

CALIFORNIA ENVIRONMENTAL QUALITY ACT INITIAL STUDY

The Department of Toxic Substances Control (DTSC) has completed the following document for this project in accordance with the California Environmental Quality Act (CEQA) [Pub. Resources Code, div. 13, § 21000 et seq] and accompanying Guidelines [Cal. Code Regs., tit. 14, § 15000 et seq].llll

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|---|-----------------------------|------------------------|
| PROJECT TITLE: Former Engineering Plating Corporation | | SITE CODING: 401052 |
| PROJECT ADDRESS: 1224 E. Pomona St. | CITY: Santa Ana | COUNTY: Orange |
| PROJECT SPONSOR: DTSC | CONTACT: Hamid Hashemian | PHONE: 714-484-5466 |
| APPROVAL ACTION UNDER CONSIDERATION BY DTSC: <div style="display: flex; flex-wrap: wrap;"> <div style="width: 33%;"><input type="checkbox"/> Initial Permit Issuance</div> <div style="width: 33%;"><input type="checkbox"/> Permit Re-Issuance</div> <div style="width: 33%;"><input type="checkbox"/> Permit Modification</div> <div style="width: 33%;"><input type="checkbox"/> Closure Plan</div> <div style="width: 33%;"><input type="checkbox"/> Removal Action Workplan</div> <div style="width: 33%;"><input checked="" type="checkbox"/> Remedial Action Plan</div> <div style="width: 33%;"><input type="checkbox"/> Interim Removal</div> <div style="width: 33%;"><input type="checkbox"/> Regulations</div> <div style="width: 33%;"><input type="checkbox"/> Other (specify):</div> </div> | | |
| STATUTORY AUTHORITY: <input type="checkbox"/> California H&SC, Chap. 6.5 <input checked="" type="checkbox"/> California H&SC, Chap. 6.8 <input type="checkbox"/> Other (specify): | | |
| DTSC PROGRAM/ADDRESS: Brownfields and Environmental Restoration Program | CONTACT: Emad Yemut | PHONE: 714-484-5432 |
| PROJECT DESCRIPTION: <p>The DTSC is considering approval of a Focused Feasibility Study (FFS) and Remedial Action Plan (RAP) for the former Engineering Plating Corporation (EPC) project site located at 1224 East (E.) Pomona Street, Santa Ana, California (the site; Figures 1 and 2) pursuant to Chapter 6.8, Division 20, Sections 25323.1 and 25356.1 of the California Health & Safety Code, dated October 23, 2018. Wood Environment and Infrastructure Solutions, Inc. (Wood) prepared the FFS/RAP on behalf of DTSC to describe the evaluation of potential remedial alternatives (RAs) and to present a plan to mitigate chemicals of concern (COCs) in soil, soil vapor, and groundwater at the site. The FFS/RAP identified volatile organic compounds (VOCs) as COCs at the site. VOC-impacted groundwater has moved offsite toward the southwest to an adjacent commercial property. The areas of VOC-impact in soil, soil vapor and/or groundwater subject to RAs (the project) are hereafter collectively referred to as the "project area." DTSC will be providing oversight for the implementation of the RAs recommended in the FFS/RAP.</p> <p>The site is located in an almost fully-developed urban area of Santa Ana, California (the City). It is roughly rectangular and comprises an area of 7,405 square feet. The site is zoned for light industrial land use and is occupied by an approximately 4,200-square-foot commercial building. As shown on Figure 2, the site building is currently divided into two separate addresses, 1224 and 1226 E. Pomona Street. The property subdivision occurred in the 1990s after EPC ceased operations. 1226 E. Pomona Street is presently occupied by an auto repair shop. A church group occasionally meets in the other half of the building at 1224 E. Pomona Street. The site is paved with the exception of landscaped areas on the northern portion of 1226 E. Pomona Street. This landscape area is outside the project area.</p> <p>The purpose of the FFS/RAP is to evaluate technical alternatives and present recommendations and plans for remediation of soil, soil vapor, and groundwater contaminated with VOCs at concentrations exceeding remedial action objectives (RAOs). The RAOs are site-specific cleanup goals that are protective of human health and the environment. VOCs, including primarily trichloroethene (TCE) and tetrachloroethene (PCE) were detected at elevated concentrations in soil, soil vapor, and groundwater samples. TCE was the most commonly detected VOC at the site. The RAs proposed to achieve the RAOs at the site include:</p> <ul style="list-style-type: none"> • Soil Vapor Extraction (SVE) for treatment of VOCs in soil/soil vapor. • In Situ Chemical Oxidation (ISCO) using sodium permanganate for treatment of VOCs in groundwater. | | |

- Monitored Natural Attenuation (MNA) for treatment of remaining VOC-impacted groundwater following ISCO (if necessary).
- Containment (capping/ sub-slab depressurization [SSD]).

An SVE pilot study is currently being conducted at the site to extract soil vapor containing VOCs from the vadose zone and to provide sub-slab depressurization to protect indoor air and site users from vapor intrusion. The FFS/RAP proposes installation of additional vapor extraction wells with continued SVE operation to treat the entire project area containing elevated concentrations of VOCs in soil and soil vapor. A pilot test will first be conducted to evaluate the effectiveness of pneumatic fracturing in increasing the vapor flow through the fine-grained sediments in the vadose zone beneath the site. The FFS/RAP also proposes ISCO to treat relatively high concentrations of VOCs in groundwater. An ISCO pilot test will first be conducted to evaluate the effectiveness of sodium permanganate to treat VOC-impacted groundwater and support final ISCO remedial design using injection wells. Following ISCO, MNA will be implemented if necessary to meet the project RAOs by further reducing VOC mass in groundwater and preventing or reducing offsite movement of VOC-impacted groundwater after VOC concentrations in groundwater have been sufficiently reduced through ISCO, but residual concentrations still exceed RAOs. Containment methods will be used to prevent human contact with impacted soils, prevent/minimize the downward vertical movement of VOCs to underlying soil and groundwater, and/or effectively mitigate risks associated with vapor intrusion in human-occupied buildings through operation of the SSD system.

Implementation of the remedial actions is expected to begin in June 2019. Construction phase activities (well drilling and installation, trenching and piping, treatment system installation, etc.) are expected to take approximately three months. The active remediation phase of groundwater treatment (ISCO) should be complete in three years and SVE in five years. Following ISCO groundwater remedial measures, MNA is expected to last up to 12 years. Following SVE, SSD is expected to continue for up to 15 years. Institutional controls may be implemented throughout the duration of the project (up to 20 years) to prevent land use changes that could impact ongoing remedial activities or to limit future uses and activities at the site if RAOs are not achievable. Implementation of this component of the overall remedial strategy will be considered in the future based on the effectiveness of the proposed active RAs of the remedy to meet the RAOs.

Information on the site is available on the DTSC website at <http://www.envirostor.dtsc.ca.gov/public/>. DTSC's EnviroStor database number for the site is 71003391 and the site code is 401052.

Attachments:

Figure 1 – Site Location Map

Figure 2 – Site Vicinity and Location

Appendix A - CalEEMod model calculations (annual summary report and summer summary report)

ENVIRONMENTAL IMPACT ANALYSIS:

1. Aesthetics

Project Activities Likely to Create an Impact: None

Description of Baseline Environmental Conditions: The site is located in an almost fully-developed urban environment on the south side of E. Pomona Street near the intersection with S. Minnie Street (S. Minnie Street connects to Edinger Avenue). The site property is zoned for light industrial land use (M1 - Light Industrial based on the City of Santa Ana Zoning Map [2017]). It comprises an area of 7,405 square feet and is occupied by an approximately 4,200-square-foot commercial building. The building is subdivided into two addresses, one (1224 E. Pomona) is used by a church group and the other (1226 E. Pomona) is occupied by an automotive repair business. An alley (City public right-of-way) lies immediately south of the site property and connects with S. Standard Avenue to the west and a railroad easement toward the east. Predominantly commercial/industrial land use surrounds the site. Residential homes are located within 0.1 mile west of the site (west side of S. Standard Avenue).

Analysis as to whether or not project activities would:

- Have a substantial adverse effect on a scenic vista?

Impact Analysis: The site is in an industrial/commercial area and there are no scenic vistas near the project area. Construction and monitoring of the project RAs will have no effect on any scenic vista.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Impact Analysis: The site does not have any scenic resources. The project area location is surrounded by industrial/commercial facilities on either side of the building, and by City right-of-way street or alley on the others. The area has been graded and paved and the project will not impact any scenic resources.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- c. Substantially degrade the existing visual character or quality of the site and its surroundings?

Impact Analysis: The project consists of construction and operation of soil and groundwater RAs. Project activities would be consistent with those of the industrial/commercial area of the City and would be unnoticeable to off-site viewers, including the residents across S. Standard Avenue west of the site. The remediation systems will be located onsite and will be enclosed by security fencing commonly used in the area. The project will have no impact on the existing visual character or quality of the site or its surroundings.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Impact Analysis: The project will not affect the lighting in the area. Construction will be conducted in daylight hours and SVE and ISCO equipment will be placed within a secured area of the site. The project will have no impact on existing light and glare conditions at the site.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

References Used:

City of Santa Ana Zoning Map. 2017: <http://www.ci.santa-ana.ca.us/pba/planning/documents/ZoningFULLCITY2017-Jan20.pdf>
Wood. 2018. FFS/RAP, Former Engineering Plating Corporation, October.

2. Agricultural Resources

Project Activities Likely to Create an Impact: None

Description of Baseline Environmental Conditions: The site is located in a predominantly industrial/commercial area in southeast Santa Ana. There are no agricultural or forested areas within this portion of the City or near the project area.

Analysis as to whether or not project activities would:

- 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?

Impact Analysis: The project will occur entirely within developed areas of the City that are currently zoned for light industrial land use. According to the California Resources Agency, no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance exist within the City. No land conversion would be necessary for project implementation and thus there would be no impact.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- b. Conflict with existing zoning for agricultural use, or a [Williamson Act](#) contract?

Impact Analysis: The site is zoned for light industrial land use and is not a designated land under the Williamson Act. The California Department of Conservation does not indicate any Williamson Act contracts within the City and thus there would be no impact from the project.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in [Public Resources Code section 12220\(g\)](#)), timberland (as defined by [Public Resources Code section 4526](#)), or timberland zoned Timberland Production (as defined by [Government Code section 51104\(g\)](#))?

Impact Analysis: The impact of the project on the local environment is limited to the project area and will not affect surrounding areas. There are no forest lands or areas zoned for timberland or timberland production in the City and thus there would be no impact from the project.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- d. Result in the loss of forest land or conversion of forest land to non-forest use?

Impact Analysis: The site lies entirely within a developed area that is zoned for light industrial use. The project will not result in the loss or conversion of forest land.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural uses?

Impact Analysis: The site lies entirely within a developed area that is zoned for light industrial use. The project will not result in the loss or conversion of Farmland.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

References Used:

City of Santa Ana. 1998. *City of Santa Ana General Plan, Land Use Element*. Adopted February 2.
City of Santa Ana Zoning Map. 2017: <http://www.ci.santa-ana.ca.us/pba/planning/documents/ZoningFULLCITY2017-Jan20.pdf>
Google earth map accessed September 2018.
Wood. 2018. *FFS/RAP, Former Engineering Plating Corporation*, October.

