scenario	Home-Based Work VMT per Industrial Employee
Existing – Citywide Average	38.9
Existing - Proposed Project	37.2
Cumulative – Citywide Average	39.0
Cumulative - Proposed Project	36.8

Notes: The City of Lathrop Base Year (2020) TDM was used to estimate Existing Citywide Average VMT and Existing Proposed Project VMT. The Cumulative Year (2040) TDM was used to estimate Cumulative Citywide Average VMT and Cumulative Proposed Project VMT.
Source: Fehr & Peers, 2021.

As displayed, the proposed project is anticipated to generate 37.2 home-based work VMT per industrial employee under existing conditions and 36.8 under cumulative conditions, which is less than the citywide average home-based work VMT for industrial developments per industrial employee under existing and cumulative conditions.

Because the proposed project would not exceed the existing or cumulative citywide average home-based work VMT for industrial developments per industrial employee, the proposed project-generated VMT would not result in a significant transportation impact.

Trip Generation Comparison

Trip generation rates published in the *Trip Generation Manual 10th Edition Supplement* (Institute of Transportation Engineers, 2020) were used to calculate the daily trip generation of the existing Service Commercial and proposed General Industrial land use designations. It is important to note that warehousing is a permitted use under the Service Commercial designation. However, a specific tenant has not been identified for the proposed project and therefore, the developer is requesting the General Plan Amendment and Rezone to provide flexibility in the event a light industrial or manufacturing type tenant are interested in occupying one or more of the buildings.

Table 2 displays the daily trip generation rates per thousand square feet of space for various land uses that could be developed on the site under each General Plan land use designation.

Table 2 – Trip Generation Comparison			
General Plan Land Use Designation	**ITE Code**	**ITE Category**	**Daily Trip Rate per KSF**
Service Commercial	820	Shopping Center	37.75
	934	Drive Through Restaurant	470.95
	943	Auto Parts and Service Center	16.28
	840	Auto Sales (New)	27.84
	710	Office	9.74
	150	Warehousing	1.74
General Industrial	110	General Light Industrial	4.96
	130	Industrial Park	3.37
	140	Manufacturing	3.93
	151	Mini Storage	1.51
Notes: Trip rates identified are published in *Trip Generation Manual 10th Edition Supplement* (Institute of Transportation Engineers, 2020). Source: Fehr & Peers, 2021			

As displayed, uses permitted under the General Industrial land use designation typically generate fewer daily trips per thousand square feet of building space than uses permitted under the Service Commercial land use designation. Therefore, it can qualitatively be concluded that the General Plan Amendment and Rezone would result in fewer vehicle trips being generated by the property.

It is also noted, subsequent analysis for the project will include a more detailed discussion of trip generation rates used for the project specifically. Since a specific tenant has not yet been identified, the project trip generation will be based on a blended trip generation rate.

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