3. Air Quality

Project Activities Likely to Create an Impact:

- Drilling and installation of 36 SVE wells and 18 ISCO injection wells
- Trenching for conveyance piping of SVE wells
- Operation of the SVE system
- Injection of sodium permanganate solution via injection wells during ISCO application
- Workers commuting in trucks and/or passenger vehicles for SVE system maintenance and routine groundwater monitoring

As stated in the FFS/RAP, the activities listed above will be implemented over a period of 5 years and will be followed by SSD, institutional controls, and MNA, for the assumed total project duration of up to 20 years. The impact on the air quality during the first 5 years are greater than those during the subsequent period of RAs. As a more conservative approach, impact on the air quality during the first 5 years of RAs implementation (i.e. the worst case scenario) is evaluated in the section below. Impacts on air quality from RAs in later years as a result of SSD, institutional controls, and MNA will be much less than those described below.

Description of Baseline Environmental Conditions: The site is located in the South Coast Air Basin (SCAB), a 6,600-square mile area. The SCAB is an area of high air pollution potential and is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). SCAB is designated a non-attainment area for federal and state standards for ozone, fine particulate matter (PM₁₀), PM_{2.5}, sulfur dioxide, lead, and sulfate.

The air quality impacts are determined according to the criteria set on the federal, state, and local pollution standards/regulations. The United States Environmental Protection Agency established national ambient air quality standards pursuant to adoption of federal Clean Air Act. The California Air Resources Board (CARB) establishes state air quality standards under the mandate of the Mulford-Carrell Act. Impacts would be considered significant if the proposed project emissions meet the following criteria:

SCAQMD suggested threshold criteria (SCAQMD CEQA Handbook, 1993):

| Pollutant | Threshold Criteria | |
|-------------------|---------------------------------|------------------------------|
| | Construction Phase (lbs/day) | Operation Phase (lbs/day) |
| ROG | 55 | 55 |
| CO | 550 | 550 |
| NOx | 100 | 55 |
| SO ₂ | 150 | 150 |
| PM ₁₀ | 150 | 150 |
| PM _{2.5} | 55 | 55 |

Reactive organic gas (ROG); carbon monoxide (CO); nitrogen oxides (NOx); sulfur dioxide (SO₂); particle matters with aerodynamic radius less than 10 and 2.5 microns (PM₁₀ and PM_{2.5}).

The current SVE system is permitted to operate 24-hours per day, 7-days per week pursuant with existing SCAQMD permit G48741. The current SCAQMD permit for the SVE system requires Total Organic Compound (TOC) emissions to not exceed 20 parts per million by volume (ppmv). The permit also lists that PCE emissions not exceed 0.05 ppmv and TCE and 1,1-dichloroethane not exceed 0.01 ppmv. Field personnel are currently and will continue to supervise the operation of the SVE system and perform periodic field screening to assure that SCAQMD emission requirements are met. The SVE system exhaust has emission controls meeting best available control technology (BACT) requirements (specified in the SCAQMD permit).

In addition to vapor discharged from the SVE system, emissions would be generated during drilling and installation of additional SVE and groundwater monitoring wells, injection of sodium permanganate, long-term operation of the SVE system, and routine groundwater sampling. Specifically, particulates and air pollutants would be directly emitted by the engines of various drilling and construction equipment, by engines in trucks and vehicles that transport personnel and material on and off-site, and dust generated from soil excavation and backfilling of conveyance piping.

Air pollutant emissions and/or ambient concentration increments from existing, project related, and cumulative sources that could potentially impact sensitive receptors within the project area or its vicinity have been estimated using the California Emissions Estimator Model 2016.3.2 (CalEEMod). The potential air quality impact from project activities was evaluated for short-term impacts during construction phase and long-term impacts during operation phase of the remedial actions. The SCAQMD emission factors were utilized by the CalEEMod to estimate emissions of air pollutants for ROG, CO, NOx, SO₂, and PM₁₀, during proposed project construction activities. The construction phase consists of drilling and installing 36 SVE wells and 18 ISCO injection wells, 3 additional groundwater monitoring wells, and approximately 1,000 square feet of trenching for underground SVE piping. The construction activities are expected to be short-term (up to three months) and, as required by SCAQMD Rule 403, appropriate dust suppression measures will be implemented. The operation phase of the proposed remedial actions includes, sodium permanganate injection using injection wells, operation of the SVE system, twice a week site visits by a technician for SVE system operation and maintenance, and quarterly groundwater monitoring.

CalEEMod calculated daily peak emissions for construction phase and operation phase are provided in the following table.

Unmitigated Daily Peak Emission Estimates (pounds/day)

| Activities | ROG | CO | NOx | SO ₂ | PM ₁₀ |
|--|-----------|------------|------------|-----------------|------------------|
| Construction: Well Drilling and Installation, trenching | 0.47 | 4.78 | 5.31 | 0.012 | 0.33 |
| Operation: SVE Operation, ISCO injection, and Groundwater Monitoring | 0.50 | 4.17 | 3.95 | 0.007 | 0.21 |
| <i>Suggested SCAQMD Criteria – Construction</i> | <i>75</i> | <i>550</i> | <i>100</i> | <i>150</i> | <i>150</i> |
| <i>Suggested SCAQMD Criteria – Operation</i> | <i>55</i> | <i>550</i> | <i>55</i> | <i>150</i> | <i>150</i> |
| Exceeds Threshold Criteria (Yes/No) | No | No | No | No | No |

The CalEEMod data input, assumptions, and results of the model calculation are presented in Appendix A, which includes the annual summary report and summer summary report for the proposed RAs. The annual summary report provides the model calculated annual average for criteria pollutants and greenhouse gas (GHG), which are

discussed in Section 7. The summer summary report provides the model calculated daily maxima for criteria pollutants and GHG.

As noted above, the calculated data for the proposed project activities do not exceed the suggested SCAQMD criteria. Therefore, emissions that would be generated from implementation of the proposed RAs would not result in significant impact on air quality. The proposed RAs will not conflict with or obstruct implementation of the applicable air quality plan or violate any air quality standard or contribute substantially to an existing or projected air quality violation. This project will not result in cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors (e.g., ROG)).

Analysis as to whether or not project activities would:

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

Impact Analysis: The RAs are intended to capture and treat VOCs that could possibly escape into the atmosphere and reduce air quality. The RAs will comply with SCAQMD air quality standards. The project will not conflict or obstruct implementation of the applicable air quality plan as the estimated emissions from the RAs are well below the SCAQMD suggested threshold criteria.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Impact Analysis: As described earlier, the estimated emission of air pollutants calculated using CalEEMod does not exceed the suggested SCAQMD criteria. Thus, project activities will not violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

c. Result in 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Impact Analysis: The project construction phase, including well drilling and installation and trenching, is expected to be completed in less than three months. Injection of sodium permanganate as part of ISCO application will be completed in less than one month at the beginning of the operation phase. As indicated in the FFS/RAP, the SVE system will be in operation for up to five years (the treatment area and active operation time for SVE system may be reduced when VOCs in vadose zone gradually decrease over the 5-year operation period). Frequency of groundwater monitoring will also be reduced after 5 years and be reduced further after 10 years. Therefore, over the course of the operation phase the scope of the RAs will decrease, which will result in decrease in vehicle miles and trips traveled and less energy use. In consideration of the cumulatively net increase of any criteria pollutant caused by project activities, the project will not result in net increase of any criteria pollutant in the SCAB.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

d. Expose sensitive receptors to substantial pollutant concentrations?

Impact Analysis: The nearest receptors to the project area are residents west of the site, the nearest of whom is located at least 500 feet from the site boundary. There are no known sensitive receptors (such as schools, hospitals, nursing homes, or day care facilities within one-quarter mile of the site. Sensitive receptors will not be exposed to substantial pollutant concentrations from implementation of project activities.

Conclusion:

- ☐ Potentially Significant Impact
- ☐ Less Than Significant With Mitigation Incorporated
- ☐ Less Than Significant Impact
- ☒ No Impact

e. Create objectionable odors affecting a substantial number of people?

Impact Analysis: Diluted TCE is odorless and granular activated carbon use to capture VOCs in soil vapor removed by SVE will also remove organic odors if any are present in the extracted vapor stream. No odors are associated with the ISCO injection.

Conclusion:

- ☐ Potentially Significant Impact
- ☐ Less Than Significant With Mitigation Incorporated
- ☐ Less Than Significant Impact
- ☒ No Impact

References Used:

California Emissions Estimator Model User's Guide, Version 2016.3.2. 2016.
City of Santa Ana. 1998. City of Santa Ana General Plan, Land Use Element. Adopted February 2.
DTSC. 2004. CEQA Initial Study Workbook, April.
Google earth map accessed September 2018.
SCAQMD. 1993. CEQA Air Quality Handbook, April.

4. Biological Resources

Project Activities Likely to Create an Impact: None

Description of Baseline Environmental Conditions: The site is located within an urban environment in an area zoned for light industrial use with little or no native vegetation or habitats. The project area has been graded and paved for several decades. Construction and operation of the RAs will not reduce or modify any natural habitat. Based on the City of Santa Ana Zoning Map (2017) the project area is zone as M1 - Light Industrial. Except for some planter/landscape areas, the paved and covered project area and surrounding properties developed for light industrial use provide poor habitats to support biological resources.

Analysis as to whether or not project activities would:

- 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](#)?

Impact Analysis: The project will not modify any habitat used by any candidate, sensitive, or special status species. The site is located in an urban environment zoned for light industrial use, and the project area is predominantly paved. A query of the California Natural Diversity DataBase (CNDDB) was completed to identify known recorded occurrences of state or federally listed threatened, endangered, candidate, sensitive, or special status species. A total of 80 plant species, wildlife species, and plant communities were identified in the CNDDB search. The site area provides no suitable habitat for any of the state or federally listed threatened, endangered, candidate, sensitive, or special status species identified in the CNDDB search based on the Anaheim, Newport Beach, Orange, and Santa Ana, California United States Geological Service 7.5-minute topographic quadrangle maps.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the [California Department of Fish and Game](#) or [US Fish and Wildlife Service](#)?

Impact Analysis: Based on review of aerial photographs, the CNDDDB, and the United States Fish and Wildlife Services National Wetland Inventory, the site and nearby surrounding areas do not contain any riparian habitat or other sensitive natural community. Based on the information from CNDDDB, eight sensitive plant communities occur within an approximate three-mile radius of the project site (e.g., Southern California Arroyo Chub/Santa Ana Sucker Stream, Southern Foredunes, Southern Dune Scrub, Southern Coastal Salt Marsh, Southern Coast Live Oak Riparian Forest, Southern Cottowood Willow Riparian Forest, Southern Sycamore Alder Riparian Woodland, and California Walnut Woodland). However, none of these plant communities occurs within or near the project area. The project will not affect riparian habitat or other sensitive natural community.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- c. Have a substantial adverse effect on federally protected wetlands as defined by [Section 404 of the Clean Water Act](#) (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Impact Analysis: Based on review of a recent aerial photograph and the United States Fish and Wildlife Services National Wetland Inventory, the site is not located in or near a wetland. The existing storm water controls in the project area will regulate and control storm water runoff from the site. Project implementation would not increase the amount of impervious surface and would not increase peak off-site storm water flows. The project would not adversely affect any federally protected wetlands.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- 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?

Impact Analysis: The project area does not provide habitat for any native resident or migratory fish or wildlife species and is not located along any migratory fish or wildlife corridor. Additionally, the project site does not contain any native wildlife nursery sites. The project will not affect storm water runoff, which will be controlled and managed by the existing storm water drainage system. The project will not affect the movement of any native resident or migratory fish or other wildlife species.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- e. Conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact Analysis: The Santa Ana General Plan, Land Use Element (1998) does not identify any local policies or ordinances protecting biological resources in the project area. The project will not directly or indirectly affect any biological resources on or near the site, and would thus not conflict any local policies or ordinances protecting biological resources.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- 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?

Impact Analysis: The project has no conflict with any conservation plans. Santa Ana is a part of the Orange County Transportation Authority (OCTA) Habitat Conservation Plan (HCP) and the project has no conflict with the conservation plan. (<https://www.wildlife.ca.gov/Conservation/Planning/NCCP/Plans/OCTA>). Because of the light industrial zoning of the site and limited impacts of construction and monitoring, the project would not conflict with any adopted conservation plans that might exist.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

References Used:

California Department of Fish and Wildlife's California RareFind 5 and Bios 5 Natural Diversity Database (CNDDDB). 2018, accessed September 7.

California Regional Conservation Plans Map: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=68626&inline>

City of Santa Ana. 1998. City of Santa Ana General Plan, Land Use Element. Adopted February 2.

City of Santa Ana Zoning Map. 2017: <http://www.ci.santa-ana.ca.us/pba/planning/documents/ZoningFULLCITY2017-Jan20.pdf>

Google earth map accessed September 2018.

Orange County Transportation <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=16025&inline>

United States Fish and Wildlife Services National Wetland Inventory: <https://www.fws.gov/wetlands/data/Mapper.html>

5. Cultural Resources

Project Activities Likely to Create an Impact: None

Description of Baseline Environmental Conditions: The site is located within an urban environment in an area zoned for light industrial use with little or no known cultural resources. The site and project area have previously been graded and paved. Ground disturbances during construction and operation of the RAs (e.g., trenching, groundwater monitor and SVE well drilling and installation, ISCO injection) will occur in areas that have already been disturbed.

A California Historical Landmarks search was conducted on the California State Parks Office of Historic Preservation website (http://ohp.parks.ca.gov/?page_id=21445) for Orange County. These results of this search found no known historical resources present within a one-mile radius. The closest historical landmark is Orange County's Original Courthouse located 1.9 miles northwest of the site. A search of records was conducted at the South Central Coastal Information Center. No records were found for resources within a one-mile radius of the site.

If any unanticipated cultural resource concerns are encountered during the project, work will be suspended at the site of discovery and DTSC will be notified of potential impacts. The DTSC may seek guidance from the DTSC Office of Environmental Justice and Tribal Affairs (OEJTA).

Analysis as to whether or not project activities would:

- a. Cause a substantial adverse change in the significance of a [historical resource](#) as defined in [§ 15064.5](#)?

Impact Analysis: As described in the Santa Ana General Plan, Land Use Element (1998), the site is not located near a Historical Resources area of the City. No other records of nearby historical resources were found. The project will not cause an adverse change historical resources.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

Impact Analysis: As described in the Santa Ana General Plan, Land Use Element (1998), an archaeological record search at the UCLA Institute of Archaeology indicated there is one recorded prehistoric site in the City near Santiago Creek. The site is not located near an archaeologically sensitive area of the City. No other records of nearby archaeological resources were found. The project will not cause an adverse change archaeological resources.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impact Analysis: No unique paleontological resource or site are located near the site or does the site have any unique geologic features. The project will not impacted any known paleontological resource or site or unique geologic feature. If any paleontological resource is discovered, work in the area will cease and the discovery will be immediately reported to the appropriate professionals for determination of paleontological significance.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- d. Disturb any human remains, including those interred outside of dedicated cemeteries?

Impact Analysis: There is no known dedicated cemetery near the site. However, if human remains are encountered, work will be suspended within a 50-foot radius of the area of discovery and an efforts will be made to protect the resources while notifying the DTSC. The local coroner will also be contract. The appropriate professionals will determine if the remains are human, and if they are associated with an archaeological deposit. If the remains are not human and are not associated with an archaeological deposit, the work may continue. If the remains are human, the appropriate law enforcement officials will be notified. These officials will visit the site and determine, with the aid of a coroner or physical/forensic anthropologist, if the remains are recent or ancient. If necessary, work will be suspected pursuant to the Native American Graves Protection and Repatriation Act (NAGPRA).

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

References Used:

California Landmarks in Orange County, California State Parks: http://ohp.parks.ca.gov/?page_id=21445
City of Santa Ana. 1998. City of Santa Ana General Plan, Land Use Element. Adopted February 2.

6. Geology and Soils

Project Activities Likely to Create an Impact:

- Groundwater monitoring and SVE well drilling and installation
- Trenching for conveyance piping

Description of Baseline Environmental Conditions: The site is located in the southern portion of the Los Angeles Basin. The nearest known earthquake fault delineated on the California Department of Conservation's Fault Activity Map of California (2010), the Bolsa-Fairview fault, is located over five miles southwest of the site. Displacement of the Bolsa-Fairview fault, part of the Newport-Inglewood-Rose Canyon fault zone, occurred during Late Quaternary. The nearest known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map (revised 2018), the North Branch fault of the Newport-Inglewood-Rose Canyon fault zone, is located over eight miles southwest of the site.

The unconsolidated sediments to depths of approximately 125 feet beneath and adjacent to the site have been subdivided into four hydrostratigraphic units (HSUs). HSU-1 through HSU-4 are described as follows:

- HSU-1: discontinuous and poorly defined interbedded zones of sandy silt and silt/clay from ground surface to a depth of approximately 10 feet. No groundwater was encountered in this unit.
- HSU-2: low-permeability silts and clays with some sandy silt to silty/clayey sand lenses between depths of approximately 10 and 40 feet. The higher-permeability lenses of silt to silty/clayey sand lie near the bottom of this unit. No groundwater was encountered in this unit during drilling activities; however, water accumulated in several vapor probes installed at depths between 15 and 32.5 feet in HSU-2.
- HSU-3: higher-permeability sands with interbedded silts and clays, between depths of approximately 40 and 100 feet. Three distinct water-bearing zones have been interpreted in this unit and are referred to here as HSU-3a, HSU-3b, and HSU-3c. HSU-3a, an interpreted paleochannel, is a zone of focus for ISCO.
- HSU-4: low-permeability silts and clays from depths of approximately 100 feet to greater than 124.5 feet.

Analysis as to whether or not project activities would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to [Division of Mines and Geology Special Publication 42](#).

Impact Analysis: The site is not located within an earthquake fault zone. The nearest known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map (Special Publication 42, revised 2018) is located over eight miles southwest of the site. Because project activities are limited in scope and extent, these activities have no potential to rupture a fault or cause seismic disturbances.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

ii) Strong seismic ground shaking?

Impact Analysis: According to the City of Santa Ana General Plan, Land Use Element (1998), the site is located within a "high-medium" liquefaction zone. Although the site is located within a liquefaction zone, there are no known earthquake faults within five miles of the site. Thus, there is a low potential that the site would experience strong ground shaking during an earthquake.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☒ Less Than Significant Impact
☐ No Impact

iii) Seismic-related ground failure, including liquefaction?

Impact Analysis: The site is located within a liquefaction zone. However, as described above, there are no known earthquake faults within five miles of the site. Thus, there is a low potential that the site would experience seismic-related ground failure during an earthquake. As described in the FFS/RAP, pneumatic fracturing is being evaluated at the site to assist with removal of VOCs from the vadose zone using SVE. A structural analysis will be conducted before pneumatic fracturing is implemented to confirm protection of site structures during project activities.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☒ Less Than Significant Impact
☐ No Impact

iv) Landslides?

Impact Analysis: The site is not located within a landslide zone. The project area is relatively flat and has been previously graded and paved. Project activities will not result in landslides.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

b. Result in substantial soil erosion or the loss of topsoil?

Impact Analysis: The project area is paved or developed with the exception of some planter/landscape areas. The planter/landscape areas are located outside construction and monitoring area and thus there is no potential for project activities to result in substantial soil erosion or the loss of topsoil.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

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?

Impact Analysis: No unstable geologic unit or soil has been encountered in the project area. The soils located beneath the project area are generally stable and project activities will not cause lateral spreading, subsidence, liquefaction or collapse of soil.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Impact Analysis: Soils within the project area are not considered expansive. According to the City of Santa Ana General Plan, Land Use Element (1998), the only known area of expansive soils is located south of the site. Therefore, there would be no impact from project activities.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Impact Analysis: The project does not entail the installation or use of septic tanks or alternative wastewater disposal systems. Therefore, there would be no impact from project activities.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

References Used:

City of Santa Ana. 1998. *City of Santa Ana General Plan, Land Use Element. Adopted February 2.*
 California Department of Water Resources. 2003. *Coastal Plain of Orange County Groundwater Basin, Bulletin 118.*
 Dept. of Conservation, California Geological Survey. 2010. *Fault Activity Map of California.*
 Dept. of Conservation, California Geological Survey. 2018. *Earthquake Fault Zones, Special Publication 42.*
 Orange County Water District. 2015. *Draft Groundwater Management Plan.*
 Wood. 2018. *FFS/RAP, Former Engineering Plating Corporation, October.*

7. Greenhouse Gas Emissions

Project Activities Likely to Create an Impact:

- Drilling and installation of 36 SVE wells and 18 ISCO injecting wells
- Trenching for conveyance piping
- Operation of the SVE system
- Injection of sodium permanganate solution into injection wells during ISCO application
- Workers commuting in trucks and/or passenger vehicles for SVE system maintenance and routine groundwater monitoring

Description of Baseline Environmental Conditions: In the absence of an adopted local Greenhouse Gas (GHG) reduction ordinance or other requirement, such as an element of the General Plan, the SCAQMD's tiered approach is used to determine whether GHG emissions from a project are significant. Under this approach, project emissions will include direct, indirect, and, to the extent information is available, life cycle emissions during construction and operation. Construction emissions will be amortized over the life of the project, defined as 30 years, added to the operation emissions, and compared to the applicable interim GHG significance threshold Tier 1. The following description of Tiers 1 through 3 is taken from the SCAQMD's Interim CEQA GHG Significance Threshold guidance document.

- Tier 1 - consists of evaluating whether the project qualifies for any applicable exemption under CEQA. If the project qualifies for an exemption, no further action is required. If the project does not qualify for an exemption, then it would move to the next tier.
- Tier 2 - consists of determining whether the project is consistent with a GHG reduction plan that may be part of a local general plan. The concept embodied in this tier is equivalent to the existing concept of consistency in CEQA Guidelines §§15064(h) (3), 15125(d), or 15152(a). The GHG reduction plan must, at a minimum, comply with AB 32 GHG reduction goals; include emissions estimates agreed upon by either CARB or the AQMD, have been analyzed under CEQA, and have a certified Final CEQA document. Further, the GHG reduction plan must include a GHG emissions inventory tracking mechanism; process to monitor progress in achieving GHG emission reduction targets, and a commitment to remedy the excess emissions if GHG reduction goals are not met (enforcement).

If the proposed project is consistent with the qualifying local GHG reduction plan, it is not significant for GHG emissions. If the project is not consistent with a local GHG reduction plan, there is no approved plan, or the GHG reduction plan does not include all the components described above, the project would move to Tier 3.

- Tier 3 - establishes a screening significance threshold level to determine significance using a 90 percent emission capture rate approach. The 90 percent capture rate GHG significance screening level in Tier 3 for stationary sources was derived using the reported annual natural gas consumption for 1,297 permitted facilities for 2006 through 2007 to estimate the 90 percentile of the cumulative natural gas usage for all permitted facilities, which corresponds to 10,000 metric tons of CO₂ equivalent emission per year (MTCO₂eq/yr).

Due to the lack of applicable exemption under CEQA (Tier 1) and lack of a GHG reduction plan (Tier 2) for this project, the screening significant threshold level established in Tier 3 will be used to evaluate the GHG impact of the RAs.

Analysis as to whether or not project activities would:

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

Impact Analysis: GHG emissions associated with project activities were estimated using SCAQMD guidance and its emission model CalEEMod. During the construction phase of project activities (e.g., drilling and installation of 36 SVE wells and 18 ISCO injection wells; trenching for conveyance piping), direct GHG emissions arise from operation of drilling and construction equipment, transporting of waste offsite, delivery of construction materials, and daily commute of workers in truck and passenger vehicles. An estimated 21.1 metric tons of unmitigated CO₂ equivalent emissions would be generated per year. This value is well below the significance threshold of 10,000 metric tons of CO₂ equivalent emissions per year (MTCO₂eq/yr), established by the SCAQMD in Tier 3.

During the project operation phase, indirect GHG emissions arise from electricity usage for the SVE system and water usage for ISCO injection; direct GHG emissions arise from heavy equipment for ISCO injection, and routine truck and passenger vehicle traffic (direct emissions) for operation and maintenance of the SVE system, and groundwater monitoring. Based on emission factors provided in the CalEEMod, GHG emissions based on the operational activities are calculated to be 149.6 metric tons of CO₂ equivalent emissions per year, which is well below the significance threshold established by the SCAQMD (10,000 metric tons of CO₂) in Tier 3.

The CalEEMod data input, assumptions and model calculated daily maxima and annual average GHG emissions for the construction and operation phases are provided in Appendix A. These assumptions are based on typical daily maxima, and thus are conservative and overstate annual average conditions. Therefore, the GHG generated from this project will have a less than significant impact on the environment.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☒ Less Than Significant Impact
☐ No Impact

- b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact Analysis: The applicable policy is the SCAQMD's GHG policy, which is to reduce GHG emissions to stabilize climate change. As part of this policy, the SCAQMD established performance standards and target GHG reduction objectives that will ultimately contribute to reducing GHG emissions. Further, the SCAQMD policy is to also fully implement the Governor's Executive Order S-3-05 and the Global Warming Solutions Act of 2006 (AB 32), and to reduce GHG emissions 80 percent below 1990 levels or 90 percent below current levels by 2050. On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency.

The proposed RAs are consistent with the SCAQMD's policy and the Governor's Executive Order and AB 32 because the Project has been designed to ensure that operation, construction, and electricity-related GHG emissions are below the SCAQMD's screening significance GHG thresholds, as shown in Appendix A. The project will not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

References Used:

California Air Pollution Control Officers Association (CAPCOA). 2008. *CEQA and Climate Change, Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*, January.
California Climate Action Registry. 2009. *General Reporting Protocol*, version 3.1.
California Emissions Estimator Model User's Guide, Version 2016.3.2. 2016.
SCAQMD. 2008. *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules, and Plans for use by the AQMD*.

8. Hazards and Hazardous Materials

Project Activities Likely to Create an Impact:

- Management of Investigation Derived Waste (IDW)
- Injection of chemical oxidant (sodium permanganate) for ISCO

Description of Baseline Environmental Conditions: As previously described, site investigation activities have identified VOCs, primarily TCE, in soil, soil vapor, and groundwater underlying the site. The estimated IDW generated during project activities includes approximately 80,000 pounds of spent carbon containing VOCs from the SVE treatment system during routine SVE operations, 66 cubic yards of soil cuttings from well drilling and installation and trenching for underground conveyance piping, 45 cubic yards of concrete waste from trenching and well installation, and up to 1,000 gallons of purged groundwater generated during routine groundwater sampling events. Nearly all of the IDW generated during project activities is expected to be classified as non-hazardous waste except for the wastewater generated during the sampling of groundwater monitoring well MW-4A located in the suspected source area, which was characterized as "hazardous" waste.

The only hazardous substance that will be used during the project is undiluted sodium permanganate (approximately 42,000 pounds of 40% by weight sodium permanganate). Undiluted sodium permanganate will be delivered in totes to the site by authorized hazardous material transporters. The ISCO pilot test work plan will describe methods and procedures for containing and neutralizing any spilled sodium permanganate solution. In addition, the field personnel

who will implement the cleanup activities will be trained regarding potential safety and health risks associated with the hazardous waste handling activities as described in the Health and Safety Plan.

Analysis as to whether or not project activities would:

- a. Create a significant hazard to the public or the environment throughout the routine transport, use, or disposal of hazardous materials?

Impact Analysis: The offsite removal of IDW (e.g., soil cuttings, purged groundwater, spent carbon) will be performed by licensed hazardous waste transporters. Such transportation will be limited to RA construction and routine system operations & maintenance, performance monitoring, and carbon change-out. Undiluted sodium permanganate will be delivered to the site by authorized hazardous material transporters and field personnel will be trained regarding potential safety and health risks associated with the hazardous waste handling activities and methods and procedures for containing and neutralizing any spilled solution. The potential hazard to the current industrial setting around the site would be less than significant.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☒ Less Than Significant Impact
☐ No Impact

- 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?

Impact Analysis: All IDW generated during the project would be properly characterized and transported offsite to an appropriate waste management facility in compliance with applicable federal, state, and local regulations. In the event there is an accident, trained personnel would carry out the provision of an emergency preparedness plan to prevent, detect, and address any accidents involving the release of hazardous material. In addition, worker health and safety and project waste management plans will be prepared to describe project-specific accident prevention procedures, including managing any release of sodium permanganate. Therefore, there is a less than significant hazard to the public or the environment from the project activities.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☒ Less Than Significant Impact
☐ No Impact

- c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?

Impact Analysis: As described earlier in Section 3, Part d, there are no known or proposed schools within one-quarter mile of the site. Project activities will not impact schools.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- 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?

Impact Analysis: The site is identified on the DTSC's Cortese List: Section 65962.5(a) as Engineering Plating Corp. The project includes in situ (in place) treatment of soil and groundwater in the project area and should therefore not result in a significant hazard to the public or the environment. In the event of any accidents or spills of hazardous materials, trained personnel would carry out the provisions of safety and response plans to

prevent, detect, and address any accidents involving the release of hazardous material. Therefore, there is a less than significant hazard to the public or the environment from the project activities.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☒ Less Than Significant Impact
☐ No Impact

- 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 for people residing or working in the project area?

Impact Analysis: According to the City of Santa Ana Zoning Map (2017), the site is not located within two miles of a public airport or public use airport. The City's Airport Environs Element (2009) for John Wayne Airport, located nearly three miles south of the site, identifies the site within its Airport Environs Land Use Plans (AELUP) for Heliports. However, project activities would have no effect on the AELUP.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

Impact Analysis: According to the City of Santa Ana Zoning Map (2017), the site is not located within the vicinity of a private airstrip. Therefore, project activities would not result in an associated safety hazard.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- g. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?

Impact Analysis: No adopted emergency response plan or emergency evacuation plan is required for the project. Likewise, construction and monitoring activities are limited to the project area and would not interfere with any other emergency response or emergency evacuation plans. There is no impact.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Impact Analysis: The site is located in a nearly fully-developed urban area away from wildlands. The project would not increase the risk of wildland fires, or expose people or structures to a significant risk of loss, injury, or death from wildland fires.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated

- ☐ Less Than Significant Impact
☒ No Impact

i. Result in human exposure to Naturally Occurring Asbestos?

Impact Analysis: This project does not involve the removal of old buildings constructed before 1950 and the site is not located at any asbestos mine site lists or in an area likely to contain naturally occurring asbestos. Therefore, this project will not result in human exposure to Naturally Occurring Asbestos.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

References Used:

City of Santa Ana Zoning Map. 2017: <http://www.ci.santa-ana.ca.us/pba/planning/documents/ZoningFULLCITY2017-Jan20.pdf>

City of Santa Ana. 2009. City of Santa Ana General Plan, Airport Environs Element. Adopted February 11.

Dept. of Conservation, Division of Mines and Geology, 2000. General Location Guide for Ultramafic Rocks in California, Open File 2000-019.

9. Hydrology and Water Quality

Project Activities Likely to Create an Impact:

- Groundwater sampling
- Injection of chemical oxidant (sodium permanganate) for ISCO

Description of Baseline Environmental Conditions: The site is located within the Coastal Plain (Plain) of the Orange County Groundwater Basin (Basin) of the South Coast Hydrologic Region (California Department of Water Resources [DWR]). The Basin covers an area of approximately 350 square miles, bordered by the Coyote and Chino Hills to the north, the Santa Ana Mountains to the northeast, and the Pacific Ocean to the southwest. The Plain is formed of coalescing alluvial fans and flood plains deposited by the Santa Ana River, Santiago Creek, and numerous other minor streams that drain from the mountains. The DWR divided the Basin into two primary hydrologic divisions: the Forebay and Pressure areas. The Forebay/Pressure area boundary generally delineates the areas where surface water or shallow groundwater can or cannot move downward to the first producible aquifer in quantities significant from a water supply perspective (OCWD, 2015). The site is located in the Pressure area, which is characterized by near-surface silts and clays (upper approximate 50 feet) that impede vertical movement of groundwater to deep utilized aquifers.

The Basin was subdivided into three major aquifer systems: the Shallow, Principal, and Deep. These aquifer systems are hydraulically connected, as groundwater is able to flow between them via leakage through the intervening aquitards or discontinuities in the aquitards. As noted by OCWD (2015), the Shallow Aquifer system overlies the entire Basin and generally occurs from the surface to approximately 250 feet below ground surface. Over 90 percent of groundwater production occurs from wells that are screened within the Principal Aquifer system at depths between 200 and 1,300 feet. A minor amount of groundwater is pumped from the Deep Aquifer, which is up to 2,000 feet deep in the center of the Basin. Based on the June 2014 Groundwater Elevation Contours for the Principal Aquifer (OCWD, 2014), the potentiometric surface in the Basin's Principal Aquifer system was approximately 80 feet below msl, and regional groundwater flow was to the southwest.

Three distinct water-bearing zones have been identified at the site (within HSU-3) in the upper part of the Shallow Aquifer system, each with confined groundwater. Groundwater conditions in the uppermost portion of HSU-3 vary greatly through the site vicinity depending on whether a location is within paleochannel deposits (HSU-3a, which yield copious amounts of water for sampling) or outside paleochannel deposits (undifferentiated HSU-3, where sampling tools have shown typically slow recharge and did not provide enough water for sample collection). The top of HSU-3a was encountered at a depth of approximately 39 feet and the potentiometric surface indicated by water levels in the wells was approximately 33.5 feet. The tops of the two other underlying water-bearing zones, HSU-3b and HSU-3c, were encountered at depths of approximately 55 and 63 feet, respectively, and the potentiometric

surface indicated by water levels in the wells in both subunits was approximately 33.5 feet deep. The groundwater elevations in monitoring wells screened in HSU-3b and HSU-3c were very similar (within 0.05 to 0.12 foot) to the groundwater elevation in a companion monitoring well screened in HSU-3a. These similar hydraulic head conditions and results of previous aquifer testing indicate a hydraulic connection between HSU-3a and HSU-3b, and a likely connection with HSU-3c.

Analysis as to whether or not project activities would:

a. Violate any water quality standards or waste discharge requirements?

Impact Analysis: ISCO is proposed for remediation of VOC-impacted groundwater in the project area. Before the work can proceed, a work plan will be prepared in part to meet the requirements of Attachment B of Order No. R8-2013-009, General Waste Discharge Requirement for In Situ Groundwater Remediation at Sites within the Santa Ana Region, dated May 3, 2013, and issued by the Regional Water Quality Control Board, Santa Ana Region (RWQCB) (Waste Discharge Requirement [WDR]). Before the RWQCB issues a WDR, the RWQCB will review and approve a report of waste discharge (ROWD). Subsequently, groundwater quality will be monitored while implementing groundwater RAs to confirm compliance with the WDR.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☒ Less Than Significant Impact
☐ No Impact

b. 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)?

Impact Analysis: The proposed groundwater RA involves extraction of VOC-impacted groundwater from the project area, adding oxidant to prepare permanganate solution, then injection of the solution back into the project area. Thus, there is no net loss of groundwater. If the water-bearing zone does not provide sufficient water for preparing permanganate solution, then water will be provided by a nearby water hydrant. There may be some local changes in groundwater levels because of extraction, reinjection, and/or sampling (including purged groundwater generated during compliance sampling and MNA), but these activities are not expected to cause a significant groundwater table level change beyond the project area boundary.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☒ Less Than Significant Impact
☐ No Impact

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site?

Impact Analysis: There is no stream or river onsite. The proposed groundwater remediation involves in-situ treatment of groundwater and would not impact drainage systems or runoff of the site or area.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site?

Impact Analysis: The proposed groundwater remediation involves in-situ treatment of groundwater and would not impact drainage systems or runoff of the site or area, or increase the rate or amount of surface runoff.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

Impact Analysis: The project will not create or contribute to runoff water in excess of the capacity of the existing stormwater drainage system serving the site and surrounding areas.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- f. Otherwise substantially degrade water quality?

Impact Analysis: Groundwater quality will be monitored in accordance with the Waste Discharge Requirements and there is no other surface water runoff that could degrade water quality. As described above, ISCO is expected to improve water quality by reducing the volume and toxicity of VOCs present in groundwater.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- g. Place housing within a 100-year flood hazard area as mapped on a [federal Flood Hazard Boundary](#) or [Flood Insurance Rate Map](#) or other flood hazard delineation map?

Impact Analysis: The site is outside the 100-year flood hazard area. According to the City of Santa Ana General Plan, Land Use Element (1998), the site is located within a 500-year flood plain.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- h. Place within a 100-flood hazard area structures which would impede or redirect flood flows?

Impact Analysis: The site is outside the 100-year flood hazard area.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Impact Analysis: The site is not located in an area with flood risk due to levee.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- j. Inundation by seiche, tsunami or mudflow?

Impact Analysis: The site is unlikely to be impacted by a seiche, tsunami, or mudflow.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

References Used:

*City of Santa Ana. 1998. City of Santa Ana General Plan, Land Use Element. Adopted February 2.
FEMA Flood Map Service Center, online access available at: <https://msc.fema.gov/portal/home>.*

10. Land Use and Planning

Project Activities Likely to Create an Impact: None

Description of Baseline Environmental Conditions: The site is located within an urban environment in an area zoned for light industrial use. The general land use in the project area is zoned M1 - light industrial. Based on review of a City's General Plan, Land Use Element (1998), the site is located within the South Main Street Redevelopment Plan, which was adopted in 1982 and applied to 1,500 acres in one of the primary commercial and industrial districts of the City.

Analysis as to whether or not project activities would:

- a. Physically divide an established community?

Impact Analysis: The project is limited to the project area and will not physically divided an establish community.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Impact Analysis: The project is limited to the project area and will not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

c. Conflict with any applicable habitat conservation plan or natural community conservation plan?

Impact Analysis: The project is limited to the project area and will not conflict with any applicable habitat conservation plan or natural community conservation plan.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

References Used:

City of Santa Ana. 1998. City of Santa Ana General Plan, Land Use Element. Adopted February 2.

City of Santa Ana Zoning Map. 2017: <http://www.ci.santa-ana.ca.us/pba/planning/documents/ZoningFULLCITY2017-Jan20.pdf>

11. Mineral Resources

Project Activities Likely to Create an Impact: None

Description of Baseline Environmental Conditions: The site is located within an urban environment in an area zoned for light industrial use. Soil conditions within the City are a direct result of stream and wind deposition, and the City is not known to lie above an oil or gas field. There are no mineral extraction activities in the City.

Analysis as to whether or not project activities would:

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?

Impact Analysis: Based on review of a City's General Plan, Land Use Element (1998), there are no mineral extraction activities in the City.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

b. 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?

Impact Analysis: As noted above, there are no mineral extraction activities in the City or known mineral resources. The closest known aggregate resources are located north of the City.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

References Used:

City of Santa Ana. 1998. City of Santa Ana General Plan, Land Use Element. Adopted February 2.

12. Noise

Project Activities Likely to Create an Impact:

- Construction (groundwater monitoring and SVE well drilling and installation; excavation equipment; vehicular transportation)
- SVE operations

Description of Baseline Environmental Conditions: The site is located within an urban environment in an area zoned for light industrial use. Because Santa Ana is almost fully developed, The City's General Plan, Noise Elements (1982) were adopted to minimize noise problems in areas sensitive to noise, and included the following standards and guidelines for noise levels for land uses:

Table 1
Interior and Exterior Noise Standards

| <i>Categories</i> | <i>Land Use Categories</i> | <i>Interior¹</i> | <i>Exterior²</i> |
|-------------------|--|-----------------------------|-----------------------------|
| Residential | Single-family, duplex, multi-family | 45 ³ | 65 |
| Institutional | Hospital, school classroom/playgrounds | 45 | 65 |
| | Church, library | 45 | -- |
| Open Space | Parks | -- | 65 |

Notes:

- 1 Interior areas (to include but are not limited to: bedrooms, bathrooms, kitchens, living rooms, dining rooms, closets, corridors/hallways, private offices, and conference rooms).
- 2 Exterior areas shall mean: private yards of single family homes, park picnic areas, school playgrounds, common areas, private open space, such as atriums on balconies, shall be excluded from exterior areas provided sufficient common area is included within the project.
- 3 Interior noise level requirements contemplate a closed window condition. Mechanical ventilation system or other means of natural ventilation shall be provided per Chapter 12, Section 1305 of the Uniform Building Code.

The project is located in an existing light industrial area. The Santa Ana noise ordinance applies a 65 dBA exterior standard. The nearest residential receptors are approximately 500 feet away from the site. Project noise is not anticipated to exceed these thresholds during the duration of the RAs. Construction would occur on weekdays, between 7:00 a.m. and 6:00 p.m. and would occur within the project area. SVE is currently operating continuously onsite (24-hrs per day). Engineering controls (e.g., insulating acoustic blankets, flexible piping) were installed to reduce ambient noise levels from SVE operations. Noise levels measured while the SVE system was operated have been measured and are below the 65 dBA exterior standard.

Analysis as to whether or not project activities would result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Impact Analysis: The project area is not located within a "noise abatement" area of the City; thus, the noise standards and guidelines listed above apply to this project. Project-relative noises are not anticipated to exceed the City's standards and guidelines, and additional measures (e.g., engineering controls, work hour restrictions) will be used if necessary to further mitigate noise levels to less than significant impact.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☒ Less Than Significant Impact
☐ No Impact

b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Impact Analysis: The project is not anticipated to generate significant groundborne vibration. Any vibration generated by the construction activities would be short-term in duration and limited to the site area, only occurring during the construction phases of the RAs. Based on the surrounding land uses, any periodic occurrence of ground-borne noise or vibration would be unnoticeable to adjacent properties and impacts would not be significant.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☒ Less Than Significant Impact
☐ No Impact

c. A substantial permanent increase in ambient noise levels in the vicinity above levels existing without the project?

Impact Analysis: The project includes minor, short-term construction activity with longer-term monitoring. As described above, while operation of the SVE system will increase ambient noise levels during RAs, the project will not permanently increase ambient noise levels in the site or site vicinity.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Impact Analysis: The project includes minor, short-term construction activity with longer-term monitoring. Short-term construction activities will result in temporary or occasional increase in ambient noise levels in the project vicinity. Likewise, operation of the SVE system has increased ambient noise levels in the project vicinity. However, as described above, engineering controls have been installed around the system to keep noise levels within the standards and guidelines identified in the City's General Plan, Noise Elements (1982).

Construction activities will temporarily increase ambient noise levels in the project vicinity. However, the increase would be considered minor compared with existing noise conditions of the project site. Additionally, construction would occur on weekdays, between 7:00 a.m. and 6:00 p.m. to minimize potential increase in ambient noise levels to nearby residents. Therefore, the temporary and periodic increase in noise level from the project would have a less than significant impact on ambient noise levels.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☒ Less Than Significant Impact
☐ No Impact

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 expose people residing or working in the project area to excessive noise levels?

Impact Analysis: According to the City of Santa Ana Zoning Map (2017), the site is not located within two miles of a public airport or public use airport. The City's Airport Environs Element (2009) for John Wayne Airport, located nearly three miles south of the site, identifies the site within its Airport Environs Land Use Plans (AELUP) for Heliports, however project activities would have no effect on the AELUP.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated

- ☐ Less Than Significant Impact
☒ No Impact

- f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Impact Analysis: According to the City of Santa Ana Zoning Map (2017), the site is not located within the vicinity of a private airstrip.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

References Used:

City of Santa Ana Zoning Map. 2017: <http://www.ci.santa-ana.ca.us/pba/planning/documents/ZoningFULLCITY2017-Jan20.pdf>
City of Santa Ana. 1982. City of Santa Ana General Plan, Noise Element. Adopted September 20.
City of Santa Ana. 2009. City of Santa Ana General Plan, Airport Environs Element. Adopted February 11.
Wood. 2018. FFS/RAP, Former Engineering Plating Corporation, October.

13. Population and Housing

Project Activities Likely to Create an Impact: None

Description of Baseline Environmental Conditions: The project includes minor, short-term construction activity with longer-term monitoring that does not entail construction of new housing or businesses. All construction and monitoring workers are expected to commute from the surrounding area to the project site. As a result, no additional demand would be placed on housing, schools, or other community resources associated with population growth.

Analysis as to whether or not project activities would:

- a. Induce substantial population growth in area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Impact Analysis: The project does not involve construction of new housing or businesses that would directly or indirectly induce substantial population growth in the area. There would be no impact.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Impact Analysis: The project does not entail construction of housing and would not displace existing housing. There would be no impact.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Impact Analysis: The project will not displace people necessitating the construction of replacement housing elsewhere and thus, there would be no impact.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

References Used:

City of Santa Ana. 2014. City of Santa Ana General Plan, Housing Element Update. Revised January 27.

14. Public Services

Project Activities Likely to Create an Impact: None

Description of Baseline Environmental Conditions: The project including minor, short-term construction activity with longer-term monitoring that does not entail construction of new housing or businesses, nor need for additional public services. All construction and monitoring workers are expected to commute from the surrounding area to the project site. As a result, no additional demand would be placed on public services.

Analysis as to whether or not project activities would:

- a. Result in substantial adverse physical impacts associated with the provision of new or physically altered government 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 following public services:

- i. Fire protection?

Impact Analysis: Fire protection services in Santa Ana are contracted through the Orange County Fire Authority (OCFA). Two OCFA fire stations are located with about three-quarter mile of the site. The project will not impact existing fire protection services.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- ii. Police protection?

Impact Analysis: Police protection services are provided through the Santa Ana Police Department. These include a police headquarters and two sub-stations. The project will not impact existing police protection services.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- iii. Schools?

Impact Analysis: There are no schools within one-quarter mile of the site. The project will not impact school services.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

iv. Parks?

Impact Analysis: Santa Ana presently has about 400 acres of public park and recreation facilities distributed generally uniformly throughout the City. The nearest park, Madison Park, is located about 700 feet northwest of the site. The project will not impact parks.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

v. Other public facilities?

Impact Analysis: As described above, the project will not impact any public facilities.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

References Used:

City of Santa Ana. 1982. *City of Santa Ana General Plan, Open Space, Parks and Recreation Elements*. September 20.
City of Santa Ana. 1982. *City of Santa Ana General Plan, Public Facilities Plan*. September 20.

15. Recreation

Project Activities Likely to Create an Impact: None

Description of Baseline Environmental Conditions: As described in the City of Santa Ana General Plan, Open Space, Parks and Recreation Elements (1982), the City presently has about 400 acres of public park and recreation facilities distributed generally uniformly throughout the City. Little current or future potential exists for the acquisition of additional park lands and open spaces. The Santa Ana River and Santiago Creek are part of a regional system of open space corridors promoted by the Orange County General Plan Open Space Element. Centennial Park is located in a relatively central position in the City and also is an important node of open space within the regional system. These links to a regional system of open space will become increasingly significant to Santa Ana residents as the City builds out.

Analysis as to whether or not project activities would:

- a. 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?

Impact Analysis: The project includes minor, short-term construction activity with longer-term monitoring that does not entail construction of new housing or businesses. All construction and monitoring workers are expected to commute from the surrounding area to the project site. The project will not increase the use of existing neighborhood and regional parks or other recreational facilities.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- b. Does the project include recreational facilities or require construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Impact Analysis: The project does not include use of recreational facilities or require construction or expansion of recreational facilities and thus will not have an adverse physical effect on the environment.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

References Used:

City of Santa Ana. 1982. *City of Santa Ana General Plan, Open Space, Parks and Recreation Elements*. September 20.

16. Transportation and Traffic

Project Activities Likely to Create an Impact:

- Construction and monitoring (equipment delivery, waste removal, and vehicular transportation)
- Workers commuting in trucks and/or passenger vehicles (including operation and maintenance of SVE and ISCO treatment systems, groundwater monitoring)

Description of Baseline Environmental Conditions: The Circulation Element of the Santa Ana General Plan (1998) serves as the City's primary guide for transportation planning to accommodate the transportation needs of those living, working, and visiting the City. The primary streets within the site vicinity are Standard Avenue and Edinger Avenue. Edinger Avenue is a designated "Smart Street" improvement in the General Plan (1998) and includes traffic signal synchronization, re-striping/widening of roadways to increase the number of travel lanes, intersection grade separations, bus turnouts, removal of on-street parking, and intersection improvements to facilitate traffic movement. Edinger intersects the 55 freeway about one mile east of the site.

The proposed RAs will not exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways. No changes to site paving- or adjoining-roads are proposed. Therefore, the project will not substantially increase traffic hazards. The equipment necessary to the project will not be incompatible with approved uses of the existing roadways. Also, the field activities will not result in inadequate emergency access since these activities must comply with the site health and safety plan. The estimated three to four vehicles each day for three months during construction and one to two vehicles thereafter each week will be managed onsite, which will not result in inadequate parking capacity, or conflict with adopted policies, plans, or programs supporting alternative transportation.

Analysis as to whether or not project activities would:

- a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Impact Analysis: Construction activities associated with project implementation would result in the temporary and short-term generation of trips for equipment deliveries and site workers. During construction activities, it is estimated that up to four additional vehicles would be ingressing and egressing the site each day for no more than two months. This is a fraction of a percent of the traffic estimated for Standard Avenue and Edinger Avenue. Maintenance and monitoring of the treatment systems and groundwater monitoring was estimated to require one

to two vehicles ingressing and egressing the site each week. This is even less of an impact than the construction phase and will not result in a significant increase in compared to the existing traffic flow and pattern. Therefore, there will not be any significant impact to the environment. Therefore, the impacts from project activities would be less than significant.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☒ Less Than Significant Impact
☐ No Impact

- b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Impact Analysis: Edinger Avenue identified in the Orange County Transportation Authority's Congestion Management Program (CMP) (2011) as a designated CMP highway system. The CMP (2011) also designates the intersection of SR-55 and Edinger Avenue as a CMP intersection. Project-related traffic (e.g., trucks, delivery of construction equipment, and personal vehicles) will not significantly impact the CMP.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☒ Less Than Significant Impact
☐ No Impact

- c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

Impact Analysis: The project will not affect air traffic patterns.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Impact Analysis: The project will not impact design features or incompatible uses of streets in the site vicinity.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- e. Result in inadequate emergency access?

Impact Analysis: The project will not impact emergency access uses of streets in the site vicinity. During some construction activities, access in the alleyway south of the site may be restricted (traffic use on the alley is very light and typically limited to nearby property occupants and tenants). However, traffic control measures will be implemented so that emergency access is available and potential impacts would be less than significant.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☒ Less Than Significant Impact
☐ No Impact

- f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Impact Analysis: The project will not conflict with any policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

References Used:

City of Santa Ana. 1998. *City of Santa Ana General Plan, Circulation Elements, February 2*.
Orange County Transportation Authority. 2011. *Congestion Management Program, Revised April 19*.
Wood. 2018. *FFS/RAP, Former Engineering Plating Corporation, October*.

17. Tribal Cultural Resources

Project Activities Likely to Create an Impact: None

Description of Baseline Environmental Conditions: The site is located within an urban environment in an area zoned for light industrial use with little or no known cultural resources. The site and project area have previously been graded and paved. Ground disturbances during construction and operation of the RAs (e.g., trenching, groundwater monitor and SVE well drilling and installation, ISCO injection) will occur in areas that have already been disturbed.

Analysis as to whether or not project activities would:

- a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
- i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

Impact Analysis: DTSC's Office of Environmental Justice and Tribal Affairs (EJTA) contacted the Native American Heritage Commission (NAHC) about this Site. NAHC conducted a search of NAHC's Sacred Lands File and identified cultural sites in the area. However, none of the site were located within the project area.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

- 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 Resource Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Impact Analysis: As noted above in a.i., there are no identified sites within the project area. EJTA sent letters to all of the Tribal contacts identified by NAHC and also made multiple attempts to reach the Tribes via electronic mail and voice messages. No responses were received. As a result, EJTA has determined that no interest exists on behalf of these Tribal governments.

Conclusion:

- ☐ Potentially Significant Impact
- ☐ Less Than Significant With Mitigation Incorporated
- ☐ Less Than Significant Impact
- ☒ No Impact

References Used:

18. Utilities and Service Systems

Project Activities Likely to Create an Impact:

- Construction and monitoring (equipment delivery, waste removal, and vehicular transportation)

Description of Baseline Environmental Conditions: According the Santa Ana General Plan, Land Use Element (1998), the City has a well developed system of public infrastructure which includes water supply and distribution, sewer facilities, and storm drains and other flood control facilities. The Santa Ana Water Department delivers service to City businesses and residents. And they expect to continue to have access to adequate water supplies through the year 2025 without problems of major significance. The City has identified and prioritized storm drain improvements needed in the City to accommodate anticipated development and meet the 10-year storm criteria. Sewage from the City is diverted into Reclamation Plant Number 1 in the City of Fountain Valley. The Orange County Sanitation District has indicated that the District's facilities are adequate to handle the present demand for sewage treatment. According the Santa Ana General Plan, Energy Element (1982), Santa Ana's energy comes from many sources and the City is not a utility owner.

Electricity for current SVE system is provided by Southern California Edison. Water needs at the site for the RAs will be met by the Santa Ana Water Department. No discharge to sewer or storm drains will occur during implementation of the RAs.

Analysis as to whether or not project activities would:

- a. Exceed wastewater treatment requirements of the applicable [Regional Water Quality Control Board](#)?

Impact Analysis: All wastewater generated during RA construction and monitoring activities will be transported offsite to an appropriate waste disposal facility. Onsite wastewater treatment is not required. Project workers will use portable restroom facilities.

Conclusion:

- ☐ Potentially Significant Impact
- ☐ Less Than Significant With Mitigation Incorporated
- ☐ Less Than Significant Impact
- ☒ No Impact

- b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Impact Analysis: All wastewater generated during RA construction and monitoring activities will be transported offsite to an appropriate waste disposal facility. The limited volume of wastewater to be managed (generated primarily during groundwater monitoring activities) is insignificant and would not result in the construction of new water or wastewater treatment facilities.

Conclusion:

- ☐ Potentially Significant Impact
- ☐ Less Than Significant With Mitigation Incorporated
- ☐ Less Than Significant Impact
- ☒ No Impact

- c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Impact Analysis: The existing storm water controls in the project area will regulate and control storm water runoff from the site. Project implementation would not increase the amount of impervious surface and would not increase peak off-site storm water flows. Thus, the project will not result in the construction of new storm water drainage facilities or expansion of existing facilities.

Conclusion:

- ☐ Potentially Significant Impact
- ☐ Less Than Significant With Mitigation Incorporated
- ☐ Less Than Significant Impact
- ☒ No Impact

- d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Impact Analysis: The proposed groundwater RA involves extraction of VOC-impacted groundwater from the project area, adding oxidant to prepare permanganate solution, then injection of the solution back into the project area. Thus, there is no net loss of groundwater. If the water-bearing zone does not provide sufficient water for preparing permanganate solution, then water will be provided by a nearby water hydrant. ISCO injection may require an estimated 101,000 gallons of water provided by a nearby water hydrant. The contractor will obtain a permit from the City and reimburse the City for water used. No new or expanded water supply entitlements will be necessary, thus impact from the project will be less than significant.

Conclusion:

- ☐ Potentially Significant Impact
- ☐ Less Than Significant With Mitigation Incorporated
- ☒ Less Than Significant Impact
- ☐ No Impact

- e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Impact Analysis: The project will require offsite disposal of a limited volume of water generated during groundwater monitoring. The wastewater treatment provider has adequate capacity to serve the project's demands.

Conclusion:

- ☐ Potentially Significant Impact
- ☐ Less Than Significant With Mitigation Incorporated
- ☐ Less Than Significant Impact
- ☒ No Impact

- f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Impact Analysis: The project will require offsite disposal of a limited volume of soil and concrete generated during trenching and groundwater monitoring and SVE well drilling and installation. The waste removal provider and any landfills to which project wastes are taken have adequate capacity to serve the project's demands.

Conclusion:

- ☐ Potentially Significant Impact
- ☐ Less Than Significant With Mitigation Incorporated
- ☐ Less Than Significant Impact

☒ No Impact

- g. Comply with [federal](#), [state](#), and local statutes and regulations related to solid waste?

Impact Analysis: All waste generated during project activities would be characterized and transported offsite to appropriate disposal/treatment facilities. The project will comply with federal, state, and local statutes and regulations related to solid waste and thus impacts would be less than significant.

Conclusion:

- ☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☒ Less Than Significant Impact
☐ No Impact

References Used:

City of Santa Ana. 1982. City of Santa Ana General Plan, Energy Element, Adopted September 20.
City of Santa Ana. 1998. City of Santa Ana General Plan, Land Use Element. Adopted February 2.

Mandatory Findings of Significance

Based on evidence provided in this Initial Study, DTSC makes the following findings:

- a. The project ☐ has ☒ does not have the potential to 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.
- b. The project ☐ has ☒ does not have impacts that are individually limited but cumulatively considerable. ("Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)
- c. The project ☐ has ☒ does not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.

Determination of Appropriate Environmental Document

On the basis of this initial evaluation:

☒ I find the proposed project COULD NOT HAVE a significant effect on the environment. A **Negative Declaration** will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **Mitigated Negative Declaration** will be prepared.

☐ I find the proposed project MAY HAVE a significant effect on the environment. An **Environmental Impact Report** is required.

☐ I find the proposed project MAY HAVE a "Potentially Significant Impact" or "Less Than Significant With Mitigation Incorporated" 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.

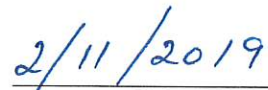
☐ I find the proposed project COULD HAVE a significant effect on the environment. All potentially significant effects (a) have been analyzed adequately in an earlier Environmental Impact Report or Negative Declaration pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier Environmental Impact Report or Negative Declaration, including revisions or mitigation measures that are imposed upon the proposed project. **Therefore, nothing further is required.**

Certification:

I hereby certify that the statements furnished above and in the attached exhibits, present the data and information required for this initial study evaluation to the best of my ability and that the facts, statements and information presented are true and correct to the best of my knowledge and belief.



Preparer's Signature



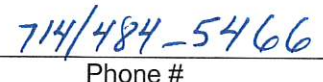
Date



Preparer's Name



Preparer's Title



Phone #



Branch or Unit Chief Signature



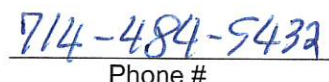
Date



Branch or Unit Chief Name



Branch or Unit Chief Title



Phone #

Plot Date: 9/06/2018 9:32:38 AM, Plotted by: joanna.worker, Drawing Path: W:\Projects\IR1316460L (Engineering Plotting)\tb_001_Site Location Map.dwg, Site Location Map



Explanation



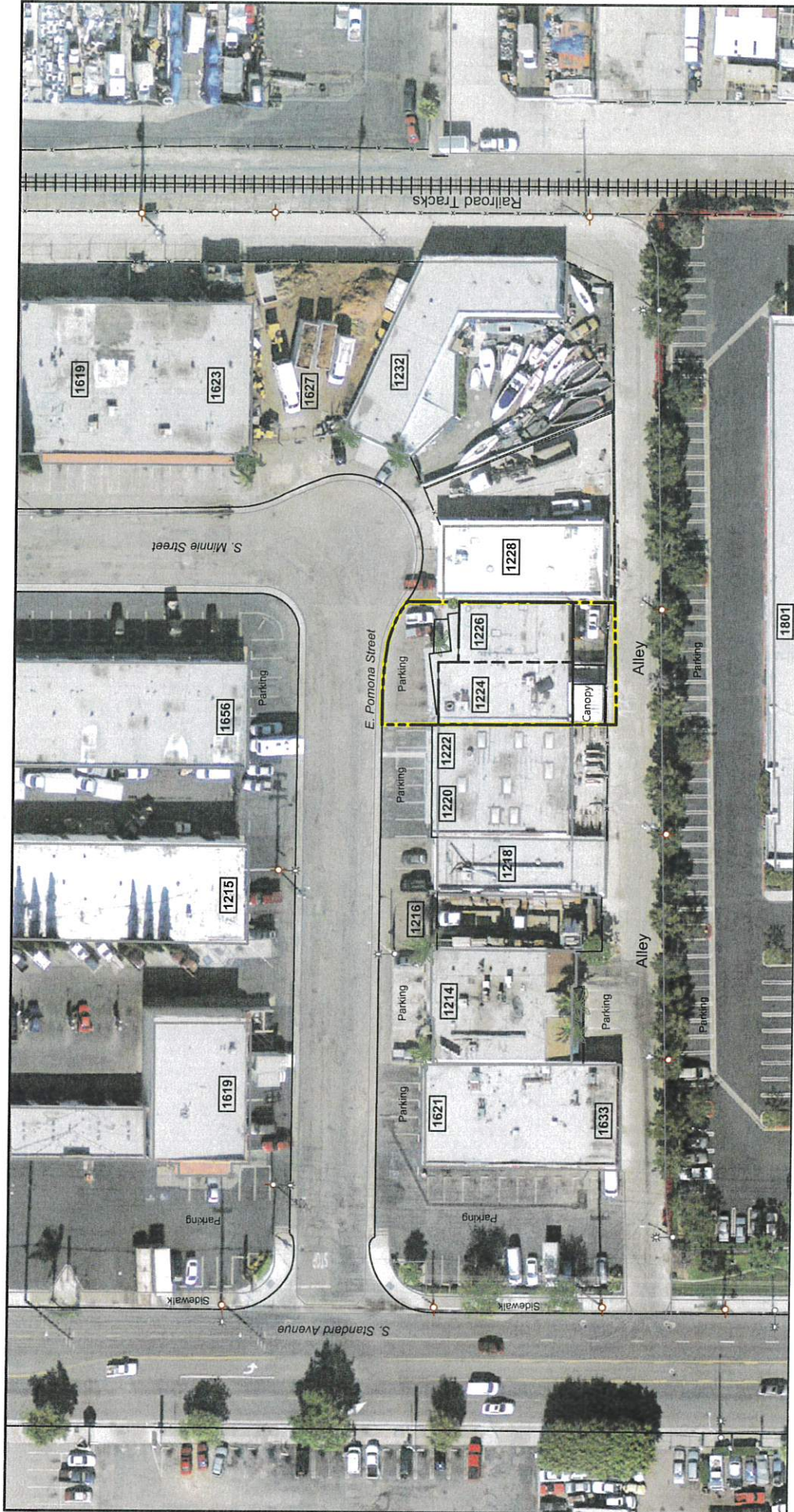
Site limits



Basemap modified from an aerial photo from Esri World Imagery- Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, dated 6-2-2016.

SITE LOCATION MAP
Former Engineering Plating Corp. Site
1224 E. Pomona Street
Santa Ana, California

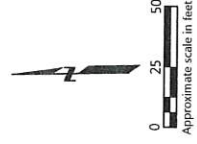
| | | |
|---------|------------------|------------------------|
| By: jrw | Date: 09/06/2018 | Project No. IR1316460L |
| wood. | | Figure 1 |



Explanation

- Site limits
- Current building address
- Chain-link fence
- Block wall
- Street light
- Utility pole

Note:
All locations are approximate.



Aerial photograph from Eagle Aerial Imaging, Inc. 2011.

SITE VICINITY AND LOCATION
Former Engineering Plating Corp. Site
1224 E. Pomona Street
Santa Ana, California

By: JFW Date: 09/06/2018 Project No. JRI316460L

Figure 2

wood.

Appendix A

CalEEMod Model Calculations

Engineering Plating Initial Study - Orange County, Summer

Engineering Plating Initial Study

Orange County, Summer

1.0 Project Characteristics**1.1 Land Usage**

| Land Uses | | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|------------------------|--|------|----------|-------------|--------------------|------------|
| General Light Industry | | 0.50 | 1000sqft | 0.01 | 540.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|--------------------------|----------------------------|--------------------------|-------|---------------------------|-------|
| Urbanization | Urban | Wind Speed (m/s) | 2.2 | Precipitation Freq (Days) | 30 |
| Climate Zone | 8 | | | Operational Year | 2021 |
| Utility Company | Southern California Edison | | | | |
| CO2 Intensity (lb/MW/hr) | 702.44 | CH4 Intensity (lb/MW/hr) | 0.029 | N2O Intensity (lb/MW/hr) | 0.006 |

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - SVE system land use: 15'x18'; ISCO land use: 15'x18'

Construction Phase - 12 days duration for installing SVE wells, 8 days for installing monitoring wells, and 21 days for installing and developing 18 ISCO injection wells

Off-road Equipment - equipment for well installation include one drill rig, one forklift, concrete coring tools, pressure washer for drill rod decon and one support truck

Off-road Equipment - trenching for SVE pipes 500 linear feet, 2 feet wide and 1 foot deep. Backfill with imported base. Excavated soil will be transported off site for disposal. Model default horsepower are used.

Trips and VMT - no vendor trip during well installation. Waste hauling distance is 90 miles to Soil Safe Facility in Adelanto, CA. Travel distance for workers is 6 miles (from Wood Irvine office to the site). 2 round trips for soil base vendor during trenching for SVE. Default vehicle class is used.

Off-road Equipment - equipment for drilling 36 SVE wells include: one drill rig, one pressure washer for drill rod decon, one forklift and concrete cutters and concrete mixer; model default equipment horsepower are used

Vehicle Trips - 4 daily trips during full-scale ISCO injection; Two site visits per week for routine O&M and 3 days per quarter for GW monitoring (equivalent of 0.9 trip per day), travel distance is from office to the site (6 miles)

Road Dust - assume driving on 100% paved road only

| | | | |
|--------------------------------|-------------------------|-------------|--------------------------|
| tblFleetMix | LHD1 | 0.02 | 0.00 |
| tblFleetMix | LHD2 | 5.7910e-003 | 0.00 |
| tblFleetMix | MCY | 4.8960e-003 | 0.00 |
| tblFleetMix | MDV | 0.11 | 0.00 |
| tblFleetMix | MH | 9.6600e-004 | 0.00 |
| tblFleetMix | MHD | 0.03 | 0.00 |
| tblFleetMix | OBUS | 1.7130e-003 | 0.00 |
| tblFleetMix | SBUS | 5.9000e-004 | 0.00 |
| tblFleetMix | UBUS | 1.5530e-003 | 0.00 |
| tblLandUse | BuildingSpaceSquareFeet | 500.00 | 540.00 |
| tblLandUse | LandUseSquareFeet | 500.00 | 540.00 |
| tblOffRoadEquipment | HorsePower | 221.00 | 81.00 |
| tblOffRoadEquipment | HorsePower | 9.00 | 402.00 |
| tblOffRoadEquipment | HorsePower | 81.00 | 187.00 |
| tblOffRoadEquipment | HorsePower | 89.00 | 247.00 |
| tblOffRoadEquipment | HorsePower | 13.00 | 97.00 |
| tblOffRoadEquipment | LoadFactor | 0.50 | 0.73 |
| tblOffRoadEquipment | LoadFactor | 0.56 | 0.38 |
| tblOffRoadEquipment | LoadFactor | 0.73 | 0.41 |
| tblOffRoadEquipment | LoadFactor | 0.20 | 0.40 |
| tblOffRoadEquipment | LoadFactor | 0.30 | 0.37 |
| tblOffRoadEquipment | OffRoadEquipmentType | | Bore/Drill Rigs |
| tblOffRoadEquipment | OffRoadEquipmentType | | Concrete/Industrial Saws |
| tblOffRoadEquipment | OffRoadEquipmentType | | Forklifts |
| tblOffRoadEquipment | OffRoadEquipmentType | | Cement and Mortar Mixers |
| tblOffRoadEquipment | OffRoadEquipmentType | | Pressure Washers |
| tblOperationalOffRoadEquipment | OperDaysPerYear | 260.00 | 8.00 |
| tblOperationalOffRoadEquipment | OperDaysPerYear | 260.00 | 18.00 |
| tblOperationalOffRoadEquipment | OperDaysPerYear | 260.00 | 18.00 |
| tblOperationalOffRoadEquipment | OperDaysPerYear | 260.00 | 18.00 |
| tblOperationalOffRoadEquipment | OperDaysPerYear | 260.00 | 12.00 |
| tblOperationalOffRoadEquipment | OperFuelType | Diesel | Electrical |
| tblOperationalOffRoadEquipment | OperFuelType | Diesel | Electrical |

| tblTripsAndVMT | WorkerTripNumber | |
|-----------------|---------------------|------------|
| tblVehicleTrips | CC_TL | 10.00 |
| tblVehicleTrips | CC_TTP | 8.40 |
| tblVehicleTrips | CNW_TL | 28.00 |
| tblVehicleTrips | CNW_TTP | 6.90 |
| tblVehicleTrips | CW_TL | 13.00 |
| tblVehicleTrips | CW_TTP | 16.60 |
| tblVehicleTrips | ST_TR | 59.00 |
| tblVehicleTrips | SU_TR | 1.32 |
| tblVehicleTrips | WD_TR | 0.68 |
| tblWater | IndoorWaterUseRate | 6.97 |
| tblWater | OutdoorWaterUseRate | 115,625.00 |
| | | 0.00 |
| | | 101,000.00 |

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

| Year | 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 |
|---------|-------|-------|-------|-------|---------------|--------------|------------|----------------|---------------|-------------|---------|----------|-----------|-------|-------|----------|
| 2019 | 0.474 | 5.311 | 4.783 | 0.012 | 0.089 | 0.270 | 0.331 | 0.024 | 0.252 | 0.268 | 0.000 | 1203.415 | 1203.415 | 0.323 | 0.000 | 1211.496 |
| Maximum | 0.474 | 5.311 | 4.783 | 0.012 | 0.089 | 0.270 | 0.331 | 0.024 | 0.252 | 0.268 | 0.000 | 1203.415 | 1203.415 | 0.323 | 0.000 | 1211.496 |

Mitigated Operational

| Category | 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 |
|-------------------|----------|----------|----------|-------------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|----------|--------|----------|
| lb/day | | | | | | | | | | | | | | | | |
| Area | 0 | 0 | 5.00E-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 0 | 0 | 1.20E-04 |
| Energy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mobile | 4.04E-03 | 3.09E-03 | 0.0412 | 1.10E-04 | 0.0104 | 8.00E-05 | 0.0105 | 2.76E-03 | 7.00E-05 | 2.84E-03 | 11.326 | 11.326 | 11.326 | 3.00E-04 | 0 | 11.3335 |
| Offroad | 0.4957 | 3.948 | 4.1306 | 7.33E-03 | 0.208 | 0.208 | 0.208 | 0.2031 | 0.2031 | 0.2031 | 642.2419 | 642.2419 | 642.2419 | 0.0877 | 0 | 644.4339 |
| Total | 0.4997 | 3.9511 | 4.1719 | 7.4400E-003 | 0.0104 | 0.2081 | 0.2185 | 2.7600E-003 | 0.2032 | 0.2060 | 653.5679 | 653.5679 | 653.5679 | 0.0880 | 0.0000 | 655.7675 |
| lb/day | | | | | | | | | | | | | | | | |
| Category | 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 |
| 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 | Installation of SVE and monitoring | Trenching | 7/1/2019 | 7/26/2019 | 5 | 20 | |
| 2 | Trenching for SVE pipes | Trenching | 7/27/2019 | 8/9/2019 | 5 | 10 | |
| 3 | Installation of 18 ISCO injection wells | Trenching | 8/10/2019 | 9/9/2019 | 5 | 21 | |

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating -

3.2 Installation of SVE and monitoring - 2019

Unmitigated Construction On-Site

| Category | 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 |
|----------|--------|--------|--------|-------------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|--------|-----|----------|
| Off-Road | 0.4445 | 5.0984 | 4.5594 | 7.3000e-003 | | 0.2685 | 0.2685 | | 0.2505 | 0.2505 | | 717.1475 | 717.1475 | 0.1968 | | 722.0680 |
| Total | 0.4445 | 5.0984 | 4.5594 | 7.3000e-003 | | 0.2685 | 0.2685 | | 0.2505 | 0.2505 | | 717.1475 | 717.1475 | 0.1968 | | 722.0680 |

Unmitigated Construction Off-Site

| Category | 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 |
|----------|----------|--------|--------|-------------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|-----|----------|
| Hauling | 6.24E-03 | 0.1999 | 0.0542 | 6.30E-04 | 0.0157 | 9.70E-04 | 0.0166 | 4.28E-03 | 9.30E-04 | 5.22E-03 | | 70.5674 | 70.5674 | 8.83E-03 | | 70.7381 |
| Vendor | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Worker | 0.023 | 0.0128 | 0.169 | 4.80E-04 | 0.0457 | 3.40E-04 | 0.046 | 0.0121 | 3.10E-04 | 0.0124 | | 47.3439 | 47.3439 | 1.26E-03 | | 47.3754 |
| Total | 0.0283 | 0.2127 | 0.2232 | 1.1100e-003 | 0.0613 | 1.3100e-003 | 0.0627 | 0.0184 | 1.2400e-003 | 0.0177 | | 117.9113 | 117.9113 | 8.0900e-003 | | 118.1135 |

Mitigated Construction On-Site

| Category | 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 |
|----------|--------|--------|--------|-------------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|--------|-----|----------|
| Off-Road | 0.4445 | 5.0984 | 4.5594 | 7.30E-03 | | 0.2685 | 0.2685 | | 0.2505 | 0.2505 | 0 | 717.1475 | 717.1475 | 0.1968 | | 722.068 |
| Total | 0.4445 | 5.0984 | 4.5594 | 7.3000e-003 | | 0.2685 | 0.2685 | | 0.2505 | 0.2505 | 0.0000 | 717.1475 | 717.1475 | 0.1968 | | 722.0680 |

Mitigated Construction On-Site

| Category | 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 |
|----------|--------|--------|--------|------------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|--------|-----|----------|
| Off-Road | 0.2402 | 2.3834 | 2.3412 | 3.19E-03 | | 0.1578 | 0.1578 | | 0.1454 | 0.1454 | 0 | 313.8564 | 313.8564 | 0.098 | | 316.3054 |
| Total | 0.2402 | 2.3834 | 2.3412 | 3.1900E-03 | | 0.1578 | 0.1578 | | 0.1454 | 0.1454 | 0.0000 | 313.8564 | 313.8564 | 0.0980 | | 316.3054 |

Mitigated Construction Off-Site

| Category | 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 |
|----------|----------|--------|--------|------------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|----------|-----|----------|
| Hauling | 0.0125 | 0.3998 | 0.1085 | 1.27E-03 | 0.0313 | 1.95E-03 | 0.0333 | 8.57E-03 | 1.86E-03 | 0.0104 | | | 141.1347 | 0.0137 | | 141.4762 |
| Vendor | 4.47E-03 | 0.0732 | 0.0242 | 2.90E-04 | 0.0117 | 1.87E-03 | 0.0136 | 3.51E-03 | 1.79E-03 | 5.30E-03 | | | 30.7231 | 3.20E-04 | | 30.731 |
| Worker | 0.023 | 0.0128 | 0.169 | 4.80E-04 | 0.0457 | 3.40E-04 | 0.046 | 0.0121 | 3.10E-04 | 0.0124 | | | 47.3439 | 1.26E-03 | | 47.3754 |
| Total | 0.0400 | 0.4867 | 0.3017 | 2.0400E-03 | 0.0887 | 4.1600E-03 | 0.0929 | 0.0242 | 3.9600E-03 | 0.0282 | | | 219.2018 | 0.0152 | | 219.5827 |

3.4 Installation of 18 ISCO injection wells - 2019

Unmitigated Construction On-Site

| Category | 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 |
|----------|--------|--------|--------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|------------|--------|-----|------------|
| Off-Road | 0.3959 | 4.6229 | 2.9281 | 0.0108 | | 0.1667 | 0.1667 | | 0.1561 | 0.1561 | | | 1,055.2603 | 0.3122 | | 1,063.0660 |
| Total | 0.3959 | 4.6228 | 2.9281 | 0.0108 | | 0.1667 | 0.1667 | | 0.1561 | 0.1561 | | | 1,055.2603 | 0.3122 | | 1,063.0660 |

Unmitigated Construction Off-Site

4.1 Mitigation Measures Mobile

4.2 Trip Summary Information

4.3 Trip Type Information

4.4 Fleet Mix

[illegible]

6.0 Area Detail

6.1 Mitigation Measures Area

| Category | 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 |
|-------------|-----|-----|---------|-----|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|-----|-----|----------|
| Mitigated | 0 | 0 | 5.0E-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 0 | 0 | 1.20E-04 |
| Unmitigated | 0 | 0 | 5.0E-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 0 | 0 | 1.20E-04 |

6.2 Area by SubCategory

Unmitigated

| SubCategory | 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 |
|-----------------------|-----|-----|---------|-----|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|-----|-----|----------|
| Architectural Coating | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Consumer Products | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Landscaping | 0 | 0 | 5.0E-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 0 | 0 | 1.20E-04 |
| Total | 0 | 0 | 5E-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 0 | 0 | 1.20E-04 |

Mitigated

| SubCategory | 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 |
|-----------------------|-----|-----|---------|-----|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|-----|-----|----------|
| Architectural Coating | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Consumer Products | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Landscaping | 0 | 0 | 5.0E-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 0 | 0 | 1.20E-04 |
| Total | 0 | 0 | 5E-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.10E-04 | 1.10E-04 | 1.10E-04 | 0 | 0 | 1.20E-04 |

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